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Perception, prevalence and correlates of depression among females attending the Gynaecological Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria

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ABSTRACT

Background: Infertility is a global problem, particularly in developing countries, and it has been linked with emotional responses such as depression, anxiety, guilt, social isolation, and decreased self-esteem in both men and women. **Aim:** This study was conducted to assess the perception, prevalence and correlates of depression among females attending the Gynecological Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. **Materials and Methods:** A cross-sectional study was conducted among 156 females with infertility (selected by systematic sampling technique) in Sokoto, Nigeria. A structured interviewer-administered questionnaire was used to collect data on the research variables. Data were analyzed using IBM SPSS version 20 statistical computer software package. **Results**: The mean age of the respondents was 28.3 ± 6.4 years. Majority, 113 (72.4%) of the 156 respondents perceived the need to share their feelings concerning the delay they had in having a child with others, but close to half of them (48.7%) had fears of adverse consequences after doing so. About a fifth of respondents (21.8%) had depression and it was associated with being married for ≤ 3 years, having negative attitude to child adoption, and poor support from in-laws. **Conclusion**: This study showed high levels of perception of the benefits and consequences of sharing their feelings regarding their infertility with others, and high prevalence of depression among females with infertility in Sokoto, Nigeria. Care providers should promote child adoption among women undergoing fertility treatment, routinely screen them for depression and include their extended family members in the interventions for preventing depression among them.

Keywords: Perception, prevalence, correlates, depression, infertility, females

INTRODUCTION

Infertility (defined as the inability to conceive after one year of regular intercourse of about 3-4 times per week without contraception) is a global problem particularly in developing countries, and it has been estimated to affect 1 in 3 couples in the Central- and West-African countries, and 10-15 percent of all couples of fertile age in industrialized countries (Okonofua, 2005; Makar and Toth, 2002; Maheshwari, 2008; Statistics Sweden, 2007). According to the World Health Organization (WHO), about 60% of infertility cases in Africa are attributable to genital tract infections in males and females as compared to other regions of the world, with 30-40% of cases being due to the man, and 30-40% of cases being due to the woman; but paradoxically, the female is held responsible for virtually all cases of infertility in Africa (WHO, 2010; Okonofua, 2005; Robinson and Stewart, 1996).

The African society places passionate premium on procreation in any family setting, and as such, the woman's place in marriage remains precarious until it is confirmed through childbearing. Also, children are held as sources of pride, strength and economic fortune for the family, with a man's wealth and strength being equated to his progeny. Infertility is therefore considered as a serious problem in Africa and a major crisis in the affected family with negative impacts on the couple's mental and social well-being (Okonofua, 2005).

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In addition, the attendant emotional, psychological, cultural and social burdens drain the couple of self-belief and esteem; the unsolicited and often inpatient societal demands and expectations place on couples unimaginable pressure and tension, and they may become isolated and neglected consequent upon the attendant social stigmatization (Ljubin-Sternak, 2014). Also, infertility may lead to physical, emotional and financial burden; and other problems such as marital conflicts, poor self-esteem, and lack of satisfaction with sexual performance / reduced frequency of sexual intercourse, thus perpetuating the problem (Monga et al., 2004; Andrews et al., 1991; Ulbrich et al., 1990). It is therefore evident that infertility has a great impact on the quality of life and marital status of the affected couples.

Studies conducted in both developed and developing countries have documented several psychological complications of childless marriages (Matsubayashi et al., 2004; King, 2003; Dyer et al., 2005; Sami and Ali, 2006), and infertility has been linked with emotional responses such as depression, anxiety, guilt, social isolation, and decreased self-esteem in both men and women (Abbey et al., 1991; Greil, 1997; Morin-Davy, 1998). The prevalence of depression in infertile couples has been found to increase in recent years from 44% in the first half of the decade of the 2000s to 50% in the second half (Masoumi et al., 2013).

It is estimated that about 40% of infertile couples experience anxiety and 86% experience depression, and several correlates of depression have been identified in infertile couples (as these factors influence their vulnerability to depression); these include previous history of depression, preexisting stressful life event, personality factors, previous reproductive failure and genetic predisposition; and exposure to stressful life events is believed to be higher among subjects with a history of depression (Caplan et al., 2000; Williams and Zappert, 2006; Kendler et al., 2000). The risk factors for depression and anxiety in the general population include low socioeconomic status, smoking, drug and alcohol abuse, being single and being unemployed (Baumeister and Harter, 2007; Anderson et al., 2004).

In Africa, women with fertility problems may be despised, neglected and abused by the husband and her in-laws (Dyer et al., 2005). Their exclusion from some important social events has been noted in some parts of Nigeria and Mozambique (Orji et al., 2002; Gerrits,1997). Despite these observations, the impact of the experience of infertility on women's mental health is an area that is currently under researched in sub-Saharan Africa and Nigeria in particular. In Nigeria, infertility is the commonest presenting complaint among gynaecological patients and about 2 of every 5 patients complain of infertility, and it now constitutes a major burden on the clinical service delivery in Nigeria, accounting for more than 50% of gynecological caseloads and over 80% of laparoscopic investigations (Idrisa et al., 2001; Isawumi, 2011); and with institutional-based prevalence rates of 4.0, 15.4, and 48.1% in studies conducted in Ilorin (North-central Nigeria), Abakaliki (South-east Nigeria), and Osogbo (South-west Nigeria) respectively (Abiodun et al., 2007).

With the establishment of a Facility Unit in the hospital, and the creation of awareness of the services among the populace in Sokoto State and the neighboring states, the numbers of infertile couples presenting for treatment of infertility has increased dramatically. Whereas, a previous study conducted in Sokoto, Nigeria (the study area) had reported 15.7% prevalence of infertility among women attending the gynecological clinic of UDUTH, Sokoto, Nigeria, virtually nothing is known about the burden of depression, its effects on the psychological well-being of those affected, and its correlates among infertile females in this area. This study was conducted to determine the perception, prevalence and correlates of depression among females attending the Gynecological Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria.

MATERIALS AND METHODS

Study Design, Population and Area

A cross-sectional study was conducted among females with infertility attending the Gynecological Clinic of Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto, Nigeria, in November 2016. The hospital has a bed capacity of 800 and serves Sokoto State and the neighboring states of Kebbi and Zamfara, as well as the neighboring Niger Republic. The Fertility Unit is one of the 4 firms under the Obstetrics and Gynecology Department (the other firms include Feto-maternal, Oncology and Urogynecology). All infertile females (irrespective of type of infertility, and whether or not they were under treatment) attending the Gynecological Clinic of UDUTH within the period of the study and gave their informed consent to participate were considered eligible and enrolled into the study.

Sample Size Estimation and Sampling Technique

The sample size was estimated at 156 using the statistical formula for calculating the sample size for descriptive studies (Ibrahim, 2009) a 10.9% prevalence of depression among infertile women in a previous study

(Volgsten et al., 2008), a precision level of 5%, and an anticipated 95% response rate. The eligible participants were selected by systematic sampling technique. Four gynecological clinics are run in a week, and about 30 patients are seen per clinic, making a total of 120 patients per week. One of 2 infertile females presenting consecutively at the clinic over a period of 3 weeks was enrolled into the study until the estimated sample size of 156 was obtained.

Data Collection and Analysis

A structured interviewer-administered questionnaire (adapted from the instrument used in previous studies) (Oliver et al., 2014; Upkong and Orji, 2006; Masoumi et al., 2013) was used to obtain information the participants' socio-demographic characteristics, their perception of depression, and the correlates of depression among them. The Beck Depression Inventory (Beck, 1979) was used to screen for depression among the participants. The Beck Depression Inventory (BDI) is a 21-item survey tool. Each question contains four response options ranging from zero to three, with the higher rating indicating a more severe symptom of depression. The total ranges of potential total scores vary from 0 to 63. Scores of 0-10 are considered as normal ups and down, 11-16 indicate mild mood disturbance, 17-20 indicate borderline clinical depression, 21-30 indicate moderate depression, 31-40 indicate severe depression, and scores of 40 and above indicate extreme depression (Beck, 1979).

Four doctors (House Officers) were recruited to assist in data collection, after being trained on the objectives of the study, conduct of survey research, interpersonal communication skills and use of survey instrument. The questionnaire was pretested on 20 females attending the Gynaecological Clinic of Specialist Hospital, Sokoto, Nigeria (another tertiary health care facility in Sokoto, Nigeria) immediately after the training of the research assistants to assess its appropriateness, and to familiarize the research assistants with it. The questions were well understood and no modification was necessary. The questionnaires were manually checked for accuracy and completeness. Data were cleaned, entered into and analyzed using the IBM Statistical Package for Social Sciences (SPSS) version 20. Quantitative variables were summarized using mean and standard deviation while categorical variables were summarized using frequencies and percentages. The chi-square test was used to compare differences between proportions. All levels of significance were set at $p < 0.05$.

Ethical Consideration

Institutional ethical clearance was obtained from the Ethical Committee of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. Permission to conduct the study was obtained from the Management of the hospital, and informed consent was obtained from the participants before administering the questionnaires.

RESULTS

Respondents' socio-demographic characteristics

All the 156 questionnaires administered were adequately completed and found suitable for analysis, giving a response rate of 100%. The mean age of the respondents was 28.3 ± 6.4 years with a larger proportion 65 (41.7%) of the 156 respondents being in the 18-25 years age group. Majority of respondents were Muslims (76.9%), and a larger proportion of them had tertiary education (37.8%), and were either full-time housewives (46.2%) or civil servants (43.3%). Majority of respondents (51.9%) were in monogamous marriage (Table 1).

Table 1: Respondents' socio-demographic characteristics

Variables	Frequency (%) n = 156
Age group (years)	
18-25	65 (41.7)
26-30	42 (26.9)
31-36	27 (17.3)
≥37	22 (14.1)
Religion	
Christianity	36 (23.1)
Islam	120 (76.9)
Level of education	
None	43 (27.6)
Primary	21 (13.5)
Secondary	33 (21.1)
Tertiary	59 (37.8)
Occupation (n = 143)	
Unemployed	2 (1.4)
Civil servant	62 (43.3)
Farming	4 (2.8)
Business	9 (6.3)
Full-time housewife	66 (46.2)
Type of marriage	
Monogamous	81 (51.9)
Polygamous	75 (48.1)

Perception of depression among respondents

Close to half, 76 (48.7%) of the 156 respondents had fears about others knowing their feelings concerning the delay they had in having a child, with the most common sources of fears being that people might start gossiping about them (41.0%), being divorced (39.7%), and in-laws encouraging their spouses to marry another wife (10.3%). Majority of respondents (72.4%) believed that it

is important to share their feelings with others, and would prefer to share their feelings with their parents (66.0%). Majority of respondents (62.2%) also believed that sharing their feelings with others would reduce self-burden and promote self-confidence (Table 2).

Table 2: Perception of depression among respondents

Variables	Frequency (%) n = 156
Had fears about others knowing their feelings concerning the delay in having a child	
Yes	76 (48.7)
No	40 (25.6)
No response	40 (25.6)
Main source of fear	
Might be kicked out of home	62 (39.7)
People might gossip about them	64 (41.0)
In-laws might encourage their spouses to leave them	10 (6.4)
Might be discriminated against	4 (2.6)
In-laws might encourage their spouses to marry another wife	16 (10.3)
Believed it is important to let others know their feelings about the delay in having a child	
Yes	113 (72.4)
No	43 (27.6)
Who they believed should be informed about their feelings	
Spouse	27 (17.3)
Co-wives	18 (11.5)
Parents	103 (66.0)
Friends	8 (5.1)
Perceived benefits of telling others about their feelings	
Encourages family support	24 (15.4)
Reduces self-burden and promotes self-confidence	97 (62.2)
Promotes sexual satisfaction	6 (3.4)
Do not know	29 (18.6)

Prevalence of depression among respondents

Thirty-four (21.8%) of the 156 respondents in this study had depression, with 29 (18.6%) having mild depression, while 5 (3.2%) had moderate depression (Figure 1).

Correlates of depression among respondents

Majority, 117 (75.0%) of the 156 respondents have been married for more than 3 years, and majority of them (72.4%) had no child. Most of the respondents (80.1%) had negative attitude towards child adoption. About a fifth of respondents (20.5%) had poor support from their husbands, while majority of them (60.3%) had poor support from their in-laws (Table 3).

The proportion of respondents with depression was significantly higher among respondents that have been married for ≤ 3 years (43.6%) as compared to those in the other groups (ranged from 0 to 31.6%) χ^2= 23.731, $p < 0.001$; it was significantly higher among respondents with negative attitude towards child adoption (79.2%) as compared to those with positive attitude towards it (40.0%) χ^2= 4.948, $p = 0.026$; and among those with poor support from in-laws (92.3%) as compared to those with good support (55.0%) χ^2= 5.192, $p = 0.023$. The proportion of respondents with depression was higher among respondents with no child (72.7%) as compared to those with at least a child (58.3%), and among those with poor support from their husbands (80.0%) as compared to those with good support, but the differences were not significant ($p > 0.05$) as shown in Table 4.

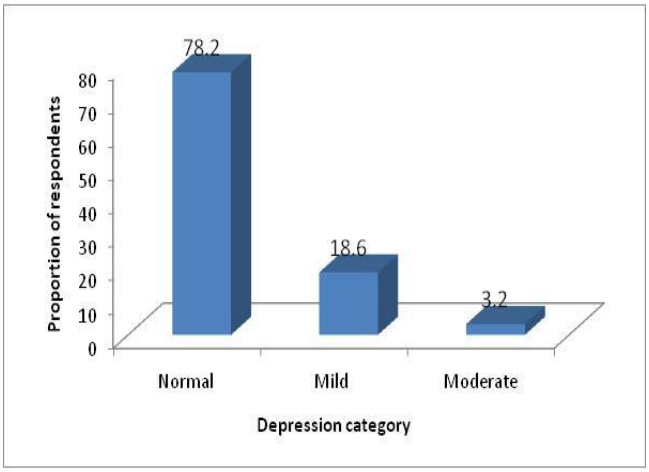

Figure 1: Prevalence of depression among respondents

Table 3: Correlates of depression among respondents

Variables	Frequency (%) n = 156
Duration of marriage (years)	
1-3	39 (25.0)
4-6	46 (29.5)
7-9	33 (21.2)
≥ 10	38 (24.4)
Not having at least a child	
Yes	113 (72.4)
No	43 (27.6)
Had negative attitude towards adoption	
Yes	125 (80.1)
No	31 (19.9)
Poor support from husband	
Yes	32 (20.5)
No	124 (79.5)
Poor support from in-laws	
Yes	94 (60.3)
No	62 (39.7)

Table 4: Distribution of depression by its correlates among respondents

Variables	Depression status		Test of significance
	Not depressed Frequency (%)	Depressed Frequency (%)	
Duration of marriage (years)			
1-3	22 (56.4)	17 (43.6)*	χ^2= 23.731, p < 0.001
4-6	40 (87.0)	6 (13.0)	
7-9	33 (100)	0 (0)	
≥ 10	27 (68.4)	11 (31.6)	
Not having at least a child			
Yes	6 (27.3)	16 (72.7)	χ^2= 0.735, p = 0.391
No	5 (41.7)	7 (58.3)	
Had negative attitude towards adoption			
Yes	5 (20.8)	19 (79.2)*	χ^2= 4.948, p = 0.026
No	6 (60.0)	4 (40.0)	
Poor support from husband			
Yes	1 (20.0)	4 (80.0)	χ^2= 3.409, p = 0.523
No	10 (34.5)	19 (65.5)	
Poor support from in-laws			
Yes	1 (7.7)	12 (92.3)*	χ^2= 5.192, p = 0.023
No	9 (45.0)	11 (55.0)	

*Statistically significant

DISCUSSION

This study assessed the perception, prevalence and correlates of depression among females attending the Gynecological Clinic of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. Although, majority of the respondents in this study (72.4%) believed that it is important to share their feeling concerning the delay they had in having a child with others, and were aware of the benefits of doing so (including reduction of self-burden and promotion of self-confidence), close to half of them (48.7%) had fears in telling others about it. This could be due to the fact that in Sokoto, Nigeria (similar to the situation in many developing countries), children are highly valued for cultural, social and economic reasons; and childlessness often creates huge problems for couples, especially for women who are generally blamed for the infertility.

The stigma of childlessness is so great in many developing countries that infertile women are socially isolated and neglected even by the people who are supposed to support them, such as their husbands and extended family; and motherhood is often the only way for women to enhance their status within their family and community. It is therefore easy to understand why large proportions of the respondents in this study had fears of people gossiping about them (41.0%), being divorced (39.7%), and in-laws encouraging their spouses to marry another wife (10.3%) if they share their feeling with others; and it is not surprising that majority of them (66.0%) would prefer to share their feelings with their parents.

The 21.8% prevalence of depression among the respondents in this study is quite high even though it is substantially lower than the rates obtained in studies conducted in Nigeria (42.9%) (Upkong and Orji, 2006) and other places including Ghana (62.0%) (Alhassan and Abaidoo, 2012), and Iraq (68.9%) (Al-Asadi and Hussein, 2015). The high prevalence of depression in this study and the latter studies buttresses the psychological challenges that childless women are confronted with in many developing countries across the globe. In many developing countries including Nigeria children are seen as a form of social security in old age and as a means of perpetuating the family lineage.

The high prevalence of depression among the respondents in this study could also be due to the fact they are predominantly Muslims and childbearing is considered as very important and valuable in Islam. In the study area, having children stabilizes the family and increases marital satisfaction. Women without at least a child are therefore prone to being treated disrespectfully and stigmatized by the relatives of their husbands who may even encourage the husbands to divorce them or marry another wife since it is permitted by Islamic law (Ramezanzadeh et al., 2004).

The significantly higher prevalence of depression among respondents that have been married for ≤ 3 years (43.6%) as compared to those that have been married for longer periods of time in this study could be related to the high expectation of seeing the woman becoming

pregnant as soon as possible after marriage to prove her womanhood, and in situations where the woman is the first and only wife, to prove that her husband is "man enough". The fear of contending with embarrassing questions from in-laws regarding delay in having a child could therefore exact serious psychological stress on the woman in the early years following marriage. The significantly higher proportion of respondents with negative attitude towards child adoption having depression (79.2%) as compared to those with positive attitude towards it (40.0%) is similar to the finding in a study by Upkong and Orji (2006), and this could be related to the fact that adoption is not widely practiced in this part of the country as compared to other places, thus reflecting the variations in religious beliefs and cultural practices from one place to another.

In this study, almost all the respondents with poor support from their in-laws (92.3%) had depression as compared to those with good support. This is in consonance with the finding in a study by Upkong and Orji (2006), and it highlights the substantial influence in-laws have on marital relationships in many developing countries where many families stay together as extended families with their in-laws in a compound, thus facilitating close interactions and show of concern by the members of the respective nuclear families in the group. It is therefore necessary for care providers to promote child adoption among women undergoing fertility treatment, routinely screen them for depression, and also include their extended family members in the interventions for preventing depression among them.

CONCLUSION

This study showed high levels of perception of the benefits and consequences of sharing their feelings regarding their infertility with others, and high prevalence of depression among females with infertility in Sokoto, Nigeria. Care providers should promote child adoption among women undergoing fertility treatment, routinely screen them for depression and include their extended family members in the interventions for preventing depression among them.

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Conflict of interest

None declared.

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