

## **GAMETE DONATION: KNOWLEDGE, ATTITUDE AND PERCEPTION OF INFERTILE COUPLE IN A PUBLIC HOSPITAL IN NIGERIA**

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### **ABSTRACT**

**Aim:** To assess the knowledge and attitude of infertile couples towards gamete donation.

**Method:** A descriptive cross-sectional survey conducted at the Human Reproduction Research Programme/In-vitro Fertilization Clinic, University of Benin Teaching Hospital (UBTH). Infertile couples on followed up at the gynaecologic clinic of the Hospital had orally administered questionnaire by one of the authors. The questionnaire included questions on their biodata, awareness of ART and knowledge and perception of gamete donation. The study involved the female and male partners and findings were compared.

**Result:** A total of 114 females and 39 males participated in this study. Awareness of gamete donation was more amongst female respondents (67.5%) compared to the male respondents (53.8%). Majority of female respondents were willing to receive and donate gametes (62.3% and 85.1%). In contrast most male respondents were averred towards receiving donated gametes (59%). Overall, majority of study participants' wanted anonymity of donor and recipient. However in contrast to the male respondents, a significant majority (60.5%) of female respondents would like to know the physical attributes of the donor. The older females accepted treatment with gamete donation more than the younger ones.

**Conclusion:** Awareness of gamete donation as treatment option for infertile couples is fairly high in our setting. However, acceptance of gamete donation may be influenced by age, religion and concerns of anonymity and disclosure. Public enlightenment programme to educate and correct false perceptions about gamete donation is desirable to address these concerns.

**Running head: gamete donation; developing nation**

**Keywords:** Gamete Donation, Awareness, Perception, Infertility, IVF, ART

### **INTRODUCTION**

Infertility treatment in Nigeria has undergone a gradual transformation from the conventional treatment to the use of assisted reproductive technology (ART). Albeit, the utilization of ART still differ from community to community owing to varying socioeconomic, cultural, religious, ethical and legal reasons.

The donation of gametes (sperm and oocyte) to infertile couples has become an accepted method of assisted reproduction especially for couples who cannot produce the requisite gametes.<sup>1-4</sup> The process of donating eggs is not without hazards, and raises medical, legal and ethical issues. Laws and regulations regarding ART and gamete donation vary considerably amongst countries.<sup>4-7</sup> The variation may affect access to different treatments, donor anonymity and characteristics of recipients.

In Nigeria the burden of infertility is enormous, especially because of the high premium placed on motherhood, this makes many seek pregnancy and childbirth at all cost using both orthodox and unorthodox means. Furthermore with the advent of assisted conception older couples who had given up on childbearing have renewed hope and are eager to access the options available to them.<sup>8-11</sup>

Unlike in developed countries most patients in Africa are not knowledgeable of the ethical and

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legal considerations associated with gamete donation; those who are aware are worried about issues regarding transmission of physical and genetic traits, issues of anonymity/disclosure and socio-cultural and religious acceptance. This study was conceptualized to access the knowledge and attitude towards gamete donation amongst infertile couples accessing treatment in a public health facility.

## **METHODOLOGY**

This descriptive study was approved by our Institutional Ethics Committee, and was conducted between September and December 2010. The study participants were infertile couples who were being followed up at the gynaecology clinic of the Hospital. The study was by orally administered questionnaire which was at the visit to the clinic. The questionnaire included questions on the socio-demographic characteristics, awareness of ART and knowledge and perception of gamete donation. The social classes of the participants were determined using Olusanya et al [12] classification which makes use of the educational status of the woman and her husband's occupation. All the respondents were initially counseled about the study and informed consent was obtained before recruitment for the study. During the interview, privacy was assured. There was no space on the questionnaire for name to ensure anonymity. 114 females and 39 men participated in the study. The result were aggregated and presented as frequency, proportion, mean  $\pm$  standard deviation. Comparative analyses were done for the responses of male and female partners using the statistical package SPSS for Windows version 13 (Chicago, IL., USA). The respondents were divided into subgroups for the purpose of analysis. Differences between subgroups were subjected to statistical analysis using chi-square test or student t-test as appropriate. A p value of  $<0.05$  was accepted as statistically significant.

## **RESULTS**

A total of 114 females and 39 males participated in this study. Majority (30.7%) of the female respondents were between 31-35 years while the majority (51.3%) of male respondents were  $>40$  years. The mean ages for female and male

respondents were respectively  $34.3\pm 5.5$  and  $39.7\pm 3.7$  (Table I). Over 98% of the study participants were Christians with majority (72.8%) being of Pentecostal denomination. Most of the patients were in a monogamous marriage setting (92.1%) and also in social classes 1 and 2 (Table I).

Approximately 79% of female and 67% of male respondents were aware of assisted reproductive technology [ART] using in-vitro fertilization and embryo transfer [IVF/ET]. The source of information about the IVF was mainly from the Doctor for the females, majority of the males heard from news media (44.8%) and from friends (34.5%). As much as (67.5%) of the female respondents were aware of gamete donation as a treatment, as against (only 46.2%) of the male respondents who were aware. The major source of knowledge of gamete donation as a treatment for infertility was from the Doctor. (Table II.)

In Table III shows the analysis of the attitude and perception of respondents towards gamete donation in which most of the female respondents were willing to receive and donate gametes (62.3% and 85.1%). In contrast most male respondents were averse towards receiving donated gametes (59%). However both male and female respondents were disposed to having an altruistic potential for gamete sharing (51.3% and 73.7%). All male respondents and majority (71.1% and 88.6%) of the female respondents wanted anonymity of donor and recipient. However in contrast to the male respondents' significant majority (60.5%) of female respondents would like to know the physical attributes of the donor. Most of the respondents would not disclose to offspring (female 87.7% and male 100%). While majority of female respondents (74.6%) agreed to disclose to spouse, only few, 33.3% of male respondents said they would tell their spouse. Most female respondents 62.3% thought that spouse perception did not cause marital disharmony

Table IV - VI showed the relationship between age, religion and social class on the willingness of female respondents to accept donated gamete. Acceptability of gamete donation proportionately increased significantly with age. There was no significant influence of social class on perception to gamete donation. Women of Catholic

denomination were less receptive towards gamete donation compared to other religious sect although this was not statistically significant.

## **DISCUSSION**

This study revealed that knowledge of gamete donation as part of ART was higher amongst female than male patients and they were likely to accept donor gametes compared to their male partners. The higher rate observed amongst female respondents as regards knowledge and acceptability of gamete donation may be a reflection of the intense cultural pressure placed on the infertile woman in our setting. Previous reports have established a huge stigma placed on African infertile women with infertility mostly seen has a problem of the female partner.<sup>11,13,14</sup> These assertions have been further buttressed in this study by the relatively fewer number of male respondents to females that participated in the study showing the wife is made to singularly bear the burden of the infertile couple.

Gamete donation remains one of the methods of infertility treatment despite the slow public acceptance of this method. Previous reports have suggested that the traditional family ideology and relationship is distorted by use of genetic material of a third party and the issue of anonymity versus non anonymity in gamete donation is an important factor to contend with.<sup>2,10,15,16</sup> In this study, overall more respondents were in favour of donor and recipient anonymity. Interestingly few of the female respondents supported disclosure, while all the males preferred anonymity. This finding corroborates the work of Bolton and colleagues<sup>17</sup> in the UK where donor anonymity was favoured and this was more with respondents for sperm donation/recipient compared to egg donation/recipient. Several other works have shown anonymity to be an important issue.<sup>1-3,7</sup> In the comparative study by Bolton et al<sup>17</sup> subjects were more in favour of gamete donation as treatment for infertility, than general public and recipients than donors, our study however looked only at patients [i.e. potential recipients or donors]. But even in their study 65% of general public believed that donors should remain anonymous in keeping with our findings. Onah and co workers<sup>10</sup> reporting from Nigeria observed that over 90% of respondents were opposed to identity disclosure of

recipient or donor. The observation that most respondents preference to anonymity in gamete donation may be reflecting the general concern that donor or recipient disclosure may pose a threat to family relationships. This is even more important in our African society where the true test of manhood is placed on the individuals fertility potential.<sup>9,11,13,14</sup> Murray et al<sup>18</sup> concluded in their study that nondisclosure could be explained by social stigma surrounding the use of donor oocytes and anxiety about the origin of the donor.

Interestingly in this study, while majority of the female respondents wanted to know the physical attributes of the donor most of the male respondents were not interested. This further buttresses the anxiety that permeates the woman receiving donor gamete as suggested by previous reports.<sup>16,18</sup> Furthermore most female respondents would disclose to their spouse as they felt that their spouses' perception would not cause much disharmony. In sharp contrast most male respondents wanted to maintain secrecy from their partners. This largely suggest the typical male dominated society we live, where decision making is permanently resident in the male's domain.<sup>13</sup>

Perhaps one of the most contentious issues associated with gamete donation in the treatment of infertility is that of disclosure to offspring information about their genetic origin. In this study overwhelming majority preferred non disclosure to the offspring, and this largely reflects the level of perceived stigma and consequent secrecy owing to societal/cultural influences. Our finding supports the previous documented argument that non-disclosure may protect both the couple and the child from existing negative societal attitudes about gamete donation. Furthermore these authors argue that disclosure may affect the child-parent psychological relationship/wellbeing. They believe it's the parents prerogative to keep their child's conception confidential and use their right to privacy.<sup>19,20</sup> On the other hand opponents of non disclosure argue that it is in a child's best interest to have access to its genetic fathers identity should the child wish. This view stems from the fact that adopted children benefit from information about their genetic parents.<sup>17,19,21</sup> and

the believe that information to the offspring's may improve psychological wellbeing.<sup>22</sup> In Nigeria a study analyzing perception and attitude of potential gamete donors observed that majority of respondents expressed uncertainty as regards information of donor identity being made available to the offspring.<sup>10</sup>

In this study age and religion were found to influence women's attitude to gamete donation. Those of catholic denomination were less disposed to use of gamete donation in treatment of infertility, thus reflecting the basic beliefs and practice of the catholic faith with regard to issues of infertility and fertility regulation. The fact that most of our respondents were from the Pentecostal denomination may also suggest the shift from conservative orthodox religion to 'radical Pentecostalism' all in a quest to seek quick solutions to their problem including infertility, hence the overall preference for gamete donation by this sect compared to the catholic faith. Previous studies have shown the strong influence of religion and age on ART practice.<sup>2,10</sup> The fact that acceptance of gamete donation increased with age as observed in this study reflects the extra zeal and desire of the elderly infertile women to achieve pregnancy and childbirth

In this study respondents overall were aware of IVF/ART and gamete donation as treatment modality for infertility and majority were more in favour of anonymity for gamete donation and non-disclosure to offspring. We can therefore conclude that despite the high level of awareness of gamete donation, favourable disposition to its uptake may be influenced by factors such as age, religion and concerns of anonymity and disclosure. Public awareness and enlightenment programme to educate and correct false perceptions about gamete donation is desirable to address these concerns. It is instructive to note that with increased uptake of ART/IVF services in Nigeria, increasing number of children and families may be created by way of gamete donation, and this brings to fore the consequent potential effect [negative/positive] of non-disclosure and the psychological impact on the traditional family relationship and thus the need for future research into ethical, legal and public perspective on issues of non-disclosure and anonymity.

### **Declaration of interest**

The authors report no conflict of interest. The authors alone are responsible for the content and writing the paper.

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**Table 1:**  
**Sociodemographic Data Of Respondents**

	<i>Female</i> <i>n=114(%)</i>	<i>Male</i> <i>n=39(%)</i>
<b>Age (mean)</b>	34.34 ± 5.51	39.67 ± 3.68
20-25	4(3.5)	
26-30	27(23.7)	1(2.6)
31-35	35(30.7)	5(12.8)
36-40	30(26.3)	13(33.3)
>40	18(15.8)	20(51.3)
<b>Parity</b>	99(86.8)	
0	10(8.8)	
1	3(2.6)	
2	2(1.8)	
3		
<b>Marital Status</b>	112(98.2)	
Married	2(1.8)	39(100)
Divorced		
<b>Religion</b>		
Catholic	16(14.0)	3(7.7)
Pentecostal	83(72.8)	28(71.8)
Jehovah Witness	3(2.6)	
Islam	2(1.8)	
Protestant/others	10(8.8)	8(28.5)
<b>Type of marriage</b>		
Monogamous	105(92.1)	35(89.7)
Polygamous	9(7.9)	4(10.3)
Previous marriage	9(7.9)	3(7.7)
Previous childbirth	13(11.4)	6(15.4)
<b>Socio-economical status</b>		
1	42(36.8)	8(20.5)
2	40(35.1)	14(35.9)
3	20(17.5)	9(23.1)
4	5(4.4)	8(20.5)
5	7(6.2)	

**Table II:  
Knowledge Of In-Vitro Fertilization (Ivf) And Gamete Donation**

<i>IVF</i>	<i>Female</i>	<i>Male</i>
Aware		
Yes	90(78.9)	26(66.7)
No	24(21.1)	13(33.3)
Source	27(27.8)	10(34.5)
Friends	19(19.6)	13(44.8)
Electronic Media	34(35.1)	3(10.3)
Doctor	4(4.1)	
Nurse	8(8.2)	
Book/Papers	5(5.2)	3(10.3)
Others		
Gamete donation Awareness		
Yes	77(67.5)	18(46.2)
No	37(32.5)	21(53.8)
Source		
Friends	12(16.4)	5(20.8)
Electronic media	12(16.4)	8(33.3)
Doctor	31(42.5)	8(33.3)
Nurse	3(4.1)	
Book/papers	10(13.7)	3(12.5)
Others	5(6.8)	

**Table III:  
Attitude Towards Gamete Donation**

	<i>Female</i>	<i>Male</i>	<i>P value</i>
<b>Willing to receive</b>			
Yes	71(62.3)	16(41.0)	
No	43(37.7)	23(59.0)	0.034
<b>Willing to donate</b>			
Yes	97(85.1)	20(51.3)	
No	17(14.9)	19(48.7)	0.0001
<b>Like to know donor</b>			
Yes	33(28.9)	0	
No	81(71.1)	39(100)	0.0004
<b>Like to know recipient</b>			
Yes	13(11.4)	39(100)	
No	101(88.6)		0.0612
<b>To know physical attribute of donor</b>			
Yes	69(60.5)	1(2.6)	
No	45(39.5)	38(97.4)	0.0001
<b>Disclose to child</b>			
Yes	14(12.3)		
No	100(87.7)	39	0.0483
<b>Allow relative to donate</b>			
Yes	50(43.9)	3(7.7)	
No	64(56.1)	36(92.3)	0.0001

**Table IV:  
Religion and Willingness to Accept Gamete Donation**

	<i>Acceptance</i>	<i>Restrictive</i>
Catholic	7(43.8)	9(56.2)
Pentecostal	53(63.9)	30(36.1)
Jehovah Witness	2(66.7)	1(33.3)
Islam	2(100)	
Protestant	7(70)	3(30)

**P = 0.2196**

**Table V:  
Age Of Women And Gamete Donation**

	<i>Positive attitude</i>	<i>Negative attitude</i>
20 – 25	1(25)	3(75)
26 – 30	15(55.6)	12(44.4)
31 – 35	18(51.4)	17(48.6)
35 – 40	23(76.7)	7(23.3)
>40	14(77.8)	4(22.2)

**P= 0.0001**

**Table VI:  
Social Class and Attitude to Gamete Donation**

	<i>Positive</i>	<i>Negative</i>
<b>Social class</b>		
1	26(61.9)	16(38.1)
2	26(65)	14(35)
3	12(60)	8(40)
4	3(60)	2(40)
5	4(57.1)	3(42.9)