

Psychosocial morbidity in women attending an infertility clinic in Northwestern Nigeria: *'Its the worst misfortune of a woman'*

Mustapha Aisha¹, Adesiyun Adebisi Gbadebo¹, Yusuf Abdulkareem Jika²,
Abdullahi Jibril Randawa¹, Lawal Biliaminu³

¹Department Of Obstetrics And Gynaecology, Faculty of Medicine, Ahmadu Bello University / Ahmadu Bello University Teaching Hospital, Zaria, Kaduna State, Nigeria

²Department Of Psychiatry, Faculty of Medicine, Ahmadu Bello University / Ahmadu Bello University Teaching Hospital, Zaria, Kaduna State, Nigeria

³Department of Community Medicine, Ahmadu Bello University Teaching Hospital, Zaria, Kaduna State, Nigeria

Email address:

pamustafa@yahoo.com (M. Aisha), biyi.adesiyun@yahoo.com (A. A. Gbadebo), yusufajika@yahoo.com (Y. A. Jika),
lawalbiliaminub@gmail.com (L. Biliaminu), drrandawa@yahoo.com (A. J. Randawa)

To cite this article:

Mustapha Aisha, Adesiyun Adebisi Gbadebo, Yusuf Abdulkareem Jika, Abdullahi Jibril Randawa, Lawal Biliaminu. Psychosocial Morbidity in Women Attending an Infertility Clinic in Northwestern Nigeria: *'Its the Worst Misfortune of a Woman'*. *Journal of Gynecology and Obstetrics*. Vol. 3, No. 1, 2015, pp. 6-12. doi: 10.11648/j.jgo.20150301.12

Abstract: Background: Infertility is a problem of global proportions. It is the most important reproductive health concern of women. Generally, the female is held responsible for virtually all cases of infertility. The men folk are held as above board. Consequent upon this, the woman is humiliated, isolated, derided, rebuffed and abused. This abuse could be physical or psychological. The psychosocial morbidity they have can also affect their treatment success as such there is need to evaluate the prevalence, types, and sources of this psychosocial morbidity and also the need to introduce psychotherapy as part of infertility management in our centre. Materials and methods: A descriptive cross-sectional study was carried out on consecutive women attending the infertility clinic at Ahmadu Bello University Teaching Hospital, Shika Zaria. Data was collected using a socio-demographic questionnaire designed by the researchers and psychiatric morbidity in the women was assessed by means of the 12-item General Health Questionnaire (GHQ-12) until sample size of 217 was met. Women with severe psychological distress were confidentially interviewed about their sources of pressure. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 17. Results: The mean age of the respondents was 33.2 years. Most of them were married [95.8%] in a monogamous setting [72.2%] and in their first order of marriage [62%]. Fifty-six percent of them had secondary infertility. The mean duration of infertility in all respondents was 5.3 years. Majority [77.8%] of the respondents were stressed by being unable to conceive. Their sources of pressure included their husbands, mother-in-law amongst others. 26.2% have been physically abused as a result of their infertility. Only 29.8% of women will consider adoption in case of prolonged childlessness and most [63.8%] of infertile women will cope better with infertility if there were support groups. Prevalence of psychological distress among infertile women was 37.8% and of these, 7.7% had severe psychological distress. Those with primary infertility, longer duration of infertility and the financial burden of treatment had a statistically significant increase in severe psychological distress. Previous psychiatric disorder did not affect the prevalence of severe psychological distress in them. In-depth interview with these women revealed the enormous burden they carry as a result of infertility including marital disharmony, social stigma, and mental health difficulties. Conclusion: A significant proportion of infertile women experience psychosocial morbidity, as such, there is needed to implement psychotherapy as part of infertility management.

Keywords: Psychosocial Morbidity, Infertility, Psychological Distress, Northwestern Nigeria, General Health Questionnaire

1. Introduction

Infertility is a problem of global proportions. The WHO

estimates that 8–12% of couples around the world experience difficulty conceiving a child. ^[1] In Nigeria, prevalence rates may be higher. A recent study reported that up to a third of women in a rural community were affected. ^[2] It has been

described as the most important reproductive health concern of Nigerian women,^[3] and accounts for between 60 and 70% of gynaecological consultations in tertiary health institutions in Nigeria.^[4]

Illiteracy is rife in most communities in Northwestern Nigeria and as such many notions exist as to the etiopathogenesis of infertility. Generally, the female is held responsible for virtually all cases of infertility with the men folk held as above board. In most African societies, a passionate premium is placed on procreation in any family setting. In most cultures in Nigeria, the only proof of womanhood is motherhood and this makes infertile women experience both physical and psychological abuse. Earlier reports in Nigeria have documented psychosocial morbidity (marital instability, social ostracism, economic deprivation, depression, anxiety, suicidal ideation) associated with female infertility.^[5,6] Common psychological symptoms reported among infertile women include depression, anxiety, and suicidal ideation.^[7] Reports from other countries also support this^[7,8] Psychiatric morbidity is present in 46.4% of infertile women in southwestern Nigeria.^[6] Researchers have also looked into the psychological impact of infertility per se and of the prolonged exposure to intrusive infertility treatments on mood and well-being. There is less information about effective psychiatric treatments for this population; however, there is some data to support the use of psychotherapeutic interventions.^[9]

There has been little attention on the psychosocial morbidity (PSM) of these infertile women in sub-Saharan Africa and as such less resources have been directed towards alleviation of PSM among these women. The literature on the psychological as well as social complications of female infertility in Northern Nigerian women is few. Nigeria, with over 250 ethnic groups, holds slightly differing attitudes on the concept of infertility, and most studies previously conducted have been in the Southern part of the country.^[2,6,7] As such, there is need for more of such studies in Northern Nigeria. Previous studies on infertility have either qualitatively focused on the effect of childlessness^[10,11,12] or in fewer cases, their mental health.^[6] This study focuses on both aspects. Also, integrating psychosocial interventions within infertility management during gynaecological care is not practiced in northern Nigeria. This may stem from the paucity of knowledge of the magnitude of psychological distress of infertility and its social correlates. Thus, this study aims to evaluate psychosocial distress among women attending an infertility clinic in northwestern Nigeria for the possible incorporation of psychotherapy as part of infertility management.

The specific objectives of the study include determining the prevalence, degrees and sources of psychological distress and to determine the socio-demographic correlates of such distress, among women attending infertility clinic in northwestern Nigeria.

2. Materials and Methods

2.1. Setting

The study was conducted at the infertility unit of the gynaecology clinic of Ahmadu Bello University Teaching Hospital, Zaria, Kaduna State of northern Nigeria. It serves as a referral centre for other hospitals in Kaduna and neighbouring states. A team of doctors, comprising of residents and consultants assisted by nurses and supporting staff, run the infertility clinic. New patients referred from the General Out Patient Clinic, which is the first point of call, have their detailed history taken, are examined fully and discussed with consultants for review of their diagnosis and management. Old patients are followed up and relevant investigations carried out on all patients. For those diagnosed with male factor infertility, their spouses are referred to the urology clinic. The patients requiring elective operations are counseled and booked for admission and surgery. No specialist care on psychotherapy is offered.

2.2. Procedure

A descriptive cross-sectional study was carried out on all consecutive women attending the infertility clinic, old and new for the 3-month study period (October to December 2013) until the sample size was met. Their folders had the study logo and serial number on them to allow for follow up. 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 two years. Data was collected using a socio-demographic questionnaire designed by the researchers and psychiatric morbidity in the women was assessed by means of the 12-item General Health Questionnaire (GHQ-12).

The purpose of the study was explained to all participants and an assurance of confidentiality was obtained.

2.3. Questionnaires

The socio-demographic questionnaire was an anonymous semi-structured questionnaire consisting of closed ended and few open-ended questions was administered by the researcher after verbal consents have been obtained. It contained questions about socio-demographic background, reproductive history, type and duration of infertility and how infertility has affected the respondents' social life.

The GHQ is a measure of current mental health. It focuses on two major areas – the inability to carry out normal functions and the appearance of new and distressing experiences. The GHQ is valid and useful in both clinical and general populations. The GHQ, which was originally developed by Goldberg,^[13] has been widely used in various cultures as a screening tool to determine whether an individual is at risk of developing a psychiatric disorder.^[14] It is worth mentioning that the GHQ is extensively used by researchers and has been found to be reliable and well-

validated.^[15] The GHQ was originally designed to be used in adult populations. However, it is noted in the GHQ manual that the scale has been used with adolescents.^[14] Originally developed as a 60-item instrument,^[13] a range of shortened versions of the questionnaire including the GHQ-30, GHQ-28, GHQ-20 and GHQ-12 are now available. The questionnaire asks whether the respondent has experienced a particular symptom or behavior recently. Each item is rated on a four-point scale.

The 30-item General Health Questionnaire (GHQ-30) is a screening instrument designed for the quick identification of psychological distress among respondents.

The 12-item version has been shown to be as effective as the 30-item version.^[14] It takes an average of five minutes to complete and is intended for use in adults aged sixteen and above. It is self-administered. The GHQ-12 has six negatively-phrased and six positively-phrased questions. Different scoring methods can be used but the Likert scoring method will be adopted for this study because it has been shown to be the optimum one to use when the aim is to assess the severity of psychological distress.^[15] On the Likert scale, each of the 12 items are scored 0,1,2,3 from left to right with 3 being the most negative mood state. Higher scores are indicative of more psychological problems.^[15] The Likert scoring method results in a score ranging from 0–36 and it can be broken down for interpretation into five categories. A score of 1–10 indicates 'low psychological distress'; 11–12 is 'typical'; 13–15 is 'more than typical'; 16–20 shows 'evidence of psychological distress'; scores over 20 indicate 'severe distress'.^[15]

2.4. Interviews

Women found to have severe psychological distress were followed up during subsequent visits and in-depth interviews were conducted one-on-one in a consulting room with privacy ensured. Interviews were semi-structured and questions were open-ended. Respondents were asked about their sources of pressure and why they were psychologically distressed. They were interviewed in English or Hausa languages depending on what language they were comfortable with. Their response was recorded on a phone. Interview lasted approximately ten minutes for each woman.

2.5. Data Analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS) version 17. Chi square test was used to determine relationships between variables and alpha level of significance was set at 0.05.

Results were displayed by means of tables and charts. Minimum sample size was calculated from a previous study as 217.

2.6. Ethical Approval

Ethical clearance was obtained from the Health Research Ethics Committee of ABUTH. Clients that did not consent to participate still received due care and attention at the clinic.

Clients with severe distress benefited from early referral to a clinical psychologist and psychiatrist. Strict confidentiality was maintained throughout the study.

2.7. Limitation

A limitation of this study is that it cannot be determined whether the psychological distress detected among these women is due to infertility or other problems the patient might be encountering.

3. Results

A total of 217 questionnaires were administered and 216 retrieved and analyzed.

The age range of respondents was 19–48 years with a mean age of 33.2 years. Out of the 205 married respondents, 148 (72.2%) were in a monogamous setting while 57 (27.8%) were in a polygamous marriage setting. Majority were married (95.8%). Out of the 205 married respondents, 127 (62%) were in their first order of marriage, 75 (36.6%) were in their second and 3 (1.5%) were in their third order or more.

Table 1. Socio-demographic characteristics of the Respondents.

Characteristics	Frequency	Percentage (%)
Age group in years (n=214)		
16-19	4	1.9
20-24	40	18.7
25-29	45	21.0
30-34	72	33.6
35-39	39	18.2
>40	14	6.5
Total	214	100.0
Tribe (n=216)		
Hausa/Fulani	119	55.1
Igbo	19	8.8
Yoruba	36	16.7
Others	42	19.4
Total	216	100.0
Religion (n=216)		
Christianity	73	66.2
Islam	143	33.8
Total	216	100.0
Marital Status (n=214)		
Married	205	95.8
Single	5	2.3
Divorced	4	1.9
Total	214	100.0
Occupation (n=214)		
Health worker	15	7.5
Professional	51	23.8
Artisan	10	4.7
Trader	60	28.0
Unemployed	45	21.0
Others	32	15.0
Total	214	100.0
Level of Western Education (n=216)		
None	19	8.8
Primary	30	13.9
Secondary	73	33.8
Tertiary	94	43.5
Total	216	100.0

Of the 216 respondents, 95 (44%) had primary infertility while 121 (56%) had secondary infertility.

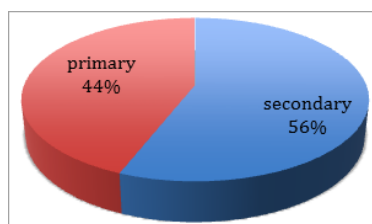


Fig. 1. Type of infertility among respondents.

The mean duration of infertility in all respondents is 5.31 years with a range of 2-16 years. Majority (53.9%) of the respondents believe the cause of their infertility is unknown to them while 40.1% believe it's due to medical reasons. Six percent however believe it has a spiritual backing.

161 (77.8%) out of the 207 women that responded said they were stressed by being unable to conceive while 46 (22.2%) responded in the negative. The reasons for being stressed are as shown in the bar chart below.

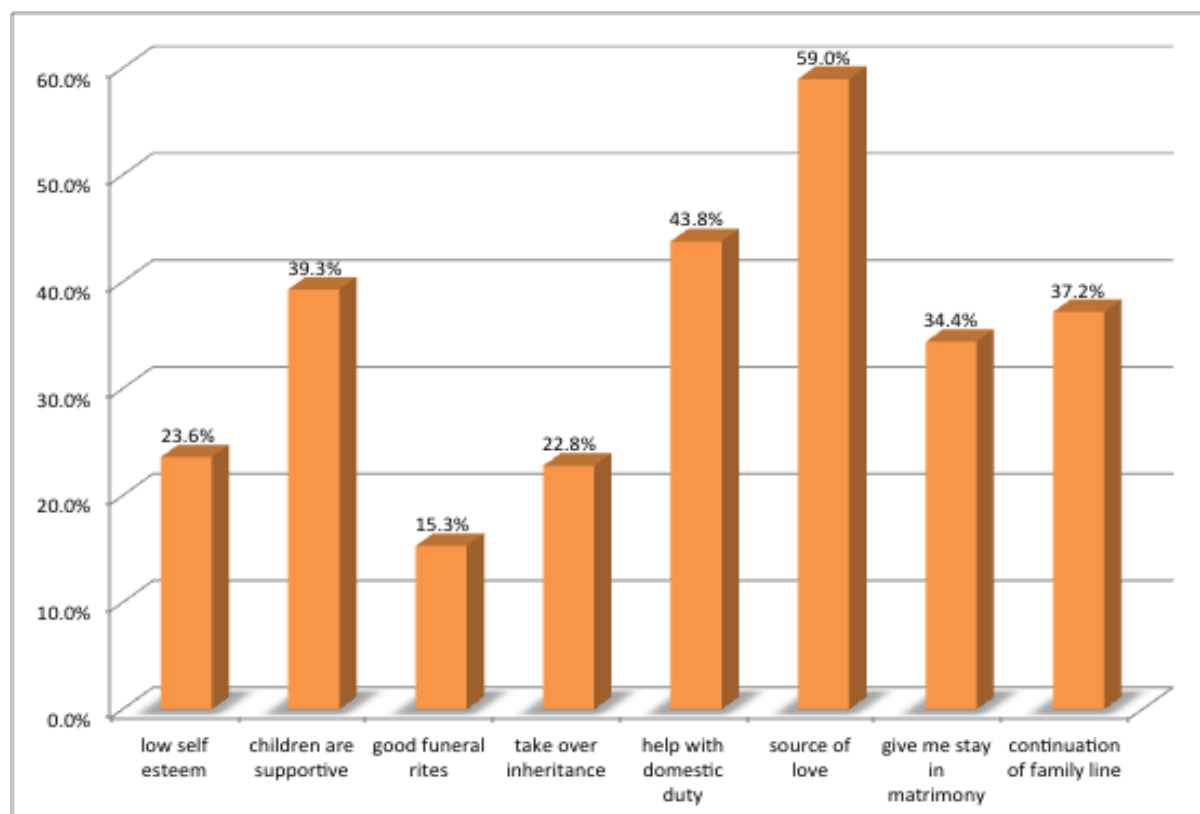


Fig. 2. Reasons for being stressed by infertility.

Out of the 205 married respondents, 169 (%) had supportive husbands while 36 (%) had unsupportive husbands.

Table 2. Sources of pressure among respondents.

Source of pressure	Frequency	Percent
Husband	56	26.7
Mother	7	3.3
Mother-in-law	22	10.5
Friends	6	2.9
Other relatives	21	10.0
Nobody	98	46.7
Total	210	100.0

Majority (46.7%) of respondents had no sources of pressure. However, 26.7% said their husbands were their sources of pressure and 58 (26.9%) of all respondents had marital instability as a result of their infertility. Also, 26.2% have been physically abused as a result of their infertility

In 70.8% of infertile women, their husbands pay for their investigations and treatment while 10.5% of women pay themselves. The cost is shared by both partners in 7.8% of cases and other relatives in the remaining cases.

29.8% of women will consider adoption in case of prolonged childlessness while 70.2% will not.

Most (63.8%) infertile women believe they will better cope with childlessness if there were support groups available.

Table 3. Prevalence of psychological distress among respondents.

Level of psychological distress	Frequency	Percent
Low	77	36.8
Typical	53	25.4
More than typical	31	14.8
Evidence	32	15.3
Severe	16	7.7
Total	209	100.0

Of the 209 respondents who filled the GHQ-12, 7.7% had severe psychological distress while 15.3% had evidence of psychological distress. Therefore, prevalence of psychological distress was 37.8%.

Relationship of socio-demographic and clinical variables with severe psychological distress: those at the extremes of reproductive ages had more severe psychological distress. Level of education, husband and in-laws support with the degree of psychological distress was not statistically significant. However, those with primary infertility, the longer the duration of infertility and the financial burden of treatment had a significant increase in severe psychological distress. Previous psychiatric disorder did not affect the prevalence of severe psychological distress in them.

Table 4. Relationship of socio-demographic and clinical variables with severe psychological distress.

Variable	Severe Psychological Distress	Level of significance (p<0.05)
Age	Case (%)	
16-19	2(50)	
20-24	6(15)	
25-29	2(4.9)	<0.002
30-34	0(0)	
35-39	4(10.5)	
> 40	2(16.7)	
Highest level of education		
None	0(0)	<0.132*
Primary	4(13.3)	
Secondary	8(11.6)	
Tertiary	4(4.4)	
Husband support		
Yes	14(8.3)	<0.286 *
No	2(6.3)	
Type of infertility		
Primary	10(11.0)	<0.028
Secondary	6(5.1)	
Duration of infertility		
<5 years	4(6.6)	<0.032
5-10 years	8(7.2)	
>11 years	4(11.4)	
Stressed by infertility	<0.004	
Yes	14(8.7)	
No	2(4.3)	
Stressed by financial burden of Rx	<0.041	
Yes	12(11.3)	
No	4(4.0)	
Previous induced abortions	<0.002	
Yes	8(20.2)	
No	14(8.4)	
Psychiatric illness	<0.000	
Yes	2(7.7)	
No	14(7.7)	

* Not statistically significant

Out of the sixteen women with severe psychological distress, eleven were successfully interviewed. Most of them reported being victimized by their husbands and his relations especially mothers-in-law. A woman said, "I am not allowed to work again because I have no child. They say I should concentrate

on conceiving first. That is what is done in my husband's culture" (33years, secondary infertility). Another said, "my mother-in-law is bringing him a fertile virgin from the village next week, because she feels I was wayward and God is now punishing me" (29 year old with six years history of primary infertility). A 43-year-old nulliparous woman with 19-year history of secondary infertility said, "my husband has 3 children from two other women. We last had intercourse eight months ago. He tells me every time that he is doing me a favour keeping me as his wife despite pressure from his mum to divorce me. I wish to leave him...but I am not empowered."

One 37year old, who cried all through the interview, said, "infertility is the worst misfortune of a woman, I don't wish it even for my enemy."

Other women recounted their ordeal and most had similar experiences.

4. Discussion

The study has shown that high levels of psychological distress exist in patients with infertility. The prevalence of psychological distress in women attending infertility clinic in ABUTH is 37.8%. This is high 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.^[16] From community samples in Nigeria, rates of 19.2% to 28.5% have also been reported.^[16,17,18]

The findings that infertility is associated with severe psychological distress are in agreement with previous studies.^[19,20,21,22] The predictors of severe psychological distress in this study were not having at least one child, financial burden of treatment, duration of infertility, stressed by infertility, and marital instability due to infertility. Lack of a supporting relationship with spouse did not predict severe distress. This was in contrast to the findings of Ukpong and Orji,^[6] and also Matsubayashi et al^[23] who observed that anxiety and depression in infertile women were significantly associated with lack of husband's support and feeling stress. Previous induced abortions with a higher severe psychological distress was also statistically significant. This is comparable to the findings of Omoigui,^[24] Ukpong and Orji^[6] also noted that the frequency of planned abortions was significantly higher among the infertile group in their study. The combination of these factors might be associated with lower fecundity. 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.^[25] Child bearing is often highly valued in African societies and infertile couples suffer a lot of social stigma.^[26]

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.^[27] 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. Also level of education and previous psychiatric disorder didn't predict severe distress.

These 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.

Adoption was considered by only 29.2% of the participants, and the remaining 70.2% will not. This is comparable to the findings of Nicole et al ^[28] in South Vietnam who also obtained a low proportion of women who will consider adoption (18%). This is attributable to the importance of blood ties.

The qualitative aspect of the study brought out shocking revelations from infertile women, a finding comparable to what was obtained in other studies in Nigeria ^[10,11,12] and other parts of Africa. ^[29,30,31] A possible explanation for this similarity is the universality of the importance of childbearing across the African continent. Despite the diverse cultural beliefs within Nigeria and in other parts of Africa, the importance associated with childbearing seemed universal.

This study had important limitations, as outcome was measured mainly by self-report inventories even though this had the advantage of minimizing the possibility of researcher bias in assessing outcome.

5. Conclusion and Recommendation

Prevalence of psychological distress among infertile women in ABUTH, Zaria is high. It is therefore paramount to consider the implementation of psychotherapy as a part of infertility management in our clinic. This is our recommendation.

Acknowledgment

We acknowledge the contribution of Mrs. Ruqayya Shehu, Chief Nursing Officer at the gynaecology clinic of ABUTH, towards data collection for this study.

References

- [1] World Health Organisation: Infertility. A tabulation of available data on prevalence of primary and secondary infertility. Geneva, WHO Programme on Maternal and Child Health; 1991.
- [2] O.O. Adetoro and E.W. Ebomoyi, "The prevalence of infertility in a rural Nigerian community," *Afr J Med MedSci* 1991; 20:23-7.
- [3] F. E. Okonofua, "Infertility in Sub-Saharan Africa," In: Okonofua FE, Odunsi OA, editors. *Contemporary Obstetrics and Gynaecology for developing countries*. Benin City, Nigeria: Women's Health and Action Research Centre, 2003
- [4] U. Megafu, "Surgical causes and management of infertility in Nigeria," *IntSurg* 1988; 73:144-8
- [5] H.S. Aghanwa, F.O. Dare, S.O. Ogunniyi, "Socio-demographic factors in mental disorders associated with infertility in Nigeria," *J Psychosom Res* 1999; 46:117-23.
- [6] D. Ukpong, E.O. Orgi, "Mental Health of Infertile Women in Nigeria," *Turk Psikiyatri Dergisi* 2006; 17(4) *Turkish Journal of Psychiatry*
- [7] A. Fido, "Emotional distress in infertile women in Kuwait," *Int J Fertil Womens Med* 2004; 49:24-8
- [8] A.D. Domar, P.C. Zuttermeister, R. Friedman, "The psychological impact of infertility: A comparison with patients with other medical conditions," *J Psychosom Obstet Gynaecol* 1993; 14:45-52.
- [9] P.K. Deka and S. Sarma, "Psychological aspects of infertility," *Br J Med Practitioners* 2010; 3(3)2-3
- [10] F.E. Okonofua, D. Harris, A. Odebiyi, T. Kane, R.C. Snow, "The social meaning of infertility in Southwest Nigeria," *Health Transit Rev* 1997; 7, 205-220
- [11] M. Hollos, "Profiles of infertility in southern Nigeria: Women's voices from Amakiri," *Afr J Reprod Health* 2003; 7, 4 6-56.
- [12] A.C. Umezulike and E.R. Efetie, "The psychological trauma of infertility in Nigeria," *Int J Gynaecol Obstet* 2004; 84, 178-180.
- [13] D. Goldberg, "The detection of psychiatric illness by questionnaire: A technique for the identification and assessment of non-psychotic psychiatric illness," London, New York: Oxford University Press 1972.
- [14] D.D. Goldberg and P. Williams, "A User Guide to the General Health Questionnaire," Windsor: NFER-Nelson; 1988.
- [15] D.P. Goldberg, R. Gater, N. Sartorius, T.B. Ustun, M. Piccinelli, O. Gureje, C. Rutter, "The validity of two versions of the GHQ in the WHO study of mental illness in general health care," *Psychological Medicine*, 1997; 27: 191-197.
- [16] O.A. Abiodun, "Validity study of the hospital anxiety and depression inventory in general hospital units and a community sample in Nigeria," *Brit J Psych*, 1994; 165:669-672.
- [17] J.U. Ohaeri, O.A. Odejide, O. Gureje et al, "The prevalence of psychiatric morbidity among adult attenders in five PHC facilities of a rural community in Nigeria," *Psychopathologie Africaine*, 1994; 26: 97-108.
- [18] O.E. Amoran T.O. Lawoyin O.O. Oni, "Risk factors associated with mental illness in Oyo State, Nigeria: A community based survey," *Ann Gen Hosp Psychiatry*. 2005; 4: 19 doi: 10.1186/1744-859x-4-19.
- [19] S.J. Dyer, N. Abrahams, N.E. Mokoena, "Psychological distress among women suffering from couple infertility in South Africa: a quantitative assessment," *Hum Reprod*, 2005; 20: 1938-1943.
- [20] M. Monga, B. Alexandrescu, S.E. Katz et al. "Impact of infertility on quality of life, marital adjustment, and sexual function," *Urology*, 2004; 63:126-130.

- [21] N. Sami and T.S. Ali, "Psychosocial cosequences of secondary infertility in Karachi" J Pak Med Assoc, 2006;56: 19-22.
- [22] Y.M. Epstein,H.S. Rosenberg, "Depression in primary versus secondary infertility egg recipients," FertilSteril, 2005; 83: 1882-1884.
- [23] H. Matsubayashi, H. Takashi, I. Schumichiro, S. Takahiro, M. Tsunelisa, "Emotional distress of infertile women in Japan," Hum Reprod 2001: 16:966-9
- [24] J.O. Omoigui,"Psychiatric morbidity and female infertility in Benin City, Nigeria" [dissertation]. West African College of Physicians, Faculty of Psychiatry; 1990. p. 56. Available from the college library.
- [25] P.M. Ulbrich, A.T. Coyle, M.M. Llabre, MM. "Involuntary childlessness and marital adjustment: his and hers," J Sex Marital Ther, 1990; 16: 147-158.
- [26] I. Favot, J. Ngalue, Z. Mgallaet al,"HIV infection and sexual behaviour among women with infertility in Tanzania: a hospital based study". Int J Epidemiol, 1997; 26 : 414-419.
- [27] E.O. Orji, O.Kuti, O.B Fasubaa OB, "Impact of infertility on marital life in Nigeria,"Int J GynecolObst, 2002; 79: 61-62.
- [28] J.W. Nicole, J.D. Anouck, T.D. Mai Ba et al, "Consequences of infertility in developing countries. Result of a questionnaire and interview survey in the south of Vietnam," J Transl Med 2006;4:45
- [29] S.J. Dyer, N. Abrahams, M. Hoffman, Z.M. van der Spuy"Men leave me as I cannot have children': women's experiences with involuntary childlessness," Hum Reprod2002;17:1663-1668
- [30] P. Feldman-Savelsberg, Plundered kitchens and empty wombs: Fear of infertility in the Cameroonian grassfields. Soc Sci Med 1994; 39, 463-474.
- [31] L. Leonard, "Looking for children: The search for fertility among the Sara of southern Chad". Med Anthropol2002;21, 79-112.