Chapter One

Introduction

1.1 Background to the Study

This study is about Infertility-Related Stress and coping strategies as predictors of mental well-being among individuals with reproductive health challenges in Ibadan, Oyo state Nigeria. There are three variables, two independent variables which are infertility-related stress and coping strategies; one dependent variable which is mental well-being. We want to study how infertility-related-stress affects the mental well-being of individuals with reproductive health challenges, the effect of the coping strategies adopted by the affected individual on mental well-being and the impact of coping strategies on infertility-related-stress of the infertile males and females.

Mental well-being is so important that it comes under goal 3 of the Sustainable Development Goals (SDG), when people are mentally stable, they will be more productive, happier and contribute meaningfully to humanity. Mental well-being could be defined to be a dynamic state, in which the individual is able to develop his/her potential, work productively, build strong and positive relationships with others, and contribute to his/her community. It is enhanced when an individual is able to fulfill his/her personal and social goals and achieve sense of purpose in the society.

Mental well-being problems exist along a continuum from mild, time-limited distress to chronic, progressive and severely disabling conditions. The binary approach to diagnosing

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mental disorders, although useful for clinical practice, does not accurately reflect the diversity and complexity of the mental health needs of individuals or population[1].

Mental well-being is a positive perception of life challenges and efforts to realize true potential. It requires a perception of the existential challenges of life. This approach examines the growth and development of the individual in the face of the challenges of life. Mental well-being can be examined in self-acceptance, purpose in life, personal growth, positive relations with others, environmental mastery and autonomy[2]. The World Health Organization's (WHO) definition of health as "the condition of total physical, mental, and social well-being as opposed to merely a lack of illness or disability" had the benefit of broadening notions of wellness to include psychological and social dimensions, but was of no practical utility[3].

Mental well-being has been identified as important causative factors. Major Depressive Disorders (MDD) have been reported to be twice as common in women as in their male counterparts with onset in the childbearing years. Psychosocial stressors seem to be the precipitating factor particularly in women. High marital conflicts as experienced by infertile couples and attendant low psychosocial support may be reinforcing factors in Africans, who place a high premium on child bearing. Major Depressive Disorders may be recurrent or chronic, thus affecting the individuals for several years, and with profound impact on their families. The prevalence of psychiatric morbidity amongst infertile women has been shown to be quite high with values as high as 46.4%. Depression and anxiety disorders have been identified as important causative factors[4].

In a study that was centered on infertility, questionnaires were administered to 112 women with infertility at the time of their first presentation to a fertility clinic in a tertiary referral

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centre. The comparison group comprised of 96 women presenting at the family planning clinic of the same institution. In addition to demographic data, a structured questionnaire was used to collect obstetric information and clinical details from the participants.

The result revealed that prevalence of psychiatric morbidity was 46.4% (GHQ cases) in the infertile women, 37.5% and 42.9% were cases of anxiety and depression respectively. Women suffering from infertility scored significantly higher on all outcome measures of psychopathology. The results of the multiple regression analysis showed that the socio-demographic variables of the women with infertility contributed to the prediction of psychiatric morbidity (GHQ-30 score), because of the effects of age, not having at least one child and poor support from spouse. Lack of support from husband also predicted depression and anxiety. Low level of education, polygamous marriage, and unemployment, lack of support from in-laws and duration of illness were not predictors of mental ill health.

Consequently, mental wellbeing can be traceable to the cause of high fertility state of individual(s) under consideration. Poor mental well-being is a general condition connected with infertility, but is poorly recognized and treated in women with infertility disorder attending many fertility clinics[5]. The effect of infertility on women's mental health is an important area for research, specifically, the impact of family function or husband support on depression severity in women with infertility. Women with infertility disorder can, for diverse reasons, suffer from depression.

Infertility is defined as the inability to produce clinical pregnancy following 12 months or more of regular sexual activity without protection[6]. Infertility can also be defined as an incapacity to carry a pregnancy to term and deliver an intact baby. Infertility can be caused by either the man or the woman, and in certain cases, both. Impaired infertility impacts 10-

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17% of couples. In forty percent of couples who are infertile, the primary cause of the couple's fertility problems is caused by the female partner (female factor), whereas twenty percent of all infertile males and females have infertility due to a problem with the male partner (male factor). Couples with combined infertility account for an additional 30% of the total infertile population. Male infertility is defined as a man's failure to conceive a woman after 12 months of regular unprotected sexual intercourse, assuming the woman has no gynecological abnormalities. Female infertility is defined as the inability to conceive after at least a year of trying[6]. Worldwide, infertility affects 8-12% of couples; the incidence varies by area, with Nigeria having the highest rate.

The infertility-related-stress might be attributed to the fact that having a child is considered to be important in general society. Affected individual may be exposed to social pressure thus they reduced their social interaction especially with pregnant women and friends who have children.

Women who can get pregnant but have recurrent miscarriages are also considered to be infertile. Infertility affect an estimated 10 to 15% of reproductive age, worldwide. A previous studies[3,4] indicated that infertile males and females are subjected to greater stress and have an increased risk of developing psychological disorder compared with fertile males and females[6]. As a result, one can say that reactions to infertility include, shock, depression, anger, frustration, loss of self-esteem, and self-confidence and the general loss of sense of self control.

It has been demonstrated that women with infertility present greater levels of depression compared with infertile men[7]. Women with infertility have revealed cognitive dysfunction and increased anxiety and depression which invariable affect their mental health[8]. In addition,

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a greater level of experienced stress and a deteriorated quality of life has been indicated among infertile men and women with elevated alexithymia characteristics but highly pronounced in women than men[9]. A possible explanation for these results may be that women feel more responsible and guilty that men during the process of trying to conceive, as a result, women with infertility are exposed to greater social pressure and stigma[10].

Numerous studies have examined depression and anxiety symptoms in women with newly diagnosed infertility. Also the affected male and female may begin to deem himself /herself in the stead of a wrong-doer which results in a strong sense of guilt.

Essentially from the above scholarly position, it is noteworthy that infertility is a disease of both the male and female reproductive systems. Both males and females are equally likely to experience infertility. Statistically, about one-third of infertility cases can be attributed to males, another third can be attributed to females while a third is attributed to a mixture of male and female problems or untraceable[11].

The issue of infertility-related stress has been debated for years. Women experiencing infertility report higher levels of anxiety and despair, indicating that infertility causes stress. It is unclear, however, whether stress promotes infertility. The impact of infertility-related stress on treatment result has been contested for years due to a variety of issues, including faulty self-report assessments and emotions of enhanced optimism at the start of therapy. However, recent research has shown that psychological therapies are effective in reducing psychological discomfort while also increasing pregnancy rates significantly. A cognitive-behavioral group approach may be the most effective way to meet both objectives. Given the severity described by numerous infertile men and women, it is critical to broaden the accessible nature of such initiatives[12].

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The problems of infertile males and females are complicated and they are influenced by different factors such as sex differences and the cause and length of infertility. Stress, depression and anxiety could be regarded as common causes of infertility. One out of every five women experiences a major depressive episode during their lifetime[13]. Young women of reproductive age, in particular, have a high risk for depression. The point prevalence of major depressive episodes is around 6% in women. Numerous studies have examined depression and anxiety symptoms in women with newly diagnosed infertility. Most but not all studies reported an increased symptom load where 10 to 50% of subjects reported mild to moderate depression symptoms. Severe depression symptoms also predict infertility-related distress[14]. Depression and anxiety in women with infertility are both associated with higher rates of problematic personality traits like neuroticism.

The psychological reactions however vary from one individual to another. More like a domino effect i.e. one psychological effect could lead to another in the affected individuals. These reactions in some infertile adults are in form of despair, sadness, and denial[15]. Also, the affected male and female may begin to deem him/herself in the stead of a wrong-doer which results in a strong sense of guilt[16]. A careful observation of infertile males and females over the past also showed that they are most likely to become depressed due to their predicament. Not only limited to the above, a host of other psychological feelings that is spurred in infertile males and females are disappointment, hopelessness, reduction and, low self-esteem[17]. In a worst-case scenario whereby the affected individual has been triggered to a state of abject hopelessness and worthlessness, an infertile adult could go as far as taking his or her own life. Infertility causes stigma, shame and blame especially for women putting them at high risk for elevated mental health distress, anxiety and depression and greater

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psychological consequences for a woman's status and value is significantly linked to her fertility, conception (Pregnancy) and childbirth. Approximately 11% of males and females reproductive of reproductive age worldwide have difficulties achieving pregnancy. Infertile individuals experience considerable stress because of failing to achieve a meaningful life goal such as parenthood and its accompanying social stigma[18].

Without debate, Infertility is a common clinical problem which has affected about 60 to 80 million of males and females all over the world and its prevalence is estimated to be around 10 to 15%, worldwide. Meanwhile, this problem is more prevalent in developing countries. Infertile people experience depression, grief, fear, inefficiency, lack of control, and high levels of anxiety and guilt, and they are concerned about their body and sexual function disorders all of which are the symptoms of lack of fertility problems adjustment.

When we consider the effect of coping strategy as predictor of mental wellbeing, the influence of coping strategies is depended on the specific constraints imposed by the stressful situation[19]. One important factor in adoptions of coping strategies is the appraisal of controllability. In a study, scholars discovered that appraisal of high controllability has a relationship to adopting active coping strategies[20]. Similarly related is the use of more passive and less active coping strategies to psychological distress in patients with chronic illnesses. The adverse effect of infertility is on both men and women, but females seem to suffer more. The pressure on women to conceive is greater than men. According to some studies, in some cultures and societies, there is a relatively high pressure on women to have a child. They see children as an important source of social desirability. These children are the link that binds family together from one generation to another. This makes infertility to have a more devastating effect on women's mental health than men. It is obvious that the impact of

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certain coping strategies on mental health differs from one individual to another, it is therefore important to understand which coping strategies are more adopted by infertile women.

In previous studies of infertility and coping, women have been reported to cope through challenging, accepting responsibility, social support, avoiding or escaping. It is also reported that infertile females use emotion-focused coping more often than males, who tend to turn to problem-solving methods. The cognitive, emotional and behavioral responses of infertile males and females to the problem of infertility have situation-specific features.

It is quite obvious that the amount of maladjustment in the above-mentioned research cases varies due to the intensity of the stressful experiences caused by infertility. Therefore, it is very important to ask questions about how those who live with infertility cope with the challenges in this pronatalist society where we strongly believe in promoting the reproduction of life, childbearing and parenthood as desirable for social reasons thereby ensuring the continuance of humanity.

However, most empirical studies focus when considering infertility has always been the female gender, which results from diverse studies, have shown that women are more vulnerable personality when it comes to infertility issues. Therefore, this study intends to change trajectory by considering the place of both genders in terms of coping strategies and infertility related stress as a function of mental wellbeing.

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1.2 Statement of the Problem

Over the years, infertility related stress and the coping strategies have been the major concern as they relate to mental well-being of individuals. Globally, infertility as it relates to well-

being is a leading cause of chronic health problem faced by 1 in 10 couples[21]. It is defined by scholars as failure to conceive after a series of regular, unprotected sexual intercourse for 2 years in the absence of known reproductive pathology. The prevalence of infertility in Africa is higher than in the rest of the world. The prevalence in sub-Saharan Africa ranges between 14-32% and in Nigeria it is estimated to be from 10.5-14.6%. The uniqueness of infertility problems in the sub-Saharan regions earned it the 'infertility belt' title that runs from west to central, and down to southern African regions[22].

In Nigeria, 3 in 100 Nigerian women of all ages were reported never to have mothered a child. Infertility was observed to account for 50% of attendance at gynecological clinics in Nigeria and seems to be on the increase at the current rate of 20%. This increase suggested that there will be a proportional rise in infertility various squeal and co-morbidities among Nigeria infertile population[23].

According to studies, women are more stressed about impotence than men. Women are additionally more inclined than men to report symptoms of sadness and anxiety, participate more actively in medical therapy, and respond negatively when treatment fails[24]. Men are more stressed by infertility, but they appear less emotionally impacted, and they are willing to consider terminating treatment. In terms of counseling services, women have more positive attitudes on getting psychological treatment than males and are more likely to seek couple therapy for general unhappiness[25].

Similarly, a qualitative study conducted in the United States, found out that women used coping strategies such as avoidance of reminders of infertility, being the best, regaining control, sharing the burden and giving into feelings in dealing with the problems of infertility[26]. Another study also conducted in the United States by researchers found that

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women who coped through escape avoidance and through accepting responsibility for their infertility showed more distress, whereas women who sought more social support were less distressed. This shows that seeking social support was an important coping mechanism used by couple during the process of taking treatment for infertility[27].

The prevalence of infertility in Nigeria has been studied in demographic surveys, epidemiological surveys and through clinical observations. The Nigeria DHS survey for the period 1994–2000 reported a prevalence rate of primary infertility of 22.7% in 15–49-year-old women and 7.1% in 25–49-year-olds[28]. However, demographic surveys of infertility are usually inadequate for programmatic action as they are based on a five-year period of exposure to the risk of pregnancy. By contrast, epidemiological surveys are more useful as they are based on a shorter time frame; however, very few such studies have ever been conducted in Nigeria. A survey of a representative sample of 1,075 ever-married women using a validated WHO protocol revealed a prevalence rate of 20% infertility in Ile-Ife, Southwest Nigeria. As expected, the survey showed a higher prevalence of infertility in the rural parts of the city than in the urban area[29].

Currently, it is estimated that as many as 80 million males and females are affected by infertility worldwide[30]. It is also given that infertility is a stressful experience that has a high impact on the mental well-being of infertile individuals. It is also noteworthy that infertility cases are known to be of two forms primary infertility in which the affected individual has never experienced conception before and secondary infertility in which the affected individual has once been pregnant but unable to achieve subsequent pregnancy[31]. Although there is an insufficiency of national vital statistics in Nigeria, essentially, hospital-based studies constitute the main sources of information. However, it is by far the most common

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presenting complaint in gynecological clinics with the prevalence of 14.8% to 38.8% of outpatient gynecological consultation has been reported[32]. It is unequivocal that infertility cases in both men and women are usually accompanied by mental stress aggravated by socio-cultural expectations; studies have however established that the differences that exist between men and women concerning infertility can sometimes cause mutual problems between the male and female. Women usually externalize the problem and show emotional reactions, while men seldom express themselves which is sometimes wrongly interpreted as being indifferent[33]. In fact, women show stronger emotional responses and speak more about the problem than men.

In addition, another predictor of mental wellbeing of individuals affected is infertility-related-stress. Stress can affect immune system activity and thus lead to physical and mental vulnerability. Implications of infertility-related-stress include physical symptoms, reduced psychological well-being and quality of life, feelings of guilt and shame, use of negative avoidance coping strategies, and social isolation[34].

The causal role of psychological disturbances in the development of infertility is still a matter of debate. A study was carried out involving 58 women of child-bearing age reported a twofold increase in risk of infertility among those with a history of depressive symptoms[16]. However, it did not control for other factors that might influence fertility, such as cigarette smoking, alcohol use, decreased libido and body mass index. Proposed mechanisms through which depression could directly affect infertility involve the physiology of the depressed state, such as elevated prolactin levels, disruption of the hypothalamic–pituitary–adrenal (HPA) axis and thyroid dysfunction[35].

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Indeed, identifying patient needs by fertility staff has been recommended by the European Society of Human Reproduction and Embryology (ESHRE) guidelines for routine psychosocial care to reduce stress and improve patient well-being and compliance with treatment.

Altogether, whether the specific stress associated with infertility (social, relationship, and sexual concerns, need for parenthood, and negative evaluation of childlessness) and its treatment can have long-lasting psychosocial consequences on infertile individuals and couples remain open to verification[36].

A lot of research has been conducted on this concept globally and even in various zones in Nigeria, much work is, however, yet to be done precisely on the holistic approach in studying infertility-related-stress and coping strategies as to whether they play a significant function in the mental well-being of individuals with reproductive health challenges in Ibadan or not. The uniqueness of this study is also hinge on the wellbeing of both male and female as the identified problem is not gender specific especially women in the following studies. Therefore, this study examines the infertility-related-stress and coping strategies as predictors of mental well-being among infertile male and female in Ibadan and to investigate the impact of coping strategies on infertility-related-stress[37].

1.3 Aim and Objectives of the Study

The aim of this study is to investigate infertility-related-stress and coping strategies as predictors of mental well-being among individuals with reproductive health challenges in Ibadan. However, the specific objectives of this study were to:

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1. investigate gender differences on mental well-being among individuals with reproductive health challenges in Ibadan.
2. examine the impact of coping strategies on mental well-being among the participants.
3. determine the influence of infertility-related-stress on mental well-being among individuals with reproductive health challenges.
4. investigate the joint influence of infertility-related-stress and coping strategies on the mental well-being among individuals with reproductive health challenges in Ibadan.

1.4 Research Questions

The following research questions were raised guide this study:

1. How does gender influence mental well-being among individuals with reproductive health challenges in Ibadan?
2. What coping strategy is commonly used or adopted by the participants on their mental well-being?
3. How does Infertility-related-stress affect mental well-being of the participants?
4. To what extent do infertility-related-stress and coping strategies can jointly influence the mental well-being of individuals with reproductive health challenges?

1.5 Hypotheses of the Study

Based on the objectives of the study, the following alternate hypotheses were formulated and will be tested at a 0.05 level of significance.

Ha_1: Gender differences will significantly affect mental well-being among individuals with reproductive health challenges in Ibadan.

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Ha_2: There will be a positive significant impact of coping strategies on mental well-being among the participants.

Ha_3: There will be influence of infertility-related-stress on mental well-being among individuals with reproductive health challenges.

Ha_4: Infertility-related-stress, coping strategies will jointly and independently influence mental well-being among the participants.

1.6 Significance of the Study

This study has both theoretical and practical significance. Expectedly, it will add to the existing body of knowledge and literature. This study has the potential of assisting healthcare personnel or redirecting their focus in designing psychological, mental well-being and emotional support programs for infertile individuals. It is also an important source of data-driven information in understanding the pattern of psychological, mental and emotional stress associated with infertility. Furthermore, the findings of this study could help to bring to the awareness of individuals with reproductive health challenges, the salient practices and coping strategies to alleviate the emotional problem they could experience due to childlessness.

1.7 Scope of the Study

This study covers the infertility-related-stress and coping strategies as predictors of mental well-being among individuals with reproductive health challenges in Ibadan.

The study focused specifically on the pattern of psychological stress encountered by infertile males and females and also assesses the significant factors which influence their coping ability in Ibadan.

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1.8 Limitation of the Study

This study is restricted to Ibadan, Oyo State. The research method is also within the boundary of making effort to figure out the infertility-related-stress and coping strategies as a predictor of mental well-being among individuals with reproductive health challenges residing in Ibadan only.

1.9 Operational Definition of Terms

Infertility: This was defined by World Health Organization (WHO) as the inability to achieve pregnancy or pregnant a woman after a year of consistent, unprotected sexual activity without usage of any form of birth control method, provided the individual has no gynecological issue.

Infertility-related-stress: This is the emotional and psychological pressure suffered by an affected individual due to the issue of childlessness. The scale was in four dimensions which were social concern, need for parenthood, rejection of childfree lifestyle and couple's relationship concern.

Coping Strategies: These are the means devised by the affected individual in managing the psychological and emotional experience that emanates from infertility. The scale was in three dimensions which were problem focus, emotional focus, and avoidance coping mechanism.

Mental Well-Being: This state of being free from emotional, psychological and social challenges. The variables were measured through the dimensions of self-acceptance, purpose in life, personal growth, positive relations with others environmental mastery and autonomy.

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Chapter Two

Literature Review

Infertility-related-stress and Coping Strategies as Predictors of Mental Well-being among individuals with reproductive health challenges in Ibadan were reviewed. To understand it better, a critical review of the literature is necessary. Different studies have been conducted on Infertility-related-stress and Coping Strategies as Predictors of Mental Well-being among individuals with reproductive health challenges in Ibadan by academicians and they are unanimous in their views that there is positive relationship between the two terms.

The review is presented under the following sub-headings

2.1 Conceptual Review

2.1.1 Concept of Mental Well-being

Mental well-being is difficult to conceive because researchers in the field do not agree on a single term. It is a socially formed and definite idea, in the sense that distinct cultures, organizations, beliefs, and experts have different ways of conceptualizing what is psychologically fit. Most educated people confuse mental well-being with mental illness. Mental well-being is more than just the absence of mental illness. Mental well-being is an important and necessary component of health. It is a situation of welfare in which a person understands his or her potential, deals with the ordinary pressures of life, works efficiently, and is competent to contribute meaningfully to his or her society. In the optimistic view, mental well-being serves as the foundation for individual well-being and the proper functioning of society[1].

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Scholars identify six dimensions of well-being (wellness). The six Dimensions of Wellness Model was developed by a researcher and co-founder of the National Wellness Institute. Many wellness organizations rely on this popular strategy to generate resources and services[2].

1. Physical Well-being

Physical well-being (wellness) is achieved by an amalgamation of physical activity and healthy food. It requires individual accountability and care.

Physical wellbeing maintains these principles:

i. It is preferable to eat meals and drinks that promote excellent health instead of those that may harm it.
ii. Physical fitness is preferable to being unfit.

2. Psychological Wellness.

The emotional component acknowledges the presence and acceptance of one's emotions. Emotional wellbeing refers to one's level of positivity and enthusiasm for oneself and existence. It comprises knowing how to manage one's moods and related behaviors, as well as a realistic evaluation of one's own limitations, independence development, and the ability to cope effectively with stress.

Emotional wellbeing follows these tenets.

i. It is preferable to be conscious of and accept our emotions than to suppress them.
ii. Being optimistic about life is preferable to being pessimistic.

3. Spiritual Wellness.

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The spiritual component acknowledges the desire for meaning and purpose in human existence. It entails developing a profound awareness for the magnitude and breadth of life and the supernatural powers that exist in the cosmos.

Spiritual wellness embraces these principles:

i. It is preferable to consider the purpose of life for ourselves and be tolerant of others' ideas than to close our thoughts and become intolerant.
ii. It is better to live every day in accordance with our principles and convictions than to conduct otherwise, we feel false to ourselves.

4. Social Wellness.

The social dimension pushes people to contribute to their environment and community. It highlights the connection of others and nature.

Social wellness adheres to the following principles:

i. It is preferable to contribute to the common good of our community than to think solely of ourselves.
ii. It is preferable to live in unity with other people and the surroundings than in a dispute with them at all times.

5. Intellectual Wellness.

The intellectual dimension acknowledges one's innovative and stimulating mental endeavors. A healthy individual broadens his or her knowledge and abilities while realizing the opportunity to share his or her assets with others.

Intellectual wellbeing adheres to the following principles:

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i. It is preferable to extend and challenge our ideas Instead of becoming self-satisfied and unproductive, engage in intellectual and creative endeavors.

ii. It is preferable to anticipate potential problems and take appropriate action based on available facts than to delay, fret, and deal with serious difficulties afterwards.

6. Occupational Wellness.

The occupational dimension acknowledges individual fulfillment and improvement in a person's existence through work. At the heart of occupational wellness is the idea that professional growth is linked to one's perspective on one's work.

Occupational wellbeing follows these tenets:

i. It is preferable to choose a career that aligns with our core principles, passions, and beliefs than one that is unfulfilling to us.

ii. It is better to build effective, transferable skills through structured participation opportunities than to remain idle and uninvolved.

Furthermore, scientists contended that evaluating mental well-being is not as straightforward as evaluating physical health[3]. Physical condition, genetic makeup, learning, reasoning, and socialization all contribute to people's ability to adapt in society[5]. Others include culture, life events, drugs, illnesses, and psychological causes. The diversity of meanings offered can be questioned on certain grounds, concerning their compatibility with one another and their internal dependability[6].

However, a statistical criterion might be employed to characterize mental health, but what is normal in a particular society may be unusual in another. It is difficult to create a clear distinction between normal and pathological psychological states. Diverse scholarly

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publications have focused on various aspects of mental health, employed varied definitions of mental disease, and investigated different demographics, and many of them have failed to account for all of the perplexing difficulties[7].

Mental well-being includes the ability to appreciate life, personal development, adaptability, equilibrium, and endurance[4]. A scholar further divides the concept of mental well- being into three independent domains, namely:

1. Emotional Well-being,

2. Psychological, and

3. Social well-being.

These domains are content with the quality of life, and good affect, self-acceptance, and a sense of purpose in life; having a vibrant social life[8].

1. Emotional Well-being

Emotional well-being can be defined as an overall positive state of a person's emotions, life satisfactions, sense of meaning and purpose, and ability to pursue self-defined goals[9]. Elements of emotional well-being include a sense of balance in emotion, thoughts, social relationships, and pursuits. The relative importance of each construct will vary across subpopulations and developmental stages. Longitudinal studies have demonstrated a strong correlation between overall emotional wellbeing and health.

For instance, emotional well-being has been shown to be associated with reduced risk of death from all causes by almost 20 percent among healthy people; while having a sense of purpose in life reduces the risk of heart attack and stroke by 17 percent[10],[11]. Emotional well-being has been examined across the life course, from birth through older age. High school

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girls with high emotional well-being are 70 percent less likely to take up smoking than their peers and older adults with positive emotions are 36 percent less likely to develop mobility problems than their peers[12,13].

Prevention studies, particularly in childhood and adolescence, have established that it is possible to intervene on risk and protective factors for children and change developmental trajectories with long-term effects, on a broad array of behaviors including behaviors not precisely targeted by the intervention and positively affecting neurobiological outcomes[14,15]. Interventions to promote emotional well-being are being explored in many ways, for instance, to improve development across the life course, from early childhood through older adulthood, and to decrease burnout, stress, and mental health problems in at-risk populations[16,17].

Instances include mindfulness-based interventions implemented to improve preparations for childbirth, improve social-emotional development in grade school children, and reduce burnout and improve social emotional development in teachers[18,19,20]. Increasingly, interventions such as mindfulness practices, enhanced psychosocial supports, spiritual interventions, and meditative exercise are being explored as strategies to improve emotional well-being across the life span[21,22,23]. Better understanding and implementation of the approaches for developing emotional well-being, both as a mediator of other health outcomes or as an end, can substantially affect public health[24].

2. Psychological Well-being

Psychological well-being is an important component of everyone's existence. Scholars define psychological well-being as the desire to achieve perfection based on one's actual abilities[25].

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A scholar defines psychological well-being as a good feeling based on high self-worth and positive interactions with others, less nervous, less discouraged, and less rebellious[26]. The definitions given above are in line with the World Health Organization's definition of psychological well-being, which refers to being physically and psychologically well-being people who are capable of developing and maintaining positive interactions with others, participating in community events, and making inputs to humanity[27].

Meanwhile, in another study psychological well-being as a person's ability to deal with stress, avoid conflict, increase peace, stimulate motivation and increase self-esteem in life. While from another perspective, psychological well-being refers to spiritual aspects that reflect the human heart, soul, mind and psychology[28].

Psychological well-being is defined using six parameters: environmental mastery, personal growth, purpose of life, self-acceptance, autonomy, and positive relationships with others[29].

Environmental mastery is associated with the capacity to regulate one's surroundings as well as the ability to select and create acceptable circumstances to meet one's own requirements. Personal growth refers to one's sense of ongoing personal development[30]. It is intimately associated with self-realization, which is described as "the process of self-realization." Life objectives are associated with someone who has a feeling of direction and purpose in life[31]. Self-acceptance is a favorable attitude towards oneself. It is directly tied to self-worth and a person's level of pride in themselves[25].

Autonomy is the keen interest and capacity of a person to make autonomous choices[29]. Positive interactions with people are associated with friendliness and positivity, rather than satisfaction.

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Psychological well-being is defined differently in numerous professions[32,33]. It unifies pleasant parts of life, such as physical and spiritual satisfaction, and may work effectively[34]. Furthermore, mental health refers to people's ability to exert control over their lives and pursuits. The psychology of wellbeing includes not only feeling good all of the time, but also negative feelings such as frustration, failure, and grief, which are prevalent in life[32]. Thus, controlling undesirable feelings is critical for over an extended period of psychological well-being[35]. Emotional assistance and beneficial social interaction are essential for achieving a state of psychological well-being[25]. A person with an elevated state of psychological well-being will live a joyful and contented life, both professionally and personally, while also being capable and backed up[36].

According to the theory of psychological well-being, the health of an individual's psychology is determined by how well it functions in specific domains of life. An individual should have a healthy relationship with people, respect the environment, accept themselves now and in the past, have life objectives, seek to build, and make their own decisions[37].

Nevertheless, the World Health Organization predicts that mental illness will be one of the five most prevalent illnesses in the world by 2020, ranking second[33]. Therefore, the issue of psychological well-being should be given serious attention. As a result, the topic of psychological well-being should be seriously addressed. Furthermore, the study found that 10.1% of those aged 16 and up suffer from mental health issues. Meanwhile, in 2001, the Ministry of Health estimated that 18.8% of adults and children experienced mental health issues[35].

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A study by scholars on factors impacting stress and psychological well-being among adult women in Iran found that 64.7% reported mental health problems and 74.3% indicated levels of high stress[38].

Psychological distress has an adverse effect on one's mental, physical, and academic performance. What's more concerning is that students who have encountered this type of situation do not seek aid or treatment due to the public stigma associated with mental illness[39].

As a result, the focus of this study was on the psychological well-being components of students at Malaysian higher education institutions. This study also aimed to define well-being and describe its aspects or construct. A variety of criteria influenced the selection of undergraduate students as study participants. One of the explanations is that higher education students are more likely to have psychological well-being[28]. This remark is also confirmed by experts, who feel that students are a more vulnerable population in terms of psychological well-being due to the transition from home and school to university or college settings. Furthermore, the increasing number of students entering higher education institutions every year has resulted in competitiveness among students, particularly rivalry for jobs, financial stress, and the pressure to get a degree[40].

If the situation fails to be properly managed, it will create stress on the students. As a result of the different elements that contribute to well-being, particularly psychological well-being among students, this study was undertaken to define and identify the dimensions or constructions of well-being that assist students in leading a better life and achieving higher levels of personal development[25].

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A framework for psychological well-being in a series of essays, presented a framework based on five components that covered three overarching areas: cognition, affect, and conduct. Scholars reported that the model's components included[41]:

1. Self-awareness includes the acknowledgement of an individual's state of being. That is, the recognition of triggers and their subsequent emotions are crucial to self-awareness.

2. Social awareness includes the ability to recognize the emotional states of other individuals as well as the recognition of resources an individual can reach out to for help.

3. Relationship skills require using healthy communication to preserve friendships and relationships with others. It also refers to an individual's ability to withstand peer pressure.

4. Self-management, or also referred to as emotional regulation, requires the ability to internally buffer emotions, as to not act emotionally inappropriate.

5. Responsible decision-making refers to an individual's ability to consider the moral and ethical implications of decisions and consequently make the most optimal decision. (p. 4)

The promotion of these components across settings (e.g., home, school, community) is ideal in order to increase individuals' social-emotional skills.

Furthermore, scholars define mental illness as a psychological form that occurs in individuals and is associated with pain or ill health that is unlikely to be a feature of societal norms[35]. It is used to define health problems characterized by philosophical, mental, or behavioral changes associated with distress and impaired functioning (United States Department of Health and Human Services, 1999).

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3. Social well-being.

One of the six dimensions of wellbeing is social well-being, which motivates people to give back to their community and environment. Individuals achieve social wellbeing through positive connections with others.

The World Health Organization defined well-being as 'a broad-ranging notion affected in a complicated way by the person's physical health, psychological condition, personal beliefs, social interactions, and their relationship to salient characteristics of their environment[42].

This definition emphasizes the relevance of physical, mental, and social well-being. Accordingly, social well-being is one of the aspects of individual's public health. Individuals' health is one of the basic foundations of a balan00ced society and clearly the survival of any society depends on its members. Health has a direct impact on individual's quality of life; hence, that's why scientists have considered health issues for a long time and conducted many studies on physical and mental health. However, social well-being is one of the most important aspects of health that has been ignored and less attention has been paid to it by researchers. Numerous past research on the well-being of older persons have been undertaken from a healthcare, psychological, and sociological standpoint[43].

Good relationships in healthcare environments lead to improved health outcomes. They can give older patients with information regarding their health status and treatment procedure, while also ensuring patients' security and confidentiality[44]. Furthermore, psychological well-being has been proven to be substantially correlated with the quality of engagement in psychological and sociological settings. Conflicts with others have been linked to psychological problems such as depression, increasing the likelihood of social problems including as feeling isolated and alone among older adults, in contrast to passionate and

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encouraging relationships with family and friends are one of the most prevalent indicators of older adults' psychological well-being. However, the way hospitality services can help to address these societal concerns is undetermined[45].

Transformative service scholars have researched well-being in financial, socioeconomic, and health dimensions. However, relatively little emphasis has been dedicated to the social functioning of well-being[46]. Scholars argue that meeting an individual's social requirements results in overall well-being[47]. As a result, measuring sub-dimensions provides more detailed information for enhancing overall wellbeing[48].

Social Connectedness

When people feel excluded, lonely, or alone, they frequently seek counselling or psychotherapy services. Scholars propose that it is crucial to ensure customers' access to counseling or supportive services for health[49]. They also emphasize that keeping clients socially linked via the Internet or local communities can help them preserve their social relationships and well-being. Social connection is described as the relationship between an individual and the outside world, indicating a sense of belonging[42].

Previous study has shown that financial counselling services can help customers build a sense of belonging, which has an impact on their financial well-being. Furthermore, the social assistance offered by virtual medical facilities might satisfy the desires that patients have to be socially connected with others[50].

According to researchers, service design can assist incorporate supportive resources to foster transformative values during service encounters. They discovered that supportive service programs aimed at developing an individual's skills, such as supportive housing and job

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training, foster social connectivity, which may lead to psychological well-being among individuals[51].

It has been discovered that senior customers desire social connections in commercial settings. Social scientists have investigated the idea that customers attend commercial areas to grow their social networks, obtain social support, and develop relationships with each other through engagement[52].

Well-being can be enhanced by the use of appropriate assets and techniques. As a result, this study sees social connectivity as a resource for achieving social well-being, which is strengthened by social engagement[53].

Social Interaction

A significant amount of researchers have recognized many types of social interaction[42]A scholar distinguish between two sorts of social interaction: concentrated and unfocused. Other researchers have since introduced two major types of social contact: people-to-people interaction and people-to-machine interaction[46]. People-to-people interaction is frequently occurring at the personal level, but can also involve groups or aggregated agents on occasion[54]. As a result, people-to-people interactions can be classified as individual-to-individual (e.g., nurse-patient, staff-customer), individual-to-group (e.g., lecturer-students, actor-audience), and group-to-group (e.g., two teams in a game, two departments of employees in a meeting).

It is argued that good interactions between service entities and consumer entities significantly contribute to well-being[55]. Several studies have validated the considerable impact of various

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contacts on patients' well-being in hospitals, such as relationships with medical personnel, peer patients and with individual who volunteers[56].

2.1.2 Concept of Infertility-Related Stress

Infertility may be conceptualized as a failure on the part of the male or female reproductive system to achieve pregnancy after one year of regular unprotected sexual intercourse[57].

Infertility is a global health issue affecting millions of people of reproductive age worldwide. Available data suggest that between 40 and 80 million individuals have infertility globally. Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse. Primary infertility is the inability to have any pregnancy i.e. the person has never been pregnant either the pregnancy is carried to term or not, while secondary infertility is the inability to achieve a life birth or to have another pregnancy after a previously successful conception[58]. W.H.O International Classification of Diseases provides more information on the many primary and secondary causes of infertility in both men and women. In addition, infertility may occur due to male factors, female factors, or a combination of male and female factors or may be unexplained. For both men and women, however, environmental and lifestyle factors such as smoking, excessive alcohol intake, obesity and exposure to environmental pollutants have been associated with lower fertility rates[59].

The psychological repercussions of infertility on the lives of infertile couples appear to be linked to family difficulties as well as marital dissatisfaction. The number of infertile couples is increasing as the global population grows and marriages become older. The prevalence of infertility varies by country. According to some research, there are approximately 80 million infertile couples globally. Infertility is a major issue in fertility health that has medical,

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psychological, and social implications. Psychological constraints and anxieties about infertility have a direct impact on normal[60].

2.1.3 What Leads to Infertility?

Both men and women can experience infertility in a variety of ways. Of all cases of infertility, 26–30% are due to male factors,while female factor infertility accounts for 35%. About 25–28% of infertility cases have no known cause. Infertility situations resulting from a mix of male and female causes or several female factors account for forty percent of cases[61].

The Female Factor: In females, issues ranging from ovarian factors such as polycystic ovarian syndrome [PCOS] which accounts for irregular menstruation and sometimes no ovulation, uterine factors e.g. absent uterus, small uterus [hypoplastic uterus], uterine masses like fibroids , perforated uterus from previous uterine surgery , surgical removal of uterus [hysterectomy] , tubal factors e.g. tubal blockage , nutritional deficiencies and anaemia, pelvic inflammatory disease [PID], sexually transmitted diseases, coital disorder, endometriosis [inflammation of the endometrium which is the lining of the uterus], endocrine factors e.g. thyroid dysfunction , genetic disorder , decrease libido due to substance abuse, stress and depression, smoking and excessive alcohol consumption, certain medical prescriptions like antihypertensive and antiseizure medications have been identified to be risk factors contributing immensely to reproductive health challenges in females[62].

Ovulatory-Factor

Polycystic Ovary Syndrome is the most common type of ovulatory failure, which causes infertility. Ovulatory-factor infertility accounts for 21-25% of female-factor infertility (PCOS)[63]. PCOS, which affects 6-10% of women, disrupts ovulation by changing the

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hormonal and gastrointestinal processes. Women diagnosed with PCOS have two of the following symptoms: hyperandrogenism, ovulatory dysfunction, and polycystic ovaries.

PCOS has several key symptoms that can affect women's performance, such as hirsutism, being overweight, worsened acne, and menstrual cycle disruption[64]. Women with PCOS typically report changes in their psychological well-being. Many researchers have found that PCOS is linked to poorer mental health, decreased self-worth, and lower standards of living[65].

Tubal-Factor

Twenty to thirty percent of female-factor infertility cases are caused by fallopian tube illness, which affects 2% of all women and causes the tubes to become dysfunctional or clogged[66]. Many conditions, including pelvic inflammatory illness, chlamydia, endometriosis, pelvic or abdominal surgery, ruptured appendix, TB, or hydrosalpinx, can cause tubal dysfunctions[67]. One of the most frequent acquired causes of tubal blockage is pelvic inflammatory illness. The accumulation of fluid in a defective fallopian tube, known as hydrosalpinx, has been linked to a higher rate of miscarriages. One-sided or bilateral tubal infertility are both possible[68].

Uterine-Factor

One of the less frequent reasons of infertility is uterine abnormalities. Uterine factor infertility can be acquired or congenital, similar to tubal factor infertility. 5.5% of women have defective uterine physiology, however not all anomalies will lead to infertility. Surgery is typically used to correct uterine malformations[69].

Endometriosis

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One of the rare chronic diseases linked to infertility that affects several reproductive system organs is endometriosis. Endometriosis can induce ovulatory, tubal, or uterine-factor infertility because of the way the endometrial-like tissue attaches itself outside the uterus.

In women who are of reproductive age, endometriosis is linked to persistent pelvic pain and has a significant role in reducing their quality of life and causing disabilities. 10% of women who are reproductive age will receive an endometriosis diagnosis; some estimates place the illness in 50% of those who are infertile[70].

Male-Factor

An all-encompassing term for infertility in which the man is the primary cause is "male-factor infertility", resembles female-factor infertility in prevalence. Several factors can contribute to male-factor infertility, including low sperm concentration, low motility, and physically defective sperm. It is estimated that 2-7% of males will have poor sperm parameters[71]. Numerous factors have been linked to infertility, including enlarged scrotal veins, genetic disorders, overexposure to heat, injury to the scrotum or testicles, low sperm count (also known as oligospermia), no sperm count (also known as azoospermia), watery sperm, low testosterone levels, premature ejaculation, undescended testis, enlarged scrotum, certain medical prescriptions (such as antihypertensive and antizeisure medications), nutritional deficiencies, smoking and excessive alcohol consumption, and a host of other risk factors have been linked to infertility[72].

Assisted Reproductive Technologies

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There are various Assisted Reproductive Technologies (ART), accessible to couples who are experiencing difficulty reproducing. The three most often used ART procedures are ovulation induction, intrauterine insemination (IUI), and in vitro fertilization (IVF).

IVF is usually used exclusively in cases where the less painful and more affordable treatments of ovulation induction and/or IUI fail to give rise to a child, based on the root cause of infertility[60].

Ovulation Induction

The most popular technique for treating anovulatory women, those who hardly or never ovulate, and women with PCOS is ovulation induction[73]. The first-line treatment for women experiencing anovulation is clomifene citrate, a selective estrogen receptor modulator. Clomifene stimulates the growth of new hair follicles by increasing the production of folliclestimulating hormone through mechanisms in the hypothalamus. Another drug for ovulation induction is an aromatase inhibitor[74]. Aromatase inhibitors block androgens from being converted into oestradiol, causing a surge in follicle-stimulating hormone. Insulin-sensitizing medications are another type of medication used to stimulate ovulation. Insulin sensitizing medicines are often used in PCOS women because they have insulin resistance, and insulin sensitizing treatments have been shown to increase ovulation in these women[75]. Clomifene citrate, aromatase inhibitors, and insulin-sensitizing medications have similar success rates, ranging from 10 to 20% per cycle. Direct injection of gonadotropins (LH and FSH) is an alternative therapy for anovulation that necessitates women to inject themselves every day (usually in the stomach) during the follicular phase. Gonadotropin treatment has been 12% successful12%[76].

IUI

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IUI is a method of ART that is most commonly utilized on couples whose infertility is unconnected to the fallopian tubes. Using a catheter, highly concentrated pre-treated semen is inserted into the uterus during an IUI operation. With success rates ranging from 5.7 to 17.7%, pregnancy rates are quite low with this type of ART. IUI and ovulation induction are occasionally combined to improve the likelihood of a successful implantation[77].

IVF

IVF is now used to treat any type of infertility, while it was primarily created for women who had tubal-factor infertility. The current IVF techniques usually entail a standardized process that uses an ultrasound to retrieve the eggs and gonadotropin injections to stimulate the ovaries[78].

The retrieved oocyte is then fertilized in the lab and put in the woman's uterus once the fertilized egg has grown to the blastocyst stage (3-5 days after insemination). Depending on the features of the pair, such as the age of the female, the average success rate for one IVF cycle is 30%[79].

IVF is the most successful reproductive treatment now accessible, but it is also the most expensive ranging from $15 to $20 000 each cycle in Canada. Even with the little price reduction, IUI still costs about $1,000 per cycle. It follows that the low percentage of infertile couples seeking medical attention (56%), and the low percentage of infertile couples actually receiving treatment (22%), is not surprising[80]. Therefore, 88% of infertile couples experience difficulty conceiving without the need for medical assistance. But as the rest of this thesis will make evident, the overwhelming bulk of studies looking into the psychology of infertility are done on women undergoing IVF. As a result, there is a dearth of psychological

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study on the 88% of women who still experience infertility and do not use assisted reproductive technology[81].

The Psychological Burden of Infertility

Gender Differences in the Experience of Infertility

Infertility affects men and women psychologically in different ways. Consistent with long-standing cultural and societal beliefs that fecundity is exclusively the duty of women and is primarily a measurement of a woman's value in her family and community. Usually, it is the woman's responsibility to research, get tested for fertility, and receive treatment[82]. For women, trying to get pregnant is also a physically more taxing procedure. Although this is particularly clear when discussing ART, necessitates that women undergo invasive medical procedures, this also applies to natural cycles, since women are usually the ones who use the previously mentioned techniques to determine when the "fertile window" begins[83]. Therefore, it should come as no surprise that research has indicated that infertility has a greater psychological impact on women than men. In fact, 50% of infertile women say that infertility is the most miserable experience in their life, compared to 15% of their male spouses[84]. Researchers examined 100 infertile couples and discovered that women exhibited higher degrees of somatization, obsessive behaviors, interpersonal sensitivity, and anxieties over men. Along with higher levels of psychological discomfort, anxiety, and despair, the women also reported worse self-esteem. Researchers examined the experiences of one thousand IVF couples[85]. There was a large gender disparity in mental health, with women being twice as likely as men to exhibit depressive symptoms and three times as likely to experience anxiety. Several other studies have confirmed the gender discrepancy in the psychological toll of infertility[86].

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Psychopathology and the Quality of Life

Approximately a third of women using antidepressants (ART) met the clinical criteria for either major depressive illness or anxiety disorders[86]. In this demographic, generalized anxiety disorder (GAD) affects roughly 15–23% of people, and 26-32% of people fulfill the criteria for a serious mood disorder. Numerous studies also reveal that women receiving ART have much lower quality of life[87]. Indeed, a study that examined six cohorts of women with long-term health issues—chronic pain, HIV, cancer, hypertension, cardiovascular illness, and infertility—discovered that the quality of life of infertile women was least as high as that of people with hypertension, cancer, and cardiovascular disease[88]. A retrospective study revealed that women who use ART to become pregnant have a worse quality of life, both physically and socially, than women who conceive naturally[89].

While most studies on the psychological well-being of infertile women have been cross-sectional in design, six studies that measured emotions at different points during an IVF cycle indicate that infertility-related distress is highly cyclical, at least when it comes to assisted reproductive technology[90]. During an IVF cycle, anxiety and depression were measured two or three times in four of these trials they discovered that during the course of treatment, anxiety and depressive symptoms change. In particular, it was discovered that anxiety was higher at the ART onset than it was at baseline. It was discovered that depression was worse before taking a pregnancy test[91]. The last two studies looked at psychological health on a daily basis during an IVF cycle. In their initial study, the researchers measured the daily stress levels of forty women and discovered that the times of egg retrieval and the pregnancy test were the most stressful. In a more recent study, researchers assessed 61 women's daily evaluations of anxiety and despair during the course of one IVF cycle[92].

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Depression and anxiety were shown to be quite low during the therapy phase. However, tension increased during the 14-day waiting period, peaked in the days leading up to the pregnancy test result, and quickly decreased after learning the test was negative[93]. Furthermore, self-reported depression increased in the days preceding the test result. However, it continued to rise after the test result was negative, remaining high on the final assessment day, which was four days after the test.

While some research indicates that rates of psychopathology are high in this cohort as well, there are comparatively few studies looking at infertile women who are not on ART. In one study, for instance, 23% of 580 women with infertility issues who did not seek therapy satisfied the clinical criteria for major depressive illness[94]. In a similar vein, 81 infertile couples who were yet to undergo reproductive therapies and 70 fertile controls were juxtaposed for psychological distress, and the results revealed that infertile women had higher rates of psychopathology. Of those who fit the criteria, 28% had an adjustment disorder with mixed symptoms of anxiety and depression, 18% had binge eating disorder, and 12% had generalized anxiety disorder[95]. Compared to the fertile controls, 3% met the criteria for mixed anxiety and depression adjustment disorder, 0% for binge eating disorder, and 8% for generalized anxiety disorder[96].

There aren't any long-term studies that look at whether symptoms of anxiety or depression exhibit the same cyclicity during a non-ART menstrual cycle, notwithstanding the limited papers listed above indicating women who are sterile, yet are not receiving ART have severe psychopathology[97]. Furthermore, it is unclear if the practices used to monitor fertility—such as basal body temperature monitoring, ovulation predictor test use, and cervical mucus

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checking—have a beneficial or detrimental effect on mental health throughout the menstrual cycle[98].

Marital Satisfaction

Similar to the body of literature on psychopathology and life satisfaction, most studies on infertility and marital satisfaction have concentrated on couples using assisted reproductive technology. Remarkably, a systematic review comprising eighteen papers investigating the connection between infertility and marital satisfaction discovered that, although couples facing female-factor infertility report higher levels of marital satisfaction, those facing male-factor infertility report lower levels of marital satisfaction[99]. When they initially discover they are infertile, women frequently report changes in their level of marital satisfaction.

A couple's sexual activity may contribute to the decline in satisfaction with marriage that occurs in the face of infertility. It has been shown that infertility experiences have a detrimental effect on sexual satisfaction since some women claim that they now only have sex in an effort to conceive[100]. Given this, it stands to reason that marital happiness may be negatively impacted by female-factor infertility more than by male-factor infertility due to the increased focus on determining a woman's reproductive window and consequently larger detrimental impacts on sexual satisfaction. Still needs to be tested, though, is this idea[101].

Psychological Interventions for Infertility-Related Distress

While there is much evidence of the psychological toll that infertility takes, the majority of the psychological interventions that are currently on the market have not been able to significantly improve the lives of unable to reproduce ladies. The most current meta-analysis, containing 21 randomized controlled trials, found that psychological therapies can reduce

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anxiety and increase the likelihood of a successful pregnancy, but they are not useful in easing depressive symptoms, infertility distress, or marital discontent[102]. The psychological therapies' randomized control trials did not yield statistically significant effect sizes for the combined outcomes. Twelve counseling therapies, four cognitive behavioral therapy interventions, and five mindfulness-based interventions were shown to be equally effective[103]. These results emphasize the need for greater study to deepen our comprehension of the everyday struggles faced by infertile women in order to provide more specialized and successful solutions[104].

Coping with Infertility

1. Cross-Sectional Studies

Numerous studies employing cross-sectional approaches have analyzed the extent to which infertile women embrace different cognitive coping strategies and the extent to which these strategies are related with issues[105]. These studies often suggest that women who favor a "active" or "problem-focused" coping style—characterized by behaviors such as problem solving, information searching, and/or professional help—report lower levels of suffering when confronted with challenging circumstances[106]. In contrast, multiple studies have found that a "passive" or "avoidant" coping approach, which typically entails suppressing uncomfortable thoughts and feelings, is associated with higher suffering. But there are some discrepancies. For instance, active coping was linked to higher anxiety in a research including 404 women receiving ART[107].

2. Longitudinal Studies

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Contrary to the various cross-sectional investigations that have been previously undertaken, only three studies assess whether coping strategies are longitudinally predictive of psychological well-being in the context of infertility. The first research, which included 157 women undergoing IVF, found that an avoidant coping style at baseline was predictive of depressive and anxious symptoms 18 months later[108]. Similar to that, a reluctant coping style was discovered to anticipate increases in anxiety and depression symptoms from the pre-treatment processes evaluation to the post-treatment assessment in a study involving ninety-one female IVF patients[109].

Researchers discovered that "normalization," or sticking to established practices despite being infertile, was positively associated with the standard of living at background but failed to foresee modifications to adjustment at the eight-month further investigation in the full cohort. It did, however, prevent women who had already had a child from deterioration in their wellbeing. The third trial involved 180 women undergoing ART[110].

3. The Psychology of Waiting for an Uncertain Outcome

According to the current coping research, infertile women who use an active coping style often report better psychological wellness than those who adopt an avoidant coping approach, it can be challenging to translate these findings into doable daily recommendations for women[111]. What does good "active coping" look like, for instance, in the days before the much-awaited pregnancy test? Or after another disastrously unfavorable outcome? Do coping mechanisms alter during these two phases? Though it appears likely that they do, there aren't any specific suggestions in the literature as of yet[112].

Sweeney and colleagues at the University of California, Riverside conducted research on the psychology of waiting, which is relevant in this case. Her research, which primarily

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concerned students waiting for exam results (such as the California bar exam), prompted her to develop the Uncertainty Navigation Model, which enumerates the specific coping methods people most frequently engage when they are waiting[113]. These consist of information seeking, reassessment (expectation management, preemptive benefit identification, and distancing), direct emotion management (distraction and suppression), and consequence mitigation (preventative measures action and forward-thinking coping). The scholar's theory states that there is a bidirectional association between using these "uncertainty navigation strategies" and experiencing anxiety and rumination[114]. People adopt these tactics to alleviate their misery, but frequently the opposite occurs. However, she thinks that a number of fundamental characteristics, such as protective pessimism and intolerance for ambiguity, are likely to influence the efficacy of the various strategies[115].

2.1.4 Coping Strategies and Mental well-being

According to the theory of Dahlquist, many researchers have argued that the effectiveness of a coping strategy is related to the duration and nature of the stressful situation. Avoiding strategies are more effective as a primary reaction to the cause of stress when the emotional arousal is high and the situation is out of control[116]. In chronic cases, when alertness or taking action is needed, approaching strategies can be more effective. In a meta-analysis done by scholars, it has been shown that women use more emotion-focused coping method in case of their infertility[117]. Apart from minor skills such as the ability of coping or problem solving other specific vulnerable factors such as personality traits; OCD, inflexibility and impatience cause stress. Evidences show that personality is related to both stress and method of coping with stress for example, regarding the coping method, it is clear that people with different

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personality traits show different coping methods (passive in contrast with active) and different levels of vulnerability in experiencing a stressful situation[118].

Scholars emphasized that personality predicts the emotional reaction to stressful experiences by affecting the perception of threat or loss and the accompanying emotional and psychological reactions. Personality predicts the stressful experiences of a person in different situations by means of a relation with the important collection of coping and evaluation[119].

Available external sources (social support) function as barriers for people in stress processes. Some studies reported that a lack of social support can be a source of stress. Psychological factors are important in coping with chronic diseases and their outcomes especially the concept of the patient from his own disease, his coping method and external source of support, like social support, are very important[120]. Social support is defined as the level of receiving kindness and companionship and attention of family members, friends and others[100].

In mid 1970s, there was an increasing interest in studying the role of social support as an external coping source. Perceived social support as an effective source in stress process means that one can receive others' help if he/she needs it[121]. Social support is consisted of those social sources which a person has perceived or been suggested.

Perceived social support is one of the most common scales used for social support which is the perception of the person of the availability of others' support such as family and friends. Perceived social support signifies the cognitive evaluation of the availability and adequacy of support[122]. The main function of the perceived social support is that mental evaluation and expecting support help the person to believe that he is respected and is part of a network of mutual duties. In coping with infertility, seeking social support is an important coping mechanism used by couple treated for infertility. In the process of seeking social support

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from friends and family, infertile couple sometimes has to reveal some confidential information of their life[123].

Regarding the stated background for the importance of psycho-social factors in infertility stress, the present study intended to assess the relation of personality traits, coping methods and perceived social support with infertility stress in infertile women. It is also going to determine the share of each of these variables as the predicting variables in infertility stress as the criterion variable[124].

Coping Strategies with Infertility: Women

Most literature searches yield data about the impact of infertility on mental health. However, the purpose of this review is to examine the impact of psychological intervention and/or psychological coping methods on the likelihood of attaining pregnant[125].

According to scholars, infertility is the 'fourth most upsetting experience' in a woman's life. Infertility has been linked to feelings of loss, depression, guilt, and worry, as well as increased stress levels. This is consistent with the work of scholars. More so, there are studies that reveal that when matched to women who can achieve pregnancy via natural means, ‘distress in infertile women was reported to be significantly higher[126].

This is congruent with the findings of academicians. Furthermore, studies have shown that as compared to women who can conceive naturally, infertile women's distress levels are much higher.

Interestingly, scholars are researching women in the United States to determine the association between infertility diagnosis, treatment type, distress levels, and self-identification as infertile. Women who were medically diagnosed with infertility were more

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likely to self-identify as such. Women who sought therapy for male-factor infertility were less likely to identify as infertile. Women who classified as infertile reported higher levels of distress. The researchers determined that self-identification as infertile, rather than the type of infertility diagnosis, was directly associated to suffering levels[127].

In the framework of the current study, aside from showing the enormous psychological load encountered by women seeking pregnancy, it is also vital to highlight how affected individuals deal with the responsibility of infertility during therapy courses[128].

In a study, many researchers devised a "51-item measure, 'Coping with Infertility Questionnaire' to assess styles of coping related to the infertility experience. Their research identified three major coping regions, each of which is made up of more particular coping strategies, as stated in a study: The approach-avoidance coping strategy which includes aspects of social withdrawal, denial, self-blame, self-neglect, disclosure, acceptance, and positive re-interpretation[129]. Relationship coping strategy which includes seeking spousal support, practical management coping strategy which includes self-nurturing, seeking social support, planning and information-seeking, and faith[130].

The same researchers also compared coping to psychological adjustment, which was measured using measures of well-being, distress, life satisfaction, and somatic symptoms[131]. They found that emotional approach coping such as self-nurturing, and problem appraisal strategies such as positive reinterpretation were associated with better psychological adjustment. On the other hand, emotional avoidance, and problem-management strategies such as seeking social support and information-seeking were associated with worse adjustment.' This contradicted the findings of experts who believed that strong social support, particularly marital support, was associated with lower levels of discomfort[132].

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A scholar validated the researchers' findings, revealing that women with primary or secondary infertility frequently used social support, problem solving, and constructive criticism to cope with discomfort. They were less likely to utilize avoidance, self-control, distance, admitting responsibility, or confrontational coping strategies to settle the situation. Accepting responsibility and avoidance were connected with increasing levels of suffering among people with primary infertility[133].

Another intriguing study looked at how different coping mechanisms interacted with each other throughout the infertility treatment cycle. Scholars found that affected women were more likely to seek social assistance and avoid escape across all treatment stages[130]. Self-control was also often used, albeit women who were no longer in therapy were less likely to employ this coping strategy. Furthermore, those with five or more years of unsuccessful medical interventions were more likely to assume responsibility than those who had completed infertility therapy'[134].

Scholars discovered that women facing infertility had weaker resilience than normal populations, which was connected with higher levels of infertility-related and overall anxiety.

Finally, as stated in the cited scholarly publications, there is an obligation to examine the emotional components of female fertility problems. This is also supported by certain experts, who believe that "women experience peak prevalence of psychiatric disorders during the childbearing years[135].

Coping Strategies with Infertility: Men

Similarly to women, there are scholarly researches that demonstrate that male fertility may be altered by psychogenic stress. However, as has been noted, there is a disproportionately little

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corpus of research on the male experience throughout therapy for infertility, including their support requirements and decisions to discontinue treatment [136]. Scholars stated that the lack of research could be attributed to the fact that infertility treatments may primarily and subconsciously target the female partner in the relationship[137].

In the meantime, a study conducted in the Netherlands by Schmidt and other researchers found that men of higher social class, as determined by 'education, vocational training, and occupation, were more likely to use active-avoidance coping than men of middle or lower social class.' Using 'avoidance coping and self-blame' tactics has been associated with increased psychological stress levels[138].

Scholars also looked at how men and women deal with infertility differently. Their findings indicated that male spouses were more likely to use distance, more organized solving issues, and self-control tactics to cope with infertility than female partners. They also found that male spouses were more likely to seek social assistance in response to the psychological stress associated with infertility and infertility treatment than female partners[139].

Surprisingly the chance of affected persons adopting a "social support, distancing, and organized problem-solving approach" has been linked to lesser infertility-related suffering. On the other hand, exercising self-control has been linked to greater infertility-related distres[140].

Other study concluded that male partners diagnosed with infertility utilized fewer coping methods than their female partners[134]. However, compared to fertile men, sub-fertile guys use more coping strategies, Men were more likely to use a coping technique of suppressing information about their psychological stress, which has been linked to increased fertility and overall distress, self-control, relaxation, desire for self-affirmation, intrusive thoughts,

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disparagement, avoidance, and escape are some of the often used coping techniques for managing male methods for treating male infertility psychological stress as described in a PhD study by scholars[141].

The Impact of Infertility on the Couple

Essentially, as noticed in numerous studies, the degree of stress caused by inability to reproduce in the affairs of couples can be extremely overpowering. As a result, the role performed by the partners toward themselves cannot be underestimated. In their paper, scholars emphasized that couples undergoing infertility treatment programs are often the 'main source of support' for one another[142].

No matter what the cause of the infertility, research has indicated that the success or inability to achieve conception following the diagnosis of infertility may depend on the effectiveness of the couple's coping mechanisms. Several studies were able to link more 'negative affect' or a failure to manage psychological distress (resulting in psychological traits such as anxiety disorders, depression) during the 'infertility journey' to the potential for success in achieving pregnancy and marital satisfaction[143].

Similarly, several researchers have looked into the positive effects of infertility, such as improved sexual performance and other marital benefits. This was demonstrated in a study in which negative psychological features and coping techniques were linked to decreased sexual performance. Similarly, there are findings that demonstrate the beneficial effects in the marital life of couples who undergo assisted reproductive technologies[144].

Other research has held conflicting opinions in support of the negative consequences of infertility over an extended amount of time and the ineffectiveness of infertility therapy with

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lower marital benefits[139]. When reviewing these research, it is vital to notice how they emphasize the 'dyadic potential of the infertility experience and how 'understanding the possible advantages of infertility may allow couples to implement more effective stress-coping techniques[145].

Overview of Psychological Interventions

Various mental health literatures have maintained its support for typical stress-management techniques, such as psychological therapies. In the field of reproductive health and infertility, psychological treatments are specific therapies aimed to help infertile couples meet their psychological requirements during the infertility and treatment process[146].

Since recently, academics and healthcare practitioners have received fresh insights into the significance of psychotherapy in attaining pregnancy. Other researchers emphasized frequent measures used during infertility treatments, such as psychological and educational therapies. In essence, psychological treatment focuses on behavioral changes, whereas educational interventions focus on providing critical medical or procedural information on infertility, including causes, treatment, and techniques for 'self-management and self-efficacy' such as skills training and psycho-education[147].

In the framework of this analysis, the goals of psychological interventions in providing support to those afflicted by infertility and its treatment have been classified into three dimensions: cognitive, behavioral, and psychodynamic therapies[143]. In another way, the aim of the interventions for infertility patients is to improve their mental health and increase their pregnancy rate.'

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Briefly, cognitive therapeutic therapies aim to change faulty cognitions and attitudes regarding infertility and its implications.' According to studies, those who hold specific negative attitudes about stressful events are more likely to experience psychological stress and misery. As a result, an effective technique to controlling such dysfunctional beliefs has been proposed to alleviate psychological stress[148].

Cognitive therapeutic techniques are frequently combined with behavioural therapies. The behavioural therapies aim to change undesirable behaviors associated with infertility..

Finally, psychodynamic therapies are being created in order to alleviate internal conflicts that are thought to include intense negative emotions regarding pregnancy, for example. Women frequently develop such sentiments as a result of early experiences[143].

2.2 Theoretical Framework

This section captures the theories for the study; these include Life History Theory, Crisis Theory, Family Theory and Mental Wellbeing Theory.

2.2.1 Life History Theory

Organisms follow a species-specific sequence in their life, with gestation, birth, growth during childhood, sexual maturation, reproduction, aging and death being significant milestones. Life history theory assumes that this sequence is shaped by evolution and also individually calibrated by early life experiences, if anything goes wrong during the intrauterine and extrauterine life, it can affect the reproductive status of an individual e.g. absent uterus in females and undescended testes in males. Also adverse conditions in childhood may foster a fast life history strategy including impulsive behavior, activation of the hypothalamic-adrenal pituitary axis, early reproduction and low investment in personal

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mental and physical well-being. As a matter of fact, empirical research has shown that having survived a serious medical disorder by age 10 is associated with women reproducing at an earlier age. Low socioeconomic status is equally associated with a lower age at first birth[149].

2.2.2 Crisis Theory

Crisis theory advocates that the emotions that accompany a traumatic crisis like infertility can be described in different ways. The description has existential base being grounded on the emotional experience of being a human being. Dustink said everybody has a basic need of a kind of existential structure and everybody seeks a position for being human in a place and function in the world. Crisis experienced by individuals may have effect on their reproductive status. Infertility among males and females is a situation that demands maximum adjustment (coping). If the affected males and females can learn new and appropriate reactions and coping mechanisms, the crisis will lead to development of an individual. Some of the coping strategies may be religious support and individuals engaging in activities that most interest him or her such as watching movies, listening to music etc[150].

2.2.3 Family Theory

Family theory established that members of the family system are expected to respond to each other in a certain way according to their role which is determined by relationship agreements. Melissa theorized that maintaining the same pattern of behaviours within a system may lead to balance in the family system but also to dysfunction. Positive family impact will have good effect, promote mental health and alleviate the sufferings of people going through the rigor of infertility[151].

2.2.4 Mental Well-Being Theory

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The network theory holds that a person is in the state of mental well-being if she instantiates a homeostatic ally clustered network of feelings, emotions, attitudes, behaviors, traits, and interactions with the world that tends to have a relatively high number of states that feel good, or that are valued by the agent or her culture.

A person with a high degree of mental well-being is in a positive rut or groove, he or she is enmeshed in a positive causal web involving positive feelings, attitudes, behaviors, traits and successful interactions with the world. Good mental well-being promotes the mindset and enhances optimistice feelings for an individual passing through the process of childlessness[152].

2.3 Review of Empirical Studies

2.3.1 Infertility Related Stress and Mental Well-Being

Humans grow up believing that stress causes fertility. Infertility causes severe distress, and psychological therapies are likely to lessen depression while increasing pregnancy rates. The accuracy of self-report measures is a significant challenge when analyzing the distress levels of men and women with infertility. Some ladies appear fine, but are not actually healthy inwardly; they act like this to appear more mentally fit than they are. It is also plausible that women feel positive and hopeful before beginning infertility treatment, as this is when the majority of distress ratings are obtained. In a study where structured psychiatric interviews were employed[153]. An aggregate of 122 women were surveyed beforehand to their initial infertility clinic appointment, and the findings were surprising: 40% of the women were diagnosed with anxiety, depression, or both. Other studies have supported these conclusions. According to the survey, 31% of people experience psychiatric symptoms, with serious depression being the most common. In a big Danish survey involving 42,000 women 35% of

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those who underwent assisted reproductive treatment (ART) who were assessed for depression before to treatment tested positive, in a recent study of 174 women undergoing infertility treatment, 39% matched the criteria for serious depressive disorder[154]. In one of the most significant studies to date, 352 women and 274 men were evaluated in infertility clinics in Northern California. 56% of the women and 32% of the men had substantial signs and symptoms of depressive disorders, while 76% of the women and 61% of the men experienced symptoms of anxiety[155]. It is hardly surprising that a recent study found that infertile patients routinely report much higher levels of anxiety and despair than fertile persons. A recent study on suicidality found that 9.4% of 106 infertile women reported having suicidal thoughts or attempts[156]. A recent literature analysis on the incidence of psychological symptoms in infertility confirmed that 25% to 60% of infertile persons exhibit mental symptoms, with significantly greater levels of anxiety and sadness than fertile controls[157].

The medications used to treat infertility, including clomiphene, leuprolide, and gonadotropins, are associated with psychological symptoms such as anxiety, depression, and irritability. Thus, while analyzing women's symptoms in the middle of therapy, it is difficult to distinguish between the psychological impact of infertility and the adverse effects of the medicine. As a result, studies that included assessments of these symptoms before starting medication or after discontinuing it may be more accurate than those that just looked at women throughout their cycles. The further a patient progresses in treatment, the more frequently they exhibit symptoms of despair and anxiety. Patients with one treatment failure showed considerably higher levels of anxiety, and those with two failures had higher levels of depression as compared to those who had not received treatment. However, it was

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additionally discovered that the more severely depressed the infertile woman is, the less likely she is to start infertility therapy[158]. Researchers have also discovered that, despite a favorable prognosis and the ability to pay for treatment, discontinuation is most often attributable to psychological factors. The effect of stress on treatment outcomes of the most contentious issues in reproductive medicine is the potential influence of psychological variables on pregnancy rates[159]. Although there are numerous old wives' tales that support the idea that stress impairs reproduction function, this theory has been difficult to confirm. There have been scores of research that have looked into the relationship between psychological symptoms before and during assisted reproductive treatment [ART] cycles and eventual conception rates, with mixed results. Some studies have found that the more upset the women are prior to and throughout therapy, the lower the pregnancy rate, although others have not[160]. There are various plausible reasons for these disparities. One issue is that people may misreport their level of discomfort when filling out psychological surveys. Research backs up this theory. In a study of fecundity in 339 women seeking to conceive in the United Kingdoms, self-reported symptoms of depression, anxiety, and stress had no significant relationship with time to conception. However, in a similar study of 501 women in the United States, salivary a-amylase levels, a stress biomarker, were found to be strongly linked with time to pregnancy. Women in the top quartile of a-amylase levels at baseline were twice as likely to develop infertility[161]. Finally, in a recent research of 135 in vitro fertilization [IVF] patients, cortisol levels were assessed using hair samples taken three to six months before. The hair cortisol levels were significantly correlated to pregnancy rates (P=0.017). Hair cortisol levels associated substantially with pregnancy rates (P=0.017). These results support

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what the majority of infertility patients believe: psychological disorders have an adverse effect on fertility[162].

Infertile individuals experience a strong psychological stress. This stress could affect the relationship between man and woman. The infertile individuals experience the symptoms of depression, grief, loss of control, and high levels of anxiety. In a very recent study, the main emotional disorders of 500 infertile males and females from different socioeconomic milieus were shock, anxiety, low self-worth, depression, marital disharmony, and anger, feelings of guilt, frustration, and sense of failure[163]. The infertile individuals had, in all mentioned factors, poor mental well-being than fertile counterpart, so they were susceptible to more physical and psychological stressors. Some studies reported that the level of depression and anxiety in infertile people is equal to cancer patients. A new study reported depression in 57% and anxiety in 67.2% of infertile women[164]. There are different reasons for psychological problems in infertile people. In societies with cultural norms considering high value for the role of a woman as a mother, the consequences of infertility are more severe, and some results such as instability of normal life, home violence, and loneliness have been observed[165].

From the above it is clear that infertility causes stress and it is important to note that stress can lead to hormonal imbalance and menstrual irregularities thus preventing ovulation in woman affected leading to infertility.

In a study conducted, it was reported that infertile individuals may experience relief from depression with the support of the family members. It is needful to say that coping strategies refer to cognitive or behavioural efforts to manage a stressful event that is perceived to

exceed an individual's personal resources. Social support is fundamental to one's physical and psychological well-being[166].

The experience of infertility is not only a medical one, but it is also an emotional experience. Those experiencing infertility encounter a variety of feelings. These feelings vary widely from stress, reactions to diagnosis and medical treatments to the experience created by the physician and medical environment. Gender is sometimes linked with couple infertility[167].

The underlying cause of infertility may be a male factor (40%), a female factor (40%) or a combination (20%) of problems. In a study conducted in Nigeria, it was found that about 15% of people aged 19 to 45years have various forms of infertility problems. Of these, 23.6% had primary infertility, 28.3% had secondary infertility while the remaining 48.1% had other gynaecological disorders and 60 to 80 million males and females worldwide currently suffer from infertility[168].

Even though much of the literature on infertility focuses on women, the findings of current research with elegant methodologies have shown that the emotional impact of infertility can be quite balanced: men suffer as well, and this must be addressed in infertility counseling.

In this regard, the manner in which we communicate our emotions is fundamentally tied to our learning history and hence culturally influenced. Male infertility is still stigmatized in many cultures and linked to a lack of masculinity. For men, this may result in secrecy around diagnosis, sometimes to the point where the female spouse accepts responsibility for the couple's failure to conceive[169].

The stress background of male infertility usually refers to life style cues as smoking tobacco or marijuana, drinking habits, weight and eating habits, and a complete lack of exercise,

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because of the lowering effects of testosterone blood levels and steroids intake. Lifestyle approaches also include vitamins intake and avoiding exposure to toxins. The stress research was during the ’90s and still is now one of the core topics of male infertility research. Infertile couples may easily cope with common day to day stressors, but coping with infertility issues, including the ART treatments, may be considerably more difficult[170].

A series of research found that infertile males have poorer self-esteem, more anxiety, and more physical symptoms than fertile men. Such discomfort may last 18 months following therapy, regardless of whether a live birth was achieved. Furthermore, when faced with infertility, some men endure temporary impotence and sexual performance anxiety. Emotional stress and marital troubles tend to be higher in couples when the man is infertile[171].

Also, a qualitative study was undertaken in the United States, it demonstrated that women employed a variety of coping mechanisms to address infertility issues. In Pakistan, some women turned to adoption to cope with infertility. However, from an African viewpoint, adoption is seen as the least viable option possible[172].

2.3.2 Coping Strategies and Mental well-being

Coping is the continual shift in cognitive and behavioral efforts to handle certain external and/or internal pressures that are deemed to be stressful or exceeding the person's capabilities[173]. Coping techniques are deliberate attempts to find solutions to an individual or organizational problem in order to overcome, reduce, or tolerate stress or conflict.

Parenthood achievement is one of the major life goals for most men and women. In planning a life together, most of the infertile individuals have a vision about how their life should be, and most of them wish to have children of their own for the future life[174]. When fertility fails,

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the affected person become depressed psychologically and can experience a wide range of emotions. They may blame themselves even though it is not a personal failure or punishment. Childless women will undergo varied psychological distress and in order to overcome psychological distress and maintain their quality of life they need to use appropriate coping strategies. In a qualitative study conducted in the United States, it was found that women used coping strategies such as avoidance of reminders of infertility, being the best, regaining control, sharing the burden and giving into feelings in dealing with the problems of infertility[175]. Another study also conducted in the United States by Stanton et al found that women who coped through escape avoidance and through accepting responsibility for their infertility showed more distress, whereas women who sought more social support were less distressed. Seeking social support was an important coping mechanism used by people involved during the process of taking treatment for infertility. This study aims to identify the psychological and mental wellbeing and coping strategies of women seeking treatment for infertility[180]. The findings have the potential of enabling the healthcare personnel in designing and implementing supportive psychological programs for women faced with fertility problems.

Infertility is a source of stress that can impact the wellbeing of people with fertility disorders. This impact is influenced by the coping strategies: Active-confronting (asking for advice), active-avoidance (avoiding contact with pregnant women, keeping feelings for themselves), passive-avoidance (expecting a miracle, waiting as the only solution), meaning-based coping (linking the experience with the improvement of the marriage or personal growth)[181]. Studies that involved women undergoing in vitro fertility (IVF) treatment showed that those that mainly used emotion-focused strategies had higher levels of stress and more difficulties

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adjusting to their situation. Furthermore, denial as part of an avoidant coping strategy predicted higher stress levels related to infertility. The results of a recent study showed a positive association between seeking social support, avoidance coping, and state anxiety these findings support the results[182]. Positive attitude coping was negatively associated with state of anxiety, at least regarding women. It was similar to the results of another study which studied coping strategies centered on positive reframing. The results of another study discovered that passive coping (meaning emotion focused coping) was a positive predictor for stress, while active coping (problem-focused coping) was a negative predictor for stress[183]. Regarding emotion-focused and problem focused strategies, the difference between couples was not significant, but women had less self-control compared to men. In addition, anxiety associated with infertility had a direct influence on active-oriented coping strategies. Taking into account a few of the difficulties that women with infertility face (among them being uncertainty and lack of control), examined the association between perception of infertility controllability and coping strategies, the results demonstrating a positive association between the perception of low controllability and avoidance coping[184]. In addition, there was a positive association between the perception of a high level of controllability and problem-focused coping.

Infertile individuals are perceived to suffer from many mental difficulties such as depression, anxiety, stress and etc. Hence, women seem to be more vulnerable to psychological distress so; the reaction to infertility in women differs from men. Infertile couples use the strategies for coping with the stress of infertility, and to apply various coping strategies to manage their personal and family crisis[185]. Therefore it is important to gain insight into the coping mechanisms which influence the patients' life. Coping strategies refer to the individual's

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cognitive ability to control and manage a stressful life event. The goal of coping can be altering the problem (problem-focused coping) or reducing the emotional disturbance (emotion-focused coping). Many studies have been conducted on coping and stress within the infertility context[186]. Selection of a coping strategy depends on the type of crisis and individual's interactions with the dominant factors within the family and society. In some societies such as Iran there is a high pressure on women to have a child and seem in these societies response to an event of stress is different among infertile patients[187].

In basic terms, successful stress management necessitates a match between circumstance assessments and coping responses (known as the goodness of fit model). When a scenario is perceived as controlled, problem-focused tactics are more effective than emotion-focused ones, which are better suited for less controllable situations. Research has identified two types of coping strategies: problem-focused and emotion-focused[188]. The problem-focused technique aims to reduce or eliminate stressors or adaptive behavioral conditions. Problem-focused tactics involve gathering knowledge and developing new approaches to problem-solving. Emotion-focused coping occurs when we lack control over a situation, making it difficult to address the root cause. It entails learning skills for managing emotional distress. They include escape avoidance, social support, exercise, relaxation, and confrontation. Three of these coping strategies will be widely used in this study[189].

To be specific, escape-avoidance being a coping strategy was categorized into two namely, active-avoidance e.g. avoiding being with a pregnant women and passive-avoidance e.g. hoping for a miracle.

2.3.3 Gender and Mental well-being

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The psychological implications of infertility in men have received far less attention than those in women. The majority of existing studies focused on women's reactions to male infertility, while only a few looked at couples dealing with male infertility and men's psychological problems.

A research study was undertaken at the Federal Medical Centre in Owerri, Imo State, specifically at the hospital's fertility clinic. The researcher distributed copies of the validated questionnaire to respondents in the study area. 67 questionnaires were issued, and the study discovered that age and gender had significant correlations with infertility. While inability to reproduce is more common in those aged 30-35, women appear to be more prone than men[190].

A woman's fertility steadily drops after the age of 32, whereas men's fertility begins to decline around the age of forty. He further suggested that infertility in elderly women could be due to a higher rate of chromosomal abnormalities in the eggs. This confirms that fertility declines with age, but is more pronounced in women. The etiology of male and female infertility is multi factorial. The causes of male and female infertility are multifactorial. They claimed that while male infertility could be caused by genetic factors, physical deformities, injuries, medicines, infections of the genital tract, radiation, toxins, or unknown reasons, infections were the leading cause of male infertility in Nigeria[191].

Male infertility can also be caused by low sperm count, low sperm motility, abnormal sperm, medical conditions such as testicular infection, cancer, previous surgery, anaemia, thyroid disease, ejaculatory dysfunction, premature ejaculation, mumps, hypospadias, and cystic fibrosis. Female infertility can be caused by a variety of factors, including cervical narrowing or stenosis and cervix infection, uterine factors such as the presence of submucosal fibroids or benign tumors in the muscular wall of the uterus, congenital malformations such as

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endometriosis and ovarian factor, ovulation disorder, and tubal factors involving abnormalities or damage to the fallopian tube[192].

In their exploratory and qualitative study on communities opinion on child bearing and childlessness in Northern Ghana (Upper region), they revealed that socially couples could become infertile due to supernatural factors such as bewitchment and disobedience of social standards, abortion, masturbation, and the use of contraception. Infertility is not a disease, although the condition and the treatment that accompanies it can affect all aspects of people's lives, which can cause various mental disorder and consequences including turmoil, frustration, depression, anxiety, hopelessness, guilt, and feelings of worthlessness in life[193].

Despite the fact that infertility as a psychological stressor can threaten the health of infertile people, nonetheless, the extent of its impacts is dependent on people's cognitive and defensive skills. Infertility is a major source of stress for couples and can jeopardize their psychological health by affecting their quality of married life, fear of divorce, decreased intimacy, despair and depression, or other psychological disorders such as anxiety, irritability, lack of self-efficacy, sexual disorders, and so on[194]. Treatment options for infertile couples are evolving; treatment with new technologies has significant risks. Additionally, these pressures can have an impact on treatment success. Evaluation of quality of life and impacts of psychological therapy interventions (counselling or medicines) in infertile people can make an effective move on infertility. The psychological impacts of infertility on the lives of infertile people are associated with family difficulties and marital dissatisfaction. The number of infertile couples is increasing as the global population grows and marriages become older. The prevalence of infertility varies by country. According to some research, there are approximately 80 million infertile couples globally. According to estimates, Iran has

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approximately two million infertile males and females[192]. Psychological stress and infertility issues have a direct impact on normal bodily physiology and can have a twofold effect on reproductive outcomes. People who have peace of mind and are psychologically fit are less stressed and hence have a higher chance of successful fertility outcomes. Regardless of the technique used to treat infertility (such as IVF, ART, surrogacy, and adoption), good outcomes can improve quality of life and overall health. The advancement of infertility treatment techniques had opened most of the doors to infertility difficulties, but it also had its own set of complications. Several studies have found that current treatment procedures such in vitro fertilization [IVF] can cause melancholy and anxiety symptoms in 5-10% of women[191]. Experience of pregnancy, delivery and giving love to the own child, is a natural need in woman. The experience of pregnancy, delivery, and loving one's own kid is a natural need for women. Women typically view their primary function as motherhood, and infertility can lead to feelings of inadequacy and failure. If a doctor assures a couple that they will be unable to have children, this might produce a psychological crisis that affects their communication and employment skills. Some researchers believe that infertile persons are affected by a complex interconnected network of physical, psychological, and social elements, and that the patient's behavior to these events might determine the pattern of patient response to the problem[193]. As a result, the incidence of various psychiatric problems in infertile people might be related to a range of circumstances, such as the individual's gender, the cause of infertility, the duration of infertility, treatment modalities, and culture.

The findings of more recent research with superior methodological designs revealed that the emotional burden of infertility can be quite balanced: males suffer as well, and this must be addressed in infertility counseling. The way we communicate our emotions is fundamentally

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tied to our learning history, and thus culturally defined. Male infertility is still stigmatized in many cultures and linked to a lack of masculinity. For men, this can lead to secrecy surrounding the diagnosis, even to the point where the female spouse bears responsibility for the couple's failure to conceive[191,192]. The stress background of male infertility is generally associated with lifestyle cues such as smoking tobacco or marijuana, drinking habits, weight and eating habits, and a complete lack of exercise due to the diminishing effects of testosterone blood levels and steroids use. Vitamin supplementation and pollution avoidance are two examples of lifestyle adjustments. The stress study was undertaken in the 1990s and is now one of the key topics of male infertility research. Infertile persons may cope well with regular day-to-day challenges, but dealing with infertility issues, particularly ART therapies, can be much more difficult[194]. Several studies have indicated that infertile males had lower levels of self-esteem, higher anxiety, and more somatic complaints than fertile ones. Such anguish can linger for 18 months following therapy, regardless of whether a live birth was achieved. In addition, when dealing with infertility, some men have temporary impotence and sexual performance anxiety. It implies that mental stress and marital problems are amplified in couples when the man is infertile[186]. In-depth interviews found that when faced with infertility, guys may endure considerable agony due to low self-esteem and social shame, and that it is likely to be enhanced in men with male-factor infertility rather than those with unexplained or female-factor infertility. Couples having IVF procedures (ejaculated, epididymal, or testicular spermatozoa) were evaluated in order to detect sex differences and risk factors for depression. The authors examined the responses of a one-year cohort of couples who had previously sent questionnaires, with successful couples being more likely to engage in the study. As hitherto mentioned in the literature, retrospective data on the anguish

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caused by infertility are likely to be affected by the responders' inherent selection and should be approached with caution. The study's findings revealed, as expected, that treatment-related distress was frequently higher in women than in men. Men reported slightly higher depression levels than their controls, and the treatment added some extra difficulties for men, such as a greater psychological responsibility for infertility, the impact of childlessness on daily life, treatment-related stress, and time constraints[194]. The study also discovered some variables for couples that indicate a higher risk of depression, such as an unsatisfactory treatment outcome, recurrent treatment cycles, a low socioeconomic position, foreign nationality, and for women, a lack of partner support. These criteria may be especially important for guiding psychological counseling in infertile males and females.

2.3.4 Effect of Age and infertility-related-stress on mental well-being

The age of a man or woman is a factor among others that can affect fertility and mental well-being. Due to pursuit of education and other factors, many couples are choosing to delay child-bearing. Fertility peaks and then decreases over time in both men and women, thus the reproductive timeline may be one aspect to consider when determining the ideal time to start a family. As men age, testosterone levels begin to decrease and hypogonadism results. However, if testosterone is used to treat hypogonadism, it can suppress spermatogenesis[172].

Semen parameters also begin a steady decline as early as age 35; semen volume and motility both decrease and morphology may become increasingly abnormal. After the age of 40, men can have significantly more DNA damage in their sperm, as well as decline in both motility (40%) and viability (below 50%) ($n = 504$, $p < 0.001$)[172]. There may also be an increase in time to pregnancy with an increase in male age.

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Scholars reported that when men were over the age of 45, their partner's relative risk of an increase in time to pregnancy over one year increased to 4.6, and over two years increased to 12.5 (n = 1832, CI = 24.5-38.1). The authors also noted that the older population tended to consume more alcohol, have intercourse less often, had longer contraceptive usage, and smoked less cigarettes which could have been confounding factors. Another study found that there are also exponentially fewer infants born to fathers ≥35 to 39 years of age and older compared to younger age groups even when controlling for female age (n = 122,061)[195].

2.3.5 Types of Infertility-related-stress

The following are types of infertility related stress

Depression

Depression, characterized by a sense of hopelessness and despair, is a very common consequence of the diagnosis and treatment of infertility. For some, depressive episodes are periodic and brief, often related to a sense of failure created by a rise in temperature and subsequent onset of menstruation. For others, depression-with occasional respites-is a daily curse throughout the entire process. Depression is for some incapacitating and for others heavy emotional baggage that they learn to carry[194].

However it is experienced, depression is a response to "both the excessive losses and the prolonged stresses created by infertility. Loss Barbara Berg has entitled the account of her own infertility Nothing to Cry About. This title represents an illuminating aspect of infertility its accompanying sense of profound loss. In one sense, it is wrong. There is much to cry about: the problem itself, its implications in the lives of infertile couples, and the reality that they may never have a child. But in another sense, the title is accurate. Who can mourn the

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loss of someone who has never been born or possibly conceived? The fact that there is nothing tangible to represent the loss actually intensifies the pain and makes the loss more difficult to understand. There is much to cry about, and there is nothing to cry about. Everything is lost, and nothing is lost. All theories concerning factors which contribute to depression mention the concept of loss. The loss may involve a love object, a variety of reinforcers, power and control over the environment, or positive and hopeful developments in one's life. These losses usually involve a crucially important source of security, which, when lost, leads to a depressed condition and a sense of helplessness and hopelessness[195].

Loss of Status or Prestige (in the Eyes of Others)

Society places eminent value on parenthood, thereby safeguarding and reinforcing behavior that relates to procreation and child rearing. From the inevitable "How many children do you have?" to religious exhortations to "Multiply and replenish the earth," childless couples are duly reminded of society's expectations that they have children. Infertility does not reinforce this value[192]. The stigma attached to it is great. Some couples believe that divorce would be more socially acceptable than infertility. Others think that their worth to society is lessened by their inability to produce children. Childless couples may feel that being infertile jeopardizes their individual sexual identities. Because fertility and virility become intertwined for the infertile, a man who is unable to father a natural child may feel that others question his masculinity. For many women, having children is central to their identity. Society has been structured so that from the time they are very young, women think of themselves as-and others expect them to be-mothers. A woman's family and friends may be unfairly critical when this does not happen and sometimes imply that her identity as a woman is incomplete. She is different; she does not fit it[192].

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Loss of Self-Esteem (or Pride in Oneself)

This is a common challenge among couples going through the problem of infertility as they tend to loss their self-esteem.

Other consequences of Infertility Related Stress are;

1. Divorce/ Separation
2. Violence
3. Social Stigma
4. Emotional Stress
5. Depression
6. Anxiety etc.

2.3.6. Prevalence and predictors of infertility-specific stress in individuals diagnosed with primary infertility.

According to the existing literature on infertility, stress appears to be inevitably associated with infertility diagnosis and treatment in sub-fertile individuals. The epidemiological data on the prevalence and predictors of infertility-specific stress in cultural specific scenario are scarce. The objective of the present study was to estimate the prevalence of infertility-specific stress and identify predictors of infertility-specific stress in women diagnosed with primary infertility[194].

The prevalence of stress among women was 80%. Univariate analysis revealed that predictors of stress were years of marital life, duration of infertility, infertility type, history of gynecological surgery, cycles of ovulation induction with timed intercourse and intra-uterine inseminations, present and past psychiatric morbidity, coping difficulties, gynecological

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diagnosis, and severity of premenstrual dysphoria. Multivariate analysis showed leading associations of stress with infertility type and coping difficulties[195].

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2.4 Conceptual Framework

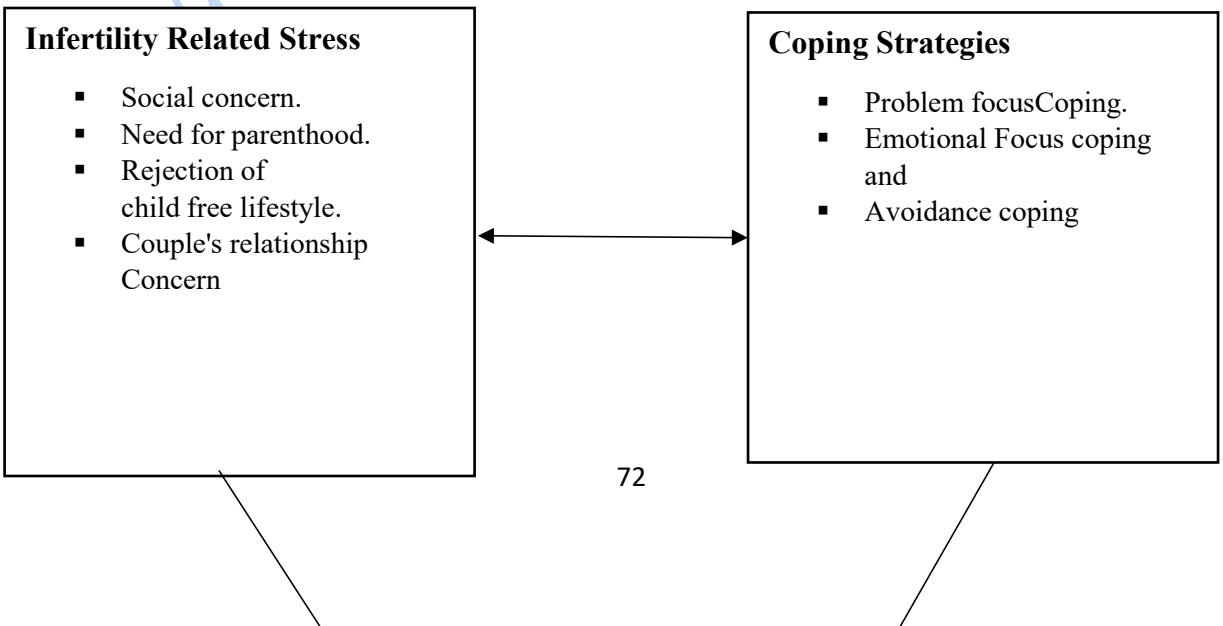

Figure 1.1 Showing diagrammatical representation of relationship between the dependent variable (Mental Wellbeing) and independent variables (Infertility Related Stress and Coping Strategies)

2.5 Summary of the Literature Review

The literature was reviewed from at least five perspectives comprising of the study of infertility-related-stress, coping strategies adopted by individuals with reproductive health challenges. Also, empirical studies of previous research work on infertility were reviewed which was found to have concentrated on the female gender over the years until recently. The concepts of infertility and its risk-factors were also explained in the literature. The concept of infertility-related-stress and coping strategies as predictors of the mental well-

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being of the individuals with reproductive health challenges can be structured thus: The dependent variable according to this study is the mental well-being of the individuals with reproductive health challenges, the identified independent variables are infertility related stress and the coping strategies.

Therefore it is obvious that many people passing through the challenges of infertility have high poor mental well-being especially in a pronetalist society where much significance is place on children. Such individuals are always in a state of anxiety, fear of unknown and uncertainty, depression and societal stigma. Despite the various coping strategies adopted such as avoidance, emotional and problem focus, they still show feelings of psychological and emotional instability as a result of their condition of childlessness. Hence, clinical psychologists and reproductive Health Practitioners can develop a line of management such as mental health assessment, coping skills therapy, cognitive behavioural therapy and medical intervention to help and assist such people with reproductive health challenges.

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Chapter Three

Methodology

This chapter explained the research design, the framework in which this study was carried out, a detailed description of the target participants, as well as the sampling techniques that were used to select the participants. It also encapsulated the instrument needed to sample the participants' opinions on the study's variables, the procedures guiding the data collection, and the specific statistical analysis that was used for data analysis.

3.1 Research Design

This study adopted a cross sectional research design because of its capacity and usefulness in collecting standardized data from moderately large cohorts. This survey research method worked by selecting samples from the population of study to reveal the relative distribution and relationship between the variables and to subsequently infer a larger population. The standardized data provided the information used in answering the research questions needed to properly examine the infertility-related-stress and coping strategies as predictors of mental well-being among infertile males and females in Ibadan. The primary source of data was the use of a questionnaire as it is known to be one of the most practical methods of data collection to elicit reliable information from the respondents. As such, a five-point set of Likert scale structured questionnaires was constructed and administered to provide answers to the research questions. Information from literature was also used as a secondary source to aid variables formulation and comparisons in the questionnaires constructed.

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3.2 Population of the Study

The study's populations were males and females adults who were trying to achieve pregnancy after 12months of regular and unprotected sexual intercourse without the use of any form of birth control method. The research was conducted in Ibadan, Oyo state, South west Nigeria. The respondents were mostly residents of Ibadan who were predominantly Yoruba's. Eligibility criteria involved males and females that engaged in having regular, unprotected sexual intercourse without the use of any birth control method in the last one year trying to achieve pregnancy and had been diagnosed to have infertility. Four [4] hospitals were purposively selected to carry out this research; Two [2] Oyo State

government hospitals in Ibadan which were Adeoyo Maternity Teaching Hospital, Yemetu, Ibadan with a total of 720 patients altogether and St. Peters State General Hospital, Aremo Ibadan with 840 patients in a year for females participants as records on infertility register showed that many females with infertility issues make use of these facilities and Two [2] Private Hospitals in Ibadan which were Careforte Medical Centre Airport Ibadan with 180 patients in a year and Oni- Wumi Hospital Abayomi, Iwo Road Ibadan with 240 patients in a year for males participants because they are highly utilized by males with infertility related problems. Therefore, this study focused on individuals with fertility-related health issues who visited the gynaecological clinic of the facility in a year amounting to estimated population of one thousand nine hundred and eighty (1,980) for all the four hospitals.

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Table 1.1 Showing Distribution of the Population Study after Visitation to each Hospital by the Researcher

S/N	Hospital	Population Size 1n a Year
1.	Adeoyo Maternity Teaching Hospital Yemetu Adeoyo Ibadan	**720**
2.	St Peters State General Hospital Aremo Ibadan	**840**
3.	Careforte Medical Center Airport Ibadan	**180**
4.	Oni-Wumi Hospital Abayomi Iwo Road	**240**
	Total	**1980**

3.3 Sample Size and Sampling Techniques

Probability sampling method was used for it reduces bias and produces results that best represent a general population. Due to the nature of the target population, Simple Random Techniques was employed in the study. The gynaecological clinic for females at Adeoyo Maternity Teaching Hospital and St. Peters State General Hospital was every Tuesday and Thursday where Mondays and Wednesdays for registrations and booking for new patients while Infertility clinic for males was every Wednesday at Care Forte Medical Centre and every Saturday at Oni Wumi Hospital using other days for booking and registration for new patients.

Using simple random sampling the study adopted a balloting method where names of all patients at each clinic day were arranged alphabetically and numbered serially. Selection of papers were made to cover every patient present in the clinic .Numbers were later written on the pieces of paper to cover the numbers needed for the study on each clinic day . Each selected number was included in the sample. By this technique, all members of interest had equal probabilities and chances of being selected. Every name written was properly discarded after each clinic day to ensure confidentiality and privacy.

The register of those outpatients reporting to the gynaecological clinic was used as the sampling frame, and a total of three hundred and thirty three (333) respondents were selected from the four hospitals using Taro and Yamani 1967 formula for determining accurate sample size from relatively large population through quota sampling. The sample size for each hospital was derived from percentage of each hospital population size to the total population size of the four hospitals. Simple random sampling was considered by random selection of individuals with reproductive health challenges who were seeking infertility

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treatment from selected infertility clinics and hospitals particularly on gynecological clinic days.

$n= N/1+N(e)^2$

n= sample size

N= population size

e= margin error (0.05) i.e 5%

$n= 1980/1+1980 (0.05)^2$

$n= 1980/1+1980(0.0025)$

$n= 1980/1+4.95$

$n=1980/5.95$

n= 332.7 Approximately 333

Table 1.2 Showing Sample Size as % Percentage Size after Determination of Total Sample Size from Taro Yamani

S/N	Hospital	Population Size in Year	Sample Size
1.	Adeoyo Maternity Teaching Hospital Yemetu Ibadan	**720**	**121**
2.	St Peters State General Hospital Aremo Ibadan	**840**	**141**
3.	Careforte Medical Center Airport Ibadan	**180**	**30**
4.	Oni-Wumi Hospital Abayomi Iwo Road Ibadan	**240**	**41**

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	Total	**1980**	**333**

Each sample size of the selected hospitals was considered purposively as a percentage of population after determination of the total population from Taro Yamani, therefore, One Hundred and Twenty One (121) from Adeoyo Maternity Teaching Hospital, One Hundred and Forty One [141] from St Peters State General Hospital Aremo, Thirty [30] from Careforte Medical Centre Airport Ibadan and Forty One [41] from Oni-Wumi Hospital Abayomi Iwo Road Ibadan.

3.4 Description of Research Instrument

A structured questionnaire was used for data collection in the study. The questionnaire booklets were made of sections namely: Section A, B, C and D. Section A: measured the socio-demographic variables of the participants. Section B Measured Infertility Related Stress. Section C: Measured Coping strategies. Section D: measured Mental Well-Being. The questions B and D respect 5 Likert scale response while Section C respects 4 Likert scale response.

Section A: Socio-Demographic Variables

This section measured the demographic characteristics of the participants which involves; Gender (male or female), Marital status (Single, Married, Divorce, Widowed/Widower), Number of children (None,1, 2,3), Religion: Christianity, Islam, Traditional Others), Highest academic qualification (No formal education, Primary education ,Secondary education, Tertiary education), Actual age , Ethnicity [Yoruba , Igbo , Hausa , Others] .

Section B: Infertility–Related Stress Scale

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This section measured infertility-related-stress which is defined as the emotional pressure suffered by an affected individual due to the issue of childlessness. This was measured by infertility related stress inventory (IRS); it was developed by Zurlo et al., 2017 , it was measured with 27-item predicated in 5 response options which involved; Strongly Disagreed was coded as 1, Disagreed as 2 , Undecided as 3 , Agreed as 4 and Strongly Agreed as 5 . The scale was in four (4) dimensions which include; Social Concern (α=0.88) 4, 8, 13, 16, 19, 21, 22, 25, 26, 27, Need For Parenthood (α= 0.78), 1, 2, 3, 15, 18, 24, Rejection Of Childfree Lifestyle (α=0.70), 5, 11, 12, 14, 17, 23, and Couple's Relationship Concern (α= 0.70) 6, 7, 9, 10, 20. The item in the scale had been given equal weight but the reverse items include; 11, 13, 14, 17, 23. Higher score mean higher level of stress.

Section C: Brief Coping Scale (BCS)

This section measured infertility coping strategy which can be explained as means devised by the affected individual in managing the psychological and social experience that emanates from infertility. It was developed by Dias et al., 2012.

This study coping strategy scale were in three (3) dimensions which included; Problem focus with the items ; (2, 7, 10, 12, 14, 17, 23, 25), Emotional focus (5, 9, 13, 15, 18, 20, 21, 22, 24, 26, 27, 28) and Avoidance coping (1, 3, 4, 6, 8, 11, 16, 19) with alpha (α) value of approximately 0.75. it was measured with 28-item in 4 response options which involves; I have not been doing this at all coded as 1, A little bit as 2 , A medium amount as 3, I have

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been doing this a lot as 4. The reverse items include 13, & 16. Higher score mean higher ability to cope otherwise, lower score. The internal consistency level of the items was confirmed to be 0.72.

Section D: Warwick Mental Well Being Scale [MWBS]

This is a state of being free from emotional, psychological and social challenges. The variables were measured by Warwick Mental Well Being scale through the dimensions of self-acceptance, purpose in life, personal growth, positive relations with others, environmental mastery and autonomy. It was developed by Warwick-Edinburg in 2006 . This involved 12 item scale with six reverse items which were item 2, 4, 6, 9, 10, 12. The MWBS involved five (5)-point scale anchored by : None of the time was coded as 1, Rarely as 2, Some of the time as 3 , Often as 4, and All of the time as 5 . The validity and consistency coefficient is 0.73 and 0.85 respectively.

3.5 Validity of Research Instruments

Validity can be viewed as the extent to which an instrument can be verified to do what it purports to do accurately. It is the soundness and effectiveness of a measuring tool. Content validity was used in checking the questionnaire, which involved the examination of content to determine whether it covered a representative sample of the behavioural domains to be measured. Further, the items or factors within variables were compared to other research factors, covering the parameters in question, to ensure that there was consistency in assessing infertitlity-related stress and coping strategies as predictors of mental well-being among individuals with reproductive health challenges

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Validation was also done by dividing the instrument into several sections. Each section was carefully checked to ensure that it conveyed the necessary message and attracted the relevant feedback, to achieve specific themes of the research objectives and hypotheses.

3.6 Reliability of Research Instruments

Reliability is the extent to which a research instrument can be relied upon to obtain accurately, what is needed from the research[1]. The reliability of the instruments (questionnaire) was measured using Cronbach's Alpha correlation coefficient, which resulted to 0.744. Each questionnaire was checked in the field for completeness.

3.7 Method of Data Collection

The study employed a cross-sectional survey method in obtaining its primary data from the respondents. Regarding this, a well-structured questionnaire was administered to the respondents for the data collection process. For female participants out of 50 to 60 that come to the clinic on each clinic day, about 25 - 30 respondents were interviewed for 6weeks. For males participants out of 20 to 25 that appear at the clinic about 10 to 15 were interviewed for 4 weeks. The researcher was assisted by four well-trained research assistants. They were essentially trained on the subject of this research, how to objectively retrieve the instruments and general communication skills so that no aspect of the instrument would be left blank. The research assistants also offered the respondents guidance when needed. In cases of illiterate respondents, the research assistants extracted the information from the patients in form of interviews[1].

3.8 Method of Data Analysis

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The quantitative data was collected for this research. The utilization of a well-structured questionnaire made it possible to attach numeric values to each variable. All the data that were obtained from these respondents were analyzed using descriptive and inferential statistical procedures with the aid of statistical package for social sciences (SPSS 20). Simple percentages, frequencies and basic visualizations were employed in analyzing the socio-demographic variables. In answering the research questions and testing the hypotheses, Pearson-moment correlation was employed. All hypotheses were tested at 0.05 level of significance. The above statistical tools were employed to capture robust descriptive and inferential statistic properties[2].

3.9 Ethical Considerations

The ethical consent was obtained from the Ministry of Health, Oyo State Hospitals Management Board Oyo State, Ibadan. This approval covered for both Government and Private Hospitals included in the study. The universal ethical principles were observed which were: respect for persons as individual must be treated as autonomous people and people with diminished autonomy must be protected. Also, we protected every participant from all forms of harms by increasing the benefits and reduce the risks/harms. Furthermore we maintained justice by being fair and impartial. In addition, an informed consent was obtained from each participant after explaining the objectives of the study, nature of questions and what was expected of them as responses. Assurance of confidentiality of their private information's as well as their voluntariness of their participation was also guaranteed.

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Chapter Four

Results and Discussion of Findings

4.1: Demographic Characteristics of the Respondents

Infertility-related-stress and Coping Strategies as Predictors of Mental Well-being among Infertile Males and Females in Ibadan Oyo State Southwest Nigeria using the aid of questionnaire

The total number of participants in this study were 333 , 262 females (78.7%) and 71 males (21.3%) with age range between 21-60 years . 110 [33%] of the participants were between 21-30 years , 138 [41.4%] were 31-40years , 72 [21.6%]were 41-50years and 13 [3.9%] were 51-60years. 80 [24%] had primary education , 167 [50.2%) had secondary education and 83 [24.9%] had tertiary education. There were 121 [36.3%] respondents from Adeoyo Maternity Teaching Hospital Yemetu Ibadan, 141 [42.3%] from St Peters State General Hospital, Aremo, 30 [9.1%] from Careforte Medical centre Airport Ibadan and 41 [12.3%] from Oni-Wumi Hospital Iwo Road Ibadan. 190 [57.1%] of respondents had the duration of infertility for12-60 months, 117[35.1%] 61-120months, 20 [6.0%] 121-180months and 6 [1.8%] respondents had 181-240 months. 315 (94.6%) of the respondents were of the Yoruba ethnic group, 2[0.6%] were Hausa and 14[4.2%] were Ibo. 200 (60%) of the respondent answered "in myself only" as the cause of their infertility, 6[1.8%] in partner only and 124 [37.2%] .219(65.8%) of the respondents were of the Islamic faith and 114 (36.4%) were of the Christian faith.

95 [28.5%] answered YES to failure of previous treatment and 238[71.5%] said NO. 150 [45%] were suffering from primary infertility and 183[55%] from secondary infertility.

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228[68.5%] had been attending infertility clinic between 1-12months and 105 [31.5%] between 13-24months. Among the 262 females that were interviewed, 114[43.5%] had the specific cause to be irregular menstruation, 67[20.1%] had Uterine fibroids, 60[22.9%] had Hormonal Imbalance, 20 [7.6%] had small uterus and 1 [0.3%] had unexplained cause. In the males, out of 71 respondents, 13[18.3%] had no sperm count, 20[28.2%] had low sperm count, 20[28.2%] had premature ejaculation and 18[25.3%] had unexplained causes.

Table 4.1.1 Demographic Profile of Respondents by Gender and Age

Demographic Profile	**Frequency**	**Percentage**
Sex(N=333)		
Male	71	21.3
Female	262	78.7
Age(N=333)		
21-30 Years	110	33.0
31-40 Years	138	41.4
41-50 Years	72	21.6
51-60 Years	13	3.9

Source: Authors Fieldwork, 2023

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Table 4.1.2 Demographic Profile of Respondents by Highest Academic Qualification and Duration of Infertility

Demographic Profile (N=333)	Frequency	Percentage
Highest Academic Qualification		
No formal education	0	0
Primary education	80	24.0
Secondary education	167	50.2
Tertiary education	83	24.9
Missing	3	0.9
Hospital		
Adeoyo Maternity Teaching Hospital Yemetu	121	36.3
St Peters State General Hospital Aremo	141	42.3
Careforte Medical Center Airport	30	9.1
Oni-Wumi Hospital Abayomi Iwo Road	41	12.3
Duration of infertility		
12-60 Months	190	57.1
61-120 months	117	35.1
121-180 months	20	6.0
181-240 months	6	1.8

Source: Authors Fieldwork, 2023

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Table 4.1.3 Demographic Profile of Respondents by Ethnicity, Causes of Infertility and Religion

Demographic Profile (N=333)	Frequency	Percentage
Ethnicity		
Yoruba	315	94.6
Hausa	2	0.6
Igbo	14	4.2
Others	2	0.6
Causes of Infertility		
In myself only	200	60.0
Partner	6	1.8
Both	124	37.2
Invalid	3	0.9
Religion		
Christianity	114	36.4
Islam	219	65.8
Traditional	0	0.0
Others	0	0.0

Source: Authors Fieldwork, 2023

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Table 4.1.4 Demographic Profile of Respondents by Failure of Previous Treatment, Types of Infertility, Month for Attending Infertility Clinic

Demographic Profile (N=333)	**Frequency**	**Percentage**
Failure of Previous Treatment		
Yes	95	28.5
No	238	71.5
Types of Infertility		
Primary	150	45.0
Secondary	183	55.0
How Many Months have you been Attending Infertility Clinic		
1-12months	228	68.5
13-24months	105	31.5
Female Specific Causes: F= 262		
Irregular menstruation	114	43.5%
Uterine fibroid	67	25.6%
Hormonal imbalance	60	22.9%
Small uterus	20	7.6%
Unexplained	1	0.3%
Male Specific Causes: M= 71		
No sperm count	13	18.3%
Low sperm count	20	28.2%
Premature ejaculation	20	28.2%
Unexplained	18	25.3%

Source: Authors Fieldwork

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4.2. Presentation of Data

Prevalence of Infertility Related Stress

Assessment of infertility related stress among the respondent, the following responses were elicited from the respondents. 70.2% of the respondents reported “strongly agreed” “that For me, being a parent is a more important goal then having a satisfying career”. When asked on whether their marriage needs a child/another child 71.7% strongly agreed. On the question “A future without a child/another child would frighten me” 76.9% “strongly agreed”.

When asked whether They feel like they have failed at sex 71.2% of the respondent said “strongly agreed”. When asked whether Family get-togethers are especially difficult for them 62.4% said strongly agreed.

60.0% of the respondent said strongly agreed, Talk about our fertility problem, lead to an argument. 61.9% reported strongly agreed’ I have often felt that I was born to be a parent. 62.5% reported As long as I can remember, I’ve wanted to be a parent.

When ask I find it hard to spend time with friends who have young children 68.5% of the respondents said ‘Strongly agreed’. I feel like friends or family are leaving myself and partner 71.2% said Strongly agreed.

When I see families with children, I feel left out, 64.6% said Strongly agreed’.

The overall Infertility related stress categorization of the respondents shows that 68.6% had high level IRS.

4.2.2 Infertility Coping Skills among Respondents

71.2% of the respondents strongly agreed that “I've been turning to work or other activities to take my mind off things my infertility”.

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71.7% of the respondents strongly agreed with the statement that I've been saying to myself "the current situation of my life isn't real".

62.5% strongly agreed that I've been getting emotional support from others for my situation.

More than one-third (48.1%) strongly agreed' with the statement that I've been giving up trying to deal with the infertility. Few (37.1%) agreed that I've been making fun of the situation.

48.1% strongly agreed with the statement I've been learning to live with it.

The overall coping skills of the respondent showed that Majority (76.9%) had been concentrating my their efforts on doing something about the situation I'm in. 35.1% had avoidance coping 33.6% had problem focus and 31.2% had emotional focus as their coping mechanism.

Table 4.2.1 Relationship between Infertility Related Stress and Mental Wellbeing of the Respondents

Demographic variables	**Poor Mental wellbeing**	**Good Mental wellbeing**	**Total**
Low infertility related stress	15(8.2)	35(23.5)	50(15.0)
Moderate Infertility related stress	27(14.7)	27(18.1)	54(16.2)
High Infertility related stress	142(77.2)	87(58.4)	229(68.8)
Total	184(100.0)	149(100.0)	333(100.0)

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4.3 Test of Hypothesis

Hypothesis One: Gender differences will significantly affect mental well-being among the infertile males and females was analysed with t-test of independent sample. The result is presented in Table 4.3.1

Table 4.3.1: Summary of T-Test for Independent Sample Showing the Difference between Female and Male on Mental Well-Being

Sex	N	$\bar{x}$	SD	Df	T	P
Male	76	38.75	6.57	322	-.220	> .05
Female	248	38.94	6.74			

The results in Table 4.2.1 shows that there is no significant difference between male ($\bar{x}$ = 38.75, SD = 6.57) and female ($\bar{x}$ = 38.94, SD = 6.74) on mental well-being (t (322) = -.220, p > 0.05).

This means that being a man or a woman does not have any significant difference in the mental well-being of an individual with the reproductive health challenges.

Hypothesis Two: There will be a positive significant impact of coping strategies on mental well-being among the infertile males and females with multiple regression analysis were used to test the hypothesis. The result is presented in Table 4.3.2.

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Table 4.3.2: Summary of Multiple Regression table Showing Coping Strategies on Mental Well-being among the Infertile Males and Females

Variables	β	t	P	R	R^2	F	P
Problems	-.113	-1.627	> .05	.301	.091	10.457	< .01
Emotional	.216	2.619	< .05				
Avoidance	.167	2.491	> .05				

From Table 4.2.2, the result indicates that, there is significant joint impact of problem focused, emotional focused, and avoidance coping strategies on mental well-being among the infertile males and females, R^2 = .091, F (3,315) = 10.457, p < .01. Also, 9.1 percentage variance observed in mental well-being is accounted for by problem focused, emotional focused, and avoidance coping strategies. From the same table emotional focused (β = .216, p < .05) and avoidance (β = .167, p < .05) independently predicted mental well-being. However, problem focused (β = -.113, p > .05) does not independently predict mental well-being among the infertile males and females. The hypothesis is confirmed.

This shows that coping strategies adopted by an individual with reproductive health challenges such as problem focus, emotional and avoidance have a positive impact on their mental well-being. This means that with those coping tchniques they were able to thrive well in their childlessness situation and faced every stress related to their infertility status.

Hypothesis Three: There will be a significant influence of infertility-related stress on mental well-being among the infertile males and females; multiple regression analysis was used to test the hypothesis. The result is presented in Table 4.3.3.

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Table 4.3.3: Summary of Multiple Regression Table Showing Infertility-Related Stress on Mental Well-Being among the Infertile Males and Females

Variables	B	T	P	R	R^2	F	P
Social concern	-.361	-5.326	< .01	.621	.386	49.340	< .01
Need for parenthood	-.043	-.841	> .05				
Rejection of childfree lifestyle	.370	7.276	< .01				
Couple's relationship concern	-.025	-.357	> .05				

From Table 4.3.3, the result indicates that, there is significant joint influence of infertility-related stress (social concern, need for parenthood, rejection of childfree lifestyle, and couple's relationship concern) on mental well-being among the infertile males and females, $R^2 = .386$, $F (4, 314) = 49.34$, $p < .01$. Also, 38.6 percentage variance observed in mental well-being is accounted for by infertility-related stress. From the same table social concern ($\beta = -.361$, $p < .01$) and rejection of childfree lifestyle ($\beta = -.370$, $p < .01$) independently influenced mental well-being. However, need for parenthood ($\beta = -.043$, $p > .05$) and couple's relationship concern ($\beta = -.025$, $p > .05$) are not independently predicted mental well-being among the infertile males and females. The hypothesis is confirmed.

This means that people with infertility-related stress have high poor mental well-being as they come up with depression and rejection by people in the society and they develop high level of anxiety and fear. Therefore, infertility-related stress gives them high poor mental well-being.

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Hypothesis Four: Infertility-related-stress, coping strategies will jointly and independently influence mental well-being among the infertile males and females, hierarchical multiple regression analysis was used to test the hypothesis. The result is presented in Table 4.3.4.

Table 4.3.4: Summary of Multiple Regression table showing influence of infertility related stress and **coping strategies on mental well-being among the infertile males and females**

Variables	**B**	**T**	**P**	**R**	**R^2**	**F**	**P**
Social concern	-.318	-4.445	< .01				
Need for parenthood	-.044	-.858	> .05				
Rejection of childfree lifestyle	-.355	-6.819	< .01				
Couple's relationship concern	.032	.445	> .05	.650	.423	31.591	< .01
Problems	-.047	-.740	> .05				
Emotional	.173	2.514	< .05				
Avoidance	.057	.954	> .05				

From Table 4.3.4, the result indicates that, there is significant joint influence of infertility-related stress (social concern, need for parenthood, rejection of childfree lifestyle, and couple's relationship concern) and coping strategies on mental well-being among the infertile males and females, R^2 = .423, F (7, 302) = 31.59, p < .01. Also, 42 percentage variances observed in mental well-being is accounted for by infertility-related stress and coping strategies. From the same table social concern (β = -.318, p < .01), rejection of childfree lifestyle (β = -.355, p < .01), and emotional coping strategy (β = .173, p < .03) independently influenced mental well-being. However, need for parenthood (β = -.044, p > .05), couple's relationship concern (β =.032, p >.05), problem focused strategy (β = -.047, p > .05), and

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avoidance coping strategy (β = .057, p > .05) are not independently influence mental well-being among the infertile males and females. The hypothesis is confirmed.

This means that despite the stress attributed to or caused by the situation of infertility, the coping strategies adopted by the individuals in the dimensions of problem focus, emotional focus and avoidance have made them to have a good mental well-being and thrive well emotionally, psychologically and mentally as they pass through the challenges of childlessness. Though the infertility situation have the related-stress but the coping strategies sustained them resulting in good mental wellness.

4.4.Discussion of Findings

The study explored the impact of infertility-related stress and coping strategies on mental well-being among infertile males and females in Ibadan, Oyo State, South West Nigeria. The findings offer significant insights into how demographic factors, stress levels, and coping mechanisms influence the mental health of individuals dealing with infertility.

The demographic analysis revealed that a larger proportion of the participants were females (78.7%) compared to males (21.3%), with most respondents falling within the age range of 31-40 years (41.4%). The majority had secondary education (50.2%), and a significant portion (57.1%) had been dealing with infertility for 12-60 months. The ethnic distribution showed a dominance of Yoruba respondents (94.6%), which is reflective of the study's geographical focus. These demographic characteristics provide a comprehensive overview of the study population and are consistent with other regional studies on infertility.

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The results indicated a high prevalence of infertility-related stress among the respondents. The majority (70.2%) strongly agreed that parenthood was more important than having a satisfying career, and 76.9% were frightened by the prospect of a future without children. This highlights the cultural and personal significance of parenthood in the respondents' lives. Additionally, the high level of agreement on feeling like failures at sex (71.2%) and finding family gatherings difficult (62.4%) underscores the profound social and emotional impacts of infertility.

The study identified various coping strategies employed by respondents. A substantial number (71.2%) turned to work or other activities to divert their minds from infertility-related stress. Emotional support from others was also significant (62.5%). Interestingly, while a portion of respondents (48.1%) reported giving up trying to deal with infertility, the majority (76.9%) concentrated their efforts on actively managing their situation. This dichotomy in coping approaches highlights the varied ways individuals handle the stress associated with infertility[1].

The data revealed that a higher level of infertility-related stress correlated with poorer mental well-being. Respondents with high infertility-related stress (68.6%) had significantly lower mental well-being. This finding aligns with existing literature that links chronic stress to adverse mental health outcomes. It emphasizes the need for effective stress management and mental health support for individuals dealing with infertility[2].

The t-test analysis showed no significant difference between male and female respondents regarding mental well-being. This suggests that gender does not play a crucial role in

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determining the mental health impacts of infertility, indicating that both males and females experience similar levels of psychological distress[3].

Multiple regression analysis indicated that coping strategies significantly impacted mental well-being. Emotional-focused ($\beta = .216$, $p < .05$) and avoidance coping strategies ($\beta = .167$, $p < .05$) were significant predictors of better mental well-being. However, problem-focused coping did not independently predict mental well-being. This suggests that while certain coping mechanisms, particularly those that address emotional responses, can positively influence mental health, not all coping strategies are equally effective[4].

Infertility-related stress factors such as social concern ($\beta = -.361$, $p < .01$) and rejection of a childfree lifestyle ($\beta = -.370$, $p < .01$) were significant predictors of poor mental well-being. This finding underscores the profound impact of social and personal perceptions of infertility on mental health[5]. The need for parenthood and couple's relationship concerns did not independently predict mental well-being, indicating that broader social and cultural pressures may have a more substantial impact.

The hierarchical multiple regression analysis showed that both infertility-related stress and coping strategies jointly influenced mental well-being ($R2 = .423$, $F (7, 302) = 31.59$, $p < .01$). This indicates that while stress from infertility can significantly impair mental health, effective coping strategies can mitigate these effects[6]. Emotional-focused coping, in particular, emerged as a crucial strategy for maintaining mental well-being amidst infertility-related stress[7].

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The study highlights the intricate relationship between infertility-related stress, coping strategies, and mental well-being. While infertility poses significant stressors that adversely impact mental health, effective coping strategies, especially emotional-focused approaches, can play a vital role in sustaining mental well-being[8]. These findings emphasize the need for comprehensive support systems, including mental health services and coping skills training, for individuals dealing with infertility[9]. Addressing the social stigma and providing emotional support can significantly enhance the mental health outcomes for this population[10].

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Chapter Five

Conclusion

5.1 Summary of Findings

This study was conducted to investigate Infertility-related-stress and Coping Strategies as Predictors of Mental well-being among individuals with reproductive health challenges in Ibadan Oyo State Nigeria. This chapter would address the following; socio-demographic information; infertility related stress, coping mechanism and mental wellbeing among the male and female respondents. Other sub-sections are the implication of the findings to clinical psychologists as well as conclusion and recommendations.

78.7% of the respondent in this study were females with a range of age 21-60 which is similar to that of a study conducted by scholars.

The findings from this study also revealed that 65.8% of the respondents were of the Islamic faith this was contrary to that of the study conducted by scholars where majority 93.3% were of the Christian faith. 50.2% had secondary school as the highest level of education a findings similar to that of the study conducted by scholars. 94.6% of the respondents were Yoruba ethnic group as this may be attributed to the fact that this study was conducted at the southwestern region with a significant Yoruba population. Respondents with secondary infertility have a higher percentage of 55% than those with primary infertility of 45% similar to that of the study conducted by scholars.

5.2 Conclusion

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This study has provided significant insights into the impact of infertility-related stress and coping strategies on mental well-being among individuals in Ibadan, Oyo State, Nigeria. The high prevalence of infertility-related stress and the associated poor mental well-being highlight the urgent need for comprehensive psychological support. The study found that while coping strategies play a crucial role in managing stress, emotional-focused coping emerged as particularly beneficial.

The findings underscore the importance of addressing infertility-related stress through targeted psychological interventions, including cognitive behavioral therapy, coping skills training, and mindfulness-based approaches. Additionally, the study points to the need for integrated medical and psychological management strategies to support individuals facing infertility challenges effectively.

The overall Infertility related stress categorization of the respondents shows that 68.8% had high level infertility related stress this is similar to a study conducted by scholars in Ethiopia maybe because procreation is commonly important in most African countries. Coping skills of the respondent showed that 35.1% had avoidance coping, 33.6% had problem focus and 31.2% had emotional focus as their coping mechanism in dealing with their infertility related stress.

Majority, of the Female respondents had poor mental wellbeing compared to few of the male respondents who had poor mental wellbeing this may not be enough to make general conclusion as majority of the respondents were females. Overall, 68.8% of the respondents that have infertility related stress has poor mental wellbeing that means there is an association with infertility related stress and mental wellbeing this is similar to other research

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conducted along this line. Based on the findings of this study, there was high level of poor mental well-being associated with infertility despite the fact that 35.2% of the respondents had avoidance coping skills. Furthermore, 68.8% had high Infertility related stress which was a significant mental challenge on infertile males and females. Hence the findings from this study had a significant psychological implication and thereby the need for psychological interventions for tackling the identified mental health issues among individuals with reproductive health challenges

5.3 Recommendations

The findings of this study revealed the high prevalence of poor mental wellbeing and high infertility-related-stress.

Hence, there is a need for clinical psychologists to organize the following psychological intervention for individuals with reproductive health challenges to address their mental health concern:

1. **Develop and Implement Psychological Support Programs:** Develop Cognitive-Behavioral Therapy (CBT) programs tailored to address the specific stresses and anxieties related to infertility. Also, Implement mindfulness programs to help individuals manage stress and improve their mental well-being by establishing peer support groups where individuals can share their experiences and receive emotional support from others facing similar challenges.
2. **Training for Healthcare Providers:** Government should provide training for clinical psychologists on infertility-related mental health issues to ensure they are equipped to offer effective interventions and also to train reproductive health professionals to

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recognize signs of psychological distress in their patients and refer them to appropriate psychological services.

3. **Public Awareness Campaigns:** Government should provide an effective public campaigns about education on Mental Health and Infertility by launching public awareness campaigns to destigmatize infertility and mental health issues, encouraging individuals to seek help, and also promote Psychological Interventions to highlight the availability and benefits of psychological interventions for those experiencing reproductive health challenges.
4. **Research and Continuous Evaluation:** Conduct long-term studies to evaluate the effectiveness of psychological interventions in improving mental well-being and reducing stress related to infertility and regularly collect feedback from individuals undergoing these interventions to refine and improve the support programs.
5. **Policy Recommendations:** There should be the incorporation of Mental Health Services in Reproductive Health Clinics as a standard practice. Also, government Push for policies that ensure psychological interventions for infertility-related stress are covered by health insurance plans.
6. Also, the government should adopt a policy where medical management by medical personnel and psychological intervention by clinical psychologists can be jointly used to manage and alleviate the sufferings of the affected individual passing through the challenges of infertility.

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5.4 Contribution to Knowledge

The study on "Infertility-Related Stress and Coping Strategies as Predictors of Mental Well-being among Individuals with Reproductive Health Challenges" contributes significantly to the understanding of the complex relationship between infertility-related stress, coping mechanisms, and mental well-being. It highlights how stressors related to infertility can profoundly impact mental health, underlining the importance of identifying effective coping strategies to mitigate these effects. The findings suggest that certain coping strategies may either alleviate or exacerbate stress, thus influencing overall mental well-being. This insight is crucial for developing targeted psychological interventions that can help individuals better manage the emotional toll of infertility.

For future research, this study opens avenues for exploring the efficacy of specific coping strategies in improving mental well-being among those facing reproductive health challenges. It suggests the need for longitudinal studies to assess the long-term impact of these strategies and their potential role in preventing the onset of more severe mental health issues. Additionally, this research underscores the importance of personalized mental health support, tailored to the unique stressors and coping styles of individuals dealing with infertility, which could lead to more effective interventions and better outcomes in clinical settings.

5.5 Suggested Areas for Further Research

Based on the findings of this study, several areas warrant further investigation to deepen the understanding of infertility-related stress and coping strategies:

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1. **Longitudinal Studies**: Research exploring the long-term effects of infertility-related stress and coping strategies on mental well-being over extended periods could provide insights into the enduring impacts and effectiveness of different coping mechanisms.
2. **Cultural and Regional Variations**: Studies examining how cultural and regional differences influence infertility-related stress and coping strategies can help tailor interventions to diverse populations. This could include comparing findings across different regions or ethnic groups within Nigeria and other countries.
3. **Impact of Support Systems**: Investigating the role of social support systems, including family, friends, and community, in mitigating the effects of infertility-related stress could provide valuable information for developing more effective support structures.
4. **Comparison of Coping Strategies**: Research comparing the effectiveness of various coping strategies, such as emotional-focused versus problem-focused approaches, in different contexts could help identify the most effective methods for improving mental well-being among individuals with infertility.
5. **Intervention Effectiveness**: Evaluating the efficacy of specific psychological interventions, such as cognitive behavioral therapy and mindfulness-based therapy, in improving mental well-being among individuals with infertility-related stress could guide the development of targeted therapeutic approaches.
6. **Gender Differences**: Further research could explore any subtle gender differences in the experience of infertility-related stress and the effectiveness of coping strategies to understand whether tailored interventions are needed for males and females.

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  Anglican Grammar School 1989
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- **Health Counsellor** (Part time) 2012 to date
  Career and Health Information Consult
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- **Research Nursing Officer**
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  College of Medicine,
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The University Compliance Certification

This is to certify that, this thesis by Adedunsi Aderonke ABOLUSODUN with matriculation number LCU/PG/002877 in the Department of Psychology, Faculty of Management and Social Sciences, Lead City University, Ibadan, is in full compliance with the approved university format and style.

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Signature **Date**