

Sperm Bank Scheme And Surrogacy Institution;-willingness And Utilization Of Assisted Reproductive Technology Among Women Of Reproductive Age Group In Ilorin. Nigeria

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Abstract

Introduction;

With the introduction of intracytoplasmic sperm injection (ICSI), assisted reproductive treatment (ART) can now help infertile couples with a male factor, a condition for which results of traditional treatment have not been satisfactory. It can help fertile couple as well to conceive healthy children through the application of new technologies of pre implantation genetic diagnosis and embryo selection

Objectives

The study seeks to determine the willingness and utilization pattern of ART services in Nigeria. It also assessed perception to surrogacy and sperm bank scheme.

Methodology

The study was a prospective, community based, cross sectional study in north central Nigeria involving women of reproductive age group. Two hundred and seven (207) were interviewed for the study.

Results

Awareness of the ART is high (70.4%), though only (38.4%) actually knows what ART means. The choice of adoption as an alternative to ART was not favored by 78% of respondents. For those who will choose adoption alternative, cost (100%), likely failure (89%) and to a lesser extent cultural objections were some of the variables which may influence their choice of adoption. Gamete (egg/sperm) banking is generally frowned at in most cases and the respondents will not permit their spouses nor serve as donors for banked gametes. Majority of the respondents prefer that there should be ethical standards in the practice of egg/sperm banking.

Conclusion and recommendations

The willingness of the respondents to utilize ART treatment in general is good. However, there are gaps waiting to be filled in terms of factors that will influence the utilization and uptake of ART services this include the cost of the treatment options as well as the ethical issues of regulation, gamete donation, and surrogacy. We therefore recommend a couple-centered approach uptake of ART services, there is an urgent need for optimal and tailored information dissemination to women of reproductive age group.

Key Words; Assisted Reproductive Health, Willingness, Utilization, ART, Sperm Bank and Surrogacy

Introduction

The prevalence of infertility is particularly high in Sub-Saharan Africa, varying from 20-46% in some parts of West Africa¹⁻³. Countries like Gabon, Cameroon, Guinea Equatoria, Central African Republic, Niger, Mali and Zaire have levels of infertility among women aged 25 - 29 years ranging between 7-50%^{2,4}. This high level of infertility suggests that acquired causes of infertility are prevalent in these countries. There are also ethnic and religious bias in the prevalence rates of infertility as seen in these countries¹⁻⁵.

At the University of Ilorin Teaching Hospital, Ilorin, more than 50% of gynaecological consultations are for infertility⁶. Post-infectious infertility are relatively commoner in East and Central African countries than the West and South African countries^{3,7}.

When the first baby conceived in vitro was born, a completely new frontier was opened up in reproductive medicine, and new hope was given to infertile couple. The new technology brought happiness and harmony to many families. Since 1978, the field of assisted reproductive technology (ART) has witnessed spectacular scientific advances and additional medical applications^{2,3}. With the introduction of intracytoplasmic sperm injection (ICSI), ART can now help infertile couples with a male factor, a condition for

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Table 2: Level of Education and Acceptance of Respondents To Be An Egg Donor

Educational Status	Yes	No	Total
None	12	40	52
Primary	16	43	59
Secondary	18	42	60
Tertiary	30	6	36
Total	76	131	207

$X^2=10.03$, degrees of freedom =3, p value=0.0056(S)

TABLE 3: RELIGIOUS VIEWS OF RESPONDENTS ON ART

Variable	A (%)	NA (%)	DK (%)	Know
Belief ART is forbidden and sinful	48 (23.3)	159(76.7)		
Belief is written in Holy Book (Quran or Bible)	32 (66.7)	16(33.3)		
Religious permit limited All levels of ART	152(73.4)			
Religious permit limited some levels of ART	34(16.4)			
Religious forbids All levels of ART	08(3.9)			
Awareness of IVF Treatment cost	89 (43.7)	118(57.3)		
Don't know what Religious permit of ART	13(6.3)			
Cost is not affordable	81(91.0)	8(9.0)		
Infantile Couple should Save for IVF	204(99.6)	3(1.4)		
Infantile Couple should Adopt	46 (22.2)	161(77.8)		

Table 5: Respondents' Attitudes to Gamete - Embryo Donation and Surrogacy

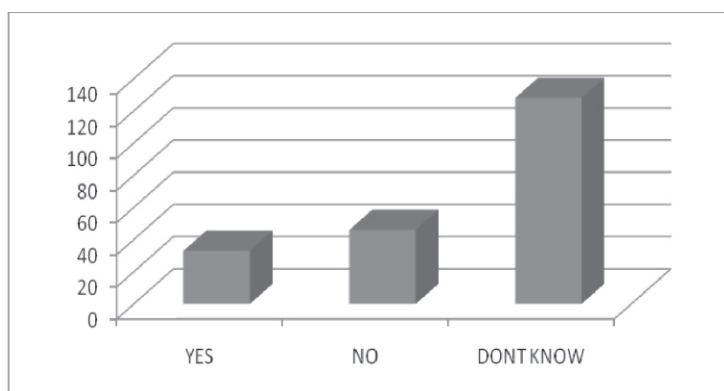
Variable	Yes	No
Permit my Husb. To be a sperm donor	9 (4.3)	198 (95.7)
Can you be an Egg donor	36(17.4)	171(82.6)
Donate Egg Family/Relation only	171(82.5)	28(13.5)
Done Egg to Anybody	8(4.0)	-
Awareness of Surrogacy	73(35.3)	124(64.7)
Like to be paid surrogacy	20(91.0)	2(9.0)

TABLE 6 : KNOWLEDGE AND ATTITUDES TO GAMETE (EGG/SPERM) BANKING

Variable	Yes	No
Aware of Gamete Egg/Sperm Bank	24 (11.6)	183(88.4)
Egg be bank for future	76(36.7)	131(63.3)
Husband Sperm be Banked	76(36.7)	131(63.3)
There should be Ethical Standard	207 (100.0)	



FIG V awareness of the practice of assisted reproduction among respondents



KNOWLEDGE OF RESPONDENTS ABOUT ART USE IN PRE-IMPLANTATION GENETIC DIAGNOSIS

Table 1: Socio-Demographic Characteristics of Respondents

<i>Age</i>	Number (%)
15-20	28(13.5)
21-25	62(39.0)
26-30	57(27.5)
31-35	20(9.7)
36-40	18(8.7)
41-45	12(5.8)
46- 50	10(5.8)
Total	
Marital Status	
Single	43(20.8)
Married	47 (71.0)
Divorced	12 (5.8)
Windowed	5(2.4)
Total	
Parity	
0	48(23.2)
1-2	76(36.7)
3-4	40(19.3)
≥ 5	43(20.8)
Total	
Religion	
Islam	152 (73.4)
Christianity	47(22.7)
Traditional	8(3.9)
Total	
Educational Status	
None	52(25.1)
Primary	59(28.5)
Secondary	60(29.0)
Tertiary	36(17.4)
Total	
Occupation	
Trading	104(50.2)
Teaching	51(24.6)
Artisan	21(10.1)
Full Housewives	13(6.3)
Nursing	5(2.5)
Medical practice	1(0.5)
Others	3(1.5)
Unemployed	9(4.3)
Total	207(100)

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which results of traditional treatment have not been satisfactory⁴. The potential of ART is now not limited to infertile couples. It can help fertile couple as well to conceive healthy children through the application of new technologies of pre implantation genetic diagnosis and embryo selection. Further, ART allowed a much better understanding of the early stages of human development and differentiation, and opened up a new field of stem cell research, bringing a new hope for the treatment of certain serious diseases, for which no effective treatment is currently available⁴.

With all these advances, challenges are still to be faced. There are challenges for which the health profession as a group has to take responsibility. And the society has to cope with new challenges brought to the forefront by this technological revolution and its social implications. One challenge that cuts across all others is how to make ART more widely available and affordable for all who need it, particularly in developing countries.

The study seeks to determine the willingness and utilization pattern of ART services in North Central Nigeria. It also determined the Knowledge and Attitudes of Women of Reproductive Age Group to surrogacy and Sperm bank scheme

Methodology

The study was a prospective, community based, cross sectional study in Ilorin, north central Nigeria involving

women of reproductive age group. Two hundred and seven (207) were interviewed for the study. The instrument used was interviewer administered questionnaire. The questionnaires contain forty-eight open and closed ended questions. The pretesting of the research instrument was carried out at Ilorin South LGA involving about 30 respondents. All the necessary modifications of the instrument were made before the final instrument can be used for data collection.

Results

From Table I The mean age of the respondents was 27.68 ± 4.82 years. Most (71.36%) were married and about a fifth was single. Majority (73.4%) were Muslims while 22.7% were Christians. The mean parity of the respondents was 3.76± 2.09. About a quarter (23.2%) never had a baby previously. About half of the respondents were traders. Others were teachers (24.76%), Artisans (10.19%) while health practitioners constituted only 3% of respondents.

Figure I. Most of the respondents were aware (90.29%) and had utilized (23.5%) conventional method of treatment for infertility. Awareness of the ART was high (70.4%), though only (38.4%) actually knew what ART means.

Form Table II. There is significant association between level of education and acceptance to be a surrogate

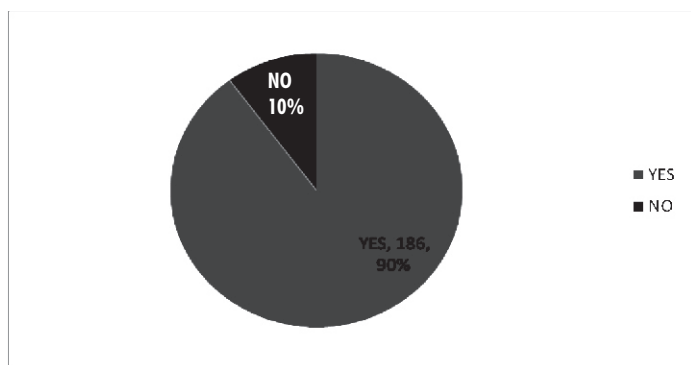


Figure I: Awareness About Conventional Method Of Infertility Treatment Among Respondents

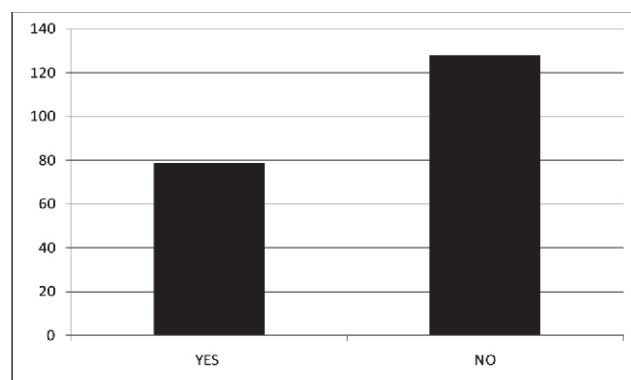


Figure ii: AWARENESS OF ASSISTED REPRODUCTION

FIGURE iii: MEANING OF ASSISTED OF REPRODUCTION TECHNOLOGY ACCORDING TO RESPONDENTS

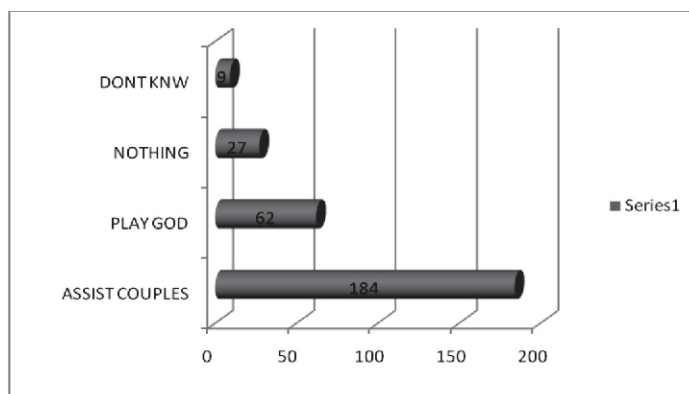


Fig. IV; Meaning of Assisted Reproductive Technology

mother. From Table III, about ninety percent of respondents believed that ART assists couples to achieve pregnancies easily; about a third of respondents believed ART practitioners play God with human reproduction. About a quarter will consider ART as forbidden and sinful; yet more than seventy percent will consider taking all ART treatment modalities irrespective of their religious affiliation. Only a quarter will wait for divine time in order to get pregnant. Majority will not consider failure of treatment as spiritual curse. (Table III)

Figure II. Out of the 78 (70.4%) respondents with negatives responses about awareness, a further two thirds (66.7%) were willing to utilize such services if necessary.

Most respondents did not know how much it costs to have an ART treatment done. However, most do believe that it was meant for the rich. Almost all the respondents believed the clients will need to save in order to be able to afford the ART treatment. The choice of adoption as an alternative to ART was not favored by 78% of respondents. For those who will choose adoption alternative, cost (100%), likely failure (89%) and to a lesser extent cultural objections were some of the variables which may influence their choice of adoption. Table IV.

Majority of the respondents will not permit their spouses as gamete donors. Even for those who will, they will prefer to do that in majority of cases to their relatives and will not encourage surrogacy. Almost 90% of respondents will not want to be surrogate mother, but for those who will, they will prefer to be paid. The respondents in most cases will not want the surrogate child to be informed about his conception nor like the surrogate child to know the other siblings. Gamete (egg/sperm) banking is generally frowned at in most cases and the respondents will not permit their spouses nor serve as donors for banked gametes. Majority of the respondents prefer that there should be ethical standards in the practice of egg/sperm banking as seen in Table 6. In figure VI, most of the respondents do not know the use ART in pre implantation genetic diagnosis. Table V

Discussion

Willingness and awareness about assisted reproduction technologies (ART) is high while the majority of the respondents believe that ART is beneficial. This finding is consistent with the views of Okonofua⁴ in Benin City, Nigeria and Jimoh⁴ in Ilorin. Presence of such specialized service in Ilorin and Nigeria is appreciated though as much as a third ascribed God's attributes to the IVF providers similar to the experience of Serour G.I amongst Muslims in Egypt⁸. Many of the respondents still believe the technology is sinful and forbidden. This is reflective of the level of understanding and

appreciation of the new technology in Nigeria and Ilorin precisely. This experience is shared by many other authors⁹⁻¹² in their review of the practice of IVF technology in their respective domains. Cultural as well as religion influences can be used to corroborate the perceived opinion of these people as exemplified by two thirds of the respondents with negative belief and views about the IVF technology in this study.

Interestingly, more than eighty percent will advise infertile couples to choose the ultimate path way of IVF when conventional treatment has failed instead of waiting for divine time.¹³⁻¹⁵ The respondents in majority of cases accept sex selection and PGD as possible benefits of ART but consider embryo screening as wrong. This appears contradictory since embryo screening is an intrinsic part of PGD technology which can be adopted for embryo screening. Infertility in Nigeria in some cases are considered as spiritual curse^{4,7,12,14}

In respect to ART, as shown in this study, most respondents will not consider spiritual curse as a reason for unsuccessful treatment outcome.

Cost of the ART treatment is known to be prohibitive^{4,7,12,13} especially in developing countries. Access to the treatment is restrictive as believed by over 40% of respondents and there is almost universal agreement that in many cases, perspective clients will heed to save in order to access treatment.

In the ART program in Nigeria, the need for some level of subsidy is advocated by majority of respondents. Subsidies are rare opportunities on ART programme worldwide. Even in developed world, subsidies are not generalized but limited to some aspects of the treatment (HFEA UK), this is virtually non existence in Nigeria as in most developing countries^{4,7-9,16,17,19}.

Adoption of children is restricted by the societal laws and the culture of the local people. Such children are considered not really theirs and the society tends to frown at such attempts. In order to avoid recrimination against the adopted children, couples often seek ART as alternative options^{20, 21, 22, 23}. More than three quarters of respondents do not prefer adoption to ART, while for those who may adopt Children, suggested reasons are varied but instructive. These include cost, known success rate of ART as well as cultural objection to adoption.

Availability of IVF centers in Nigeria is believed to be low¹⁰. Presently, there are not more than 23 centres in Nigeria for a population of about 3-5 million IVF seekers. This is highly restrictive, and may be partly responsible for the high cost of the procedure in Nigeria. Training of personnel for the ART programme is limited in Nigeria. Certainly, there is presently no government institution that provides training program. In majority of cases, training and

collaboration are done with foreign IVF centers and other training institutions.¹²⁻¹³ This situation is not particular to Nigeria, this is similar to experiences elsewhere^{19,12-15}

Surrogacy as an institution in Nigeria is not common¹¹. Awareness about surrogacy is high as demonstrated by the study, but the issues of practice remains unpredictable while the issue of payment as a surrogate remains a key issue. Informing the offspring of a surrogate IVF cycle is desirable according to the HFEA guidelines but this study has revealed otherwise, perhaps due to cultural and religious factors as undercurrents. Certainly, virtually all respondents will not want surrogate offspring's know their naturally conceived offsprings; this may appear more cultural. Experiences in the past at efforts in creating sperm banks or egg donation schemes have met with disappointing results.³ It is therefore not surprising that almost all respondents will not encourage their male spouses to be sperm donors while similarly, they will also not serve as egg donors. A novel egg sharing scheme which allows a donor who is financially incapable of paying for her own ART treatment to donate some of her own eggs for a more financially capable person in need of donated eggs will obviously reduce appreciably the stigma, logistical problems as well as the easy availability of donors. At all times, confidentiality and counseling are mandatory. An elaborate and well designed study is necessary to look at ways of improving this area of deficiency. It is not enough to have knowledge/awareness of gamete banking, real attitudinal and behavioral modification will be necessary to improve the acceptance of the donation policy and the donated gametes- this is similar to the experience among sperm donors in china¹⁴.

Conclusions And Recommendations

From the foregoing, it can be seen that the willingness of the respondents to utilize ART treatment in general is good. However, there are gaps waiting to be filled in terms of factors that will influence the utilization and uptake of ART services in including age of the respondent, religious affiliation of the respondents, cost of the treatment options as well as the ethical issues of regulation, gamete donation, and surrogacy. We therefore recommend a couple-centered approach uptake of ART services, there is an urgent need for optimal and tailored information dissemination to women of reproductive age group. Partial or total funding of infertility services, including ART, will go a long way in ameliorating the financial burden associated with this form of infertility management

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