PERCEPTION AND ACCEPTABILITY OF ASSISTED REPRODUCTIVE TECHNOLOGY AMONG INFERTILE WOMEN IN SELECTED HOSPITALS IN LAGOS STATE

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Abstract

Assisted Reproductive Technology (ART) has been found to provide new possibilities for couples struggling with infertility. However, factors such as poor perception and perceived high costs discourage many infertile married women in Lagos State from utilizing ART. The specific objectives of this study were to examine the perception of ART techniques among infertile women in Lagos State, to assess their level of knowledge and awareness regarding ART, and to evaluate their willingness to utilize these technologies. The study used a descriptive cross-sectional design. Lagos Island General Hospital and Ikorodu General Hospital were selected through simple random sampling from among the general hospitals in Lagos State. 131 participants were randomly selected for this study. The data were analyzed using Analysis of Variance (ANOVA), and the hypotheses were tested at a significance level of 0.05. There was an overall negative perception with a score of 3.86, indicating a negative perception of ART among the infertile women studied. The total acceptability score was 51.29% (below the average threshold of 55%), suggesting that ART was not generally acceptable to the participants. However, the study participants (56%) demonstrated good knowledge, indicating that the majority of infertile women had a correct understanding of ART. There is a negative perception and low acceptability toward ART among infertile women in Lagos State. It is recommended that the government, through the Ministry of Health, develop policies and programs aimed at increasing awareness and acceptance of ART.

Keywords: Acceptability, Infertility, Perception, Assisted Reproductive Technology, Infertile women,

Introduction

Infertility is a disease of the male and female reproductive systems. It refers to a condition in which a woman of reproductive age, between 15 and 49 years, is unable to achieve pregnancy after 12 months of regular, unprotected sexual intercourse. In reproductive health, infertility is considered a critical issue that significantly affects an individual's overall well-being (Okafor, Saanu, Olayemi, Omigbodun, 2022). It affects both men and women. Globally, approximately 48.5 million couples suffer from infertility, with a prevalence rate of between 5 and 8 percent. In Africa, the rate is about 10.1 percent; in Nigeria, an estimated 10 to 30 percent of couples are affected. The majority of these individuals reside in developing countries, according to the World Health Organization (WHO, 2018). Infertility includes both primary infertility, which refers to women who have never conceived, and secondary infertility, which refers to those who have conceived previously but are unable to do so again after at least 12 months (WHO, 2018; Leslie et al., 2025; Bayu et al., 2020).

In Africa, the most common causes of infertility in women include blocked fallopian tubes and hormonal imbalances. In men, it may result from blockages in the reproductive tract or hormonal disruptions (Tsevat etal, 2017). Although infertility is not a life-threatening condition, its negative impact on individuals, families, and society is significant (Liang et al., 2021). Furthermore, it is a leading contributor to marital issues in many families (Ogundele et al., 2018). Despite the high prevalence of infertility in Africa, the utilization of assisted reproductive technology remains the lowest in the world (WHO, 2018). Many African societies interpret infertility using unscientific explanations, commonly associating it with supernatural forces or evil powers. Consequently, treatment is often sought from traditional healers or faith-based institutions, with orthodox medical care considered a last resort (Dlungwane & Mokwena, 2023). Infertility remains a public health concern in African countries and continues to hinder the achievement of comprehensive reproductive health, especially in Nigeria. A promising solution is found in assisted reproductive technology, which has proven effective in managing infertility. Before the development of ART in 1978, available treatment options were limited to surgical procedures, medication, and lifestyle modifications, many of which are still in use today (Daniluk etal, 2025).

Infertility treatments generally fall into two broad categories: non-assisted reproductive strategies and assisted reproductive technologies. Non-assisted strategies do not involve the direct handling of reproductive cells. These include ovulation induction, hormone therapy, reproductive surgery, and other forms of medical management. Assisted reproductive technology involves the manipulation of gametes, which are the male and female reproductive cells. Examples of ART procedures include artificial insemination, gamete intrafallopian transfer, intracytoplasmic sperm injection, zygote intrafallopian transfer, and in vitro fertilization (Simpson, 2025).

ART techniques are widely practiced in Nigeria, supported by a growing number of competent professionals. In vitro fertilization, in particular, has gained prominence due to a relatively higher level of personal acceptance (Daniluk etal, 2025; Adamson etal, 2018). It is estimated that more than six million children have been born globally through the use of ART, with a considerable number coming from developing countries (Pinborg, 2023). In Nigeria, the first in

vitro fertilization birth occurred in 1989 through the efforts of Dapo Ashiru and Giwa Osagie (Ezeome, 2023). Today, many fertility centers have emerged across Nigeria, offering a variety of assisted conception services. However, the fertility industry is largely run by private entities that are more commercially driven than ethically focused. While ART is widely accepted in developed countries, the uptake in Nigeria remains limited due to high costs, low awareness, cultural misconceptions, and poor public perception (Fabamwo & Akinola, 2013). This study aimed to explore the perceptions and acceptance of assisted reproductive technology among women experiencing infertility in selected hospitals in Lagos State.

Statement of the Problem

Infertility remains a problem in African countries, and it remains a barrier to the attainment of adequate reproductive health for people in those countries, particularly in Nigeria. Children are highly valued and regarded as insurance for old age and continuity of family inheritance in Nigerian society. In most cases, a family is regarded as incomplete without their children. Thus, having children is the desire of many women. Despite information on infertility and assisted reproductive technology, the researcher observed that many married women are not willing to accept or use the technology, and orthodox options are often the last resort. In Nigeria, infertile women often suffer from stigmatization, family pressure, divorce, name-calling (Agan in Yoruba, Aga in Ibo, Bakarariya in Hausa), and unnecessary interference from extended families, thereby making many of them seek help from faith-based institutions. Hospital statistics in Nigeria revealed that at least one out of every six couples has an issue of infertility (Adegbola & Akindele,2013). WHO (2018) reported that 10% -20% of the population have infertility challenges.

The researcher has also noted that many infertile women are not willing to accept assisted reproductive technology. Some of the reasons adduced are: cultural, religious, financial, and personal. However, inadequate knowledge, low level of awareness, and fear of stigmatization of having ART babies contribute to the scant willingness to use ART. It is against this background that the study seeks to describe the perception and acceptability of assisted reproductive technology among infertile women in Lagos State.

Research Questions

The study answered the following research questions:

1. What is the perception of assisted reproductive technology among infertile women in Lagos State?
2. What is the level of knowledge and awareness of assisted reproductive technology among infertile women in Lagos State?
3. What is the level of willingness to use assisted reproductive technology among infertile women in Lagos State?

1.5 Research Hypotheses

The following hypotheses were tested during the study:

1. Perception of assisted reproductive technology would not have a significant effect on assisted reproductive technology acceptability

among infertile married women in Lagos State.

2. Knowledge and awareness of assisted reproductive technology would not have a significant effect on the level of acceptance of assisted reproductive technology by infertile women in Lagos State.
3. Willingness to use assisted reproductive technology would not have a significant effect on the acceptability of assisted reproductive technology among infertile women in Lagos State.

Methodology

This study adopted a descriptive cross-sectional research design. The population of the study consisted of 1,268 infertile women attending the Gynecology Clinic of Lagos Island General Hospital and Ikorodu General Hospital in Lagos State. The two hospitals were selected out of the twenty-six general hospitals in Lagos State by simple random sampling using the table of random numbers. Ethical approval was obtained from the Health Research and Ethics Committee, Lagos State University Teaching Hospital (LREC/06/10/ 2460). The sample size of infertile women participants for the study was obtained using the Cochran formula.

$$n_0 = \frac{z^2 pq}{d^2}$$

Sample size = 124.79 + 6.24 = 131.

A sample size of 131 was used on the basis of the expected variability and the need for sufficient statistical power for detecting meaningful associations. 90 participants were selected by random sampling from Lagos Island General Hospital, and 71 participants were selected from Ikorodu General Hospital.

The research instruments used for data collection and intervention include the Socio-Demographic Data Form and the Adapted Assisted Reproductive Technology Questionnaire (Daniluk etal, 2012; Abazie & Abimbola, 2021). This consists of sections aimed at collecting respondents' personal information, such as age, marital status, religion, educational level, occupation, residence, duration of marriage, duration of infertility, number of pregnancies, number of abortions, number of deliveries, and number of children alive. The Adapted Assisted Reproductive Technology Questionnaire consists of 16 items validated to measure the ART perception and acceptance among infertile women. The items are distributed into three subscales: Perception of Assisted Reproductive Technology, the Acceptability of Assisted Reproductive Technology, and the Knowledge of Assisted Reproductive Technology sub-scale. The respondents' scores on perception were converted to a mean and graded as follows: negative perception = mean score below 4.00, and good perception = mean score above 4.00. The acceptability of ART was classified into acceptance or non-acceptance as follows: acceptable ≥ 55% score => 24.75, not acceptable < 55% score = < 24.75. The reliability of the perception subscale is 0.81, while the reliability of the acceptance subscale is 0.738. The reliability of the knowledge subscale is 0.819.

Data were presented as frequencies and percentages for qualitative variables, and as means ± standard deviations for quantitative continuous variables. One-way analysis of variance (ANOVA) and the t-test were used for comparisons of continuous variables. For non-normally distributed continuous variables, the

median was used instead of the mean, while the chi-square test and Mann–Whitney U test (Z) were used instead of ANOVA and the T-Test, respectively. Pearson's correlation was used to assess the relationship between two quantitative variables, with a significance level set at 0.05. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS), Version 20.

Results

Table 1: Sociodemographic characteristics of respondents

Characteristic	Frequency (N=161)	Percent (%)	Cumulative Percent (%)
Age at last birthday			
15-25	22	13.7	13.7
26-36	76	47.2	60.9
37-49	56	34.8	95.7
50 and above	7	4.3	100.0
Marital status			
Single	19	11.8	11.8
Married	137	85.1	96.9
Widow	5	3.1	100.0
Religion			
Christianity	109	67.7	67.7
Islam	48	29.8	97.5
Others[1]	3	1.9	99.4
Level of Education			
None/Primary	13	8.1	8.1
Secondary	42	26.1	34.2
University	81	50.3	84.5
Post-graduate	25	15.5	100.0

Occupation			
Civil servant	40	24.8	24.8
Trader	88	54.7	79.5
Farmer	2	1.2	80.7
Others[2]	31	19.3	100.0

Others[1]: Atheist and Traditionalist; Others[2]: Tailor, Clergy/Religious worker, Self-employed, Engineer, Chef.

Table 1 shows that 47.2% of the infertile women were aged 26–36 years, and older adult women (50 years and above) made up smaller proportions, 13.7% and 4.3%, respectively. The majority of the infertile women (85.1%) were married, while 3.1% were widows and 11.8% were single. Most of the infertile women (54.7%) were traders, and 19.3% were skilled professionals in various disciplines. The frequency distribution of the reproductive history data showed that the majority (59.0%) of the infertile women had been married for 0–5 years, and 83.2% of the women had been married for 0–10 years. Many of the respondents (45.3%) had never been pregnant, while 54.7% had experienced 1–2 pregnancies. The majority (63.4%) of the respondents had not had any deliveries, whereas 36.6% had experienced 1–2 deliveries. Additionally, 77.0% of the infertile women had never had an abortion, while 21.7% had undergone 1–2 abortions in their reproductive lifetime. The study found that approximately two-thirds (67.7%) of the women had no live children, while 31.7% had 1–2 live children.

Table 2: ART Perception score and frequency distribution of the infertile women under study

	Item score	**Response frequency and percent**				
Item	**Mean ± SD**	**Strongly disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly agree**
ART means assisted reproductive technology	4.2±0.8	1	5	16	85	54
		0.60%	3.10%	9.90%	52.80%	33.50%
ART should be considered for an infertile couple	4.1±0.9	5	8	10	83	55
		3.10%	5.00%	6.20%	51.60%	34.20%
Couples fear rejection by society if they use ART.	3.3±1.2	7	41	34	49	30
		4.30%	25.50%	21.10%	30.40%	18.60%
The cost of ART is very high.	4.1±0.9	1	12	27	56	65

		0.60%	7.50%	16.80%	34.80%	40.40%
The cost of ART should be taken care of by the government.	3.7±1.0	1	25	35	61	38
		0.60%	15.50%	21.70%	37.90%	23.60%
The ART method of conception is safe.	3.8±0.9	3	6	49	70	32
		1.90%	3.70%	30.40%	43.50%	19.90%
Social media has improved my acceptance of ART.	3.9±1.0	3	18	24	69	47
		1.90%	11.20%	14.90%	42.90%	29.20%
Total subscale score	3.9±1.0					

Table 2 summarizes the perception subscale score, response frequency, and percentage. The total score was 3.855 as shown in the table above. This score (below 4.00) indicated a negative perception towards Assisted Reproductive Technology by the studied infertile women. It shows that two Items, "ART means assisted reproductive technology" and "ART should be considered for an infertile couple" received the highest percentage of "Agree" (51.60-52.80%) and "Strongly agree" (33.50-34.20%) responses compared to other items, and this resulted in the negative perception towards Assisted Reproductive Technology by the women.

Table 3: ART Acceptability score and frequency distribution of the infertile women

	Item score	**Response frequency and percent**				
Item	**Mean ± SD (%)**	**Strongly disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly agree**
My religion is against assisted reproductive technology.	47.7±22.3	30	80	19	23	9
		18.60%	49.70%	11.80%	14.30%	5.60%
Assisted reproductive technology has no effect on the reduction of infertility.	56.0±23.2	25	42	44	40	10
		15.50%	26.10%	27.30%	24.80%	6.20%
Assisted reproductive technology is a good option for an infertile couple desiring children.	64.7±26.7	30	19	14	79	19

		18.60%	11.80%	8.70%	49.10%	11.80%
Assisted reproductive technology is against our culture.	44.1±18.7	33	83	27	15	3
		20.50%	51.60%	16.80%	9.30%	1.90%
Side effects of assisted reproductive technology are harmful to the fetus.	46.6±19.9	35	61	46	15	4
		21.70%	37.90%	28.60%	9.30%	2.50%
Side effects of assisted reproductive technology are harmful to the mother.	46.0±19.6	38	56	51	13	3
		23.60%	34.80%	31.70%	8.10%	1.90%
Husbands only should make decisions about assisted reproductive technology.	45.2±21.6	40	70	27	17	7
		24.80%	43.50%	16.80%	10.60%	4.30%
Assisted reproductive technology is too expensive for easy affordability.	60.0±26.1	33	19	43	47	19
		20.50%	11.80%	26.70%	29.20%	11.80%
Total subscale score	51.3±22.3					

Table 3 shows that the total acceptability subscale score was 51.29%. This score was less than 55% and showed that ART was not acceptable to the infertile women being studied. It also shows that 49.10% and 11.80% agree and strongly agree, respectively, that ART is a good option for an infertile couple desiring children. Therefore, this resulted in the women's lower acceptability score towards ART.

Table 4: Between-group effects of the sociodemographic and reproductive factors on respondents' perception, acceptability, and knowledge of ART

Factor	Frequency (n = 161)	Perception	Acceptability	Knowledge
Age at last birthday		Mean ± SD	Mean ± SD	Median (Min – Max)
15-25	22	3.9 ± 0.9	2.7 ± 1.2	13.7 (6.9-25.0)
26-36	76	3.9 ± 1.0	2.5 ± 1.1	47.2 (32.8-53.2)
37-49	56	3.8 ± 0.9	2.6 ± 1.1	34.8 (26.8-52.8)
50 and above	7	3.5 ± 0.8	2.8 ± 0.7	4.3 (0.0-8.3)
Significant difference test		F= 1.378; p= 0.306	F= 1.426; p= 0.343	χ^2= 6.315; p= 0.393
Level of Education				
None/Primary	13	3.5 ± 0.7	2.4 ± 0.9	8.1 (4.1-14.1)
Secondary	42	3.4 ± 0.9	2.7 ± 1.0	26.1 (15.4-35.0)
University	81	3.3 ± 0.8	2.6 ± 1.0	50.3 (40.7-58.)
Post-graduate	25	3.5 ± 0.8	2. ± 0.9	15.5 (13.5-23.8)
Significant difference test		F= 2.467; p= 0.048	F= 2.455; p= 0.036	χ^2= 5.694; p= 0.297
Occupation				
Civil servant	40	3.8 ± 1.0	2.7 ± 1.2	24.8 (16.5-45.5)
Trader	88	3.9 ± 0.9	2.5 ± 1.1	54.7 (33.3-68.6)
Farmer	2	3.5 ± 0.0	2.3 ± 0.3	1.20 (0.0-3.9)
Others[2]	31	3.8 ± 0.9	2.6 ± 0.8	19.3 (7.8-27.0)
Significant difference test		F= 1.787; p= 0.374	F= 1.583; p= 0.343	χ^2= 8.463; p= 0.035
Duration of marriage (years)				
0-5	95	3.9 ± 0.8	2.2 ± 1.2	59.0 (47.2-68.3)
6-10	39	3.8 ± 0.9	2.2 ± 1.0	24.2 (15.5-37.5)
11 and above	27	3.8 ± 0.8	2.5 ± 1.0	16.8 (12.5-21.5)
Significant difference test		F= 1.315; p= 0.368	F= 1.691; p= 0.412	χ^2= 3.648; p= 0.407

Duration of infertility (years)				
0-5	105	3.4 ± 0.9	2.2 ± 1.0	65.2 (55.6-70.1)
6-10	38	3.2 ± 1.0	2.3 ± 0.9	23.6 (16.5-36.1)
11 and above	18	3.3 ± 1.0	2.4 ± 0.9	11.2 (7.8-13.4)
Significant difference test		F= 1.916; p= 0.271	F= 1.549; p= 0.308	χ^2= 3.984; p= 0.420
Number of pregnancies				
None	73	3.9± 0.9	2.5±1.1	85.1 (76.8-86.4)
1-2	88	3.8± 1.0	2.6± 1.1	77.59 (76.5-84.5)
Significant difference test		t= 1.250; p= 0.509	t= 0.835; p= 0.526	Z= -1.186; p= 0.267

The analysis of variance (ANOVA) F test and t-test in **Table 3** shows that the perception and acceptability of ART by the infertile women were not affected significantly by their age, occupation, duration of marriage, duration of infertility, and number of pregnancies. This study, however, found that the level of education of the infertile women significantly influenced their perception and acceptability of ART because perception and acceptability varied significantly across the levels of education using ANOVA. The Chi-square test (χ^2) and Mann-Whitney (Z) results in **Table 4** show that women's knowledge of ART was not affected significantly by their age, level of education, duration of marriage, duration of infertility, and number of pregnancies while the study observed that occupation of the women significantly influenced their knowledge of ART using Chi-square test since their knowledge varied significantly across the types of occupation. The total score of the cost items was 3.59, and this indicated a high cost or negative cost of assisted reproductive technology perceived by the infertile women. The options "Agree" (34%) and "Strongly agree" (25%) were the most frequent responses to Items "Cost of ART is very expensive", "Cost of ART should be taken care of by the government", and "Assisted reproductive technology is too expensive for easy affordability".

Discussion

The results of the first hypothesis test indicated that the perception of assisted reproductive technology (ART) significantly affects its acceptability among infertile women. This finding aligns with a study by Abazie & Abimbola (2021), which found that infertile women generally have a poor perception of ART. This is likely due to prevailing cultural and religious norms, anxiety about potential health risks, inadequate knowledge of the treatment process, and the societal stigma that often surrounds infertility interventions.

The second hypothesis test revealed that knowledge and awareness significantly influence ART acceptability among infertile women. A

study by Omokanye *et al.* noted that while awareness of ART is high, its utilization remains alarmingly low (Omokanye etal, 2017). This finding is consistent with a study that found that infertile women generally lack adequate knowledge of ART (Fabamwo & Akinola, 2013). Decision-making inherently requires some level of awareness, as one must have sufficient information to make informed choices. Perception plays a critical role in determining whether decisions are accepted or rejected. The lack of in-depth knowledge, awareness, and proper perception observed in this study mirrors findings from similar research conducted in Ibadan, Oyo State, Nigeria, and in Pakistan. In those studies, most participants indicated limited awareness about infertility management and held high levels of skepticism about ART procedures (Bello etal, 2014; Adashi & Dean, 2000).

The third hypothesis test indicated that the willingness to use ART significantly affects its acceptability among infertile women. A study by Omokanye *et al*. (2017) supported this finding, reporting a low willingness to use ART among infertile women. The study also found that education level influences ART acceptance, with lower acceptance observed among those with limited education. This may be due to limited exposure to accurate information about ART, misconceptions surrounding the procedures, fear of the unknown, and a lack of empowerment to make informed reproductive choices. The study was limited to self-reported responses, which may be influenced by recall bias or social desirability bias, potentially affecting the accuracy and honesty of the information provided.

Conclusion

The study revealed that although the infertile women surveyed had a good level of knowledge about assisted reproductive technology (ART), they generally held negative perceptions toward its use. Despite their awareness, the overall acceptability of ART among these women was low. A major factor contributing to this low acceptance was the fear of perceived cost implications associated with accessing ART services. Policies and programs should be developed to further increase the knowledge of infertile women about assisted reproductive technology. More public enlightenment campaigns are also needed to address and reduce the negative cultural influences that hinder the acceptance of ART among infertile women.

Recommendations

Based on the findings of the study, it is therefore recommended that the government, through the Ministry of Health and other stakeholders in the health team, should:

- Provide regular client teaching by the educators to the general population, especially the infertile women in Lagos State, to increase their perception.
- Develop policies and programmes that will further increase the knowledge of infertile women on assisted reproductive technology.
- Develop policies, programmes, and a hospital environment that will increase the acceptability of assisted reproductive technology by the infertile women.

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