

In-Vitro Fertilization: Awareness and perception among infertile women at the Jos University Teaching Hospital

Chinedu C Ekwempu¹, Amaka N Ocheke¹, Adaobi I Ekwempu²

Abstract

Background: The prevalence of infertility is high in the developing world, sub-Saharan Africa inclusive with its attendant medical and social consequences. Tubal factor and male factor are responsible for the majority of cases of infertility in this environment. In-Vitro fertilization (IVF) is the treatment of choice for these cases. Though the services are available in some parts of the country including Jos, the uptake appears to be low. We sought to assess the awareness and willingness to accept IVF services among infertile women in Jos University Teaching Hospital.

Method: A cross-sectional descriptive study involving 149 patients from the Gynaecological clinic of the Jos University Teaching Hospital was carried out. Data were obtained using a pretested questionnaire and analyzed using SPSS version 21.0.

Results: The mean age of the respondents was 30±6 years.

Only 45.6% had heard about IVF. The information they had on IVF was inaccurate in 52.9% of respondents. The majority (77.9%) of the respondents had no idea of the success rate of IVF but believed the process guaranteed pregnancy. Most respondents (74.5%) preferred to have multiple pregnancies if given a choice, however, the majority (72.7%) were unaware of the complications associated with multiple pregnancies.

Conclusion: Efforts to improve the awareness about IVF should be adopted to increase the uptake of the IVF services.

Keywords: IVF, awareness of IVF, infertility, Nigeria

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Introduction

Worldwide, infertility is generally quoted as occurring in 8-12% of couples.¹ However, the incidence varies from one region of the world to the other, being highest in the so-called infertility belt of Africa that includes Nigeria. In contrast to an average prevalence rate of 10-15% in the developed countries, the prevalence of infertility has been notably highly variable in sub-Saharan Africa ranging from 20-46%.^{2,3} This has been attributed to a high rate of sexually transmitted diseases, complications of unsafe abortions, and puerperal pelvic infections.² Infertility accounts for about 60% of the average outpatient gynaecological consultations in Nigeria.⁴

The commonest causes of infertility in Nigeria reported by researchers were tubal factor, uterine factor, ovarian factor, and abnormalities of the spermatozoa.⁴ The treatment modality for a large proportion of these infertile patients, especially with tubal and male factor infertility would be assisted reproductive technology (ART).^{4,5}

However, many patients delay seeking assistance for infertility despite the fact that success in treatment is time-bound. This delay may be due to poor knowledge of

infertility, unavailable and/or inaccessibility of appropriate services, prior unsuccessful medical intervention, and previous visits to traditional healers.⁶ When medical intervention is finally sought, the major challenge for most patients is the availability of the required treatment and the cost.⁶

The uptake of IVF has recently exploded exponentially in major cities of Nigeria. IVF services have been available in Jos for a few years now, however, its utilization has been low. We therefore sought to investigate the knowledge, attitude and willingness to accept IVF among infertile women in Jos.

Methods

This was a cross sectional descriptive study carried out at the gynaecological clinic of the Jos University Teaching Hospital, Jos. The hospital is a 500-bed capacity tertiary academic facility that serves about 8 states in the North central and North eastern parts of Nigeria. The hospital commenced IVF services in 2019 and has run only two cycles of less than ten clients per batch due to an initial low uptake.

All consenting women with a diagnosis of infertility were recruited. The study subjects were recruited using a purposive sampling technique as they presented in the gynaecology clinic and were diagnosed with infertility. All consenting women diagnosed to have infertility were included.

A self-administered questionnaire designed by the authors was pre-tested on 10 patients in the clinic. It was subsequently modified to be an interviewer administered

¹Department of Obstetrics and Gynaecology, University of Jos/Jos University Teaching Hospital, Plateau State, Nigeria.

²Department of Medical laboratory Science, University of Jos, Plateau State, Nigeria.

All correspondences to:
Dr. Chinedu C. Ekwempu
Email: cekwempu@yahoo.co.uk

questionnaire following inconsistencies observed during pre-testing. The Pre-tested questionnaires were administered to all the participants recruited for the study to obtain biodata, knowledge about IVF and willingness to accept IVF treatment.

The sample size for the study was determined using the formula below and a prevalence of Infertility of 10%.

$$N = \frac{Z^2 pq}{D^2}$$

Where:

N= Minimum sample size

Z=1.96 at 95% confidence level

P= Best estimate of prevalence of the condition in the target population expressed as fraction of 100. The prevalence rate of 10% would be used = 0.10

Q= Complementary proportion (1- p) = 0.9

D= level of significance, 0.05 at 95% confidence level

$$N = 1.96^2 \times 0.10 \times 0.9 / 0.05^2$$

$$= 138$$

$$\approx 150$$

Data analysis was performed using SPSS version 21.0.(IBM, Chicago, Illinois, U.S.A.) Continuous variables were presented as means while discrete and categorical variables as proportions.

Ethical approval for the study was sought and obtained from the Human Research and Ethics Committee of the Jos University teaching Hospital, Jos, Plateau State, Nigeria. (JUTH/DCS/ADM/127/XIX/6221)

Results

The demographic features of the respondents are shown in Table 1. The mean age of the respondents was 30±6 years.74.5% were 35 years and below, with 8.1% above the age of 40years. With regards to their faith, 57.7% were Christians while 42.3% indicated Islam as their faith. Among the respondents, 41.6% had tertiary level of education and less than half (45.6%) of the participants indicated they had heard about IVF.

Of the 68 respondents who had heard of IVF, majority (53%) knew about it from relatives and friends while (28%) had received enlightenment on IVF from media sources such as the radio, television and the internet. Only 19. 1% had heard about the procedure from healthcare personnel. (Table. 1)

In addition, out of the sixty-eight respondents who indicated they knew something about IVF, majority (52.9%) of the respondents had incorrect information about it. A large proportion (77.9%) of the patients who had heard about IVF believed that it was a guarantee for pregnancy, though most (77.9%) had no idea about the success rate of the procedure. (Table. 1)

Table 1. Demography and awareness of in vitro fertilization among women with infertility in Jos, Nigeria

Variable	Frequency (%)
Age group, years	
≤25	38 (25.5)
26-30	35 (23.5)
31-35	38 (25.5)
36-40	26 (17.4)
>40	12 (8.1)
Christianity	86 (57.7)
Educational level	
Primary	33 (22.1)
Secondary	54 (36.2)
Tertiary	62 (41.6)
Parity	
0	89 (59.7)
1-2	47 (31.6)
>2	13 (8.7)
Number children alive	
0	99 (66.4)
1-2	46 (30.9)
>2	4 (2.7)
Ever heard of IVF	68 (45.6)
Source of information on IVF	
Relatives	22 (32.4)
Friends	14 (20.6)
TV	11 (16.2)
Radio	7 (10.3)
Internet	1 (1.5)
Doctor	11 (16.2)
Nurse	2 (2.9)
Preferred number pregnancies if IVF was desired?	
Single	14 (25.5)
Multiple	41 (74.5)
Aware of risk associated with multiple pregnancies	15 (27.3)

Of the respondents who knew about IVF, only 36.8% of them knew someone who had undergone an IVF procedure. Furthermore, most of the respondents (74.5%) preferred multiple pregnancies to singleton if given a choice, though 72.7% were not aware of any of the complications associated with multiple pregnancies. (Table.1)

Among the respondents who had heard about IVF, majority (68.3%) had never considered having the treatment. Despite being aware of IVF, most (63.2%) of the respondents did not know anyone who had had IVF, and 59.1% had never been advised to have IVF. (Table 2.) Table 3. shows the reasons for not considering IVF. For a large proportion of the respondents the cost of treatment was the reason for not considering IVF.

Table 2: Level of awareness of IVF amongst respondents who had heard of IVF

Questions	Frequency (%)	
Do you know anyone who has had IVF?		
Yes	25	36.8
No	43	63.2
Have you ever been advised to have IVF		
Yes	27	39.7
No	40	58.8
No response	1	1.5
Have you ever considered having IVF?		
Yes	23	33.8
No	45	66.2
Are babies conceived through IVF normal babies?		
Yes	44	64.7
No	3	4.4
Don't know	21	30.9

Table 3. Reasons by respondents for not ever considered having IVF

Reasons	Frequency	Percentage (%)
A child grown in a bottle is not my child	1	2.4
It is against my religion	1	2.4
Because babies born through IVF have medical conditions	1	2.4
Because of infection risk associated with IVF	1	2.4
Children are gift from God	8	19.5
Cost	11	26.8
Don't like it	4	9.8
I can get pregnant by myself	2	4.9
I can still conceive	1	2.4
I have been pregnant before	1	2.4
Still young to have IVF	2	4.9
No reason	6	14.6
Not educated about IVF	2	4.9

Discussion

The main findings in this study were that less than half of the respondents were aware of IVF. This was despite the fact that the majority had some form of education with over 40% having tertiary education. Studies carried out in Okija in South Eastern Nigeria, Kano and Bauchi in Northern Nigeria showed similar low awareness about IVF, though the literacy level among the respondents was lower.^{7,8,9} However, studies conducted in Zaria and Ibadan showed high awareness of IVF.^{10,11} Their source of information was from informal discussions with friends, family and unreliable media sources. Only a relatively small proportion obtained information from medical personnel. This appears to be a recurring decimal among

the populace where informal sources of information constitute the main form of information dissemination where health matters are concerned.^{7,12}

Most of the information among the respondents who had heard about IVF was incorrect and inaccurate at best. Among respondents that had heard about IVF, majority considered the procedure as a guarantee for success and were oblivious of the failure rates associated with the procedure. This was consistent with other studies that suggested that infertile couples often overestimated the success rate of IVF.^{13,14}

Those who desired to have IVF preferred to have multiple embryos transferred rather than single embryo transfer (SET) which is the recommended standard to prevent the attendant high perinatal mortality and morbidity associated with such pregnancies and maternal complications.^{15,16,17} Majority of the respondents were unaware of the risks and complications associated with multiple pregnancies.

The main reason for the desire to have multiple embryos transferred was a bid to make up for lost time and maximize profit related to the cost of the procedure. The desire for multiple pregnancies appears to be much higher among couples in our environment.¹⁸ A study done by Aziken et al. showed that 95.9% of IVF patients preferred to have two or more embryos transferred rather than the internationally recommended single embryo transfer (SET).¹⁹ This is in sharp contrast to caucasian societies where twins and higher order multiples are not desirable due to concerns about complications associated with multiple pregnancies and attendant higher cost associated with their management.^{20,21} However, the challenge of balancing the relatively lower pregnancy rate associated with single embryo transfer with risk of multiple pregnancies is a significant concern especially in patients over the age of 35years considering the fact that success with IVF declines with increasing age.^{20,21,22}

Most patients were not willing to consider IVF as an option for the treatment of their infertility due to the high cost of the procedure. Other respondents preferred to try other options first before considering assisted reproductive techniques. Some studies have shown a strong association between acceptance of IVF and factors such as age and duration of infertility where older couples who have had a longer duration of infertility were more likely to accept the treatment option.¹¹ Our study population, with a mean age of 30years was much younger than the mean age of IVF patients in Nigeria and most parts of the world.^{23,24}

Limitations of the study

The study was carried out in a teaching hospital setting which may not be reflective of the community in which the hospital exists, considering the fact that the hospital

also receives patients referred from neighbouring states.

Conclusion

Awareness about In Vitro fertilization among infertile patients attending the gynaecology clinic of the Jos University Teaching Hospital is low. The information they possessed was inaccurate and associated with a lot of misconceptions. Service providers should improve information dissemination within the clinic environment in the form of leaflets and audiovisuals in English and local dialects as appropriate. Outreach services to religious bodies such as churches and mosques should be considered to aid information dissemination in the community which may serve to improve the uptake of IVF services in Jos.

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