

A Survey of Community Opinion and Perceptions toward Gamete Donation in North Central Nigeria

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Abstract

Background: Gamete donation supports *in vitro* fertilization services. Donation of gametes began in the developed world in 1884, but there is no documentation of when it started in Nigeria. The donors may be sourced from the community where such services are available. The objectives of this study are to determine the opinion of a community in north-central Nigeria toward gamete donation and determine the factors that influence their opinion. **Materials and Methods:** This is a cross-sectional survey of 300 individuals in a community regarding their opinions and perceptions about gamete donation in the setting. The survey involved using a questionnaire with the questions structured in a Likert format. **Results:** Two hundred and four (68%) of the respondents had knowledge of gamete donation, and 96 (32%) had none. Fifty-five (18%) respondents did not support gamete donation, whereas 153 (51%) did. Fifty-five (18%) disagreed and 158 (52.7%) agreed that gamete donation is justified. Forty-one (14%) disagreed, while 201 (67%) agreed that financial gain is the reason for gamete donation. One hundred disagreed (33.3%) and 113 (37.7%), respectively, agreed that religious beliefs prevent people from donating or receiving gametes. Forty-seven (16%) agreed, and 180 (60%) disagreed that donation can lead to childlessness in the future. Ninety-three (31%) agreed while, 130 (43.3%) disagreed with the possibility of their acceptance of gamete donation if needed. Eighty (2.6%) will not while 149 (49.6%) will support a friend/acquaintance who wants to donate their gamete. Significantly, more males agreed that religion forbids donating or receiving gametes ($P = 0.047$). **Conclusion:** There is a high awareness and favorable predisposition toward gamete donation but a low willingness to donate or accept same. More advocacy and enlightenment are needed to increase the participation of this community in gamete donation.

Keywords: Advocacy, community opinion, gamete donation

INTRODUCTION

The first documented sperm donation took place in 1884 at the Jefferson Medical College in the USA,^[1] and the first ovum donation took place in 1994 in Australia.^[2] While gamete donation is common in Nigeria, there is no record of the first donors or outcome of such. Studies from some parts of the world reveal that most donors are students, but the reports from Nigeria, especially from undercover journalists, indicate a mix of different professions as well as students among gamete donors.^[3-5] Donors are recruited from donor agencies in some parts of the world, but the process is not well organized in Nigeria. Much secrecy is attached to gamete donation in Nigeria, thus making it a clandestine activity in some regions.^[4,5] There is therefore a need for *in vitro* fertilization centers to involve communities in their planning and decisions for gamete donations. The objective of this

survey is to determine the opinion of the community toward gamete donation and the factors which affect their opinion.

MATERIALS AND METHODS

This was a cross-sectional survey carried out in August 2017 using a questionnaire structured in a 3-point Likert scale format (Agree, Neutral, and Disagree). The survey was structured to determine the opinion and perceptions of residents in Abuja, Nigeria, toward gamete donation.

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How to cite this article: Ameh N, Madugu NH, Odeku T, Ogbe M, Oyefabi AM. A survey of community opinion and perceptions toward gamete donation in north central Nigeria. Niger J Med 2020;29:471-5.

Submitted: 27-May-2020 **Revised:** 15-Jun-2020

Accepted: 15-Jul-2020 **Published:** 18-Sep-2020

Access this article online

Quick Response Code:



Website:
www.njmonline.org

DOI:
10.4103/NJM.NJM_90_20

The sample size was calculated using the formula: $Z^2 pq/d^2$ (where Z = standard normal deviation at 95% confidence interval = 1.96; P = 0.72 percentage of those who agreed to gamete donation from another study^[12] ($q=1-P = 0.28$, d = precision limit = 0.5). The calculated sample size was 300.

Three areas of Abuja (a residential area, a market and a tertiary institution) were chosen to capture a variety of opinions from the community), were randomly selected out of a list of parts of the city falling under residential area, market and tertiary institutions. Each area was allocated 100 questionnaires and was administered by individuals trained in the health survey. Consenting individuals aged 16 years and above were served the questionnaires and collected back immediately on completion until the sample size was completed.

Ethics approval was obtained from the ethics committee of the Nisa Premier Hospital, Abuja, Nigeria.

Data were analyzed using Excel Analyse-it® and displayed as proportions. Level of statistical significance was ascertained by the Chi-square test and set at $P < 0.05$.

RESULTS

All administered questionnaires were completed (response rate 100%). The responses are summarized in Figure 1.

Demographics

There were 190 (63.4%) males and 110 (36.6%) females aged 16–60 years (mean 28.5yrs), 114 (38%) were married and 186 (63%) single. Muslims were 55 (18.3%) and Christians 245 (81.7%). Civil servants were 82 (27.3%), students 112 (37.3%), unemployed 28 (9.3%), and business 78 (26.9%). Eighty-three (27.7%) had primary education, secondary education 136 (45.3%), and tertiary education 81 (27.0%) [Table 1].

Knowledge, view, and reasons for gamete donation

Two hundred and four (68%) of the respondents had knowledge of gamete donation and 96 (32%) had none. Those with primary level of education had less knowledge about gamete donation [Table 2]. The opinions are summarized in Figure 1. Fifty-five (18.3%) disagree, 176 (58.7%) agree, and 69 (23%) were neutral that advertising through media can be used to recruit donors.

Table 1: Characteristics of 300 respondents (n=300)

Demographics	No. (%)
Age (years)	
<21	59 (19.7)
21-30	123 (41)
31-40	90 (30)
41 -50	16 (5.3)
>50	12 (12)
Sex	
Males	200 (66.7)
Females	100 (33.3)
Marital Status	
Married	112 (37.3)
Single	188 (62.7)
Religion	
Christians	245 (81)
Muslims	55 (18.3)
Occupation	
Students	112 (37.3)
Civil servants	82 (27.3)
Business	40 (13.3)
Artisans	38 (12.8)
Unemployed	28 (9.3)
Educational Level	
Primary education	83 (27.7)
Secondary education	136 (45.3)
Tertiary education	81 (27.0)

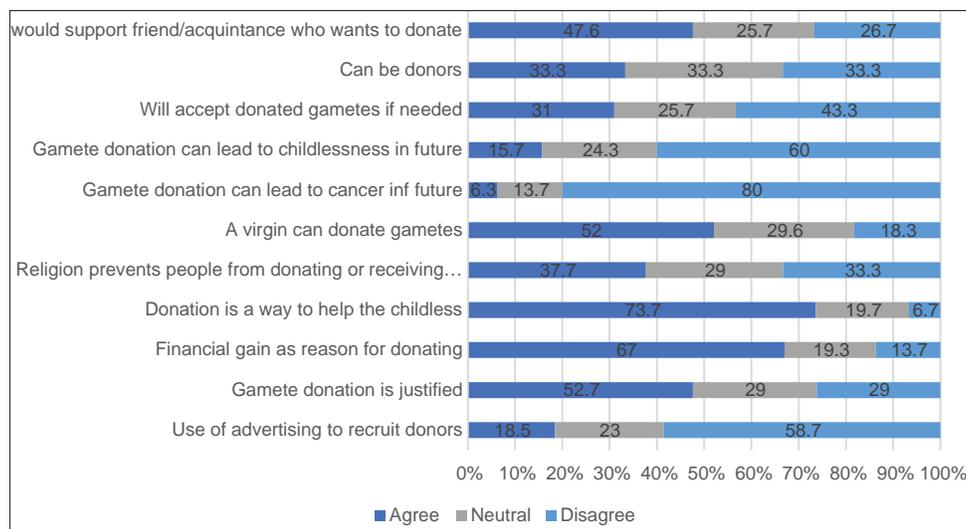


Figure 1: Opinions of 300 respondents regarding gamete donation

Fifty-five disagreed (18.3%), 158 (52.7%) agreed, and 87 (29%) were neutral as to the justification of gamete donation.

Two hundred and one (67%) agreed that financial gain was the reason for gamete donation and 221 (73.7%) agreed that gamete donation was a way to help the childless.

Factors affecting gamete donation

Regarding the factor's affection gamete donation, 113 (37.7%) agreed that religion prevents people from donating or receiving gametes, including 86 of 151 (57%) males and 27 of 64 (42.2%) females ($P = 0.043$). One hundred and fifty-six (52%) individuals agreed that a virgin could donate gametes.

Complications of gamete donation

Two hundred and forty (80%) disagreed, and 19 (6.3%) agreed that gamete donation can lead to cancer in the future while 180 (60%) disagreed, and 47 (15.7%) agreed that donation can lead to childlessness in future.

Practice of gamete donation

Regarding whether they would accept donated gametes, 130 (43.3%) disagreed and 93 (31%) agreed. One hundred each (33.3%) agreed, disagreed, or were neutral as to whether they can be donors. Ninety-three (31%) agreed and 130 (43.3%) disagreed with the possibility of their acceptance of gamete donation if needed. Majority (143, 47.6%) agreed they would support a friend or acquaintance who wants to donate.

Experience with gamete donation

While three (1%) of the respondents had been gamete donors in the past, and 19 (6.3%), knew someone who had donated before. The experience of donors was described as pleasant in 5 of the donors while 4 felt terrible, but there were no complications.

Overall, males significantly felt that religion forbids donating or receiving gametes as well as donations causing cancer and childlessness in the future [Table 2].

DISCUSSION

Challenges of infertility with its consequences have given rise to the need for innovations to match every challenge.^[5-7] Assisted reproductive technology evolved and brought about the need for support services such as gamete donation.^[8,9] Records of where and when gamete donation started in Nigeria is not readily available as those of developed countries.^[1,2] However, the media has increased the awareness of this practice among the general population.^[5,6]

Respondents of the study are distributed across the main age groups, gender, marital status, tribes, occupation, and religion. This has aided the getting of a wide feedback and better representation of the community surveyed. This is similar to findings from a West African study and another study among an Asian community in the United Kingdom.^[10,11]

Knowledge and view of gamete donation

There is a high awareness of gamete donation among the respondents at 65% and is comparable to the finding from a Nigerian and Swedish study.^[12,13] Half (52.7%) of the respondents agreed that gamete donation is justified. This is remarkable in view of the low numbers of those who are willing to donate. Source of reaching donors can be through the media as agreed by 58% of respondents and differs from findings from a Southern Nigerian study where the infertile couple had their knowledge from the doctor.^[14] Some of the respondents cited friends, as another source of information on gamete donation. The mass media, especially the Internet, is a common source of information. Some recruiting agencies advertise for potential donors through the Internet.^[4] This may well be because the community is more heterogeneous than those of infertile couple usually.^[15] Of interest is that males were more likely to have less knowledge than females. This has important implications for the planning of targeted advocacy.

Reasons for gamete donation

Financial gains have been suggested as a reason for gamete donations from some other studies and 201 (67%) of our respondents believed so.^[16] An American study reported monetary reasons as 20%, altruistic 30%, and both 40% as reasons for gamete donation.^[17] Other studies cited humanitarian consideration as the reason for donation. Majority (73.7%) felt it is a way to help childless couples, like the view of the respondents from a Swedish study. 158 (52.7%) feel it is justified to donate.^[13,17,18] Newspaper reports quotes figures such as 10–20 thousand naira paid to sperm donors and 100–120 thousand naira for egg donors.^[4,5] Some countries regulate the procedure for gamete donation with some not paying while others pay larger amounts.^[17] Some other countries proposed that payment to gamete donors should be abolished but envisages that this will lead to a scarcity of donors.^[19,20]

Complications of gamete donations

One study reported that gamete donation does not lead to cancer in the donor,^[21] and 150 (50%) of respondents in the present report seem to agree with this. A study did not find any increase in cancer (2–15 years afterward) or infertility in patients who donated eggs, but there were cases of menstrual disorders.^[21] Some countries have no fixed limits to the number of times a female can donate her eggs, but the ASRM suggested it should not be more than six times in a lifetime.^[22] Scientific evidence does not reveal early menopause in egg donors and most of our respondents 180 (%) agree that donation does not lead to childlessness in the future.^[23] However, the practice of stimulating multiple follicles in a cycle may deplete the ovarian reserves faster in the female donors but not likely for the male donor.

Practice of gamete donation

While half of the respondents will support a friend or acquaintance to donate gametes only one third would agree to donate their gamete and is like findings of another study

Table 2: Impact of gender on opinion and perceptions about gamete donation

Responses	No.	No.	No.	p	Interpretation
Knowledge of gamete donation	Much	Little	Nothing		
Male	32	81	24		
Female	24	30	13	0.114	
Primary education	12	66	5		
Secondary education	23	95	18		Those with primary education knew less about gamete donation
Tertiary education	24	44	13	0.009	
Knows anyone who donated before	Yes	No			
Male	7	164			
Female	11	67		0.0001	Males less likely to know someone who has donated
Would support friend or acquaintance who wants to donate		Agree	Disagree		
Male		84	49		
Female		40	14	0.152	
Religion forbids you from donating or receiving		Agree	Disagree		
Male		86	65		
Female		27	37	0.043	More males agree
Donation can cause cancer in future		Agree	Disagree		
Male		11	40		
Female		1	57	0.005	More males agree
Donation can cause childlessness in future		Agree	Disagree		
Male		35	89		
Female		6	47	0.011	More males agree

where one-third of the respondents would consider donating their sperm.^[19] In another report, 17% of the female respondents would consider donating their eggs in future, and 39% would not, 56% of the male respondents would support their female partners to donate but 18% would not.^[20,24] The respondents were not likely to donate their gametes because they were not comfortable with being donors.^[20] Ninety-three (31%) agreed and 130 (43.3%) disagreed with the possibility of their acceptance of gamete donation if needed.

Factors affecting gamete donation

One-third of the respondents respectively agree, disagree or are neutral about religion and gamete donation. Other studies report that Catholics and Muslims are likely to disagree with both donating and receiving gametes.^[10,11] The mixed response from the present report may be because religion was grouped into the two without differentiating between the different denominations amongst Christians and Muslims. Some studies reported significant differences among the different denominations of both religions.^[10,11] More of the respondents in the present report agree that a virgin can donate their gamete, but the decision will depend on the female donor and the doctor that will attend to her. In one report, a potential donor reported that she gave up the process because of the pain and discomfort of transvaginal scans and injections.^[4,5]

Experience with gamete donation

Very few of the respondents (6.3%) knew anyone who had ever donated gametes, and only 3 (1%) have ever donated their gametes. The experience of our respondents with gamete

donation is little both personally and by an acquaintance as in another study.^[25] Of those who knew a donor, the experiences were said to be pleasant in 5 (1.7%), terrible in 4 (1.3%) but no complications. One report has indicated a low percentage of complications among gamete donors.^[25]

Legal concerns

The high-income countries are ahead in the practice of gamete donation and are at the level of discussing ethical concerns, the rights of gamete donors as well as those of the offspring from the donation.^[26,27] The argument is that if donors are not anonymous, it will reduce reckless donation as well as consanguineous marriages between the offspring in the future.^[28] Another discussion is the rightness or otherwise of using human embryos for research.^[29] These legal and moral issues will be of concern to our community and Assisted Reproductive Technology (ART) practitioners in the nearest future as the participants in Africa become more enlightened.^[30]

Gender differences

Most of the differences were between males and females as another report which showed that males and females have different views about gamete donation.^[11,27] In the present report, more males agree that gamete donation can cause childlessness and cancer in the future and that religion prevents people from donating their gametes. The male/female views are probably due to the difference in the procedure of gamete donation between the two genders and the tendency for African/Asian males to feel a failure if their offspring is from donated sperm.^[4,5,10,11]

CONCLUSION

No discussion on the future of ART in West Africa will be complete if gamete donation is not included. There is a mixed opinion on this issue from our community. Much work is needed to pass across the correct information, especially because Abuja is home to many fertility centers. The need for regulation of the practice and advocacy cannot be over-emphasized.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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