PSYCHO-SOCIAL FACTORS AND THE UTILIZATION OF ASSISTED REPRODUCTIVE TECHNOLOGY SERVICES IN NORTH CENTRAL ZONE OF NIGERIA

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Abstract

The purpose of this study was to assess psycho-social factors and the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria. To achieve this purpose, one (1) research question and one (1) hypothesis were developed. The ex-post facto research design was used for the study. To obtain adequate data for representation, a sample size of seven hundred and sixty-eight (768) respondents comprising of males and females was drawn from the target population representing 4% of the target population. Stratified sampling technique, simple random sampling technique, purposive sampling technique and proportionate sampling technique were adopted to have proper representation of respondents for the study. A validated questionnaire of 4 point modified Likert scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) was used as instrument to elicit information from the selected respondents. The questionnaire consisted of Section A and B. A total of seven hundred and sixty-eight copies of the questionnaire were randomly distributed among infertile couples in North Central Zone of Nigeria for data collection out of which seven hundred and fifty-one (751;97.4%) were duly completed and used for analysis. Descriptive statistics of frequencies and simple percentages were used to describe the demographic characteristics of the respondents. Descriptive statistics of mean and standard deviation were used to answer the research questions, and an inferential-statistics of one sample t-test was used to test the one (1) hypothesis at 0.05 alpha level of significance. The results revealed that psycho-social factors significantly determine the utilization of Assisted Reproductive Technology services among infertile couples in North Central Zone of Nigeria (t=73.209; p=0.000). Based on the findings of the study, it was concluded that: Psycho-social factors determines the utilization of Assisted Reproductive Technology services among infertile couples in North Central Zone of Nigeria. And on the basis of the conclusion drawn, it was recommended that: Sensitization campaigns should be made by government, non-governmental organizations, faith-based organizations and traditional rulers through jingles, radio announcements, television, radio advertisement and community gathering to educate the society especially in-laws and significant others that no matter the duration of infertility and the type of infertility one maybe suffering from, it can be treated for conception through the use of assisted reproductive technology (ART) services.

Keywords: Psycho-social factors, Infertile Couples, Utilization, Assisted Reproductive Technology

Introduction

Infertility in the developing countries extends beyond the loss of human potential and unrealized self. The experience of infertility causes harsh, poignant and unique difficulties such as economic hardship, social stigma and blame, social isolation and alienation, guilt, fear, loss of social status, helplessness and, in some cases, violence (American Society for Reproductive Medicine, 2018; Whiteford & Gonzalez, 2015). It is used against the affected couple, or exclusively against the woman, as a justification for social isolation, abuse, violence, indignities, physical and mental torture, and sometimes murder. Infertility not only infringes upon the human right to health, it often leads to a violation of the most basic moral protections that are intrinsic to humanity itself (Papreen, 2018).

The role of children for social survival in developing countries is a recurring theme. Many families in developing countries depend on children for economic survival. Without children, men and women may starve to death, especially in old age. In some communities, infertile people are ostracized as they are perceived to be unlucky or the source of evil, or they become the object of public humiliation and shame. Some, even, choose suicide over the torturous life and mental anguish caused by infertility. In other communities infertile men and women are often denied proper death rites. For women in

developing countries, infertility may occasion life-threatening physical as well as psychological violence (Papreen, Sharma, Sabina, Begum, Ahsan & Baqui, 2018; Unisa, 2018).

The language of infertility which demeans women has also been deployed from time to time even in industrialised nations. A recent example in the public realm was the misogynistic depiction of Julie Gillard (former Australian Prime Minister) as being 'deliberately barren' with her leadership credentials being called into question simply because she had no children (Kent, 2017). This labelling of Gillardas 'deliberately barren' is a clear case of the gendered construction of involuntarily childlessness as it is highly debatable whether such deplorable language would have been utilized against childless male politicians. In Asia, being childless has more negative social, cultural and emotional repercussions for women than, perhaps, any other non-life-threatening condition. An infertility study in Andhra Pradesh, India, reported that approximately 70% of women who experienced infertility would be punished for their "failure" through physical violence. Nearly 20% of the women reported that their husbands used severe violence as a result of their childlessness (Unisa, 2018).

Other high income countries such as Japan also displayed some level of a negative linguistic depiction of involuntary childlessness. Again the disparaging language of infertility appears to be primarily targeted at childless women. Takeremu (2018) argues that Japanese terminology such as 'Umazume' which is literally translated as the 'stone woman' as well as the Japanese phrase 'Kashite sannenkonakiwasaru' which is translated as that a wife should leave her husband if she fails to bear a child within three years of marriage' also typifies the negative feminisation of infertility.

There is also evidence to show that the disparaging language of infertility applies beyond West Africa. In other parts of the Sub-Saharan African continent such as East and Southern Africa, the same negative language of involuntary childlessness is also obtained. In the Zulu language prevalently used in South Africa, a married woman who is unable to have children is described as 'Inyumba' (barren or fruitless) (Buthelezi, 2019). In East African countries such as Uganda, the Swahili word 'Mgumba' (the infertile one) is used to describe women who cannot have children (Boerman & Mgalia, 2017). The more humiliating terminology of 'Tassa' (infertile chicken) is used by the Luo indigenous groups in Tanzania and Uganda. This word is used to describe married women who cannot have children (Odinga, 2018).

While there may be some empirical gap in the evidence to fully establish a global language of infertility, the foregoing does show that it is not only in Sub-Saharan Africa where one can point to a language of infertility which denigrates involuntary childless person and treats them as being of a lower social standing than fertile people. In many African languages and dialects, infertility and involuntary childlessness are generally characterised as conditions to be despised, scorned, pitied and shunned. Among the Yoruba ethnic group predominantly situated in Nigeria and other parts of West Africa, the term 'agon' which literally means 'to despise or hold in contempt' is used to describe women unable to have children (Ember & Ember, 2019). Among the Igbo, another West African ethnic group, an involuntary childless woman is described as 'Mgbaliga, Nwanyi-iga' which literally can be translated as 'the sterile woman', 'the barren woman' or even in a more disparaging way as 'a sterile monster who has maternal organs for mere decoration' (Okereke, 2018). Childless women are generally blamed for their infertility, despite the fact that male factor causes contribute to at least half of the cases of infertility around the world. In developing countries, especially, motherhood is often the only way for women to enhance their status within the family and community (Egede, 2017). The pressure may be in form of isolation, powerlessness, status inconsistence and role as a wife but not as a mother. Other social risks include conflict with religious doctrine or criticism from the religious leaders, disapproval from friends and resentment from relations. It has been observed that involuntary childlessness among Nigerian couples is not encouraged and whenever infertility occurs in any family, the wife bears and endures all manner of abusive words (Osakue, & Martin-Hilber, 2018).

It is said that the deplorable characterization of an involuntarily childless woman will lead her to consult a 'Dibia' (the native doctor) who in many instances will only be able to provide psychological relief (Sifris, 2019). To further assuage the stigma, the childless women are made to pay repeated visits to herbal practitioners, diviners, spiritualists, syncretic groups of either Muslim or aladura sects of the Christianity. In fact, other religious sects are not left out as they employ the use of words to exorcise evil spirit which is believed to be responsible for reproductive break (Erinosho, 2016; Akintan, 2017; Osakue & Martin-Hilber, 2018 & Jegede, 2018). The women in question do this to demonstrate that they are willing to go to any exten to get pregnant, and at the sametime in some cases tolerate their husbands' pressure, isolation and rejection including, extramarital affairs or decision to take another wife out rightly (Osakue & Martin-Hilber, 2018). These challenges associated with infertility have necessitated different healthcare seeking behaviours, ranging from spiritual, traditional/alternative health care to orthodox medical types, including bio-technological devices such as Assisted Reproductive Technology services. While some couples viewed these technologies as a good option to follow, many people are apprehensive about them due to societal norms and values about natural process of reproduction (Cooke, 2017). In a study by Akande, Depeolu, and Ajuwon, (2019) 52% of respondents held a negative view towards the use of ART services. More than half (53.0%) preferred spiritual exercise (praying and fasting) as an alternative to the uptake of ARTs, while 50.8% would not encourage the spouse to make use of the services. However, 64.1% would encourage anyone to utilize ART

services with 50.0% expressing non-religious sentiments towards ARTs. Similarly, less than half (42.0%) of the respondents in the study were willing to adopt ART if provided in public hospitals. Among those respondents with a reported history of primary infertility, 45.0% indicated their willingness to uptake ART services as against 31.0% with a history of secondary infertility. Most preferred type of ARTs was IVF (80.0%) and gamete intra-fallopian transfer (GIFT) (50.6%). In addition, few (10.7%) in infertile couples were willing to make use of donors' sperm insemination (DSI) method, while 10.6% reported a willingness to accept donors' egg for conception. Of those willing to adopt ART, only 15.0% were optimistic that the procedures will be successful. For those not willing to utilise ARTs, the most common reasons given were perceived exorbitant cost of the services (98.8%), preference for natural conception (88.2%), belief in God's intervention (47.1%) and the view that the procedures may result to deformed and abnormal babies (45.9%). This study therefore, purposed to assess whether psycho-social factors are determinants for the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria.

Research Questions

The study sought to provide answer to the specific research question:

1. Will psycho-social factors determine the utilization of Assisted Reproductive Technology services among infertile couples in North Central Zone of Nigeria?

Research Hypothesis

On the basis of the research question, one hypothesis was formulated to guide this study:

1. Psycho-social factors among infertile couples in North Central Zone of Nigeria are not significant determinants for the utilization of assisted reproductive technology services.

Methods and Materials

The research design adopted for this study was ex-post facto research design. Ex post facto research design is ideal for conducting social research when it is not possible or acceptable to manipulate the characteristics of human participants (Simon & Goes, 2013). The population of the study comprised of all infertile couples who are affected by either primary or secondary infertility in North Central Zone of Nigeria. The population consisted of 2,915,729 with a sample size of 768 infertile couples representing 4% of the target population per hospital attendance as suggested by Research Advisor (2006) that in a population of 2,915,729, a sample size of 384 can be used at 0.05 levels, 5% margin error and 99% confidence interval. However, the researcher doubled the figure to have a wider coverage of respondents for the purpose of generalization of findings to the target population (The higher the number, the better generalization of results).

To arrive at the sample size of 768, a multi-stage sampling procedure that involves stratified sampling technique, purposive sampling technique, simple random sampling technique, proportionate and systematic sampling techniques were used for the study as follows: Stratified sampling technique was used to divide the zone (6 States and the FCT) into three strata 1. (Niger, Kwara), 2. (Benue, Kogi), 3. (Plateau, Nasarawa) and the FCT based on the geopolitical distribution that is North Central North (NCN), North Central East (NCE), and North Central West (NCW), that is, (NCN = Niger, Kwara; NCE = Benue, Kogi, NCW = Plateau, Nasarawa) respectively. Purposive sampling technique was used to select the FCT Abuja, since it was the Federal Capital Territory of Nigeria and that because it has the highest number of assisted reproductive technology hospitals situated therein. The third stage involved the use of simple random sampling technique to select 3 States, thus, Kwara, Plateau, and Benue using fishbowl method by writing all the names of States on pieces of papers, folded and dropped into three different containers according to their stratum so that all states have equal chance of being selected (randomization). Consequently, a total of 3 states and the FCT were selected, making a total of 4 states being selected for the study. Purposive sampling technique was used to select all the 3 ART hospitals in Plateau State; 2 in Benue State; and 3 in Kwara State, since the hospitals situated in the selected states were not much. And a simple random sampling technique was used to select 9 ART hospitals out of 17 ART hospitals situated in FCT Abuja. In order to have equal chance of been selected, all the names of ART hospitals in FCT Abuja were selected using fishbowl method by writing all the names of the ART hospitals and dropped them into a container, shuffled it, and the selection was made in order to get equal chance of selection. Consequently, a total of nine (9) ART hospitals were selected. Consequently, a total number of 17 ART hospitals were selected and used for the study. Proportionate sampling technique was then employed to calculate the number of respondents per hospital attendance by using 4% of the population to form the sample size. Proportionate sampling was calculated by multiplying the target population per hospital attendance by 4% to get the sample size per hospital. The choice of proportionate sampling procedure was to enable randomization of the respondents to have equal opportunity to all infertile couple's sample based on the availability. The instrument used for data collection was questionnaire which was divided into two (2) Sections (Sections A & B) and comprised of 14 items. Section A contained four (4) items designed to obtain

information on demographic characteristics of the respondents while Section B contained ten (10) items that seek to elicit information on psycho-social factors and the utilization of assisted reproductive technology services among infertile couples, designed on a 4-point modified Likert scale of Strong Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD). Data was collected using close ended questionnaire that was transformed into a digital questionnaire form and 768 questionnaires were administered on line. The submitted questionnaire form were exported, coded and analysed using statistical package for social science SPSS version 27 and the following statistical tools were used: Descriptive statistics of mean and standard deviation was used to answer the research questions on psycho-social factors as determinants for the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria, thus, any response that has a mean aggregate of 2.50 and above was accepted as positive and any response that has a mean score of less than 2.50 was considered negative or not accepted. Inferential statistics of One Sample t-test was used to test the formulated null hypothesis at 0.05 alpha level of significance.

Results and Discussions

Descriptive analysis of respondents' demographic characteristics

Table 1: Classifications of the respondents' demographic characteristics (n= 751).

Variables	Variable options	Frequency	Percent
Age range of couples in years	<30years	30	4.0
	30-40years	379	50.5
	41-50years	267	35.6
	Above 50years	75	10.0
Gender	Male	163	21.7
	Female	588	78.3
Highest Level of Education	Primary	15	2.0
	Secondary	132	17.6
	Diploma/NCE	369	49.1
	HND/Degree	235	31.3
Level of Income	<₦30,001.00	472	62.8
	₦31,000.00 - ₦50,000.00	139	18.5
	₦51,000.00 - ₦N100,000.00	87	11.6
	Above ₦100,000.00	53	7.1
Occupation	Farming	15	2.0
	Business/Trading	207	27.6
	Civil Servant	278	37.0
	Artisan/Self-employed	251	33.4

(Source: Filed survey, 2023)

The demographic variables of the respondents selected along their opinions on the variables were age, gender, highest educational attainment, level of income and occupation. Each of the variables is classified in frequencies and percentages in Table 1. Of the total respondents involved in the study, 4.0% were below 30years. Most (50.5%) of the respondents were within 30 and 40years which is the most active reproductive age. Respondents who were within the age bracket of 41 to 50years were 35.6% in total. Only 10.0% of the respondents were above 50years of age. This distribution showed that most of the respondents were within reproductive age and should therefore be in position to provide adequate information on determinants of utilization of assisted reproductive technology services. From the classification in the table above, most (78.3%) of the respondents were females. The males were 21.7% of the total respondents. This classification revealed that the opinions of male and female on utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria could be said to be fairly represented in the study.

The Table further revealed that 2.0% of the infertile couples had only primary school certificate as their highest educational attainment. Those with secondary school education were 17.6% and 49.1% had either National diploma or National Certificate in Education (Diploma/NCE). The rest 31.3% had either Higher National Diploma or University degree (HND/Degree). The relative higher educational attainment of the respondents could be associated to source of data collection which was mostly through the internet. For income per month, most (62.8%) earned below N30,001.00. Those who were earning between N31,000.00 and N50,000.00 per month were 18.5% and 11.6% earned between N51,000.00 - NN100,000.00 per month. Only 7.1% of the respondents had a monthly income that was above N100,000.00. By occupation distribution,

2.0% of the respondents were involved in farming. Those who were involved in businesses or trading were 27.6% of the total respondents involved in the study. A total of 37.0% were civil servants and 33.4% were either Artisans or were self-employed.

This distribution implied that the infertile couples could be said to represent a broad spectrum of the population in North Central Zone of Nigeria and should be in position to provide adequate information for assessing determinants of utilization of assisted reproductive technology services among infertile couples within the Zone.

Assessment of psycho-social factors as determinants for the utilization of assisted reproductive technology services among infertile couples

The responses of the respondents on psycho-social factors like duration of marriage and infertility, gender factor infertility and type of infertility among others as determinant for the utilization of assisted reproductive technology services among infertile couples were scored in Table 1

Table 2: Mean responses of respondents on psycho-social factors as determinant for the utilization of assisted reproductive technology services among infertile couples

Sn	Psychosocial factors	Mean	Std. Dev.
1	I am using ART services because my attention and concentration of infertility are impaired by thoughts of infertility	3.10	0.599
2	I am using ART services because I feel drained or worn-out of infertility treatment problems	3.29	0.606
3	Because I feel jealous and resentful about people with children, I have to use ART services in order to have children of my own	3.24	0.470
4	I am using ART services because infertility issues make me to fluctuate between hope and despair	3.07	0.655
5	I am attending ART treatment services because I receive pressure from my in-laws to make children	3.25	0.520
6	The duration of my marriage has led me to use ART services to have children	3.15	0.754
7	The duration of my infertility makes me to use ART services to have children	3.18	0.547
8	I am currently utilizing ART services because of gender factor infertility (male alone)	3.19	0.444
9	I am currently utilizing ART services because of gender factor infertility (female alone)	3.32	0.580
10	I am currently utilizing ART services because of gender factor infertility (both male and female)	3.12	0.427
	Aggregate mean	3.21	0.265

(Benchmark = 2.50)

The aggregate mean (3.21) with a standard deviation of 0.265 in Table 2 showed that most of the respondents responded that the selected psychosocial factors were major determinants for the utilization of assisted reproductive technology services**.** Among others, the respondents responded that infertility draws the attention and concentration of infertile couples, thereby impaired by thoughts of infertility leading to utilization of the treatment services and this made them to feel drained or worn-out because of treatment problems. The respondents responded that infertility make them to be feel jealous and resentful since their thoughts usually fluctuate between hope and despair thus utilizing ART services. Part of the psychosocial factors are the pressure they receive from in-laws who are urging them to have children, duration of marriage, the period of infertility and where the problem is associated with the man or the woman and where both partners are associated with the problems leading to the utilization of ART services. The type of infertility is another psychosocial factor that could be of major consideration. From the responses the respondents responded that, psychosocial factors are major determinants for the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria.

Hypothesis: Psycho-social factors (duration of marriage and infertility, gender factor infertility and type of infertility) among infertile couples in North Central Zone of Nigeria are not significant determinants for the utilization of assisted reproductive technology services.

This hypothesis was tested by comparing the scores on psycho-social factors in Table 2 with the benchmark. The result of the one sample t-test used for the hypothesis is summarized in Table 3.

Table 3: One sample t-test on psycho-social factor as determinant of assisted reproductive technology services utilization bythe infertile couples

Variables	N	Mean	Std. Dev.	Std. Error	t-value	Df	p-value
Psycho-social factor	751	3.21	0.265	0.010	73.209	750	0.000
Test mean	751	2.50	0.000	0.000			

(t-critical = 1.96, $p > 0.05$)

Table 3 revealed that respondents responded that psycho-social factors are major determinants for the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria. This is because the observed t-value (73.209) for the test is higher than the critical value of 1.96 indicated at the bottom of the table. The p-value obtained at 750, degree of freedom (df) was 0.000 ($p < 0.05$). These observations provided sufficient evidence for rejecting the null hypothesis. Therefore the null hypothesis which states that, psycho-social factors (duration of marriage and infertility, gender factor infertility and type of infertility) among infertile couples in North Central Zone of Nigeria are not significant determinants for the utilization of assisted reproductive technology services is hereby rejected and conclude that psycho-social factors were perceived as major determinants for the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria.

Discussion

The result of this study revealed that psycho-social factors were significant (p=0.000) determinants for the utilization of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria. The study further found that respondents were of the response (x=3.10) that infertility draws the attention and concentration (x=3.29) of infertile couples and are therefore impaired by thoughts of the treatment services which made such couples feel drained or worn-out thus utilizing ART treatment services (x=3.24). The study further revealed that respondents responded (x=3.07) that infertility make them to feel jealous and resentful since their thoughts usually fluctuate between hope and despair (x=3.25) thus leading them to utilize ART services. The study revealed (x=3.15) that part of the psychosocial factors arose from pressure received from in-laws who continuously urge them to have children (x=3.18), duration of marriage, the period of infertility and where the problem is associated with the man or the woman and where both partners are associated with the problems (x=3.19) thus pushing them to utilize ART services. From the responses of the respondents, psychosocial factors are major determinants of assisted reproductive technology services utilization among infertile couples in North Central Zone (x=3.36). The findings of this study are in line with Egede, (2017) who studied on bringing human rights home: an examination of the domestication of human rights treaties in Nigeria, reported from the study that motherhood is often the only way for women to enhance their status within the family and community. The findings also agreed with the report of Osakue, & Martin-Hilber, (2018) who studied on women's sexuality and fertility in Nigeria: breaking the culture of silence reported that childlessness among Nigerian couples is not encouraged and whenever infertility occurs in any family, the wife bears and endures all manner of abusive words. This further corroborates with other studies by Papreen, Sharma, Sabina, Begum, Ahsan & Baqui, (2018); Unisa, (2018) that the role of children for social survival in developing countries is a recurring theme. Many families in developing countries depend on children for economic survival. Without children, men and women may starve to death, especially in old age. In some communities, infertile people are ostracized as they are perceived to be unlucky or the source of evil, or they become the object of public humiliation and shame. Some, even, choose suicide over the torturous life and mental anguish caused by infertility.

In other communities, infertile men and women are often denied proper death rites. For women in developing countries, infertility may occasion life-threatening physical as well as psychological violence.

Conclusion

Based on the results of this study and its limitations, the following conclusions were drawn:

Psycho-social factors (duration of marriage and infertility, gender factor infertility and type of infertility) are significant determinants for the utilisation of assisted reproductive technology services among infertile couples in North Central Zone of Nigeria.

Recommendations

On the basis of the conclusion drawn, the following recommendations were made to improve on the utilization of assisted reproductive technology services:

1. Sensitisation campaigns should be made by government, non-governmental organizations, faith-based organizations and traditional rulers through jingles, radio announcements, television, radio advertisement and community gathering to educate the society especially in-laws and significant others that no matter the duration of infertility and the type of infertility one maybe suffering from, it can be treated for conception through the use of assisted reproductive technology (ART) services.

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