

Prevalence of Infertility and Acceptability of Assisted Reproductive Technology among Women Attending Gynecology Clinics in Tertiary Institutions in Southwestern Nigeria

Olugbenga Bello Adenike ^{1*}, Adebimpe Wasiu ², Olarewaju Sunday ³, Babatunde Olaniyan ³ and Oke Olufemi ³

¹Department of Community Medicine, Faculty of Clinical Sciences, College of Health Sciences, Ladoke Akintola University of Technology (LAUTECH), Osogbo, Osun State, Nigeria

²Department of Community Medicine, Osun State University, Osogbo, Nigeria

³Department of Community Medicine, Ladoke Akintola University of Technology (LAUTECH), Teaching Hospital, Ogbomoso, Oyo State, Nigeria

Abstract

This study is aimed to assess the level of awareness and perceptions of Assisted Reproductive Technology among women attending fertility clinics in Osun State South West Nigeria. A total of 257 women attending gynecology clinics in Osun State teaching hospitals (LAUTECH and OAU Teaching Hospitals) were recruited through systematic sampling technique, using a pre-tested, semi-structured, interviewer administered questionnaire.

Only 46% of the respondents were aware of ART. About 73.5% of those that were aware would opt for it. Thirty five point six percent of those who rejected IVF claimed that the cost was high, 31.1% of them believed that only God gives babies while 18.9% was of the opinion that the procedure may fail. 25.6% believed ART babies are artificial babies. Only 24.3% knew where the services were offered while 16.5% were only aware of the cost. 192(76.8%) has a positive attitude to ART. Duration of infertility, being married and high educational status were the predictors of being aware of ART, giving support for ART and opting for ART as a solution to the problem of infertility.

There was a low awareness about ART and educational status influenced level of awareness. There is need to put in more efforts in spreading the knowledge of in-vitro fertilization in developing countries like Nigeria. Efforts should be made to make the procedure more affordable and accessible.

Keywords: Awareness; Perceptions; Infertility; Assisted reproductive technology (ART)

Introduction

The population of the world had been on the increase, evident by high fertility trends. The joy of every marriage is for the couple to procreate and raise children of their own. Globally, infertility affects at least about one couple in six, and affecting the developing countries than the developed ones [1,2]. In Sub-Saharan Africa, the prevalence of infertility is as high as 30% and the male contribution in most countries including Nigeria had been variously estimated to be between 30 and 50% [3,4].

In Nigeria, it has been described as an important reproductive health concern of women and a common reason for gynecological clinic consultations. Like other developing countries, having children is a social obligation, parenthood is culturally mandatory, childlessness is socially unacceptable and childlessness stigmatized; all due to a high societal value placed on children [5]. Thus, female infertility produces social consequences for African women and these consequences are particularly profound for women as compared to men, regardless of the causes of infertility [6].

There are limited treatment options currently available for infertile couples. Many of them are wary of choosing adoption as a way of resolving infertility because of cultural factors and the non-specific provisions for adoption in the Nigerian legal system. This quest of infertile couples to resolve the problem of infertility has resulted in the patronage of various treatment centers with different treatment options. Assisted Reproductive technology has been reported to relieve more than 50 percent of infertility cases [7]. ART can be referred to as all treatments or procedures that include the *in vitro* (IVF) handling of human oocytes and sperm or embryos for the purpose of establishing a pregnancy. Therefore, even in severe cases which may be solved by conventional treatment, possible impact of these technologies on Nigeria and other nations in Africa is not in doubt.

Despite breakthroughs recorded from ART, several barriers faced accessibility to this technology including availability and affordability. Research also indicates that a greater percentage of those who experience infertility are poor and ART is still not readily covered by the premium health insurance schemes in Nigeria [8]. The level of awareness and knowledge are commensurately low despite reported high demand for ART brought about by high rate of infertility in Nigeria and many other developing countries.

Hence, determining the level of awareness and perception on ART treatment practices among infertile women would be useful in sensitizing and planning public enlightenment programmes on advanced infertility treatment. Therefore, this study seeks to assess the prevalence of infertility and level of knowledge, attitude and acceptability of ART among infertile women attending the gynecology clinics of Teaching Hospitals in Osun State in Southwestern Nigeria.

Materials and Methods

The study was carried out in Osun State, Southwestern Nigeria, with a population of about 3.5 million according to the last national

***Corresponding author:** Dr. Olugbenga-Bello AI, Department of Community Medicine, Faculty of Clinical Sciences, College of Health Sciences, Ladoke Akintola University of Technology (LAUTECH), Osogbo, Osun State, Nigeria P.O. Box 1734, Osogbo, Osun State, Nigeria, Tel: 2348033839282, E-mail: nike_bello@yahoo.com

Received January 10, 2014; **Accepted** March 18, 2014; **Published** March 28, 2014

Citation: Olugbenga Bello Adenike I, Adebimpe Wasiu O, Olarewaju Sunday O, Babatunde Olaniyan A, Oke Olufemi S (2014) Prevalence of Infertility and Acceptability of Assisted Reproductive Technology among Women Attending Gynecology Clinics in Tertiary Institutions in Southwestern Nigeria. Gynecol Obstet (Sunnyvale) 4: 210. doi:[10.4172/2161-0932.1000210](https://doi.org/10.4172/2161-0932.1000210)

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population census [9]. There are eight general hospitals and two teaching hospitals (LAUTECH and OAU Teaching Hospitals) with human resources to manage infertility in the state. However, organized Obstetrics and Gynaecology department with functional infertility clinics were readily available in the two tertiary institutions. The study was descriptive cross-sectional survey among infertile women. Only the 2 teaching hospitals were used while study population consists of all consenting women attending gynecology clinics of the 2 hospitals.

Using a 40.7%, prevalence of infertility in the Kish and Leslie (1965) formula for calculation of sample size in population less than 10,000, a sample size of 234 was estimated at 95% confidence interval and 5% level of precision with normal deviation Z of 1.96 [10]. With 10% non-response rate, 257 questionnaires were administered, equally allocated to the 2 hospitals. Gynecology clinics hold on weekly basis in these hospitals. On a clinic day, a list of already sorted out and registered women were obtained from the triage nurse, a systematic sampling of one in three women on the clinic attendance sheet were selected. Data collection continued until allocated questionnaires were exhausted. Data collection took place over a period of six months.

Research instruments were interviewer administered semi structured pre tested questionnaires, and administered by ten trained resident doctors in the departments of Obstetrics and Gynaecology and community medicine. Each questionnaire contain five sections including socio-demographic data, gynecological history of the respondents, awareness and knowledge of ART, respondents attitude towards ART and their perception and acceptability of ART. The questionnaire drafted in English language was translated to Yoruba the native language and back translated to English, to ensure clarity and non-ambiguity as well as to reduce inter-observer variation in interpretation during the interview.

Data collected were checked manually for errors & then double entered and analyzed on a microcomputer using the SPSS version 15. Relevant frequency tables were generated. Discrete variables were expressed as percentages. Nine questions were asked from respondents to showcase attitude towards ART, and responses were ordinally graded as: strongly agree, agree, indifferent, disagree or strongly disagree'. Graded marks of 1-5 were assigned to these ordinal variables, and the graded sum calculated. Positive attitude constitutes those with 55% and above. The attitude questions were, whether respondents religion is against ART, ART has no effect on reduction of infertility, ART is a good option for infertile couple desiring children, ART is against our culture, that side effects of ART are harmful to the foetus, that Side effects of ART are harmful to the mother, Husbands only should make decisions about ART, Decision about ART should be joint-wife and husband and whether ART is too expensive to warrant neglecting it. For multivariate analysis involving confidence intervals, the 3 levels of education (primary, secondary and tertiary) were grouped as educated against the non-educated participants. Also, the professional and skilled workers were grouped together as 'Professionals' while other occupation were grouped as non-professionals. In addition to multivariate analysis using the regression model, the chi-square test was used to test for association between discrete variables on the contingency tables and statistical significance was accepted at p values<0.05.

Ethical clearance to conduct the study was obtained from LAUTECH Teaching Hospital ethical review committee. Permission was also obtained from the consultant's in-charge of the clinics, while a written informed consent was obtained from each selected patient.

Results

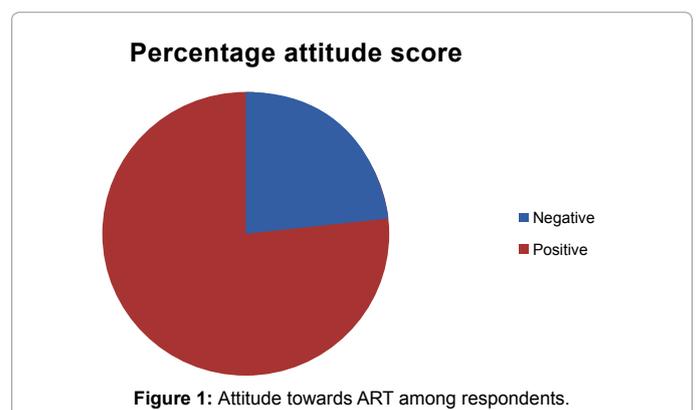
A total of 250 respondents returned completely filled questionnaires giving a response rate of 97.3%. Table 1 showed that age group 25-34 years constitutes the highest (44.4%) while 15-24 years constitutes the lowest (8.0%) frequency. Mean age of respondents was 34.9 (+9.3 years). One hundred and ninety (76.0%) of respondents were married, 149 (5.6%) had no formal education, 139 (55.6%) had tertiary level education, 119 (47.6%) were skilled and 81 (32.4%) unskilled. Majorities 179 (71.6%) were Christians and 55.6% had tertiary education.

Figure 1 showed that 58 (23.2%) had negative while 192 (76.8%) has a positive attitude to ART.

Table 2 showed the past obstetrics and gynecologic history of the

Variables (n=250)	N	%
Age		
15-24	20	8
25-34	111	44.4
35-44	84	33.6
>44	35	14
Marital status		
Single	43	17.2
Married	190	76
Others	17	6.8
Religion		
Christianity	179	71.6
Islam	68	27.2
Others	3	1.2
Education level		
Nil formal	14	5.6
Primary	22	8.8
Secondary	67	26.8
Tertiary	139	55.6
Others	8	3.2
Occupation		
Housewife	29	11.6
Unskilled	81	32.4
Skilled	119	47.6
Others	21	8.4
Ethnicity		
Yoruba	224	89.6
Ibo	13	5.2
Hausa	2	0.8
Others	11	4.4

Table 1: Socio-demographic data of Respondents.



respondents. Presenting complaint of 102 (40.8%) of respondents were infertility related, however, only 67 (26.8%) have had the problem of infertility. Of these infertile respondents, 44 (65.6%) had it for less than 5 years while the infertility had been resolved in 19 (28.4%) of them. Resolving the problem include use of surgery, drugs and ART, while alternative care include traditional healers and religious outfits. Table 2 further shows that 79(31.6%) of respondents desired to have between 2-4 more children.

Table 3 showed the perception of respondents about ART. Majority 115 (46%), were aware of ART and health care workers being the major source of information among 37 (14.8%). Among the respondents who were aware, 28 (24.3%) knew a center where ART services were rendered, while 9 (16.5%) had an idea of the cost. The major perceived benefits of ART by 92 of the respondents who responded to this question, was that conception is made possible, 91 (98.9%). However, 10 of 35 respondents perceived multiple gestations as a disadvantage of ART, while 6 respectively perceived cost and fetal deformation as a disadvantage. Societal stigma was perceived as a major side effects 14 out 15 (93.3%). Sixty four (25.6%), of respondents believes ART babies are artificial, 48 (19.2%) believes babies conceived through ART will be deformed, and 110 (44%) of respondents believed ART babies will not be socially acceptable. Table 3 further showed that majority 160 (60%) of the respondents supported ART, while cost 32, (83.3%) and religious belief (28 (66.6%) constituted major reasons for not supporting ART. However, 85 (34%) will suggest ART to infertile couples.

Using bi-variate analysis, Table 4 showed that a statistically significant association exists between awareness of ART and duration of infertility, and educational status. Similar association also exists between being in support of ART, and marital status and educational status. A statistically significant association also occur between

Variables	F	%
Past Obstetrics History		
Presenting complaints infertility related(n=250)	102	40.8
Have had problem of infertility before (n=250)		
Yes	67	26.8
No	183	73.2
Duration of infertility (n=67)		
Less than 5 years	44	65.6
5-10 years	20	29.9
Above 10 years	3	4.5
This infertility had been resolved(yes option) n=67	19	28.4
How resolved(n=19)		
Surgery	9	47.4
Drugs	4	21
ART	3	15.8
Others	3	15.8
Other alternative places that respondents have sought care (n=67)		
Traditional healers	14	20.9
Religious(mosque, church)	22	32.8
Chemists	12	17.9
Others	19	28.4
No of more children desired by respondents (n=250)		
1	13	5.2
4-Feb	79	31.6
>4	1	0.4
Non-response(shows the sensitivity women attached to counting no of children they wanted or had)	157	62.8

Table 2: Respondents history of infertility.

Variables (n=250)	F	% of total
Are you aware of ART (yes option)	115	46
Sources of information about ART (n=115)		
Health care workers	37	14.8
Family and friends	26	10.4
Book,	4	1.6
Internet	9	3.6
Media	26	10.4
Others	13	5.2
Know center where ART services are available (n=115)	28	24.3
Have an idea of the cost (n=115)	19	16.5
*Perceived benefits of ART (n=92)		
Conception made possible, family is happy	91	98.9
better than adoption	1	1.1
divorce prevented	1	1.1
societal stigma circumvented	1	1.1
technology becoming more available and affordable	1	1.1
*Perceived disadvantages of ART (n=35)		
Chance of abortion	2	5.7
multiple gestation	10	28.6
failure	5	14.3
expensive	6	17.1
fetal deformation	6	17.1
stigma	4	11.4
not natural	2	5.7
Possible side effects	15	42.9
I am in support of ART(yes option only)	160	64
One major reasons for not supporting or why I may not go for ART (n=90)		
Only God gives baby-/religious beliefs		
High cost	28	31.1
may fail	32	35.6
not cultural or natural	17	18.9
fetal malformation	5	5.6
societal stigma	4	4.4
	4	4.4
Will like to opt for ART (n=250)	85	34
Babies born through ART are artificial baby (yes option)	64	25.6
ART baby will be socially acceptable(yes option)	140	56
ART babies will be defective (yes option)	48	19.2

Table 3: Respondents perception about art.

decision to opt for ART and duration of infertility and educational status ($p < 0.05$). In addition, the observed mean difference in duration of infertility and some categories of respondents (those were in support and those who would opt for ART) was statistically significant.

Table 5 showed respondents with fertility more than 5 years duration were about 6 times (1/0.16) more likely to opt for ART than those who had infertility for less than 5 years duration, and this observation was statistically significant ($OR = 0.16$, $95\%CI = 0.04-0.67$, $p = 0.004$). Those who were married were also one and a half times more likely to opt for ART compared to those who were not, though findings not statistically significant ($OR = 0.69$, $95\%CI = 0.31-1.52$, $p = 0.182$). Similarly the educated respondents were 4 times more likely to be aware of ART ($OR = 0.243$, $95\%CI = 0.01-0.58$, $p = 0.005$) and twice more likely to opt for ART ($OR = 0.43$, $95\%CI = 0.09-1.97$, $p = 0.141$) compared to the uneducated respondents. Duration of infertility being married and high educational status were thus predictors of being aware of ART, giving support for ART and opting for ART as a solution to the

X ² variables		Aware of ART	In support of ART	Will opt for ART
		Yes No	Yes No	Yes No
Age	15-24	8 (42.1) 11 (57.9)	5 (78.9) 3 (15.8)	4 (26.7) 8 (53.3)
	25-34	50 (45.9) 59 (54.1)	67 (66.3) 25 (24.8)	37 (40.2) 38 (41.3)
	35-44	38 (55.1) 31 (44.9)	49 (73.1) 15 (22.4)	31 (50.0) 20 (32.3)
	Above 44	14 (41.2) 20 (58.8)	23 (65.7) 8 (22.9)	12 (44.4) 7 (25.9)
		X ² =2.469 p=0.481	X ² =3.050 P=0.803	X ² =6.136 P=0.408
Duration of infertility	Less than 5 years	17 (39.5) 26 (60.5)	20 (52.6) 16 (42.1)	12 (30.8) 19 (48.7)
	5-10 years	14 (70.0) 6 (30.0)	16 (80.0) 4 (20.0)	7 (36.8) 5 (26.3)
	>10 years	6 (50.0) 6 (50.0)	10 (83.3) 2 (16.7)	9 (75.0) 2 (16.7)
		X=5.071 p=0.049	X ² =6.903 p=0.141	X=10.741 p=0.030
Marital status	Single	19 (46.3) 22 (53.7)	31 (81.6) 7 (18.4)	11 (34.4) 12 (37.5)
	Married	94 (50.5) 92 (49.5)	124 (68.9) 56 (31.2)	0.70 (43.2) 62 (38.30)
		X ² =5.264 p=0.261	X ² =50.458 p=0.001	X ² =2.469 p=0.481
Educational status	Nil formal	1 (7.1) 13 (92.9)	2 (15.4) 7 (53.8)	2 (15.4) 8 (61.5)
	Primary	5 (25.0) 15 (75.0)	9 (47.4) 9 (47.4)	8 (44.4) 10 (55.6)
	Secondary	25 (39.1) 39 (60.9)	41 (67.2) 13 (21.3)	20 (37.7) 20 (37.7)
	Tertiary	83 (59.7) 56 (40.30)	106 (78.5) 24 (17.8)	54 (45.0) 41 (34.2)
		X ² =23.285, p=0.001	X ² =33.763 p=0.001	X ² =10.671 p=0.049
No of children desired	Only one	10 (83.3) 2 (16.7)	12 (100.0) 0 (0.0)	5 (41.7) 4 (33.3)
	4-Feb	43 (54.4) 36 (45.6)	52 (69.3) 18 (24.0)	25 (38.5) 19 (29.2)
	>4 children	1 (100.0) 0 (0.0)	1 (100.0) 0 (0.0)	0 (0.0) 1 (100.0)
		X ² =4.301 p=0.116	X ² =5.397 p=0.249	X ² =2.537 p=0.638
Independent sample T test				
Variables	Statistics	Aware of ART	In support of ART	Will opt for ART
Age in years	N values	Yes (113), No (127)	Yes (158), No (53)	Yes (85), No (78)
	Mean (+std dev)	34.7 (+8.4)	34.5 (+9.0)	35.1 (+8.4)
	Mean difference	-0.241	-0.739	0.837
	t and p value	-0.198, 0.843	-0.158, 0.605	0.594, 0.544
	95%CI	-4.8	-5.66	-5.56
Duration of infertility in years	N values	Yes (38), No (38)	Yes (47), No (22)	Yes (28), No (26)
	Mean (+std dev)	6.1 (+2.3)	6.7 (+2.9)	7.1 (+2.5)
	Mean difference	1.184	2.705	3.071
	t and p value	1.154, 0.252	2.369, 0.021	2.647, 0.011,
	95%CI	-4.09	0.43-5.00	0.74-5.39
Number of children desired	N values	Yes (54), No (38)	Yes (65), No (18)	Yes (30), No (24)

	Mean (+std dev)	2.6 (+1.1)	2.6 (+1.0)	2.5 (+0.9)
	Mean difference	-0.239	-0.147	-0.217
	t and p value	-1.134, 0.260	-0.541, 0.590	-0.763, 0.449
	95%CI	-0.83	-1.08	-1.13

Table 4: Bi variate analysis between selected categorical variables.

problem of infertility. Using the ordinal Kendall's tau and Crammer V statistics, association between graded attitude to ART and the selected outcome variables were all not statistically significant, still according to Table 5.

Discussion

The desire to have children should be considered as a normal need that ought to be met [11] and this is what informed our decision to embark on this study considering cultural, social and psychological problems being encountered by the infertile couples, most especially by the women. This is supported by the respondents (98.9%) who believed that with ART at their disposal, conception is made possible and the entire family is happy for it.

The predominance of secondary infertility in this study (73.2%) agrees with other studies in our country and also concurs with the findings of some works which reported primary and secondary infertility as 28.3% vs 71.7%, 42.9% vs 57.1% and 22.5% vs 77.5% [11-17]. This is opposed to the trend in the developed world where primary infertility is higher [18]. The circumstances in Africa have been ascribed to poorly treated previous pelvic inflammatory diseases [12-14,19,20]. One is therefore not amazed that symptoms of pelvic inflammatory diseases were documented among our respondents.

In this study, there was an increase in infertility as the age advances from 8% among 15-24 years to 44.4% among 25-34 years and this corroborates a study done in United States. The reason for this increase could be that at 25-34 majority had married and more concerned about their infertility in terms of social and cultural implications, hence their increased presentation at the fertility clinics [21].

This reason could be substantiated by the works of Balasch and Gratacos in Finland as well as Steenhof and de Jong in Netherlands who described the age of 30 as critical while Leridon and Infomedica in their studies in France indicated similar scenario that the female age-related infertility increases somewhat before age 30 and then significantly more so after the age of 35 [22-24].

Interestingly, higher proportion (47.6%) of skilled women who had a high socio-economic status sought medical infertility treatment earlier and more than women with lower socio-economic status. This is supported by study done in Finland by Miettinen [25]. Higher level of education and socio-economic status has been shown to influence health seeking behaviour [26].

Higher educational status significantly influences ART awareness. This infers that as the educational level increases there is tendency for high awareness and ART acceptability. Increased years of schooling have been shown to result in greater tolerance and acceptance of new ideas and technologies. Singer, Corning and Antonucci in United States of America found that those respondents with higher levels of education tend to be more accepting of genetic testing than those with lower levels of education. Infertility treatments were more common among women with tertiary educational level (55.6%) and this is in consonance with the submission of Terävä in Finland [26,27]. In a comparative study from Australia, women from higher socioeconomic

Binary logistic regression						
	Aware of ART			Will opt for ART		
	N values		OR, p values, 95%CI	N values		OR, p values, 95%CI
	Yes	No		Yes	No	
Duration of Infertility (constant=more than 5 years)	31	32	OR 0.96 p=0.4806 CI=0.23-3.33	19	39	OR 0.16 p=0.004 CI=0.04-0.67
Marital status (constant=married)	19	22	OR=0.84 p=0.3160 CI=0.42-1.66	11	21	OR 0.69 p=0.182 CI=0.31-1.52
Educational status (constant=formal)	1	13	OR=0.243 p=0.005 CI=0.01-0.58	2	11	OR 0.43 p=0.141 CI=0.09-1.97
Positive attitude towards ART (constant=negative attitude)	24	22	OR 1.16 p=0.324 CI=0.61-2.22	17	14	OR 1.07 p=0.436 CI=0.49-2.35
Kendall's and Crammer V statistics						
	Graded attitude (N values)				Statistics	
	Attitude		Statistics		X2, df p values	
	Positive		Negative			
Duration of infertility						
Less than 5 years	9 (84.3)		34 (57.6)		0.850 2 tau-c=0.060, CrV=0.108	
5-10 years	4 (28.6)		15 (25.4)		0.654 P=0.491	
Above 10 years	1 (7.1)		10 (16.9)			
Marital status						
Single	12 (25.0)		27 (14.8)		4.264 4 tau-c=0.063, CrV=0.136	
Married	34 (70.8)		149 (81.4)		0.371 P=0.196	
Educational status						
Nil formal	3 (6.4)		8 (4.4)		3.082 3 tau-c=0.046, CrV=0.112	
Formal	33 (93.6)		174 (95.6)		0.41 P=0.410	
Aware of ART						
Yes	24 (52.2)		88 (48.4)		0.215 1 tau-c=0.025, CrV =0.031	
No	22 (47.8)		94 (51.6)		0.643 P=0.643	
In support of ART						
Yes	30 (66.7)		124 (70.9)		0.303 2 tau-c=0.027, v=0.037	
No	11 (24.4)		37 (21.1)		0.859 P=0.604	
Will opt for ART						
Yes	17 (42.5)		67 (43.2)		0.318 2 tau-c=-0.018, CrV=0.040	
No	14 (35.0)		59 (38.1)		0.855 P=0.777	

Table 5: Further analysis using significant associations.

class quintiles use more ART treatment than those in the lower quintiles, probably because of likely higher educational status and ability to pay for services [28].

Duration of infertility was also found to significantly influence acceptability of ART as women who had been infertile for 5 years or more were less likely to opt for ART unlike women who had been infertile for less than 5 years. This may be a reflection of frustration and mistrust on medical services as infertility progresses and therefore calls for aggressive attention on new attendees.

Married women were more predisposed to support the use of ART than single respondents (p=0.001). This could probably be as a result of stigmatization and social pressure of parenthood as it has been revealed by several studies that infertility and parenthood are highly valued in Africa to the extent that child bearing is usually considered the most

important reason while marriage is in existence [29].

More than half of the fertility clinic attendees in Osun state were unaware of ART services. This could be as a result of non-existence of ART service centre in Osun state. Acceptability and awareness about Assisted Reproduction Technologies (ART) is low and this finding was not in support of study done by Okonofua in Benin City and Jimoh in Ilorin, Nigeria [8,30]. This is because ART services are rendered in these two cities which enhance awareness as opposed to Ile-Ife and Osogbo in Osun state. Similar survey among the general population in Europe and the U.S showed that 90 percent knew of IVF, but less than 25 percent knew about the chances of ART success [31].

Aside the non-presence of ART centre, about a third had religious conviction that only God can give babies and also high cost of service delivery was also responsible for low acceptability. The same conclusion

was drawn by Serour G.I in his study amongst Muslims in Egypt [32]. Religiosity was found to be a consistent and strong predictor of attitudes toward infertility [33].

Healthcare workers in the clinic constituted about a third of the major sources of the women's awareness on ART. This clearly showed that the use of Assisted Reproductive Technology practice is still low especially in developing countries, Nigeria inclusive, where challenges of conception may continue as long as education and poverty reduction are not intensified. This could also be attributed to the low proportion of those who knew where ART services are been rendered.

About one-third of our respondents agreed to opt for ART services agreed with other studies with possible assurance of getting pregnant as supported by many other studies such as those from Korea, North Korea and USA. However many of them who rejected ART said that the procedure is very costly considering the socio-economic situation in Nigeria [34-36]. This is in harmony with the findings of a study which reported that a large majority of the population cannot afford ART infertility treatment which is considered very costly [37]. In addition to this, some believe those babies born through ART are artificial while quite handful of them submitted that ART babies will be socially unacceptable.

It is also interesting to note that about a third preferred to have more than one child from a single pregnancy if they were at liberty to select while only 5.2% opted for singleton pregnancy. This agrees with a previous study done in Anambra State, Nigeria where multiple pregnancies were preferred to singleton [38]. It could probably be to cover for protracted years of barrenness. Also, this might not be unconnected with the out-of-reach cost implication that goes for a session of the ART service. It was also recorded that majority had positive attitude towards ART and what is left is for government to make the services available and at a highly subsidized rate so as to increase accessibility. Multiple pregnancies and births have been associated with ART, as supported by a Canadian study [39]. In 2011, a total of 36% of twin births and 77% of triplet and higher-order births resulted from conception assisted by fertility treatments in the USA [36].

Further analysis showed the importance of high educational status as index of awareness about ART. The highly educated respondents were more likely to have access to sources of information on ART including the internet, the media and specialist health practitioners. They are also more likely to have come across ART related literatures and knowhow of solutions to infertility, where one could get ART services and challenges to ART programs in Nigeria, and even opt in for ART services. The observed mean difference occasioned by different duration of infertility and awareness could be because those who has been infertile for a longer period of time would have seek for alternative methods of achieving fertility including ART, hence the reported higher rate of awareness about ART. For similar reason, the married were expected to have higher awareness and even more likely to have opted for ART compared to the non-married. This is because the traditional pressure of the need to have children would be more on them and this may have prompted them to seek more information about alternative fertility measures including ART.

It could be concluded from this study that there was a low awareness about ART and we also showed how educational status influenced level of awareness. Since there is high positive attitude towards ART what is then left is to create more awareness and increase on the present level of education. It is recommended that government should do more on girl child education so as to increase their knowledge about infertility issues

if confronted later in life. It is also suggested that ART centers should be sited in all the geo-political zones. Again, since duration of infertility influences whether or not an infertile woman would opt for ART, it is therefore strongly suggested that waiting time at fertility clinics should be reduced and attitudes of the health workers that may lead to patients' frustration and disappointment should also be changed.

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Citation: Olugbenga Bello Adenike I, Adebimpe Wasiu O, Olarewaju Sunday O, Babatunde Olaniyan A, Oke Olufemi S (2014) Prevalence of Infertility and Acceptability of Assisted Reproductive Technology among Women Attending Gynecology Clinics in Tertiary Institutions in Southwestern Nigeria. *Gynecol Obstet (Sunnyvale)* 4: 210. doi:[10.4172/2161-0932.1000210](https://doi.org/10.4172/2161-0932.1000210)

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