



Lead City Journal of the Social Sciences (LCJSS)

Faculty of Management and Social Sciences
Lead City University, Ibadan

ISSN: 2449092X
Volume 11 (No. 1) / Feb. 2026

Teachers' Motivational Strategies and Productivity in Selected Secondary Schools in Akinyele Local Government, Oyo State, Nigeria

Abdulahi Abiola Olaniyi

Prospecting Digital HR for Sustainable Local Government Administration in Nigeria

Oluwatomisin Joy Popoola and Akeem Amodu, PhD

Digital Transformation and Operational Efficiency in Local Government Administration of Oyo State

Adenike Olufunmilayo Odunsi, PhD and Oladunni Ajoke Akinola, PhD

Exploring the Relationship between Work Expectations and Employee Retention among Generation Z in Selected Small and Medium Enterprises in Nigeria.

Aderounmu G.A, Oni K. A, Otegbade T.O and Shonola Olayinka Sakirat

Infertility-Related- Stress and Coping Strategies as Predictors of Mental Well-being among Individuals with Reproductive Health Challenges in Ibadan Oyo State Nigeria

Aderonke Abolusodun and Johnson T. Oyeleke PhD

Building Psychological Resilience and Mental Health Support Systems for a Sustainable Future of Work in Nigeria

Abiona, Olabisi Modupe & Bamidele, Motunrayo Oluwagbemisola

Human Capital Development and Organizational Performance in Selected Manufacturing Companies in Nigeria

Olusola James Oladejo, Mary Etigale Ochom & Opatotun Tunde Adewumi

Enhancing Crop Yields through Credit Access among Female Smallholder Farmers in Ogun State, Nigeria

Adeyemi Olaoluwa Bamigboye and Tina Akinbo (PhD)

Digital Banking and Financial Inclusion in Nigeria

Adewumi Moyosore Akingbade, Opatotun Tunde Adewumi, and Ibikunle Oladipupo Ibadapo

Editor-in-Chief: Prof. Omolara Campbell
Editor: Dr. Omoseni Adepoju

Associate Editors

Dr. Tosin Adesina
Dr. Tina Akinbo
Dr. Tunde Onamusi
Dr. Olufemi Badru
Dr. O. S. Falase
Dr. Olorunfemi Y. Alimi

Advisory Board

Prof. 'Jide Owwoeye	Lead City University, Ibadan, Nigeria
Prof. Kabiru A. Adeyemo	Lead City University, Ibadan, Nigeria
Prof. Toyin Falola	University of Texas, Houston
Prof. Uche Isiugo-Abanihe	Lead City University, Ibadan, Nigeria
Prof. Bola Akanji	University of Connecticut, United States
Prof. J. J. Asongu	St. Monica University, Buea, Cameroon
Prof. Olatundun Adelegan	UN Women Suomi, Helsinki, Finland
Prof. B. A. Folorunso	Obafemi Awolowo University, Ile-Ife, Nigeria
Prof. Phillip Alege	Covenant University, Ota, Ogun State, Nigeria
Dr. Folasade Ayorinde	Green Climate Fund Songolo, South Korea
Dr. Taiwo Ajilore	Central Bank of Nigeria
Dr. Michael Ogunseyin	University of Wolverhampton, United Kingdom

Correspondence

The Editor-in-Chief
Lead City Journal of the Social Sciences (LCJSS)
Faculty of Management and Social Sciences
Lead City University, Ibadan, Nigeria
www.lcu.edu.ng/index.php/lead-city-journal-of-the-social-sciences
e-mail: (i) editor.lcjss@gmail.com
(ii) campbell.omolara@lcu.edu.ng
(iii) omolaracampbell@yahoo.com
+2348033176177, +2348033234042

Published by
Lead City University, Press
Beside Methodist School, Toll-Gate Area, Lagos-Ibadan Express Way, Ibadan
07064671658, 08036694838
lcupress23@gmail.com

Lead City Journal of the Social Sciences (LCISS) ISSN: 2449092X

About the Journal

LCISS is intended for scholars who wish to report results of completed or on-going research, reviews of literature and discussions of theoretical issues or policy. Its primary objective is to provide a forum for the exchange of the ideas across disciplines and academic orientations in the social sciences.

The journal is an open access peer reviewed journal that provides bi-annual publication of articles in the social sciences. The editorial board is made up of reputable scholars from various universities around the world. All correspondence should be addressed to the Editor-in-Chief, Lead City Journal of Social Sciences (LCJSS), Lead City University, Ibadan, Nigeria.

Guidelines for Contributions

Authors should note that any article to be submitted for publication must comply with the following standard:

- The manuscript content must not be more than 15 pages. Any violation of this rule will be subjected to extra charges.
- Abstract (in italics) should be a maximum of 250 words with a minimum of 3-5 keywords.
- The title and author(s) details should be on the first page. This should include telephone numbers and e-mail contacts.
- Author's name should be written in the following order: first name, other name and surname.
- The body of text should be in Times New Roman, properly justified in 12 pt. with 1.5line spacing.
- Referencing style is APA, 7th edition. All references should be listed in alphabetical order at the end of the article.
- The format for the body of article is: Introduction, Literature Review, Methodology, Results and Discussion, Conclusion and References. Also, authors should know that they are responsible for ensuring that:
 - i. The manuscript had been submitted only to this journal, i.e. It is not under consideration or peer review or accepted for publication or in press or published elsewhere;
 - ii. The manuscript contains nothing that is abusive, defamatory, libelous, obscene, fraudulent or illegal.

Non-compliance with any of the latter three conditions will be considered misconduct and dealt with accordingly.

The author or lead author of an article is entitled to one copy of the LCJSS in which his/her article appears. Authors of the accepted papers shall pay a processing fee of N10,000 (Ten thousand naira only) and publication fee of N35,000 (thirty-five thousand naira only).

Any author who wishes to publish his/her article in the journal should contact:

The Editor-in-Chief

Contents

Teachers' Motivational Strategies and Productivity in Selected Secondary Schools in Akinyele Local Government, Oyo State, Nigeria

Abdulahi Abiola Olaniyi 5

Prospecting Digital HR for Sustainable Local Government Administration in Nigeria

Oluwatomisin Joy Popoola and Akeem Amodu, PhD 18

Digital Transformation and Operational Efficiency in Local Government Administration of Oyo State

Adenike Olufunmilayo Odunsi, PhD and Oladunni Ajoke Akinola, PhD 28

Exploring the Relationship between Work Expectations and Employee Retention among Generation Z in Selected Small and Medium Enterprises in Nigeria.

Aderounmu G.A, Oni K. A, Otegbade T.O and Shonola Olayinka Sakirat 43

Infertility-Related- Stress and Coping Strategies as Predictors of Mental Well-being among Individuals with Reproductive Health Challenges in Ibadan Oyo State Nigeria

Aderonke Abolusodun and Johnson T. Oyeleke PhD 59

Building Psychological Resilience and Mental Health Support Systems for a Sustainable Future of Work in Nigeria

Abiona, Olabisi Modupe & Bamidele, Motunrayo Oluwagbemisola 78

Human Capital Development and Organizational Performance in Selected Manufacturing Companies in Nigeria

Olusola James Oladejo, Mary Etigale Ochom & Opadotun Tunde Adewumi 89

Enhancing Crop Yields through Credit Access among Female Smallholder Farmers in Ogun State, Nigeria

Adeyemi Olaoluwa Bamigboye and Tina Akinbo (PhD) 105

Digital Banking and Financial Inclusion in Nigeria

Adewumi Moyosore Akingbade, Opadotun Tunde Adewumi, and Ibikunle Oladipupo Ibidapo 120

Infertility-Related- Stress and Coping Strategies as Predictors of Mental Well-being among Individuals with Reproductive Health Challenges in Ibadan Oyo State Nigeria

Aderonke Abolusodun and Johnson T. Oyeleke PhD

*Department of Psychology, Faculty of Management and Social Sciences,
Lead City University, Ibadan Oyo State.*

Abstract

This study explored the Infertility- Related- Stress and Coping Strategies as predictors of Mental Well-being among infertile males and females in Ibadan. The study adopted a descriptive cross sectional research design using probability sampling of simple random to recruit 333 males and females going through issues of infertility at selected four hospitals in Ibadan. Respondents' ages ranged from 21 to 60. Sample size was determined using Taro and Yamani 1967 formula. Data was collected using reliable and valid measures of mental well-being, Infertility-Related-Stress and coping strategies. Four hypotheses were tested. 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 ($t(322) = -.220$, $p > 0.05$). There is significant joint impact of problem focused, emotional focused, and avoidance coping strategies on mental well-being among the infertile males and females, $R^2 = .091$, $F(3,315) = 10.457$, $p < .01$. There is significant joint influence of infertility-related stress (social concern, need for parenthood, rejection of child free lifestyle, and couple's relationship concern) on mental well-being among the infertile males and females, $R^2 = .386$, $F(4, 314) = 49.34$, $p < .01$. Age does not significantly influence mental well-being $F(1, 308) = 1.32$, $p > .05$. There is significant joint prediction of age and infertility-related stress on mental well-being $F(5, 304) = 40.00$, $p < .01$. There is significant joint prediction of age, infertility-related stress and coping strategies on mental well-being $F(8, 301) = 27.61$, $p < .01$. It was recommended that these variables should be considered when designing intervention to improve mental well-being of every individual passing through the challenges of infertility.

Keywords: Infertile Males and Females, Infertility- Related-Stress, Coping Strategies, Mental Well-Being.

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 problems exist along a continuum from mild, time-limited distress to chronic, progressive and severely disabling conditions. High marital conflicts as experienced by couples with reproductive health challenges and attendant low psychosocial support may be reinforcing factors in Africans, who place a high premium on childbearing. 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. 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 reproductive health challenges and they can, for diverse reasons, suffer from depression. Infertility can be caused by either the man or the woman, and in certain cases, both. Impaired infertility impacts 10-17% of couples. In forty percent of couples with reproductive health challenges, the primary cause of the 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. 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 affects an estimated 10 to 15% of reproductive age, worldwide. A previous studies 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. 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. In addition, 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. A possible explanation for these results may be that women feel more responsible and guilty than men during the process of trying to conceive, as a result, women with infertility are exposed to greater social pressure and stigma. 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. The impact of infertility-related stress on treatment results 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. 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. 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 women with reproductive health challenges. 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.

Statement of the Problem

Over the years, infertility-related stress and 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 problems faced by 1 in 10 couples. It is defined by scholars as failure to conceive after a series of regular, unprotected sexual intercourse for 1 year 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. 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 sequelae and co-morbidities among Nigeria infertile population. Currently, it is estimated that as many as 80 million males and females are affected by infertility worldwide. It is also noteworthy that infertility cases are known to be of two forms of 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. The uniqueness of this study is hinge on the wellbeing of both male and female as the identified problem is not gender specific especially women in the following studies.

Objectives

The objective 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.

Research Questions

The following research questions were raised to 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?

Hypotheses of the Study

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

Ha₁: Gender differences will significantly affect mental well-being among individuals with reproductive health challenges in Ibadan

Ha₂: There will be a positive significant impact of coping strategies on mental well-being among the participants.

Ha₃: There will be influence of infertility-related-stress on mental well-being among individuals with reproductive health challenges.

Ha₄: Infertility-related-stress, coping strategies will jointly and independently influence mental well-being among the participants.

Literature Review

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 their views showed there is positive relationship between the two terms. The review is presented under the following sub-headings

Concept of Mental Well-being

Mental well-being is difficult to define 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 (Oyewunmi et al., 2015). Scholars identify six dimensions of well-being (wellness) which are physical well-being, psychological wellness, spiritual wellness, social wellness, intellectual wellness and occupational wellness (Bill, 2023).

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 (White,2016). 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 (WHO,2020). 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. 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 (WHO, 2020).

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, anemia, 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 (Jain et al., 2022).

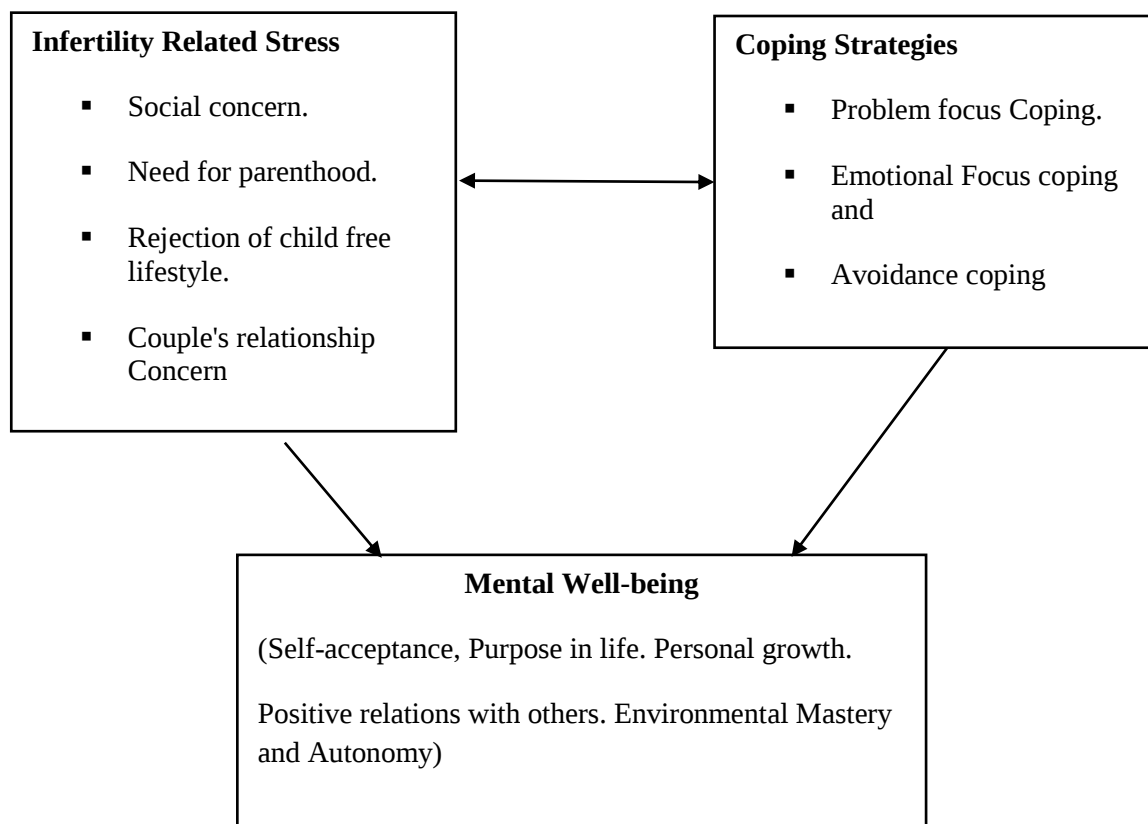
Malefactor: Several factors can contribute to male-factor infertility, including low sperm concentration, low motility, and physically defective sperm. It is estimated that 2-7% of males will have poor sperm parameters (Gebeh & Metwally 2017). Numerous factors have been linked to infertility, including 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 anti-seizure medications), nutritional deficiencies, smoking and excessive alcohol consumption, and a host of other risk factors have been linked to infertility (Shekhawat, 2012).

Review of Empirical Studies

Humans grow up believing that stress causes fertility. Infertility causes severe distress, and psychological therapies are likely to lessen depression while increasing pregnancy rates. 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 (Taheri et al 2012). 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. From the above 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.

Conceptual Framework

Source: Authors Fieldwork, 2023



Methodology

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. 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, Southwest 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 gynecological 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.

Table 1 Showing Distribution of the Population of the 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

Source: Authors field work, 2023

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 gynecological 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. The register of those outpatients reporting to the gynecological 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 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 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
	Total	1980	333

Source: Authors Field work, 2023

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.

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. 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

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 ($\alpha=0.88$) 4, 8, 13, 16, 19, 21, 22, 25, 26, 27, Need For Parenthood ($\alpha= 0.78$), 1, 2, 3, 15, 18, 24, Rejection Of Childfree Lifestyle ($\alpha=0.70$), 5, 11, 12, 14, 17, 23, and Couple's Relationship Concern ($\alpha= 0.70$) 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 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.

Validity of Research Instruments: Validation was 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.

Reliability of Research Instruments: 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.

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 6 weeks. The researcher was assisted by four well-trained

research assistants. In cases of illiterate respondents, the research assistants extracted the information from the patients in form of interviews.

Method of Data Analysis

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.

Ethical Considerations: The ethical consent was obtained from the Ministry of Health, Oyo State Hospitals Management Board Oyo State, Ibadan.

Results and Discussion of Findings Demographic Characteristics of the Respondents

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 31-40 years, 72 [21.6%] were 41-50 years and 13 [3.9%] were 51-60 years. 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 for 12-60 months, 117 [35.1%] 61-120 months, 20 [6.0%] 121-180 months 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. 228 [68.5%] had been attending infertility clinic between 1-12 months and 105 [31.5%] between 13-24 months. 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 3. 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

Table 4. 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

Table 5. 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

Table 6 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, 2023

Presentation of Data Prevalence of Assessment of infertility related stress among the respondents, 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 than having a satisfying career”. When asked 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 respondents 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 asked 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.

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”. 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 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 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.

Table7. 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)

Source: Authors Fieldwork, 2023

Hypothesis One: Gender differences will significantly affect mental well-being among the infertile males and females was analyzed with a t-test of independent sample. The result is presented in Table 8

Table 8. 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			

Source: Authors Fieldwork, 2023

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

Table 9. 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				

Source: Authors Fieldwork, 2023

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 ($\beta = .216$, $p < .05$) and avoidance ($\beta = .167$, $p < .05$) independently predicted mental well-being. However, problem focused ($\beta = -.113$, $p > .05$) 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 techniques they were able to thrive well in their childless 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 below:

Table 10. 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	-	< .01	.621	.386	49.340	< .01
		5.326					
Need for parenthood	-.043	-.841	> .05				
Rejection of childfree lifestyle	.370	7.276	< .01				
Couple's relationship concern	-.025	-.357	> .05				

Source: Authors Fieldwork, 2023

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 percent 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 levels of anxiety and fear. Therefore, infertility-related stress gives them high poor mental well-being.

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 Table 11.

Table 11. 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				

Source: Authors Fieldwork, 2023

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 percent variances observed in mental well-being is accounted for by infertility-related stress and coping strategies. From the same table social concern ($\beta = -.318$, $p < .01$), rejection of childfree lifestyle ($\beta = -.355$, $p < .01$), and emotional coping strategy ($\beta = .173$, $p < .03$) independently influenced mental well-being. However, need for parenthood ($\beta = -.044$, $p > .05$), couple's relationship concern ($\beta = .032$, $p > .05$), problem focused strategy ($\beta = -.047$, $p > .05$), and avoidance coping strategy ($\beta = .057$, $p > .05$) 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 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 has the related- stress but the coping strategies sustained them resulting in good mental wellness.

Discussion and Summary 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. 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. 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. 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 determining the mental health impacts of infertility, indicating that both males and females experience similar levels of psychological distress. 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. 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 health⁵. The need for parenthood and couple relationships 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 ($R^2 = .423, F(7, 302) = 31.59, p < .01$). This indicates that while stress from infertility can significantly impair mental health, effective coping strategies can mitigate these effects⁶. Emotional-focused coping emerged as a crucial strategy for maintaining mental well-being amidst infertility-related stress. The findings from this study also revealed that 65.8% of the respondents were of the Islamic faith, which 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 finding like 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% like that of the study conducted by scholars.

Conclusion

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.

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.
2. Training for Healthcare Providers
3. Public Awareness Campaigns
4. Research and Continuous Evaluation
5. 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 suffering of the affected individual passing through the challenges of infertility.

References

- Abbey, A., Andrews, F.M., & Halman, L.J.(1991). Gender's Role in Responses to Infertility. *Psychology of Women Quarterly*, 15, (2) pp. 295–316 <https://doi.org/10.1111/j.1471-6402.tb00798.x>
- Abdulmalik, J., Kola, L., & Gureje, O. (2016). Mental Health System Governance in Nigeria: Challenges, Opportunities and Strategies for Improvement, *Global Mental Health*, 3 (9). <https://doi.org/10.1017/gmh>.
- ACOG Committee Opinion. (2018). Aromatase Inhibitors in Gynecologic Practice. *Obstetrics and Gynecology*, 131, (6).
- Adegbola, O., & Akindele, M.O. (2013). The pattern and challenges of infertility management in Lagos, Nigeria, *African Health Sciences*, 13 (4), pp. 1126-1129.
- Adegoke, A. A., & Mang, E.S.(2021). Infertility-Related Stress and Coping Strategies among Infertile Women in Southwest Nigeria, *African Journal of Reproductive Health*, 25(2), pp. 34-45.
- Anochie, I., & Nkanginieme, K. (2020). The Impact of Infertility on Mental Health and Marital Relationships in Nigerian Couples, *Nigerian Medical Journal*, 61(3), pp. 205-212.

- Barratt, C.L.R., & Cooke, I.D. (1993). *Donor Insemination*, Cambridge University Press, ISBN: 0-521-40433-9.
- Bergstrom, S.C., Lawson, J.B., Harrison, K.A., & Bergstrom, S.(2001). *Maternity Care in Developing Countries*. .
- Bill, H. (2023). *Six Dimensions of Well-being (Wellness)*. Health & Wellness. <https://libguides.tcu.edu/WellnessGuide>.
- Bodenmann, G., Charvoz, L., Widmer, K., & Bradbury, T.N. (2020). Differences in Coping Strategies among Male and Female Partners in Infertile Couples, *Journal of Family Psychology*, 18, (4), pp. 523-531.
- Flakseir, A.A., & Zarei, M. (2013). Association Between Coping Strategies and Infertility Stress among a Group of Women with Fertility Problem in Shiraz, Iran, *Journal of Reproduction and Infertility*, 14 (4), pp. 202-206.
- Folkman, S., & Lazarus, R.S., (1988). *Appraisal and Coping*, 2nd edition, New York, Springer, pp. 23- 36.
- Oyewunmi, O.O., & Alanine, Y.O. (2015). Mental health and the Nigerian workplace: Fallacies, Facts and the Way Forward, *International Journal of Psychology and Counselling*, 7 (7), pp. 106-111
- Shariat, Z.M.A. (2000). *Presenting Socio- Psychological Solutions for infertility*. Tehran Essay Abstracts of the Symposium on Environmental Factors Effecting Infertility.
- Taebi, M., Kariman, N., Montazeri, A., & Alavi, M.H. (2021). Infertility Stigma: A Qualitative Study on Feelings and Experiences of Infertile Women, *International Journal of Fertility and Sterility*, 15 (3), pp. 189-196. DOI: 10.22074/IJFS.2021.139093.1039