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Causes, Effects and Management of Infertility Among Reproductive Women in Karim Lamido Local Government Area of Taraba State-Nigeria

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Abstract

This study examined the causes, effects and management of infertility among reproductive women in Karim Lamido Local Government Area of Taraba State. Data were collected from the primary source using survey research design. A sample of 385 respondents was drawn and used to represent the entire population of the study. The research instrument was validated and tested using Alpha cronbach with the reliability coefficient of 0.84. Data collected were analyzed using descriptive statistics of frequency, simple percentage, mean and standard deviation. The results showed: endocrine defect, unsafe abortion, excessive use of illegal drugs and Obesity are the main causes of infertility. The study also found that shame and anxiety, psychological problem, divorce and stigmatization are the main effects of infertility among women of reproductive age. Recommendations: Public enlightenment programmes relating to an understanding of infertility, and access to relevant services should be developed as part of reproductive health education to include recognition of infertility (or sub-fertility) as a result of obesity, smoking, delayed childbirth (men and women), increased sexual activity/partners without use of barrier methods, early menopause due to family history, cancer before or during reproductive years, and other factors; infertility services covering a comprehensive range of fertility strategies should be complementary to population policies and programmes of maternal and child health.

Keywords: Causes, Effects, Management, Infertility, Reproductive Age.

Introduction

Childbearing and raising of children are extremely important events in every human's life and are strongly associated with the ultimate goals of completeness, happiness and family integration (John, 2019). It is widely accepted that human existence reaches completeness through a child and fulfils the individual's need for reproduction. Human fertility, compared with other species of animal kingdom, is unfortunately low (WHO, 2018). According to recent studies by the World Health Organization (2018) approximately 8-10% of couples are facing some kind of infertility problem. Globally, this means that 50-80 million people are facing the problem of getting an integrated family. In the USA, approximately 5 million people have infertility problems, while in Europe the incidence is estimated around 14% (WHO, 2018).

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The incidence of infertility is associated with geographic differences. For example, in some west-African communities infertility rate is around 50%, while in some western European countries is 12% (WHO, 2018). Likewise, differences are observed both in developed countries, where rates range from 3.5% to 16.7%, as well as in less developed countries, where rates of infertility range from 6.9% to 9.3% (WHO, 2018). It has also been observed that the causes are related to geographical differences especially in Western countries, the most common risk factor of infertility is age, while in Africa is sexually transmitted diseases (WHO, 2018). In the past infertility has been a threat to marriages but with advances in medical technologies, it has been a simple things to deal with. The woman value to her husband is determined by her ability to bear children who will contribute to the of the family in Karim Lamido part of the Taraba state a woman can easily be divorced for her inability to bear children even if a man is the major cause of the problem (Wilie, 2019).

Globally, infertility is generally quoted as occurring in 8-12 of couples. However, the incidence varies from one religion of the world to the others, being highest in so called infertility belt of Africa that including Nigeria (Okonofua, 2018). In contrast to an average prevalence rate of 1-15% in the developed countries, the prevalence of infertility has been notable highly variable in sub-Sahara Africa ranging from 20-46%. This has been attributed to high rate of sexually transmitted disease, complications of unsafe abortion and puerperal pelvic infections (WHO, 2019). About 30% to male problems 30% to combined male and female problems while in 10% there is no recognizable cause (WHO, 2020). Currently in Taraba State about 20% of couples struggle with infertility at any giving time (Mohammed, 2018). Infertility has increased as a problem over the last 30 years, the blames for this increase on social phenomena including the tendency for married to occur at later age (Mohammed, 2018). In addition, the author further affirmed that, it is well known that fertility in women decrease with increasing ages, as illustrated by the following statistics

i.   Infertility in married women ages 16-2 = 34.5%
ii. Infertility in married women ages 35-40 = 31.8%
iii. Infertility in married women ages 40 = 70%

Makers (2018) conducted a study on the evaluation of infertility nowadays, individual often have multiple sexual partners before getting married and try to have children. This increase in sexually transmitted disease causing a form of these infections especially from pelvic inflammatory disease (PID).A serious infection of female reproductive organ, mostly cause by gonorrhea seems to be in part responsible for the increase in fertility. Furthermore, more use of some contraceptives called intrauterine contraceptive device (IUCD) contributed to an increase rate of infection. To understand issue of infertility, it is first necessary to understand the basic of human reproduction, fertilization occur when a sperm from female forming a zygote that contain genetic material (DNA) from both the father and the mother if pregnancy is then established, the zygote will developed into an embryo then a fetus and ultimately a baby will born. The male contribution to fertilization and establishment of pregnancy is the sperm. Infertility can happen if there are problems associated with human reproduction stated above (WHO, 2018).

Infertility is not always women problem, both male and female can have problem that causes infertility, about one-third of infertility are cause by women problem and another one-third is due to the man's problem. Infertility is important to family and society at large, this is why infertility has posed so many pains anxiety and shame to many families that have felling a victims victim of its children are gift from God and they support their parent in their life time especially at old age (WHO, 2018). The cause of infertility has to be cooked into, in order to proffer solution to as many couples as possible so as to reduce the burden in couples that are already victims to it (WHO, 2018).

Infertility has become a source of problem to many couples in Karim Lamido Local Government Area, Taraba State as there are new cases reporting almost daily in their gynecology and obstetrics unit. Starting family is a time of joy and excitement to young married couples. But, inability to conceive after one year when all efforts seem to be abortive, infertility affects married in so many ways which include: Economic constraint: where the couples think of paying for in vitro fertilization, surrogacy, treatment as well as genetic testimony testing can put a strain on the strongest of marriage; irrevocably breakdown of marriage: women get isolated from their spouse which eventually led to a divorce

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Aim and Objectives of the Study
The main aim of this study is to examine the causes, effects and management of infertility among reproductive women in Karim Lamido Local Government Area of Taraba State. The specific objectives sought to:
i. Identify the causes of infertility among reproductive women in Karim Lamido Local Government Area.
ii. Examine the effect of infertility among reproductive women in Karim Lamido Local Government Area.
iii. Ascertain the preventing measures of infertility among reproductive women in Karim Lamido Local Government Area.

Research Questions
This study was guided by the following research questions:
i. What are the causes and risk factors responsible for infertility among reproductive women in Karim Lamido Local Government Area?
ii. What are the effects of infertility among reproductive women in Karim Lamido Local Government Area?
iii. What are the preventive measure and strategies that will aid in reducing infertility among reproductive women in Karim Lamido Local Government Area?

Literature Review
Conceptual Clarifications
The Concept of Infertility
Infertility is defined as the inability to conceive naturally after one year of regular unprotected intercourse. Most of the time, infertility is some degree of sub-fertility in which 1 in 7 couples need specialist help to conceive. Sub-fertility can be either primary or secondary. Primary sub-fertility is a delay for a couple who have had no previous pregnancies; and, secondary sub-fertility is a delay for a couple who have conceived previously, although the pregnancy may not have been successful for example, miscarriage, and ectopic pregnancy. The "Demographers tend to interpret (define) infertility as childlessness in a population of women of reproductive age", whereas "the epidemiological definition refers to "trying for" or "time to" a pregnancy in a population of women exposed to a probability of conception (John, 2019). A female is most fertile within age 24 and diminishes after 30, with pregnancy occurring rarely after age 50 (WHO, 2018). Both infertility and subfertility are defined as the inability to conceive after a certain period of time (the length of which vary), so often two terms overlap (WHO, 2018).

World Health Organization (2010) defines infertility as a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular sexual intercourse (as there is no other reason, such as breastfeeding or postpartum amenorrhea). Primary infertility is infertility in a couple who have never had a child. Secondary infertility is failure to conceive following a previous pregnancy. Infertility may be caused by infection in the man or woman, but often there is no obvious underlying cause (WHO, 2018).

Primary infertility is defined as the absence of a live birth for women who desire a child and have been in a union for at least 12 months, during which they have not used any contraceptives (Ademi, 2020). Accordingly, WHO (2018) adds that woman whose pregnancy spontaneously miscarries, or whose pregnancy results in a still born child, without ever having had a live birth would present with primarily infertility. Secondary infertility is defined as the absence of a live birth for woman who desires a child and has been in a union for at least 12 months since their last live birth, during which they did not use any contraceptives (WHO, 2018).

Infertility is defined as the inability of getting pregnant after trying for at least 6 months or one year, for women over 35 years old, without use of birth control means and while having normal sexual intercourse. Assisted reproduction includes all the methods used for fertilization, which is not achieved through sexual intercourse (Femi, 2018).

According to Biochem (2018) infertility is a disease characterized by the failure to establish a clinical pregnancy after 12 months of regular and unprotected sexual intercourse. It is estimated to affect between 8

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and 12% of a reproductive age couples worldwide. Male are found to be solely responsible for 20-30% of infertility cases but contributed to 50% cases overall. Secondary infertility is the most common form of female infertility around the globe, often due to reproductive treat infection. The three major factors influencing spontaneous probability of conception are the age of a female partner and the disease related infertility; the chance of becoming spontaneous pregnant declines with the duration before conception. The infertility decline in female already stated around 25-30 years of age and median age at last birth is 40-47 years in most studied population experiencing natural infertility (WHO, 2018).

Causes of Infertility among women of reproductive age

According to the Center of Disease Control (CDC, 2013), the causes of female infertility can be divided into three broad categories including defective ovulation, transport and implantation. These categories are further discussed below in detail.

Defective Ovulation

Defective ovulation occurs because of the following causes:

Endocrine disorders: The dysfunction of hypothalamus and pituitary gland can lead to an excess amount of prolactin, this may prevent ovulation. Moreover, other endocrine glands including adrenals and thyroid may also delay ovulation. When the corpus luteum, fails to produce enough progesterone required to thicken the uterine lining, the fertilized egg may not be able to implant, thus leading to infertility.

Physical disorders: Certain physical disorders such as obesity, anorexia nervosa, and excessive exercise may lead to overweight or malnutrition, and later the menstrual cycle, thus make the couple infertile.

Ovarian disorders: Polycystic ovarian disease (PCO) can lead to infertility because of an increased amount of testosterone and LH and decrease uptake of glucose by muscle, fat and liver cells resulting in the production of large amounts of insulin by the pancreas. Low FSH levels also hinder the production of eggs from the ovarian follicles, and lead to form fluid-filled ovarian cysts that eventually cover the whole ovaries and prevent conception.

Endometriosis: This refers to a condition in which sections of the uterine lining implant in the vagina, ovaries, fallopian tubes or pelvis. These implants form fluid- filled cysts that grow with each menstrual cycle, and eventually turn into blisters and scars. These scars then block the passage of the egg and delay pregnancy.

Predisposing or Risk Factors of Infertility

Medical Factors:

  i.   Unsafe abortion
 ii.   Delayed diagnosis and treatment of pelvic inflammatory disease
iii.   In adequate treatment of pelvic infection
 iv.   Circumcision (WHO, 2018).

Social Factors

  i.   Multiple sexual partner (Risk of STI/HIV/AID).
 ii.   Polygamy
iii.   Prostitution
 iv.   Advanced age at marriage
  v.   Couple living apart
 vi.   Smoking and drinking alcohol
vii.   Wearing tight pant or nylon pants
       (Reproductive health textbooks for all ages, fourth edition, 2017).

Effects of Infertility

Psychological effect

The consequences of infertility are manifold and can include social repercussions and personal suffering. Advances in assisted reproductive technologies, such as IVF, can offer hope to many couples where treatment is available, although barriers existed in terms of medical coverage and affordability. The medicalization of infertility has unwittingly led to a disregard for the emotional responses that couples experience, which include distress, loss of control, stigmatization, and a disruption in the development of trajectory of adulthood (WHO, 2018). Infertility may have profound-psychological effects. Partners may

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become more anxious to conceive, increasing sexual dysfunction. Marital discord often develop in infertile couples, especially when they are under pressure to make medical decisions. Woman trying to conceive often have clinical depression rates similar to women who have heart disease or cancer (John, 2019). Even couples undertaking IVF face considerable stress; the emotional losses created by infertility include the denial of motherhood as a rite of passage; the loss of one's anticipated and imagined life; feeling of loss control over one's life; doubting one's womanhood; changed and sometimes loss of friendship; for many, the loss of one's religious environment as a support system (WHO, 2018). In addition, the emotional stress and marital difficulties are greater in couples where the infertility lies with the man.

Societal and Social Effects

In many cultures, inability to conceive bears a stigma. In closed social groups, a degree of rejection (or a sense of being rejected by the couple) many cause considerable anxiety and disappointment. Some respond by actively avoiding the issue altogether; middle-class men are the most likely to respond this way (WHO, 2018). In an effort to end the shame and secrecy of infertility according to Redbook in October 2011 who launched a video campaign, in a survey of couples having difficulty conceiving, conducted by the Pharmaceutical Company Merk (2016), 61 percent of respondents hid their infertility from family and friends (WHO, 2018). Nearly half didn't even tell their mothers. The message of those speaking out: it's not always easy to get pregnant, and there is no shame in that. There are legal ramifications as well. Infertility has begun to more exposure in legal domain. An estimated 4 million workers in the U.S. used the Family and Medical Leave Act (FMLA) in 2004 to care for a child, parent or spouse, or because of their own personal illness. Many treatments for infertility, including diagnostic tests, surgery and therapy for depression, can qualify one for FMLA leave. It has been suggested that infertility be classified as a form of disability (WHO, 2018).

Treatment of Infertility

Treatment depends on the cause of infertility, but may include counseling, fertility treatments, which include in vitro fertilization. According to ESHRE recommendations, couples with an estimated live birth rate of 40% or higher per year are encouraged to continue aiming for a spontaneous pregnancy (WHO, 2018).Treatment methods for infertility may be grouped as medical or complementary and alternative treatments. Some methods may be used in concert with other methods. Drugs used for both women and men include clomiphene citrate, human menopausal gonadotropin (hMG),follicle stimulating hormone (FSH), human chorionic gonadotropin (hCG), gonadotropin releasing hormone (GnRH) analogues, aromatase inhibitors, and metformin. Medical treatment of infertility generally involves the use of fertility medication, medical device, surgery, or a combination. If the sperm are of good quality and the mechanics of the woman's reproductive structures are good (patent fallopian tubes, no adhesion or scarring), a course of stimulating medication may be used.

The physician or WHNP may also suggest using a conception cap-cervical cap, which patient uses at home by placing the sperm inside the cap and putting the conception device on the cervix, or intrauterine insemination (IUI), in which the doctor or WHNP introduces sperm into uterus during ovulation, via catheter .In these methods fertilization occurs inside the body (WHO, 2018). If conservative medical treatments fail to achieve full time pregnancy, the physician or WHNP may suggest the patient undergo in vitro fertilization (IVF). IVF and related (ICSI, ZIFT, GIFT) are called assisted reproductive technology (ART) techniques. ART techniques generally start with stimulating ovaries to increase eg. Production. After stimulation, the physician surgically extracts one or more eggs from the ovary, and unites them with sperm in a laboratory setting, with the intent of producing one or more embryos. Fertilization takes place outside the body, and the fertilized egg is reinserted into the woman's reproductive tract, in a procedure called embryo transfer. Other medical techniques are e.g. turboplasty, assisted hatching, and Pre-implantation genetic diagnosis (WHO, 2018). IVF is the most commonly used ART. It has been proven useful in overcoming infertility conditions, such as blocked or damaged tubes, endometriosis, repeated IUI failure, unexplained infertility, poor ovarian reserve, poor or even nil sperm count. ICSI (Intracytoplasmic sperm injection) technique is used in case of poor semen quality, low sperm count or failed fertilization attempts during prior IVF cycles. This technique involves an injection of a single healthy sperm directly injected into mature egg. The fertilized embryo is then transferred to womb (WHO, 2018). Medical or Fertility tourism is the practice of traveling to another country for fertility treatments. The main reason for fertility tourism is

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legal regulation of the sought procedure in the home country or lower price. Invitro fertilization and donor insemination are major procedures involved (WHO, 2018).

Infertility can be classified into two according to (WHO, 2013)

i. Primary infertility: is defined as the absence of live birth for woman who desires a child and has been in a Union for atlest 12 months, during which they have not used any contraceptive. The world health organization also added that woman whose pregnancy spontaneously miscarriage or whose pregnancy results in a still borne child, without ever having a hard live birth would present with primary infertility.

ii. Secondary infertility: is defined as the absence of live birth for woman who desire a child and has been in a Union for at least 12 months since their last live birth, during which they did not use any contraceptive.

Measures of Minimizing Infertility

i. Health education on sexual transmitted disease program involving public education in men and women about causes, symptoms, complications and prevention.

ii. Early identication and treatment of sexual transmitted disease.

iii. The prevention of abortion and introduction of modern use of contraception.

iv. Avoid misuse of drugs.

v. Correction of nutritional deficiency and blood disorder (WHO, 2018).

Infertility treatment depend on the cause, duration, both partners age and personal performance. The couple should be explained that some of these causes of infertility cannot be corrected financial, physical and time commitment is required for infertility treatment. The following treatment modalities can be explained to the couples after assessing and evaluating the couples' health.

i. Intrauterine insemination (IUI): These could be used for unexplained infertility and female cases with minimal endometriosis and mild male factor infertility problems. In this, healthy sperm that have been collected and concentrated are placed directly in the uterus around the time of ovulation. The timing of IUI can be coordinated with the normal cycle or by using fertility medications (Hammond et al., 2016).

ii. Zygote intra-fallopian transfer (Zift) And Gamete Intrafallopian Transfer (Gift):

In ZIFT, the fertilized egg is directly transfer into the fallopian tube whereas, in GIFT a mixture of sperm and egg is placed in the Fallopian tube and fertilization occurs.

i. Intra- cytoplasmic sperm injection (ISCI): A single healthy sperm is injected directly into a mature egg.it i s use when there is a problem with the quality of semen, or there are few sperm or prior IVF cycle has failed, (Kawwas & Jamieson, 2015).

ii. Assisted hatching: Through this technique, implantation of embryo into the uterus is assisted by breaking the outer covering of the embryo. These help the embryo to smoothly implant (Cox & Lauren, 2010).

iii. Donor eggs and sperm: Assisted reproductive technology mostly uses the married couple's egg and sperm, but when there are severe issues with the egg and aperm then the donor sperm or even the embryo are taking to enhance fertility, (NICE Clinical guidance, 2010).

iv. Gestational Carrier: this is sometimes called as surrogate pregnancy, when a women who does not have uterus or if the uterus is not functional, a legal agreement is arranged where by a women agrees to become pregnant and give birth to a child for another persons who is or will become the parent of the child (Vasanti, 2018).

v. Adoption: is a process whereby a person assumes the preventing of another, usually a child from those people's biological or illegal parents. Legal adoptions permanently transfers all right and responsibilities along with foliations from the biological parent or parents, (Barnabas, 2018).

Theoretical Review

Kolkaba Theory of Comfort

The theory used to underpin this study is Kolkaba theory of comfort propounded in 2010. Kolkaba described comfort as existing in three forms (relief, ease and transcendence). Also Kolkaba described four context in which patient comfort can occur(physical, psychic -spiritual, environmental socio cultural) the first care provided who comes In contact with the couples is a nurse midwife. Nurse midwife are responsible to

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provide holistic care to the couples having infertility problems. Hence, it is important that they should know their role while taking care of the infertile couples. The concept of care can be applied by using a number of theoretical frame works, such as the Kolkaba theory of comfort to plan Care the Kolkaba theory of comfort considers patients to be individuals' families or institution, communities in need of healthcare. The environment is any aspect of the patient, families or institution surroundings that can be manipulated by a care provider or love ones in order to enhance comfort. Health is considered to be optimal functioning in the patient, as define by the patient, group family or community. Nursing describes as the process of assessing the patient comfort needs. developing and implementing appropriate nursing care plan and evaluating the patients comfort after the care plan have been carried out.

Comfort theory in nursing is characterized by four general contexts that encompass all aspects of patient comfort (physical, psyche- spiritual, environmental and social). Kolkaba described comfort existing in three forms (relief, ease, and transcendence). If specific comfort needs of patient are met, the patient experiences comfort in the scene of relief, ease addresses comfort in a state of contentment, transcendence is a state of comfort which patient are able to rise above their challenges.

Empirical Studies

Infertility is a disease of the reproductive system, defines by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse or is the inability of a sexually activities, non-contraception couples to achieve pregnancy in one year. It is a common and severe health problem which not only affects one's ability to have children, but also has emotional, economical, psychological, family and societal effects. There are uncountable researches across the globe on the causes effects and management of infertility, but for the purpose of this study, the following literature were reviewed to guide the conduct of the current study.

Roupa, Polikandrioti, Sotiropoulou, Wozniak and Gourni (2019) investigated the causes of infertility in women of reproductive age. The study population consisted of 110 infertile women who sought medical help in a private Assisted Reproduction Center for a period of 2 months. Collection of data was performed by means of a specifically designed questionnaire, which apart from the demographic data, it included questions concerning the causes of infertility. Results showed the sample studied consisted of 110 infertile women. Regarding marital status 94.4% (106) of the participants were married and 3.6% (4) unmarried. Regarding age, 64.5% were 20–29 years old, 20.0% were 30-39 years old, 11,8% were 40-49 years old and 3.7% were over 50 years old. As to occupation status, 35% of the participants were employees in the private sector, 27% were employees in the public sector, 24% were self-employees and 14% dealt with the household. Regarding educational status, 3.6% had finished primary school, 31.8% had finished high school, 56.4% were University graduates and 8.2% were graduates of another school. Concerning the causes of infertility, 27.4% of the problems were due to fallopian tubes dysfunction, followed infertility of «unknown» cause in 24.5% of the cases, 20% were due to disorders of menstruation, 9.1% due to problems of the uterus, 2,7% due to sexual disorders, another 2,7% because of age and in a very small percentage, infertility was caused by ovarian failure. Regarding the daily habits of the participants, 45.5% were smokers. Conclusions: The causes of female infertility are problems in the fallopian tubes and the uterus, disorders of menstruation, sexual disorders, age and ovarian failure. Female infertility is a complex problem that should be considered carefully by the government and stakeholders in each country and especially by those countries with demographic problems, in order to find effective interventions and solutions.

Murtaza et al (2019) assessed Male and Female Infertility: Causes, And Management. Infertility is a common problem worldwide. Childlessness could be male infertility, female infertility or combined infertility. Infertility has psychological and social impact. Female infertility is due to ovulatory problem, in male semen quality, and idiopathic cause. Sexually transmitted disease (STD), genetic, diabetes, pituitary factors, and toxins also play an important role. Diagnosis include, semen analysis, for male, female partner tested for hormonal parameters, e.g., FSH, TSH, abnormal levels indication of infertility. If the conservative medical treatment fails, physician my advice the patient to undergo in-vitro fertilization (IVF), and assisted reproductive technology (ART).IVF has promising results.

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Shahnaz and Ayesha (2016) provided a review on infertility causes, investigations, treatment modalities and role of nurse midwife in dealing with infertile couples. Infertility (a state of subfertility) can be manifested either as the inability to become pregnant, inability to uphold a pregnancy, and inability to continue a pregnancy till term [2,3]. There are various causes of female and male infertility. A vast number of investigations can be done to rule out the exact cause of infertility both in males and females. There are various treatment modalities that may be useful for the infertile couples. Although, for infertility treatment, couples visit gynecologists, but along with them the nurse midwives' play an important role to help the couple explore and identify problems related to reproductive health and coordinate with multidisciplinary team to promote and maintain reproductive health.

Katayoun et al (2019) investigated the impact of infertility on a woman's quality of life. A number of 180 infertile and 540 fertile women participated in this matched case-control study. The cases were selected through a combination of multistage stratified and cluster sampling methods. For each infertile woman three fertile women were randomly selected. The data gathering instrument consisted of demographic variables and the WHOQOL-BREF questionnaire. Data collection was conducted through interview with participants. The multivariate marginal model and SPSS software 21 were used for data analyses with a significance level of 0.05. The results of the multivariate modeling show infertility can potentially affect various aspects of women's quality of life such as physical health ($p < 0.001$), mental health ($p < 0.001$), social health ($p < 0.001$) and the total score of quality of life ($p < 0.001$) significantly.

Douglas (2018) examined the effect of infertility in men and women using primary data collected using a cross-sectional survey design. The study found that infertility affects both men and woman, yet woman particularly in developing country, may bear the sole blame for barren marriages. In many areas infertility is a socially acceptable basis for divorce by the husband. In an average 15% and 8 to 12% of couples worldwide are infertile and in some areas that figure reaches one-third or more of couples.

Methodology
Research Design

Research design for this study was a survey research design. This study made use of a structured questionnaire constructed by the researcher to source data for the conduct of the study.

Study Area

Karim-Lamido Local Government Area of Taraba state lies between latitude 8° 40'- 9° 30' N and longitude 10° 20' -11° 30' E. Karim-Lamido L.G.A. covers a land mass of about 6620sq km. the study area is located on a low altitude of about 450 meter above the sea level. Karim-Lamido was one of the first generation local government area created out of the defunct Gongola state in 1976. It is located at the northern extreme of Taraba state across the River Benue. It is bounded to the East by Adamawa state, Northwest by Plateau state, to the North by Bauchi and Gombe states, to the South by Lau, Ardo-kola, Gassol and Ibi local government areas respectively.

Population of the Study

Population of the study entails the entire geographical area to be covered by the research work. Hence, the population for this research work covered the estimated population of 206007 comprised of men and women of reproductive age in Karim Lamido Local Government Area of Taraba State.

Sample and Sampling Technique

The sample size of four hundred (400) respondents was drawn from the population of this study using a simple random sampling technique. An equal chance was given to any selected respondent picked at random using purposive sampling technique. The choice is based on its simplicity and suitability to yield better results. The sample size of this study is determined using Taro Yamane sample determination technique which is given as follows:

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$$n = \frac{N}{1 + Ne^2}$$

Where,

n = sample size

N = Population of the study

e = Error limit

1 = Constant

$$n = \frac{206007}{1 + 206007 \, (0.05)^2}$$

$$n = \frac{206007}{1 + 515}$$

$$n = \frac{206007}{516}$$

$$n = 400$$

Study Instrument

The instrument adopted for data collection was the use of a self-structured questionnaire constructed by the researcher in line with the specific research objectives. The questionnaires were administered to the selected respondents in the study area. The study instrument contained an introductory letter from the researcher to the respondents introducing the researcher and the topic for the study.

Validity and Reliability of Instrument

A measuring instrument is considered valid only when it measures truly and accurately what it intends to measure. The instrument constructed by the researcher was validated and the reliability coefficient of the instrument was determined using Alpha Cronbach's reliability test criteria which revealed the reliability coefficient of 0.84. Hence, this result showed that the instrument was considered reliable, because the closer the result to positive one (1) the more reliable the instrument becomes. The reliability result is presented in table i below.

Table 1: Reliability Test Result

Alpha Cronbach's reliability	No. of items
.84	21

Source: Authors' Computation

Method of Data Collection

Primary data were collected and used for the purpose of this study. Primary data were collected through the use of structured questionnaires administered to the respondents in the study area. The questionnaire were set in line with specific research objectives of the study which was divided into two parts namely: Sections (A) comprised the demographic data of the respondents and Section (B) comprised questions seeking for the opinions of the respondents with respect to the specific research questions were answered by circling or ticking the option that best expressed the feeling of the respondents to the specific research questions.

Method of Data Analysis

Data collected through questionnaires on socioeconomic characteristics of the respondents were statistically presented and analyzed using frequency table and simple percentage, but data collected in response to the specific research questions were analyzed using mean and standard deviation with help of SPSS version 23.

Results

This section dealt with data presentation, analysis, interpretation and discussion of the findings. In this study, descriptive statistics were used to sort, code, present and analyzed data collected for the conduct of

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the study. Demographic data were presented in tabular form using a descriptive statistics of frequency and simple percentages while responses from the questionnaire were analyzed using mean and standard deviation. Four hundred questionnaires were distributed, but only 385 were duly filled and returned.

Table 2: Classification of the Respondent according to Gender

Variable	Frequency	Percentage (%)
Female	273	70.8
Male	112	29.2
Total	385	100.0

Source: Field Survey, 2022.

Table 3: Age Distribution of the Respondents

Variable	Frequency	Percentage (%)
18 - 25 Years	179	50.0
26 - 30 Years	134	32.3
31 - 40 Years	60	15.6
41 Years & above	12	2.1
Total	385	100.0

Table 4: Classification of the Respondents based on Marital Status

Variable	Frequency	Percentage (%)
Single	20	5.2
Married	336	87.27
Divorced	18	4.68
Widow/Widower	11	2.86
Total	385	100.0

Table 5: Mean and Standard deviation of the Causes of Infertility

Variable	N	Mean	Std	Decision
Endocrine defect is one of the factors responsible for infertility among young couples	385	3.3542	.48077	Accepted
Unsafe abortion is another factors of responsible for infertility	385	3.6042	.49160	Accepted
Excessive use of illegal drugs can affect fertility	385	3.3542	.64855	Accepted
Obesity is one of the cause of infertility	385	3.0833	.87860	Accepted
Endocrine dysfunction can cause infertility.	385	3.2813	.45197	Accepted
Defective transportation of sperm causes infertility among couples	385	3.4479	.49989	Accepted
Scar tissues after abdominal surgery causes infertility among couples	385	3.5521	.49989	Accepted

Table 6: Mean and Standard deviation of the Effect of Infertility

Variable	N	Mean	Std	Decision
Shame and anxiety are results of infertility	385	3.0625	.83114	Accepted
Infertility causes psychological problem	385	3.3958	.49160	Accepted
Infertility can results to divorce	385	3.6562	.47745	Accepted
Infertility leads to stigmatization of the victims	385	3.2500	.63246	Accepted

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Infertility blocked fallopian tubes	385	3.3854	.48925	Accepted
It cause endometriosis or uterine abnormalities	385	3.3958	.49160	Accepted
Promotes lack of ovulation	385	3.5208	.50219	Accepted

Table 7: Mean and Standard deviation of the Prevention of Infertility

Variable	N	Mean	Std	Decision
Awareness and sensitization program to infertile couples about their reproductive system could help to improve their fertility	385	3.4583	.67927	Accepted
Counseling and reassuring the couples about their conditions and telling them that it could be treated will aid in reducing infertility.	385	3.3333	.59235	Accepted
Early dictation can serve as one of the measures in preventing infertility.	385	3.6250	.48666	Accepted
Discouragement of sexual intercourse during ovulation promotes fertilization.	385	3.3646	.58255	Accepted
Sex education and reproductive health should be taught in school from the secondary level to the tertiary level for proper understanding of reproductive issue	385	3.2917	.52147	Accepted
prompt treatment of sexually transmitted diseases can immensely help in preventing infertility among couples	385	3.4792	.50219	Accepted
Joining support group and accepting friends and family support can serve as measures to preventing infertility	385	3.6042	.49160	Accepted

Discussion

Table 2 depict the gender distribution of the respondents, it indicated that about 68 respondents representing 70.8% are female and 28 respondents representing 29.2% are male. This implies that majority of the respondents are female.

Table 3 clearly indicates that about 179 respondents representing 50% are between the ages of 18 – 25 years, 134 respondents representing 32.3% are between the ages of 26 – 30 years, about 60 of them representing 15.6% are between the ages of 31 – 40 years and 12 respondents representing 2.1% are between the ages of 41 years and above. It therefore indicates that majority of the respondents is between the ages of 18 – 25 years while the minority is between the ages of 41 years and above.

Table 4 shows that about 20 respondents representing 5.2% are not married (single), 336 respondents representing 87.27% are married, 18 respondents representing 4.68% were divorced and 11 respondents representing 2.86% are widows/widowers. This implies that, majority of the respondents are married while the minority are the widows/widowers respectively.

Table 5 answered the research question: what are the major causes of infertility among couples in Karim Lamido Local government? It accepted that endocrine defect is one of the factors responsible for infertility among young couples with the mean score of 3.3542 and standard deviation of 0.48077. Similarly, it also accepted that unsafe abortion is another factors of responsible for infertility with the mean score of 3.6042 and standard deviation of 0.49160. Excessive use of illegal drugs can affect fertility was accepted at the mean score of 3.3542 and standard deviation of 0.64855. Obesity is one of the causes of infertility with the mean score of 3.0833 and standard deviation of 0.45197. It is further accepted that endocrine dysfunction can cause infertility supported with the mean score of 3.2813 and standard deviation of 0.45197. Accepting, defective transportation of sperm causes infertility among couples with the mean score of 3.4479 and standard deviation 0.49989. Scar tissues after abdominal surgery causes infertility among couples was

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accepted at the mean score of 3.5521 and standard deviation of 0.49989. By implication, the major causes of infertility among couples includes: unsafe abortion, scar tissues after abdominal surgery and defective transportation of sperm.

Table 6 answered the research question: what are the effects of infertility among couples in Karim Lamido Local Government Area, Taraba State? The table reveals that shame and anxiety are results of infertility among couples with the mean score of 3.0625 and standard deviation 0.83114. It also accepted that infertility causes psychological problem with the mean score of 3.3958 and standard deviation of 0.49160. Accepting further, infertility among couples result to divorce as supported with the mean score of 3.6562 and standard deviation of 0.47745. Similarly, it has accepted that stigmatization is another effect of infertility among couples with the mean score of 3.2500 and standard deviation of 0.63246.

Table 7 answered the research question three: what are the major preventive measures of infertility among couples in Karim Lamido Local Government Area, Taraba State? It has accepted that awareness and sensitization program to infertile couples about their reproductive system could help to improve their fertility among couple with the mean score of 3.4583 and standard deviation of 0.67927. It has also accepted that counseling and reassuring the couples about their conditions and telling them that it could be treated will aid in reducing infertility supported with the mean of 3.3333 and standard deviation of 0.59235. Similarly, it has accepted that early dictation can serve as one of the measures in preventing infertility among couples in Karim Lamido Local Government Area of Taraba State. Discouragement of sexual intercourse during ovulation promotes fertilization among couples supported with the mean score of 3.3646 and standard deviation of 0.58255. Sex education and reproductive health should be taught in school from the secondary level to the tertiary level for proper understanding of reproductive issue cam help to curb infertility among couple with the mean score of 3.2917 and standard deviation of 0.52147. Prompt treatment of sexually transmitted diseases can immensely help in preventing infertility among couples is accepted at the mean score of 3.4792 and standard deviation of 0.50219. Similarly, it has accepted that joining support group and accepting friends and family support can serve as measures to preventing infertility among couples with the mean score of 3.6042 and standard deviation of 0.49160. It therefore indicated that, early dictation, joining support group and accepting friends and family support and prompt treatment of sexually transmitted diseases are the major preventive measures to preventing infertility among couples.

Summary And Conclusion

Female infertility may occur in the form of lack of ovulation, blocked fallopian tubes, endometriosis or uterine abnormalities. Male infertility factor is morphologically determined by reducing the production of motile and normal sperm. Genetic abnormalities, hormonal imbalances, and congenital genital abnormalities and infections are among the common reasons for infertility in women and men. Lifestyle factors such as obesity, diet, smoking and alcohol consumption along with exposure to environmental chemicals have been studied as infertility modifiers. In general, women should be properly trained and have enough knowledge of safe exercise during pregnancy and childbirth. Endurance in health lifestyle, regular checkups and normal weight should avoid infertility problems. Female infertility can be definitely treated by medicine, minor surgery, laparoscopy meters, hormone therapy and prevention from early pregnancy failure. Such reviews are conducted by all medical and scientific researchers trying to end infertility.

Recommendations

The data collected were analyzed and results found were discussed in the previous chapter. As a result of the results found, the following recommendations are put forward:

i. Public enlightenment programmes relating to an understanding of infertility, MAR care and access to relevant services should be developed as part of SRH education. (To include: recognition of infertility (or sub-fertility) as a result of obesity, smoking, delayed childbirth (men and women), increased sexual activity/partners without use of barrier methods, early menopause due to family history, cancer before or during reproductive years, and other factors.)

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ii. Cross-cultural epidemiological and social science research, using standard definitions of infertility, should be done to better understand the levels of prevalence, the need and demand for, and the access to fertility diagnosis and treatment services. Social science research should be used to develop a better assessment of the quality of life as affected by infertility. The social burden of infertility in different regions should be evaluated in different cultural contexts and different resource settings using comparable methodologies.

iii. Infertility services covering a comprehensive range of fertility strategies should be complementary to population policies and programmes of maternal and child health and SRH. In addition, equitable access to affordable, quality MAR care should contribute to public health and become government policy in all countries with summary data, as a minimal standard, to be regularly published.

iv. Infertile patient organizations should be involved in patient education, publicity and advocacy. Advocacy of reproductive rights in the area of infertility is essential to gain community, professional and government support. In addition, support should be given to the Global burden of disease (GBD) group in the development of the envelope for infertility, which will determine the relative impact of infertility on society.

v. A memorandum of understanding (MoU) should be written between involved organizations to form an Alliance for the development and promotion of a programme for fertility care in low-resource settings. WHO should play a neutral role in the Alliance, interacting with participants and stimulating adherence to timelines to achieve the MoU objective. In light of evidence-informed experience, WHO manuals for interventions/management of the infertile couple should be developed to address low-cost treatment options.

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