

Mental Health of Infertile Women in Nigeria

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SUMMARY

Objective: To determine the prevalence of psychiatric morbidity and factors associated with poor mental health in women suffering from infertility.

Method: The General Health Questionnaire (GHQ-30), Beck Depression Inventory (BDI) and the Anxiety Subscale of the Hospital Anxiety and Depression Scale (HADS-A) were administered to 112 women with infertility at the time of their first presentation to a fertility clinic in a tertiary referral centre. The comparison group comprised of 96 women presenting at the family planning clinic of the same institution. In addition to demographic data, a structured questionnaire was used to collect obstetric information and clinical details from the participants.

Results: The prevalence of psychiatric morbidity was 46.4% (GHQ cases) in the infertile women, 37.5% and 42.9% were cases of anxiety and depression respectively. Women suffering from infertility scored significantly higher on all outcome measures of psychopathology. The results of the multiple regression analysis showed that the sociodemographic variables of the women with infertility contributed to the prediction of psychiatric morbidity (GHQ-30 score), because of the effects of age, not having at least one child and poor support from spouse ($R^2 = .26$ Adjusted $R^2 = .19$ $F(10,101) = 3.57$ $p = .001$). Lack of support from husband also predicted depression and anxiety. Low level of education, polygamous marriage, unemployment, lack of support from in-laws and duration of illness were not predictors of mental ill health.

Conclusion: Infertility is associated with high levels of psychiatric morbidity. Our findings reinforce the need for gynaecologist and healthcare professionals to look for psychosocial distress in women undergoing fertility treatment. Psychological interventions and improvements in the organization of care is essential to positively impact on outcome during treatment in this group of women.

Key Words: Infertility, psychiatric morbidity, anxiety, depression, predictors

INTRODUCTION

Infertility is an important area of clinical work that has continued to stimulate a significant degree of worldwide research interest. Continuing advances in the field of obstetrics and gynaecology and the intrusive nature of infertility management are challenging experiences for patients and physicians (Stotland 1985).

Infertility may lead to physical, emotional and financial burden (Monga et al. 2004). Marital conflicts, poor self esteem, lack of satisfaction with sexual performance and reduced frequency of sexual intercourse are recognized as factors associated with involuntary childlessness in couples (Andrews et al. 1991, Ulbrich et al. 1990).

Psychological complications of childless marriages have been documented in the developed (Matsubayashi et al. 2004, Monga et al. 2004, King 2003, Tan et al. 2001, Andrews et al. 1991, Ulbrich et al. 1990), and less developed nations of the world (Sami and Ali 2006, Dyer et al. 2005, Fiander 1991, Jindal & Dhall 1990).

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.

The aim of the present study is to determine the prevalence of psychiatric morbidity, with a focus on anxiety and depression levels in a consecutive series of women attending a fertility clinic compared to another group seeking consultation for family

planning

We also tested the hypotheses that some demographic, social, and clinical variables would predict psychological distress in the infertile women. The variables were age, lower level of education, unemployment, polygamous marriage, not having at least one child, negative attitude towards child adoption, poor support from husband, poor support from in-laws, financial burden of illness and duration of infertility.

METHOD

Subjects

This descriptive cross-sectional comparative study of factors affecting the mental health of women suffering from infertility was conducted at the Obstetrics/Gynaecology and Family Planning Clinics of the Obafemi Awolowo University Teaching Hospital, Ile-Ife, in South-Western Nigeria.

The teaching hospital provides tertiary level health care to Osun State, while also receiving referrals from neighbouring states of Ekiti and Ondo.

Permission to carry out the study was given by the ethical and research committee of the institution. Written informed consent was obtained from participants after the aims and objectives of the study had been explained to them.

Participants were consecutively recruited from the Fertility and the Family Planning Clinics at the time of their first presentation over a period of seven months (between July and December 2005).

The consecutive referrals to the Family Planning Clinic of the same hospital who were married and had children comprised the comparison group. For this study infertility was defined as primary if conception has never occurred in the subject, and secondary if conception failed to occur after a previous pregnancy irrespective of the pregnancy outcome, in participants engaged in regular sexual intercourse without contraception for over one year.

Subjects who received treatment for infertility before a previous pregnancy were excluded from the study. Also excluded were those with a past history of clinically diagnosed mental illness.

MEASUREMENTS

Socio-demographic and historical information was obtained using a structured data schedule and from the hospital records. The following demographic and historical details were included: age, type of marriage (monogamous/polygamous), number of children, educational level (7 years or more of schooling vs 6 years or less), employment status (employed vs unemployed), and history of spontaneous/induced abortions. For the index group questions were also asked on (1) whether husband was perceived as supportive (2) whether in-laws were perceived as supportive, and (3) whether child adoption may be considered in case of prolonged childlessness. Answers were in either a 'Yes' or 'No' format.

Being responsible for the financial cost of treatment was rated on a 3-point scale on which 0= husband pays, 2= cost is shared by both, and 3= subject pays alone.

The following clinical information were also recorded: How long the patient has been trying to get pregnant, whether infertility was primary or secondary and the parity of subject.

Psychiatric morbidity in the women was assessed by means of the 30-item General Health Questionnaire (GHQ-3, Goldberg and Hiller 1979). Caseness on the GHQ was defined as a score of above five. Depression was assessed using the 21-item Beck Depression inventory (BDI, Beck et al. 1961). The BDI is a self assessment of depression severity with scores of 10 and above indicating significant symptoms, scores of 10-18 indicate mild/moderate depression; 19-29 moderate/severe and 30-63 extremely severe depression.

The GHQ-30 and BDI have been standardized and used extensively in Nigeria (Ukpong et al. 2003, Abiodun et al. 1993). For general anxiety, the subjects were screened with the Anxiety Subscale (HADS-A) of the Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith 1983).

The HADS is a 14 item self report instrument with anxiety and depression subscales. Each item

Table 1. Characteristics of Infertility and Family Planning Comparison Group.

Variable	Infertility subjects S 112	Family Panning S 96	Statistic
Age (years)			
Mean(SD)	34. 5 (5.5)	34.62 (9.05)	t=.122 df206
Range	24 - 46	22 - 53	P=.903
Type of marriage			
Monogamous	96 (%85.7)	72 (%75.0)	X ² =3.82
Polygamous	16 (%14.3)	24 (%25.0)	P=0.051
Years of Education			
Seven years or more	92 (%82.1)	72(%75.0)	X ² =1.58
Six years or less	20 (%17.9)	24(%25.0)	P=0.209
Employment status			
Employed	98(%87.5)	76(%79.2)	X ² =2.62
Unemployed	14(%12.5)	20(%20.8)	P=0.105
Abortion			
Yes	64(%57.1)	26(%27.1)	X ² =21.88
No	48(%42.9)	70(%72.9)	P=.001
Mean psychopathology			
GHQ-30 (SD)	9.83(4.33)	1.45(2.37)	t=7.11 P=0.001
BDI (SD)	9.02(5.80)	2.83(4.25)	t=6.28 p=0.001
HAD-Anxiety (SD)	6.08(4.62)	2.51(3.32)	t=6.31 p=0.001

is rated on a 4 point scale, with each subscale having a range of 0-21, and the HADS has been validated in Nigerian Hospital and Community samples (Abiodun 1994). The recommended cut off score of 8 for this locality, was used for the study (Abiodun 1994).

Statistical analysis

Student t test was used for comparison of mean values of continuous variables between two groups. The X² statistic and Fisher's exact test were used in testing for association between categorical variables. Predictors of mental illness were analysed by sequential multiple regression analysis. All analyses were done using the Statistical Package for Social Sciences 10.0 for Windows (SPSS Inc. Chicago, Ill.). A value of p<0.05 was considered significant.

RESULTS

Altogether two hundred and thirty women (230) women were recruited into the study, but 9.6% (22/230) refused to participate. Of the 22 women who declined participation 13 were from the infertility group, whereas 9 were from the family planning comparison group. The study sample was there-

fore made up of 208 women, with 112 diagnosed as suffering from infertility and 96 women seeking consultation for family planning. Of the 112 infertile women 19.6% (22/112) were diagnosed as suffering from primary infertility and 80.4% (90/112) as cases of secondary infertility. The mean duration of infertility was 4.46±3.73 years (range-more than 1 year to 18 years).

Demographic and clinical characteristics of the index and comparison group Table 1 shows the socio-demographic and some clinical characteristics of these women. There were no significant differences when the socio-demographic parameters of the two groups were compared in terms of age, type of marriage, educational level and employment status. There was a trend for the family planning controls to be more into polygamous marriages (X²=3.82 P=0.051). The infertile women were however much more likely to have had a history of spontaneous/induced abortions, and this was significant (X²=21.88 P=.001).

Psychiatric outcomes of the infertility and family planning comparison group Caseness on the GHQ-30 was recorded in 46.4% (52/112) of the subjects with infertility, and in 12.5% (12/96) of the family planning group. The BDI detected

Table II. Psychiatric Outcome By Socio-Demographic Characteristics in the Women With Infertility (N112).

Variables	GHQ-30	BDI	HADSA
	Cases (%) 52 (46.4)	Depressed (%) 48 (42.9)	Anxious (%) 42(37.5%)
Age group			
22 - 31 n=60	18(30.0)***	20(33.3)	20(33.3)
32 - 41 n=30	20(66.7)	18(60.0)	10(33.3)
≥42 n=22	14(63.6)	10(45.5)	12(54.5)
Education			
≥7years of schooling n=92	40(43.5)	36(39.1)	36(39.1)
≤6years of schooling n=20	12(60.0)	12(60.0)	6(30.0)
Type of marriage			
Monogamous n=96	44(45.8)	42(43.8)	34(35.4)
Polygamous n=16	8(50.0)	6 (37.5)	8(50.0)
Employment			
Employed n=98	46(46.9)	42(42.9)	32(32.7)**
Unemployed n=14	6 (42.9)	6(42.9)	10(71.4)
Type of infertility			
Secondary n=90	42 (46.7)	36 (40.0)	36(40.0)
Primary n=22	10 (45.5)	12 (54.5)	6(27.3)
Parity			
Nulliparous n=76	38 (50.0)	38 (50.0)*	26(34.2)
Parous n=36	14 (38.9)	10 (27.8)	16 (44.4)
Adoption			
No n=102	50 (49.0)	40(39.2)*	34 (33.3)**
Yes n=10	2(20.0)	8 (80.0)	8 (80.0)
Cost of treatment			
Cost is shared n=40	20(50.0)**	14(35.0)***	10 (25.0)**
Husband pays n=58	20 (34.5)	20 (34.5)	22(37.9)
Pays for self n=14	12 (85.7)	14 (100)	10(71.4)

*p<.05, **p<.01, ***p<.001

depression in 42.9% (48/112) of the infertility subjects and in 11.5%(11/96) of the family planning comparison group. There were 37.5% cases of anxiety (42/112) in the index group with 9.4% (9/96) being cases in the comparison group. The infertility subjects had higher mean GHQ-30, BDI and HADSA scores than the comparison group, and when the mean scores of the two groups were compared, they were statistically significant (Table I).

Relationship of socio-demographic and clinical variables with psychiatric outcome in the index group

Table II summarizes the association between

psychiatric outcome measures and the characteristics of the infertility subjects. Educational status, type of marriage, and a diagnosis of primary or secondary infertility were not significantly associated with the outcome measures. Those who were between 22 and 31 years of age had the lowest prevalence for psychiatric morbidity ($X^2=14.07$, $df=2$, $P=.001$), and there was trend towards their being less depressed ($X^2=5.88$, $df=2$, $P=.053$).

The unemployed had the highest prevalence for anxiety when compared with the employed (Fisher's exact $P=.008$). Women who have had children suffered less from depression than women with no children at all ($X^2 = 4.93$ $P= .026$). Anxiety and depression were significantly associated with a posi-

Table III. Standardised Regression Coefficients, T and Significance Values for Predictor Variables in Regression Equations Predicting Mental Illness in Women With Infertility

Dependent variable and predictors	Beta	t	P
GHQ-30			
Age group	.31**	2.75	.007
Level of education	.07	.66	.51
Type of marriage	-.04	-.39	.69
Employment status	-.12	-1.28	.20
Has at least one child	-.33***	-3.32	.001
Attitude to child adoption	-.19	-1.90	.06
Support from husband	-.23*	-2.20	.03
Support from in laws	-.04	-.46	.64
Financial burden of treatment	.10	-1.02	.31
Duration of illness	.003	-.03	.98
BDI			
Age group	.14	1.28	.20
Level of education	-.12	-1.29	.20
Type of marriage	.13	1.49	.14
Employment status	-.07	-.73	.47
Has at least one child	-.24	-2.45	.02
Attitude to child adoption	.26**	2.71	.008
Support from husband	-.30**	-2.87	.005
Support from in laws	.12	1.23	.22
Financial burden of treatment	-.20*	-2.04	.04
Duration of illness	.18	1.64	.10
HADS-A			
Age group	.08	.73	.47
Level of education	.09	.93	.35
Type of marriage	-.10	-1.09	.28
Employment status	-.16	-1.80	.07
Has at least one child	-.11	-1.07	.28
Attitude to child adoption	.26**	2.74	.007
Support from husband	-.28**	-2.71	.008
Support from in laws	-.05	-.55	.58
Financial burden of treatment	-.07	-.73	.46
Duration of illness	.17	1.54	.13

tive attitude towards child adoption (Fisher's exact $P=.008$; Fisher's exact $P=.018$). Women solely responsible for financing their treatment/investiga-

tions were more anxious ($X^2=9.55$, $df=2$, $P=.008$), more depressed ($X^2=21.34$, $df=2$, $P=.001$) and had a higher prevalence for psychiatric morbidity

($X^2=12.22$, $df=2$, $P=.002$).

Predictors of risk of mental illness in the index group. The results of the multiple regression analysis showed that the sociodemographic variables of the women with infertility contributed to the prediction of the psychiatric morbidity (GHQ-30 score), because of the effects of age, not having at least one child and poor support from spouse ($R^2=.26$ Adjusted $R^2=.19$ $F(10,101)=3.57$, $p=.001$). Standardised regression coefficients and significant test for each of the predictors are given in table 3. When the BDI scores were entered as the dependent variable, the regression equation was again highly significant ($R^2=.30$, Adjusted $R^2=.23$, $F(10,101)=4.28$, $P=.001$). Again not having at least one child and poor support from spouse increased the risk of depression. A positive attitude towards child adoption and being made to bear the cost of treatment also predicted the risk of developing depression.

When the analyses were repeated with the HADSA scores as the dependent variable in the model, the equation was still significant ($R^2=.28$ Adjusted $R^2=.21$ $F(10,101)=3.95$ $P=.001$). Again a non supporting attitude from husband and a willingness to consider adoption by the woman if unable to get pregnant on the long run contributed to the prediction of anxiety. Age only contributed to the prediction of psychiatric morbidity (GHQ scores) but not prediction of anxiety or depression. The demo-graphic variables of education, employment status and type of marriage did not contribute to psychiatric morbidity nor to anxiety and depression. Other variables like lack of support from in-laws, financial burden of treatment and duration of illness did not contribute to prediction of GHQ-30 or HADSA scores. Even though lack of support from inlaws and duration of illness did not contribute to prediction of depression scores, there was an association between depression and financial burden of the treatment.

DISCUSSION

The study has shown that high levels of psychiatric morbidity are experienced by women suffering from infertility. The prevalence of psychiatric morbidity was 46.4% in the index group, and 43% (48/112) were cases of depression while 37.5% (42/112) were cases of anxiety. On the other hand the prevalence of psychiatric morbidity was 12.5% in the comparison group of family planning sub-

jects, 11.5% and 9.4% were cases of depression and anxiety respectively. There were significant-differences when the mean scores of the outcome measure were compared in the two groups.

The prevalence of psychiatric morbidity is high in the index group when compared with findings from non-psychiatric units of general hospitals and community samples in Nigeria. Prevalence rates for psychiatric morbidity of 30.2%, 35.2% and 12.5 % have been documented in gynaecology clinic attendees, patients in medical/surgical wards, and antenatal clinic populations respectively (Abiodun 1994). From community samples in Nigeria, rates of 19.2% to 28.5% have also been reported (Ohaeri et al. 1994, Abiodun 1994, Amoran et al. 2005).

Our findings that infertility is associated with high levels of psychiatric morbidity is in agreement with previous studies (Sami and Ali 2006, Dyer et al. 2005, Epstein and Rosenberg 2005, Monga et al 2004, King 2003, Griengl 2000). The predictors of poor mental health outcomes were not having at least one child, lack of supporting relationship with spouse, attitude towards adoption, age and financial burden of treatment. Lack of a supporting relationship with spouse predicted all three psychiatric outcomes. The association between lack of husband's support and poor mental health in our cohort also support the findings of Matsubayashi et al. (2004), who observed that anxiety and depression in childless Japanese women were significantly associated with lack of husband's support and feeling stress. It is noteworthy that the stress women often experience as a result of infertility may influence their perception of their marriage and may undermine their ability to get the very support they need (Ulbrich et al. 1990). Child bearing is often highly valued in African societies and infertile couples suffer a lot of social stigma (Favot et al. 1979). Not having at least one child was associated with significant psychiatric morbidity and depression in the participants.

There is usually pressure from relatives for the husband in a childless union to marry another wife, because more often than not family members tend to perceive the woman as the infertile partner (Orji et al. 2002). The intrusive nature of in-laws therefore constitute potent sources of stress for these women even though lack of support from in-laws did not predict any of the outcome in this study. The finding that close to one half of consecutive women attending a clinic for infertile-

ity treatment suffer from mental illness and more than a third suffer from anxiety and depression has implications for the psychological care of infertile women, and wider social policies. Our findings reinforce the need for gynaecologists and healthcare professionals to look for psychosocial distress in women undergoing fertility treatment. The quality of life of women with fertility problems could be further improved if professionally supervised psychological interventions form an integral part of

the care plan in the management of female infertility.

This study had important limitations, as outcome was measured mainly by self report inventories. Although this had the advantage of minimising the possibility of researcher bias in assessing outcome, further studies would employ two stage techniques which would make standardized diagnoses possible.

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