

# A Comparative Study of Depression among Fertile and Infertile Women in a South-Western Nigerian City

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## ABSTRACT

**Background:** Studies have identified a high prevalence of depression among women with infertility; few studies have explored this association in this environment.

**Aims and objectives:** the study is aimed at evaluating depression in a group of infertile women; compare the prevalence of depression among this group with prevalence among a control group of fertile women, and to identify demographic characteristics associated with depression in infertile women.

**Method:** One hundred (n=100) infertile women and one hundred and three (n=103) fertile women as controls were recruited for the study. They were assessed with a socio-demographic questionnaire, the General Health Questionnaire-30 (GHQ-30) and a clinical interview with depression module of the Structure Clinical Interview Schedule for axis I DSM-IV.

**Results:** The prevalence of depression among infertile women was 32 percent compared with 10.7 percent among the controls. Among the infertile women that were depressed there was a significant association between depression and belonging to a polygamous family with more than one co wife, menstrual abnormalities, primary infertility.

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**Conclusion:** The infertile women are vulnerable group to depression and will require psychological support.

## INTRODUCTION

The universal value of offspring is revealed in the high premium placed on having children. In essence, children represent one's identity and, in fact, are the vehicles of self-perpetuation. Thus, most men and women approach adulthood with the assumption that they can have children of their own someday. However, not all those who wish and attempt to be biological parents achieve their aim.

Infertility is a condition in which pregnancy has not occurred after one year of unprotected, well-timed intercourse.<sup>1</sup> Impaired fertility affects approximately 80 million people globally, with rates ranging from less than 5% to over 30%.<sup>2</sup> The rates of infertility worldwide are estimated to be at least 15% in women of childbearing age, with an estimated 40.5 million women seeking treatment.<sup>3</sup>

Infertility is of significance in African society where children are regarded as a way of dealing with mortality.<sup>4</sup> Irrespective of who is infertile in the couple, infertility is considered a stressful condition, particularly for women, who are commonly blamed for the cause of infertility,<sup>5</sup> which affects many aspects of their lives, such as their social, physical, and psychological well-being.<sup>6</sup> The psychological stress faced by the married couple due to infertility equals that observed in those suffering from cancer,

**Key words:** Depression, infertility Nigeria.

hypertension and cardiac rehabilitation.<sup>7</sup> The social stigma of being childless among infertile women is so severe in some communities that such women are neglected and socially isolated.<sup>8</sup>

Many reports in literature indicated that levels of depression and anxiety are high in infertile women.<sup>9</sup>

<sup>15</sup> On the other hand, there are some studies that show that there is no statistically significant difference between the depression and anxiety levels of both fertile and infertile group.<sup>16-18</sup> The prevalence of depression in infertile women ranges from 8% to 54%.<sup>19</sup> Depression is thought to be a major public health problem associated with infertility, particularly in developing countries, Nigeria inclusive, where having a child is very important for sociocultural, economic, and religious reasons.<sup>20,21</sup>

About four decades ago, Taymor and Bcesnick<sup>22</sup> identified crisis of infertility as an emotional consequences of infertility when all efforts failed. Farrer-Meschan, also over four decades ago, noted that a woman with infertility may feel incomplete, without a sexual identity and/ or failure as a woman, leading to a sense of hopelessness and despair and sometimes intense depression.<sup>23</sup>

This study aimed to evaluate depression among infertile women attending the infertility clinic of a tertiary health facility in southwest Nigeria.

## **MATERIALS AND METHODS**

The study population comprised of consecutive patients (cases) attending the infertility clinic, and who presented with history of inability to conceive after a period of 12 months or more and who gave their consent. The controls comprised of nursing mothers who were attending the infant welfare clinic at Federal Medical Centre Abeokuta in southwest Nigeria. Informed consent from each of the participants was sought and obtained. This study included one hundred (100) and one hundred and three (103) cases and controls, respectively.

Women with history of inability to conceive of less than 12 months and who did not give their consent to participate were excluded from the study.

The initial instruments administered included the sociodemographic questionnaire and the 30-item version of General Health Questionnaire (GHQ-30). Literate cases completed their questionnaire on their own in English language or Yoruba language (Yoruba being the native language). The Yoruba version was produced through the process of translation and back translation. The questionnaire was read out to illiterate patients and their responses recorded. The same questionnaire was administered to both groups.

The researchers administered the Structured Clinical Interview Schedule for Axis I Diagnosis (SCID) on all participants to carry out a second stage psychiatric interview. A clinical diagnosis of depression was made with the Diagnostic Statistical Manual, fourth edition (DSM-IV). The SCID has been used extensively in Nigeria.<sup>19,20</sup> The instrument has been shown to have a good reliability for categorical construct for DSM-IV diagnoses and good standard validity.<sup>21</sup>

### **Ethical consideration**

Approval was sought and obtained from the ethical committee of the tertiary center where the study was carried out. Ethical issues of the participants were addressed throughout the study. All participants of the study were provided with an informed consent, clearly stating the objectives of the study and their right to refuse and if any question they do not want to answer they have the right to do so. Filled out questionnaires were carefully handled and all access to results was kept strictly to members of the group.

### **Data analysis**

The GHQ-30 was scored using GHQ scoring method.<sup>24</sup> A score of 4 and above were regarded on probable cases of psychiatric morbidity. All data were analyzed using the Statistical Package for Social Sciences version 16 (SPSS, Inc., Chicago,

IL., USA). The statistical method used included frequency tables to enable an initial exploration of data and cross-tabulation to study relationships or association between variables. A p value < 0.05 was considered statistically significant.

**RESULTS**

One hundred (100) cases infertile women and one hundred and three (103) controls (fertile women) had their ages ranged between 21 and 45 years. The predominant age range for both groups was 21-30yrs. The majority of the participants had

comparable level formal education of at least secondary education.

Majority of the participants were employed and married. The mean duration of marriage for the cases was 7.1 (S.D 5.3) years. About two-thirds (66%) of the cases were in monogamous marriage. Amongst the third of the cases in polygamous marriage, 8% had only one co-wife; and with all except one of them being the first wife. Only about 10% of the cases lived away from her spouse. More than a third (37%) of the cases' spouses had children from other women.

**Table 1:** Sociodemographic characteristics of participants.

Parameters	Cases	Controls	Statistics
Age range (years)			
21-30	51 (51%)	55 (53.4%)	$\chi^2=0.52, df=2, p= 0.772$
31-40	43 (43%)	44 (42.7%)	
>41	6 (6%)	4 (3.9%)	
Mean (S.D)	31.6 (4.7)	30.6 (5.4)	M = 4524.5, p= 0.134
Religion			
Christianity	76 (76%)	83 (80.6%)	$\chi^2=0.63, df=1, p= 0.428$
Islam	24 (24%)	20 (19.4%)	
Educational status			
Below secondary education	29 (29%)	19 (18.4%)	$\chi^2=3.13, df=1, p= 0.077$
At least secondary education	71 (71%)	84 (81.6%)	
Employment status			
Employed	80 (80%)	80 (77.7%)	$\chi^2=0.17, df=1, p= 0.685$
Unemployed	20 (20%)	23 (22.3%)	
Marital status		103(100%)	
Married	94 (94%)	0 (0%)	$\chi^2=6.37, df=1, p= 0.013$
Single	6 (6%)		
Type of marriage**			
Monogamous	66 (70.2%)	89 (86.4%)	$\chi^2=7.68, df=1, p= 0.006$
Polygamous	28 (29.8%)	14 (13.6%)	
Number of co-wives when in a polygamous marriage*			
One	23 (82.1%)	8 (57.1%)	$\chi^2=3.02, df=1, p= 0.136$
>One	5 (17.9%)	6 (42.9%)	
Position in marriage*			
First wife	1 (3.6%)	5 (35.7%)	$\chi^2=7.88, df=1, p= 0.011$
Not first wife	27 (96.4%)	9 (64.3%)	
Marriage duration** (years)			
1-5	47 (50%)	70 (68.6%)	$\chi^2=11.47, df=2, p= 0.003$
6-10	24 (25.5%)	24 (23.5%)	
>10	23 (24.5%)	8 (7.8%)	
Mean (S.D)	7.1 (5.3)	4.7 (3.7)	M =3537.0, p =0.001
Living with spouse**			
Yes	86 (91.5%)	94 (91.3%)	$\chi^2=0.003, df=1, p= 0.955$
No	8 (8.5%)	9 (8.7%)	

Cases (N=100), Controls (N=103), \*Cases (N=28), Controls (N=14) \*\*Cases (N=94), Controls (N=103)

### Psychiatric morbidity

As shown in Table 2, there was no statistical significant difference in the GHQ scores of the two groups. However, using DSM-IV, infertile women were significantly depressed compared with the control group ( $p < 0.001$ ).

### DISCUSSION

It is important mental health practitioners know how infertility affects a person's health. Depression is considered to be a major public health problem associated with infertility in developing countries such as ours where having a child is very important for socio-cultural, economic and religious reasons.

**Table 2: Psychiatric morbidity among participants**

Parameter	Cases	Controls	Statistics
GHQ-30 mean score (S.D)	3.5 (0.8)	3.4 (3.1)	$M = 4647.5, p = 0.224$
DSM-IV Depression: N (%)			
Depressed	32 (32.0%)	11 (10.7%)	$\chi^2 = 13.81, df = 1, p = < 0.001$
Not depressed	68 (68.0%)	92 (89.3%)	

Cases (N = 100), Controls (N = 103)

This study has brought to the fore associated socio-demographic factors that are of significance in depressed women with problem of infertility.

### Gynaecological variables

Table 3 revealed the gynaecological history of infertile women (cases). Menstrual flow, menstrual discomfort and sexual satisfaction, amongst other gynaecological factors, did not show statistical significant relationship among depressed and non depressed infertile women. However, and significantly, fifteen (18.1%) of those who had primary infertility were depressed as against 17 (23.6%) of those with secondary infertility ( $p = 0.004$ ).

The participants for this study were recruited from women attending infertility clinic and child welfare in a tertiary health centre in southwest Nigeria. Majority of the respondents in this study were in their early adulthood when assumed to be optimal reproductive age group. Expectedly, a significant number of the respondents were married, as all the controls and ninety-four percent of cases were married, ( $P = 0.013$ ).

**Table 3: Depression and gynaecological history among infertile women**

Parameter	Depressed	Not depressed	Statistics
Menstrual regularity			
Irregular	15 (46.9%)	19 (27.9%)	$\chi^2 = 3.48, df = 1, p = 0.062$
Regular	17 (53.1%)	49 (72.1%)	
Premenstrual discomfort			
Absent	19 (59.4%)	56 (82.4%)	$\chi^2 = 6.13, df = 1, p = 0.113$
Present	13 (40.6%)	12 (17.6%)	
Sexual satisfaction			
Satisfying	23 (71.9%)	16 (23.5%)	$\chi^2 = 2.55, df = 1, p = 0.111$
Unsatisfying	9 (28.1%)	10 (14.7%)	
Previous infertility treatment			
Yes	12 (37.5%)	28 (41.2%)	$\chi^2 = 0.12, df = 1, p = 0.726$
No	20 (62.5%)	40 (59.8%)	
Feeling toward adoption			
Like	1 (3.1%)	5 (7.4%)	$\chi^2 = 0.69, df = 1, p = 0.406$
Dislike	31 (96.9%)	63 (92.6%)	
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Supportive	30 (93.8%)	65 (95.6%)	$\chi^2 = 0.16, df = 1, p = 0.654$
Unsupportive	2 (6.2%)	3 (4.4%)	
Type of infertility			
Primary	15 (46.9%)	13 (19.1%)	$\chi^2 = 8.32, df = 1, p = 0.004$
Secondary	17 (53.1%)	55 (80.9%)	

The unacceptable nature of infertility in Nigerian culture probably encourages polygamy because a high premium is placed on child bearing. Interestingly, an earlier observation by some Nigerian authors tends to suggest that polygamy is a complication of infertility.<sup>25</sup> This study further revealed that more of the spouses of infertile women than spouses of controls had children from other women.

The mean duration of marriage of infertile women was significantly higher than that of the controls. The infertile women in this study were slightly older than the controls, which may explain this observation.

In this study, more infertile women reported irregular and abnormal menstrual flow. This finding is not unexpected in Nigerian environment where women equate regular menstrual cycle to good health and fecundity. There is a possibility of a dysfunctional Hypothalamic-Pituitary-Ovarian (HPO) axis that may be responsible for infertility may also cause menstrual irregularity. A possible explanation may adduce a dysfunctional HPO axis to worries and concerns associated with infertility.

About a third of the infertile women, compared to about a tenth of controls, in this study were depressed. This prevalence rate is lower to the rates reported by Upkong and Orji from similar study in this environment.<sup>26</sup> However, this study revealed a higher rate than the rates reported by some studies in the Western world. These apparent high rates in women with infertility can be due to additional stresses faced by infertile women due to cultural expectations. The problem of infertility itself, albeit universal, is invested in with a lot of sociocultural complexities and implications in some cultures.

Even though the prevalence value on this study is relatively lower than those reported in the Western world, the relatively higher capacity of the extended family system in African environment may tend to absorb the shock of infertility.

This study also revealed statistically significant association between the type of infertility and depression. Women with primary infertility were more depressed than their counterparts who had secondary infertility. The fact that women with secondary infertile have achieved pregnancy in the past or have a child alive may serve as consolation and stimulate hope in them.

## CONCLUSION

A major finding in this study was the observed prevalence of 32 percent of depression among women with infertility, and the significant association between depression and the type of infertility.

It is pertinent clinicians especially gynecologists should be more sensitive to the psychological needs of infertile women accessing their facilities.

A major strength of this study is the choice of controls (proven fertile women). This study, however, enlisted only clinic attendees hence the non-clinic attendees remained unreached. This study, however, is limited in the small sample size; thus, the result may not be generalized.

**Conflict of interest** There is nil conflict of interest as it regards this study.

## AUTHORS' CONTRIBUTION

Name of Author	Contribution
Dr. Oladele Ojo	Study conceptualization, design, data analysis
Dr. Lateef Olutoyin Oluwole	Study design and writing of manuscript, editing of manuscript, literature search.
Dr. Adetunji Obadeji	Data entry, manuscript editing

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