

# Psychosocial characteristics of infertile women in a Nigerian tertiary hospital

OLARINOYE AO, AJIBOYE PO<sup>1</sup>

Departments of Obstetrics and Gynaecology and <sup>1</sup>Psychiatry, University of Ilorin, Nigeria

## ABSTRACT

**Introduction:** High premium is placed on childbirth particularly after marriage in our society. Sub-Sahara Africa is known to have the high incidence of infertility and the woman is usually blamed for the problem. Stress is known to have effect on ovulation and therefore conception thereby forming a vicious cycle. The study was to determine the psychosocial problems and psychiatric morbidity among infertile women and to determine the difference in psychosocial problems in primary and secondary infertility patients.

**Method:** The Satisfaction with Life Scale (SWLS) questionnaire, the 12 -item General Health Questionnaire (GHQ-12) and the HADS (Hospital Anxiety and Depression Scale) were administered to 111 patients.

**Result:** The mean age for the respondents was 33.6 ± 5.8 years. There were more cases of secondary infertility 58 (52.3%) compared to primary fertility 53 (47.7%). The study revealed a fairly high degree of psychological morbidity among the respondents, a depressive rate of 39.6%, anxiety rate of 48.6% and psychiatry morbidity of 39.6%. There was no significant difference in prevalence of these morbidity between the patients with primary and secondary infertility.

**Conclusion:** Both primary and secondary infertility are associated with significant psychosocial and psychiatric morbidity. Psychological strain itself can also be a cause or aggravate infertility therefore psychological assessment and co-management with the psychiatrist should be encouraged.

**Key words:** Anxiety; depression; infertility; primary; psychosocial; secondary.


## Introduction

Infertility is defined as the inability of a couple to achieve conception after one year of regular unprotected sexual intercourse.<sup>[1]</sup> It is said to be primary infertility if there has not been any previous conception and secondary if there has been a previous conception irrespective of the outcome.

Prevalence rates show that 30-40% of infertility is primarily attributable to female factors (e.g., tubal factors, endometriosis), 30-40% is attributable to male factors (e.g., low sperm count, impotence), 10% to unidentified cases and the remaining 20-30% is attributable to an interaction between the two partners.<sup>[1,2]</sup>

Despite Nigeria's large population of 167 million, there is a high overall infertility prevalent rate of 30.3%, with rates of 9.2% for primary infertility and 21.1% for secondary infertility.<sup>[3]</sup> The WHO estimates that 8-12% of couples around the world experience difficulty conceiving a child with a sub-Saharan fertility rate at 12.5-16%.<sup>[4,5]</sup> African women are said to have the highest rate of disease induced infertility in the world.<sup>[6]</sup>

**Address for correspondence:** Dr. Olarinoye AO, Department of Obstetrics and Gynaecology, University of Ilorin, Nigeria.  
E-mail: adebunmiolarinoye@yahoo.com

Access this article online	
<b>Website:</b> www.tjogonline.com	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/TJOG.TJOG_54_18	

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Olarinoye AO, Ajiboye PO. Psychosocial characteristics of infertile women in a Nigerian tertiary hospital. Trop J Obstet Gynaecol 2019;36:252-7.

Great emphasis is placed on conception and childbirth by married couples in this country. Children are important for inheritance of family property, maintain the family name and lineage and as future carers of the parents in old age. Infertility is regarded as a stigma and is usually accompanied with much stress and unhappiness for the extended family and particularly for the couple. The literature suggests that infertility is more stressful for women than for men.<sup>[7]</sup> Pregnancy and motherhood is inextricably wrapped up in perceptions of femininity, and infertility can evoke a pervasive sense of failure as a woman. Moreover, women are often blamed for infertility, childbearing is associated with stabilizing their marriage and closer bonds with the husband's family. Men may divorce their wives or engage in polygamy or both in an effort to have children.<sup>[2]</sup> Studies have suggested that women with infertility feel as anxious or depressed as those diagnosed with cancer or hypertension, or who are recovering from a heart attack.<sup>[8]</sup>

The extent of negative psychological impact of infertility may be affected by factors, such as their desire for a child/family, family relationships and support, diagnosis and cause of the problem, cultural and religious beliefs and fertility drugs and treatment outcome.

Typical reactions to infertility may include shock, grief, depression, anger, and frustration, anxiety, psychiatric morbidity as well as loss of self-esteem, self-confidence and a sense of loss of control over one's destiny.<sup>[8]</sup> Relationships between spouses or partners may suffer. They may struggle with anxiety-related sexual dysfunction and other marital conflicts.<sup>[8]</sup>

While medical interventions may offer much-needed help and hope, studies suggest that they may also add to the stress, anxiety and grief that patients are already experiencing from infertility itself.<sup>[8]</sup> Infertility treatment is expensive; patients who can't pay for treatment may feel helpless and hopeless. Infertility medications may cause anxiety, sleep interruptions, depression, mania, irritability and thinking problems. When treatment fails, on the other hand, a new cycle of grieving and distress can be triggered.<sup>[9]</sup>

Psychological strain itself can also be a cause or aggravate infertility; it may prevent ovulation from its effect pulsatile release of gonadotrophin releasing hormones. High circulating stress hormones can interfere with the timing of ovulation and shorten the luteal phase. Reduced progesterone levels in the luteal phase post-conception lessens the likelihood of a successful implantation and could cause early pregnancy failure due to luteal phase defect mechanisms. A study noted

that women with high stress levels released 20% less eggs during ovulation, had up to 20% fewer oocytes retrieved and fertilized during IVF cycles than women with low stress levels.<sup>[10]</sup> Addressing and managing depression, anxiety, and stress will break the vicious cycle often formed and help increase the chances of giving birth to a child.

## Methodology

The study was a hospital based cross sectional descriptive study involving women with either primary or secondary infertility attending the gynaecology clinics of the University of Ilorin Teaching Hospital in Ilorin, Nigeria. The study spanned from February 2014 to November 2016. The research instrument consisted of a proforma questionnaire and 3 instruments, which were the Satisfaction with Life Scale (SWLS),<sup>[11]</sup> the 12 -item General Health Questionnaire (GHQ-12)<sup>[12]</sup> and the HADS (Hospital Anxiety and Depression Scale).<sup>[13]</sup> Both GHQ-12 and HADS are validated instruments and have been used extensively in this environment.<sup>[6]</sup> The GHQ-12 is a screening instrument designed to measure psychological distress, it consists of 6 positively worded and 6 negatively worded items, each item has 4 options and is rated on a 4-point scale. Using the bimodal scoring method a cut of score of 3 was chosen such that a score of 3 or more is suggestive of a probable case of psychological disorder. The HADS has also been validated, patients were asked to choose one response from the four given for each interview. They were to give immediate response and were dissuaded from thinking too long about their answers. The questions relating to anxiety were marked "A", and depression "D". Each item on the questionnaire is scored from 0-3 and this means that a person can score between 0-21 for either anxiety or depression, there were 7 items for each. Scoring is done by adding all the As = Anxiety, and the Ds = Depression. Scores of 0-7 is normal, 8-10 is borderline abnormal, 11-14 is abnormal, 15-21 is severely abnormal. For the purpose of the study, the grading of symptoms in HADS was score 0-7 normal, 8-10 mild, 11-14 moderate and 15-21 severe for both anxiety and depressive symptoms. The SWLS has also been shown to be a reliable and valid measure of individual satisfaction with life, it has been found suitable for global and cross cultural use with different age groups and populations.

Data on the sociodemographic and Obstetric and Gynaecological information were obtained on the initial part of the proforma. This was largely self-administered except for occasional assistance when required. Data was analyzed using SPSS version 23.0 software and *P* value of  $\leq 0.05$  was regarded as statistically significant. Ethical approval for the research was obtained by the ethical committee of the university of Ilorin Teaching Hospital ethical committee.

## Results

130 questionnaires were applied but only 111 could be adequately analyzed. There were almost equal numbers of primary and secondary infertility cases, accounting for 47.7% and 52.3% respectively. The average duration of the problem amongst the respondents was 3 years. The mean age for both groups was  $33.56 \pm 5.82$  years. Average number of previous deliveries and miscarriages among the secondary infertility cases was one. The greater percentage of both groups 94 (84.7%) have remained with their initial marriage partners. The greater percentage 52 (46.8%) were yet to ascertain the cause of the problem. Table 1 shows the sociodemographic characters of all the respondents while Figure 1 shows the number of respondents with primary infertility and those with secondary infertility. Those with secondary infertility were more. Table 2 shows the psychological parameters of the respondents. The sociodemographic characteristics cross tabulated with the type of infertility was shown in Table 3. A greater number of respondents with secondary infertility were older than those with primary infertility, mean ages of  $33.02 \pm 6.76$  and  $34.05 \pm 4.81$ , respectively, and 10 (17.2%) been in previous marriage relationships as compared to 7 (13.2%) of primary infertility patients, although these variables were not statistically significant. Of those with primary infertility, female factor as cause of the problem was more than twice that of male factor among those that had detected the cause of the problem. A similar pattern was also observed among those with secondary infertility with female factor been more than five times male factor. The relationship between type of infertility and psychological variables was shown in Table 4. Similar levels of anxiety and depression were seen among both groups of women. Psychiatric morbidity among the respondents with primary and secondary was 26 (44.8%) and 18 (34.0%), respectively. It was slightly higher among the

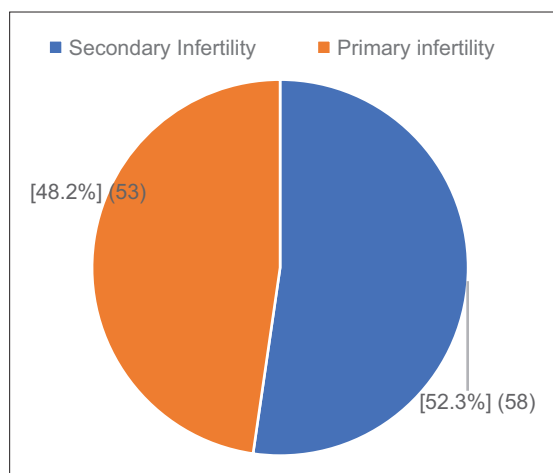


Figure 1: Prevalence of Primary and Secondary infertility

women with secondary infertility but the difference was not statistical significant.

## Discussion

The mean age of respondents of both types of infertility was 33.5 years, with a slightly higher age for the secondary than the primary type of 34.05 and 33.02, respectively. This is similar to what was obtained in studies done by Oladeji *et al.* of 34.5, but different from the study by Imran and Ramzan which showed more women in the age group

Table 1: Socio demographic variable

Variable	Frequency	Percent
Age group (years)		
≤25	8	7.2
26-30	28	25.2
31-35	41	36.9
36-40	21	18.9
41-45	10	9.0
>45	3	2.7
Mean ±SD	33.56 ± 5.82	
Range	19-53	
Previous marriages		
Yes	17	15.3
No	94	84.7
Occupation		
Unemployed	8	7.2
Artisan	13	11.7
Trader	47	42.3
Teaching	19	17.1
Civil servants	18	16.2
Students	6	5.4
Number of previous deliveries		
Median (IQR)	1 (1-2)	
Number of previous miscarriages or abortions		
Median (IQR)	1 (1-2)	
Duration of problem (years)		
Median (IQR)	3 (2-6)	
Investigations done		
None	27	24.3
HSG	*51	45.9
Semen analysis	29	26.1
Hormonal assay	37	33.3
USS	16	14.4
Problem detected		
None yet	52	46.8
Male Factor	11	9.9
Female Factor	37	33.3
Both male & female factor	11	9.9
Treatment*		
None	61	55.0
Drugs	37	33.3
Surgery	19	17.1
ART/IVF	3	2.7

\*Significant  $P \leq 0.05$

**Table 2: Psychological Variable of Respondents**

Variable	Frequency	Percent
Anxiety		
Normal	57	51.4
Mild	23	20.7
Moderate	30	27.0
Severe	1	0.9
Depression		
Normal	67	60.4
Mild	21	18.9
Moderate	23	20.7
Psychiatric morbidity		
Yes	44	39.6
No	67	60.4
Satisfaction		
Satisfied	64	57.7
Neutral	11	9.9
Dissatisfied	36	32.4

**Table 3: Type of infertility and socio-demographic variables**

Variable	Infertility		$\chi^2$	P
	Primary n (%)	Secondary n (%)		
Age group (years)				
≤25	6 (11.3)	2 (3.4)	5.906 <sup>y</sup>	0.315
26-30	16 (30.2)	12 (20.7)		
31-35	15 (28.3)	26 (44.8)		
36-40	10 (18.9)	11 (19.0)		
41-45	3 (5.7)	7 (12.1)		
>45	3 (5.7)	0 (0.0)		
Mean±SD	33.02±6.76	34.05±4.81	-0.934	0.353
Range	19-53	24-44		
Previous marriages				
Yes	7 (13.2)	10 (17.2)	0.347	0.556
No	46 (86.8)	48 (82.8)		
Occupation				
Unemployed	6 (11.3)	2 (3.4)	2.801 <sup>y</sup>	0.731
Artisan	7 (13.2)	6 (10.3)		
Trader	21 (39.6)	26 (44.8)		
Teaching	9 (17.0)	10 (17.2)		
Civil servants	6 (11.3)	12 (20.7)		
Students	4 (7.5)	2 (3.4)		
Problem detected				
None yet	28 (52.8)	24 (41.4)	4.507	0.212
Male Factor	7 (13.2)	4 (6.9)		
Female Factor	15 (28.3)	22 (37.9)		
Both male & female factor	3 (5.7)	8 (13.8)		
Duration of problem (years)				
Median (IQR)	3.00 (2.00-4.75)	3.00 (2.00-6.00)	1093.500 <sup>u</sup>	0.830
Treatment undergone				
Yes	19 (35.8)	31 (53.4)	3.465	0.063
No	34 (64.2)	27 (46.6)		

$\chi^2$ =Chi square  $P \leq 0.05$  significant

of 25-35 years.<sup>[14,15]</sup> This could be because the study was carried out in an urban area where women tend to marry at a

relatively older age because of schooling and also because of the prevailing western culture of late marriage which appears to have been imbibed in this area.

There was a larger percentage of secondary infertility 58 (52.3%), as compared to primary fertility 53 (47.7%), this agrees with the general pattern in sub-Sahara region and this is similar to what was obtained by Oladeji *et al.* Ukpong *et al.* and Awoyinka *et al.* in Nigeria<sup>[14,16,17]</sup> and some studies in Pakistan and some parts of Asia, but it is different from what was obtained in Iran by Imran and Ramzan – in which there was a higher incidence of primary infertility.<sup>[15]</sup> This difference was however not statistically different. This could possibly have been caused by pelvic infections acquired after the initial conception such as cases of pelvic inflammatory disease or puerperal sepsis. The high prevalence of infertility in sub-Sahara Africa has been attributed to the sequelae of poorly managed pelvic inflammatory disease, resulting in utero-tubal damage and or pelvic adhesions.

The study also revealed a higher incidence of female causes of infertility among both groups although the cause of infertility in majority of the respondents is not yet known. This is similar to what was obtained in several studies in Nigeria, but is quite different from what similar western studies have revealed. One possible reason for this could be because the respondents presented in the gynaecological clinic which is perceived to be for management of female problems and would not be a true representative of the incidence in the population.

This study revealed a fairly high degree of psychological morbidity among the respondents, it showed a depressive rate of 39.6%, anxiety rate of 48.6% and overall psychiatry morbidity was 39.6%. Ikeako *et al.* also obtained a similar depressive rate of 39.5% among women with infertility in Awka, Nigeria, and 37.5% was obtained in a previous study in Ilorin by Makanjuola, 39% in Tehran, and 33.5% in Poland.<sup>[18]</sup> This was however lower than rates obtained in a similar study in Pakistan, which showed 50.3% and by Oladeji *et al.* in Ogbomosho, Nigeria, which showed a rate of 52.7%.<sup>[6,14,18-20]</sup>

The prevalence of anxiety in this study was 48.6% and this is similar to 49.6% that was obtained by Maroufizadeh *et al.* in Tehran and 37.5% by Ukpong and Orji.<sup>[16,19]</sup> Reasons for these differences in prevalence of depression and anxiety may include cultural and religious factors as well presence or absence of supportive measures and social pressure. The various instruments used may also have some effect in the prevalence obtained. A lower percentage (36.2%) of respondents with secondary infertility had depressive



**Table 4: Relationship between type of infertility and psychological variables**

Variable	Infertility		Total n (%)	$\chi^2$	P
	Primary n (%)	Secondary n (%)			
Anxiety					
Normal	31 (58.5)	26 (44.8)	*57 (51.4)	1.234 <sup>y</sup>	0.745
Mild	9 (17.0)	14 (24.1)	23 (20.7)		
Moderate	13 (24.5)	17 (29.3)	30 (27.0)		
Severe	0 (0.0)	1 (1.7)	1 (0.9)		
Depression					
Normal	30 (56.6)	37 (63.8)	67 (60.4)	3.934	0.140
Mild	14 (26.4)	7 (12.1)	21 (18.9)		
Moderate	9 (17.0)	14 (24.1)	23 (20.7)		
Psychiatric morbidity					
Yes	18 (34.0)	26 (44.8)	44 (39.6)	1.366	0.242
No	35 (66.0)	32 (55.2)	67 (60.4)		
Satisfaction					
Satisfied	33 (62.3)	31 (53.4)	64 (57.7)	0.930	0.628
Neutral	5 (9.4)	6 (10.6)	11 (9.9)		
Dissatisfied	15 (28.3)	21 (36.2)	36 (32.4)		

<sup>y</sup>Significant value for Anxiety.

$\chi^2$ =Chi square \*P≤0.05 significant

symptoms as compared to 43.4% of those with primary infertility. This might be because they probably faced less pressure from family and society having proven that they are fertile from previous conception or conceptions. This was similar to what was obtained by Imran and Ramzan this difference was however not statistically significant.

Respondents with secondary infertility had an unexpected higher anxiety prevalence of 55.2% while those with primary infertility had a prevalence of 41.5%. Satisfaction with life also showed a dissatisfaction prevalence of 32.4% of which respondents with secondary infertility had a dissatisfaction prevalence of 36.2% as against 28.3% of the primary infertile group, although these differences were not statistically significant. McQuillan *et al.* also did not find a significant gap in satisfaction of life between fertile and infertile women.<sup>[21]</sup> These differences could possibly be on account of the fear of losing their homes and possibly lead to separation from their child/children. The thought of the socioeconomic implications of having to care for the child/children on her own are added concerns of those with secondary infertility which are not applicable to those with primary infertility and which could possibly account for the increased anxiety. Sami *et al.*'s study in Karachi also revealed psychosocial consequences several women with secondary infertility faced and this was worse if the initial conception was not alive, ended up as a miscarriage or if it was a female child.<sup>[22,23]</sup>

The prevalence of psychiatric morbidity of 39.6% is less than 48.8% obtained by Makanjuola *et al.* in a previous study in the

same centre, 46.4 by Ukpong and orji. This was also slightly more 44.8% among those with secondary infertility than those with primary infertility 34%, possibly for the same reasons mentioned earlier.<sup>[6,16]</sup> This was however not significant. This could be because average number of children by patients with secondary infertility was one, which was quite low.

In conclusion both primary and secondary infertility are associated with significant psychosocial and psychiatric morbidity, however psychological morbidity, anxiety issues and psychiatric morbidity were more among respondents with secondary infertility. Satisfaction with life was also less among this group of respondents. Psychological assessment and co management of infertile patients by gynaecologists and psychiatrist should be encouraged. The strengths of the study included use of validated and tested questionnaires. Anxiety, depression and satisfaction with life were tested. Limitations of the study include a fairly small study population, comparison with matched normal fertile women of the area would have helped to determine the actual psychological morbidity caused by the fertility issue in the area. Authors declare no conflict of interest.

#### Financial support and sponsorship

Nil.

#### Conflicts of interest

There are no conflicts of interest.

#### References

- Panti AA, Sununu YT. The profile of infertility in a teaching hospital in North West Nigeria. *Sahel Med J* 2014;17:7-11.
- Zuraida AS. Psychological Distress Among Infertile Women: Exploring Biopsychosocial Response to Infertility, *Malaysia Journal of Psychiatry* 2010;19:2.
- Adetoro O, Ebomoyi WE. Prevalence of infertility in a rural Nigerian Community. *Afr J Med Med Sci* 1991;20:23-7.
- National Population commission. Nigeria over 167 million population: Implications and Challenges. Available from: <http://www.population.gov.ng>. [Last accessed on 2013 Jun 21].
- The World Bank. Fertility rate Total (births per women). Available from: <http://data.worldbank.org/indicator/SP.DYN.TFRT.IN>. [Last accessed on 2013 Jun 22].
- Makanjuola AB, Elegbede AO, Abiodun OA. Predictive factors for psychiatric morbidity among women with infertility attending a gynaecology clinic in Nigeria. *Afr J Psychiatry* 2010;13:36-42.
- Wischmann T, Stammer H, Scherg H, Gerhard I, Verres R. Psychosocial characteristics of infertile couples: A study by the 'Heidelberg Fertility Consultation Service'. *Hum Reprod* 2001;16:1753-61.
- Miller MC, The Psychological Impact of Infertility and its Treatment. Available from: <http://www.intelihealth.com/article/the-psychological-impact-of-infertility-and-its-treatment?> [Last accessed on 2013 Jun 22].
- Sadler AG, Syrop CH. The stress of infertility: Recommendations for assessment and intervention. *Family Therapy collections* 1987; 22:1-17.
- Ebbesen SM, Zachariae R, Mehlsen MY, Thomsen D, Højgaard A, Ottosen L, *et al.* Stressful life events are associated with a poor in-vitro

- fertilization (IVF) outcome: A prospective study. *Hum Reprod* 2009;24:2173-82.
11. Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *J Pers Assess* 1985;49:71-5.
  12. Goldberg DP, Blackwell B. Psychiatric illness in general practice: A detailed study using a new method of case identification. *Br Med J* 1970;1:439-43.
  13. Zimond AS, Snaith RP. The hospital and anxiety depression scale. *Acta Psychiatr Scand* 1983;67:361-70.
  14. Oladeji, SA, OlaOlorun, AD. Depression among infertile women in Ogbomosoland. *South Afr Family Pract* 2018;60:41-45.
  15. Imran SS, Ramzan M. Depression among primary and secondary infertile women: Do education and employment play any role? *Ann Pak Inst Med Sci* 2017;13:39-42.
  16. Ukpong D, Orji EO. Mental health of infertile women in Nigeria. *Turk Psychiatry* 2006;17:1-7.
  17. Awoyinka MF, Ohaeri BM. Depression and coping strategies among women with infertility attending three gynaecological clinics in Ibadan. *J Biomed Res* 2014;13:48-60.
  18. Drosdzol A, Skrzypulec V. Depression and anxiety among Polish infertile couples—An evaluative prevalence study. *J Psychosom Obstet Gynecol* 2009;30:11-20.
  19. Ikeako L, Iteke O, Ezegwui H, Okeke T. Clinico-demographic indicators of depression among infertile women in a tertiary health institution in Awka, South East Nigeria. *Br J Med Medi Res* 2015;7:921-31.
  20. Maroufizadeh S, Ghaheeri A, Almasi-Hashiani A, Mohammadi M, Navid B, Ezabadi Z, *et al*. The prevalence of anxiety and depression among people with infertility referring to Royan, Institute in Tehran, Iran: A cross-sectional questionnaire study. *Middle East Fertility Society J* 2018;23:103-6.
  21. McQuillan J, Torres Stone RA, Greil AL. Infertility and life satisfaction among women. *J Family Issues* 2007;28:955-81.
  22. Sami N, Ali TS. Psycho-social consequences of secondary infertility in Karachi. *J Pak Med Assoc* 2006;56:19-22.
  23. Lakatos E, Szigeti JF, Ujma PP, Sexty R, Balog P. Anxiety and depression among infertile women: A cross-sectional survey from Hungary. *BMC Women's Health* 2017;17:48. doi: 10.1186/s12905-017-0410-2.