Epidemiology of infertility among women in Nigeria

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Abstract
As a reproductive health condition and a global public health concern, infertility has a large and negative societal impact on infertile couples, particularly women. The study looked into the occurrence, common causes, prevalence, and prevention of infertility in women aged 15 to 55 in four healthcare facilities in Osun state. Between 2001 and 2003, a survey of 200 cases of infertility was conducted on a total of 50 cases of infertility evaluated at the hospital center. Infertility was found to be prevalent in all of the centers. Every person has the right to the finest physical and mental health possible. The study suggests that women get a safe abortion to avoid pelvic infection and take steps to reduce the causes and incidence of infertility.

Keywords: Epidemiology, Infertility, Women, Nigeria

Introduction: Meaning / Concept of infertility
Infertility is a couple's failure to conceive after a year of regular, unprotected sexual activity. Having trouble getting pregnant after a year or longer of unprotected sexual relations is considered infertility by the World Health Organization (WHO). Secondary infertility refers to couples who have been able to get pregnant at least once but now are unable to get pregnant. Women's fertility declines with age, thus after 6 months of unprotected intercourse, some doctors analyze and treat women 35 and older. In Nigeria, where extended and traditional families are common, there is a lot of pressure on a couple to produce a child.

Pregnancy is the result of a process that has many steps. To get pregnant
1. An egg from one of a woman's ovaries must be released for fertilization.
2. In order for conception to occur, the egg and sperm of a man must come into contact (Fertilize),
3. The fertilized egg must go through n fallopian external icon towards die uterus external icon (womb).
4. Inside of the uterus the embryo must be attached (Implantation). Infertility can be caused by problems with any or all of these steps.

Fertility problems make it difficult for women to get pregnant or carry their babies all the way to term. There are many couples that are infertile despite the fact that infertility is typically seen as the sole responsibility of women.

Objectives of the Paper
The goal of the study is to look into the causes, symptoms, and prevention of infertility, as well as make recommendations for the variables under consideration.

Systematic Review of Infertility among women in Nigeria
Below is a systematic review of infertility in the geopolitical zones in Nigeria:
Nigeria's South-South did a research on the prevalence of reproductive issues and their patterns among infertile couples at a

secondary health institution. Infertile couples who visited the gynecological clinic at Eku Baptist Government Hospital, a secondary health facility in Delta, were included in this retrospective descriptive analysis. Beginning on January 1, 2015, and ending on December 31, 2015. For this study, information was retrieved and evaluated from the case records of all eligible couples who came to see us at the gynecological clinic. 32.0 percent of the study subjects were found to have infertility. Female infertility in our study lasted an average of 5.3 years, while 56.0 percent of infertile women's male partners exhibited aberrant seminal patterns, suggesting a significant (40.6 percent) male component contribution to infertility. A 32.0 percent rate of infertility in Delta State is equal to the national average, according to the research. Secondary infertility is also widespread in this region of the country, according to the study. According to our findings, men are primarily responsible for a big portion of infertility cases.

There was a study on the prevalence and primary causes of infertility in women aged 15 to 55 in Osun State, Nigeria's southwest area. Between 2001 and 2003, a total of 200 instances of infertility were surveyed at four different hospitals, each with 50 cases of infertility assessed. 54.8 percent of women at Obafemi Awolowo University Teaching Hospital in Ile-Ife, 54.8 percent at Obafemi Awolowo University Teaching Hospital in Ilesa, 54.8 percent at Ladoke Akintola University Teaching Hospital in Oshogbo, and 44.2 percent at the General Hospital in Ikire were unable to become pregnant. There were only 22.5 percent of cases of primary infertility, and 77.5 percent of cases of secondary infertility This study found that 39.5% of infertility cases were due to tubal, 30% were due to uterine, and 13% were due to ovarian issues as the leading causes of infertility. 3 percent of patients were impacted by the cervical factor, 5 percent by Pelvic Infection Disease (PID), and 2.5 percent were affected by the condition known as endometriosis. Between the ages of 15 and 25, infertility affected 17% of people, and between the ages of 26 and 35, it affected 31.5 percent of people. Most (50,5 percent) of the cases occurred between the ages of 36 and 45, with only 1% taking place in this range.

Table 1: Female infertilty and its percentage

S/N	Causes of female infertilty	Percentage %
1	Tubal factor	39.5%
2	Uterus factor	30%
3	Ovarian factor	3.5%
4	Cervical factor	3%
5	Endometriosis factor	2.5%
6	P.D	5.5%

Source: Obafemi Awolowo University Teaching Hospital Ilesa (2022).

Table 2: Prevalence of infertility age 15-55 years

S/N	Age	Percentage
1.	15-25 years	17%
2.	26-35 years	31.5%
3.	36-45 years	50.5%
4.	46-55 years	1%

Source: Ladoke Akintola University Teaching Hospital (2022).

Parallel research was conducted in Enugu, Nigeria, to examine the impact of infertility on the sexual lives of women seeking infertility treatment. Women with infertility who were treated at two government-owned tertiary institutions in Enugu, Nigeria, were surveyed using a questionnaire-based multicenter cross-sectional study. SPSS 20.0 was used to collect and analyze the data. The poll attracted 360 female participants. They were on average 35.23 5.7 years of age. Many (98.3 percent) had completed their post-secondary education and were married, indicating a high level of educational attainment (69 percent). When it comes to infertility, 33.9 percent of respondents reported adequate sexual intercourse before to the diagnosis; 12.2 percent reported adequate sexual intercourse following the diagnosis. In a survey, 65 percent of individuals asked reported that they no longer enjoy sex with their partners, and 38.9 percent stated that they were no longer attracted to them. Infertility has a negative effect on women's sexual lives, according to the research. If this negative affect is addressed, it could improve the quality of life for infertile women and infertility management outcomes in the region.

Unplanned pregnancies are a common occurrence in Nigerian women, although little is known about the prevalence, underlying causes, and individual patterns of infertility. 1,264 more gynecological cases were uncovered during the investigation, culminating in the evaluation of 198 infertile individuals. Infertility affects 15.7% of couples. Primary reasons accounted for 32.8% of all occurrences of infertility, while secondary causes accounted for 67.2 percent. The most prevalent genital infection symptoms were lower abdominal pain (78.8 percent) and vaginal discharge (76.6 percent). A total of 42.9 percent of female infertility and 19.7 percent of male infertility was due to gender-related infertility. 16.7% of all cases of infertility could not be traced back to either marriage, while the remaining 20.7% had no known etiology. According to the research, genital tract infection is a key contributor to secondary infertility.

Prevalence of Infertility

It is more prevalent to have infertility in Sub-Saharan Africa than anywhere else in the world. Risks of catastrophic health costs are high in Nigeria, where 92.4 percent of the population lives on less than $2 a day, due to infertility treatment (Okonofua, 2016) [21]. IVF is the best treatment for tubal illness in Nigeria, which costs an average of $3,289 USD per cycle, and is the most common cause of infertility in the country. Both poverty and poverty exacerbated by this one-time payment can be caused by this payment. According to research, financial constraints are a common reason for women to discontinue therapy. People in severe need of money have turned to traditional healers like "mamas that rub" for help. Infertility treatment methods that rely on herbal medications and belly rubs are mainly scams perpetrated by incompetent providers that take advantage of and deceive their customers. A woman's health may be at risk as a result of this practice: Maternal mortality in Nigeria may be linked to belly rubs, according to some scientists. In new data, male traditional healers have allegedly sexually exploited female patients for reproductive services.

Achieving the Sustainable Development Goals requires universal access to health care, as evidenced by its inclusion in the goals. It is unfortunate that many Nigerian states do not have functioning health insurance coverage for couples who are attempting to get pregnant. States and the National Health Insurance Scheme do not include infertility treatment in the list of services covered by health insurance. Since many couples can't afford a wedding, they end up having to pay for

it themselves (Akinloye, 2016) [3].

Causes of Infertility in Women

Infertility in both the male and female reproductive systems can be caused by a variety of factors. However, it is not always easy to pinpoint the causes of infertility.

In the female reproductive system, infertility according to the

WHO (2018) may be caused by:

1. Occlusions of the fallopian tubes can be caused by a variety of factors, including a failed abortion, postpartum sepsis, or abdominal/pelvic surgery that left the patient untreated for a sexually transmitted infection (STI).
2. Inflammatory, congenital, or benign uterine abnormalities include endometriosis, septate uterus, and fibroids.

In women with polycystic ovarian syndrome and other follicular disorders, hormonal imbalances are caused by endocrine system difficulties. The hypothalamus and pituitary glands are part of the endocrine system. Pituitary cancer and hypopituitarism are two pituitary gland disorders. According to WHO (2018), infertility can be caused by a wide range of physical and mental factors. It's possible that the lady, the man, or both are to blame.

Female Infertility may occur when:

1. It is impossible for a fertilized egg or embryo to survive after it is attached to the uterine lining (uterus).
2. Because of this, the fertilized egg does not remain attached to the uterine lining after fertilization.
3. Embryos are unable to transfer from the ovaries to the placenta.
4. The ovaries have problems producing eggs Female infertility may be caused by:
5. An irregular ovulatory cycle is indicative of an ovulation issue, or hormonal imbalance.
6. The ovaries do not produce mature eggs during anovulation.
7. Polycystic Ovary syndrome- Amenorrhea.
8. Past eating disorder Substance abuse.
9. Severe distress
10. As a result of uterine surgery such as dilatation and curettage, polyps, fibroids, septum, and adhesions can develop inside the uterine cavity (D&C)
11. The uterus can be cancerous or tumorous.
12. Sexually transmitted illness is a risk factor for female infertility.
13. Diabetes, thyroid illness, and clothes disorder are all genetic (inherited) features.
14. Excessive weight gain, obesity, and underweight are all lifestyle decisions. Caffeine's effects, alcoholics, and smokers
15. Autoimmune conditions (Lupus Rheumatoid Arthritis)
16. Pregnancy prevention surgery (Tubal ligation)
17. Chemotherapy drugs, for example

After the age of 35, infertility among women becomes increasingly common. As a woman ages, her fertility declines, her egg supply diminishes, and more of her eggs have aberrant chromosomal numbers or counts.

Epidemiology of infertility in Nigeria

Despite a "high incidence of pregnancy wastage," Nigerian fertility rates are estimated to be approximately six children per woman. The year 2015 (Arowojolu). According to the World Health Organization's 2018 World Health Report, women had 6.5 children in 1994 and 5.7 children in 2004. Infertility is no longer a taboo subject, according to these studies. It has only been very recently that infertility in Sub-Saharan Africa (particularly Nigeria) has received much attention, says Nwabuisi (2017) [16]. It was "masked" by the high conception rates in the region, which "gave birth to a worldwide backdrop of concern over population increase and great fecundity, which is not conducive to the impression of infertility as a big problem," according to Nwabuisi (2017) [16]. Women's Health and Action Research Centre reproductive health clinic in Nigeria in 2002 saw 780 couples with major infertility causes, says Okonofua (2016) [21]. According to Aghanwa (2019) [2], infection is the most common cause of infertility in Nigeria, with STDs and postarbortal and puerperal sepsis being the most common causes (Aghanwa, 2019) [2]. In contrast, no one wants to bring up the subject of male infertility because it is considered taboo. 10 Because locals believe that women are the primary cause of infertile marriages, this taboo contributes to polygyny, despite the fact that male infertility is handled sensitively to protect male honor. 4 Nutrition and hazardous elements in Nigerian diets have been examined in previous studies11–13; sociocultural practices and demographics; infections; and hormones; as have sociodemographics and infection (Aghanwa, 2019) [2].

Effect / Consequences of infertility

In Africa, a person's physical maturity does not necessarily mean they are considered an adult. These are two of the most important stages in the process of maturation. "The family's place on society's social, religious, and physical map is solidified" (Mbiti, 2016) [14]. Her status as an individual has been elevated as a result of the recognition she now receives. Being addressed as "mother of so-and-so" elevates her social standing.

Social exclusion and the loss of access to productive resources might result from infertility (Jigging, 2014). For Pearce (2019) [23], children serve as a bridge between individuals, families, and communities, in addition to the previously described economic and old-age security functions. That the childless are more vulnerable is explained by their significant societal function. For example, in Nigeria, property is passed down to children rather than spouses. Furthermore, in Nigerian courts, childlessness is a valid basis for divorce. A second wife is an option for infertile couples (Solvetti, 2014). There is no entitlement for a woman without children to her husband's money. As a result of this, her physical and social maps will very certainly be wiped. There is no doubt that the arrival of children has the capacity to either make or shatter a marriage, Awaritefe claims (2017) [5]. Because of this, the Nigerian lady is in a difficult position.

Incidence / Key Facts of Infertility

Infertility incidence / key facts according to the World Health Organisation (2018) include the following points:

1. One of the most common symptoms of infertility is the

failure to conceive after at least a year of sexual activity without any protection.
2. Infertility affects millions of women and men of reproductive age, as well as their families and communities. According to estimates, infertility affects 48 million couples and 186 million people worldwide.
3. Fertility problems are most common in men who have difficulty expulsion, low amounts of sperm, and poor morphology (morphology) and motility.
4. The ovaries, uterus, fallopian tubes, and the endocrine system can all contribute to infertility in women.

Infertility, whether primary or secondary, does exist. Primary infertility occurs when a woman has never been pregnant, whereas secondary infertility develops after a previous pregnancy has occurred.
Fertility care includes all aspects of preventing, diagnosing, and treating infertility. Every country has an issue with equal and fair access to fertility care, especially in low and middle-income countries. Benefit packages for national universal health coverage rarely include information on fertility care.

Prevention of Infertility in Women
Acquired female infertility, according to Adekunle (2018) [1], can be avoided with the following interventions:
1. Maintaining a healthy way of life Excessive activity, Coffee, alcohol, and smoking have been associated to decreased fertility. Reproductive outcomes have been linked to better nutrition and a healthy weight when women eat a diet rich in fruits and vegetables.
2. Existing diseases are being treated or prevented. The likelihood of becoming pregnant rises when disorders like diabetes and hypothyroidism are identified and addressed. It is less likely that sexually transmitted diseases will damage fertility if people practice safer sex for the rest of their life and if they receive treatment for sexually transmitted diseases as soon as feasible. When infections and anomalies are discovered early, they are easier to treat.
3. Not delaying parenthood. After the age of 27, fertility begins to drop and accelerates around the age of 35, lasting until menopause. Women whose biological moms suffered uncommon or extraordinary conceiving difficulties may be more prone to a range of diseases, including early menopause, which can be avoided by establishing a family sooner.
4. Egg freezing. In order to protect a woman's fertility, she can store her eggs. Cryogenically freezing and storing a woman's eggs throughout her reproductive years minimizes her chance of female infertility.

Conclusion
The best possible physical and mental health is a fundamental human right. Individuals and couples can decide how many children they wish to have and when they want to do so. When faced with infertility, it might be difficult to exercise these fundamental human rights. Treatment for infertility is thus a crucial aspect of realizing the rights of individuals and couples to start a family. Infertility treatment and fertility care may be necessary for heterosexual couples, same-sex partners, older adults, those who are not in sexual relationships, and those with specific medical conditions, such as some HIV sero-discordant couples and cancer survivors. Inequities and disparities in access to fertility care services impact the poor, unmarried, uneducated, unemployed, and other vulnerable populations.

Recommendations
1. Due to the high prevalence of infertility and the difficulty of conceiving via conventional methods. Improvements must be made to infertility treatment facilities and to the availability and affordability of artificial reproductive treatments.
2. The study suggests preventing pelvic infection through safe sex, offering safe abortion care, and providing basic obstetric services in order to lower the incidence of infertility.
3. As a result, infertile women should be the focus of new legislation. Stress reduction and prevention of potentially harmful behaviors and reactions that could have serious health effects for people as well as society will be achieved as a result of this.

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