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Socio-demographic correlates of psychological distress among male patients with infertility in Zaria, Nigeria

A.J. Yusuf^{a,*}, H.Y. Maitama^b, M.A. Amedu^a, M. Ahmed^b, H.N. Mbibu^b

^a Department of Psychiatry, Faculty of Medicine, Ahmadu Bello University, Zaria, Nigeria

^b Urology Unit, Department of Surgery, Faculty of Medicine, Ahmadu Bello University, Zaria, Nigeria

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KEYWORDS

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Abstract

Objectives: To determine the level and socio-demographic correlates of psychological distress among males with infertility.

Subjects and methods: This cross-sectional descriptive study involving males with infertility was carried out at the Ahmadu Bello University Teaching Hospital, Zaria, Nigeria between June and December 2011. The respondents were initially evaluated using the Hospital Anxiety and Depression Scale (HAD) and a sheet designed for the collection of socio-demographic data. Patients who scored above the cut-off points of HADS were further interviewed using the Mini International Neuropsychiatry Interview (MINI) depression and anxiety module. Data obtained from the study were analyzed using the Statistical Package for Social Sciences for Windows, version 15. All tests of significance were carried out at a 5% level of probability.

Results: A total of 81 respondents with a mean age of 35.1 ± 6.7 years participated in the study. 56 (69.1%) had a formal education. The mean number of years of education was 8.5 ± 6.0 . More than 50% of the respondents had received unorthodox treatment for infertility, and about 35% had a previous history of sexually transmitted infection (STI). 26 (32.1%) patients scored above the cut-off points of HADS. Psychological distress was found in 23 (28.4%), 14 (17.3%) patients were found to be depressed, while 9 (11.1%) had a generalized anxiety disorder. Psychological distress was significantly associated with a history of marital divorce ($\chi^2 = 24.99, p = .001$).

* Corresponding author at: Department of Psychiatry, Ahmadu Bello University Teaching Hospital, Zaria, Nigeria. Tel.: +234 8023583985. E-mail address: yusufajika@yahoo.com (A.J. Yusuf).

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Conclusion: Male infertility is associated with psychological distress in Nigeria and the rate is comparable to that of other parts of the world.

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Introduction

Infertility places an enormous psychological burden on couples worldwide [1,2]. In most traditional African societies the ability to procreate is seen as the essence of life [3,4]. Children not only serve as a source of caregivers in old age, but are also seen as a means of continuation of the lineage of a person in Africa [5]. An infertile male is an object of ridicule among his peers in addition to the psychological burden he faces on a daily basis [6,7]. Infertility has also been reported to be a cause of marital discords and an increase to the risk of HIV/AIDS infection in the couple [8,9]. Male infertility is a neglected area of research in Africa [10]. Most of the studies carried out on this subject mainly focus on the etiological factors associated with infertility. The urologist is often responsible for the assessment of male patients with infertility in Africa. However, the psychological aspect of this disorder and its treatment is often neglected. Health is not only about physical well-being, it also involves both social and psychological well-being. Studies have shown that psychological distress not only interferes with the patient's quality of life but also results in a high dropout rate among patients with infertility presenting for assessment and treatment [1]. This study was carried out in order to determine the extent of psychological disorders among male patients with infertility and to demonstrate the need for psychological assessment to be included in the assessment of male infertility.

Subjects and methods

This cross-sectional descriptive study was conducted at the Ahmadu Bello University Teaching Hospital Zaria, Nigeria, which is a major referral center for urological problems in Northern Nigeria. It provides services not only for patients in Northern Nigeria, but also for patients from the neighboring West-African countries.

The study was conducted on all male patients referred to the Urology clinic for infertility assessment and possible treatment between June and December 2011.

The patients were interviewed using the following instruments:

- i. Socio-demographic data collecting sheet: this sheet was designed for the purpose of this study gathering information on age, psychoactive substances used, income, duration of illness and other related indices.
- ii. Hospital Anxiety and Depression Scale (HADS): this instrument which has been validated in many countries including Nigeria [11–13] was developed to assess anxiety and depressive symptoms among non-psychiatric patients in the hospital [10]. The HADS has also been found useful in the assessment of psychiatric morbidity in the community. It consists of seven items each for depression and anxiety. Scores are rated on a four-point scale ranging from 0 to 3. A cut-off point of 8 and above in either or both of the anxiety and depressive subscales indicates depression and/or anxiety. The respondents in this study were

categorized into two groups based on their scores in the HADS. Respondents with a score of 8 and above in either or both of the HADS subscales were considered to suffer from psychological distress and were subjected to further psychiatric evaluation, while those with scores of less than 8 in both subscales were considered to be normal.

- iii. Mini International Neuropsychiatry Interview: this is a standardized clinical diagnostic instrument that can generate a diagnosis based on both the Diagnostic and Statistical Manual (DSM), 4th edition, and the International Classification of Diseases, 10th edition (ICD-10) [14]. It has been widely used in many countries including Nigeria. The anxiety and depression module of the MINI was used in this study.

All the instruments used in the study were translated into Hausa Language, the predominant and widely spoken language in the region, using the back-translation method.

Ethical clearance for the study was obtained from the Ahmadu Bello University Teaching Hospital Scientific and Ethical Committee. All the respondents gave an informed written consent before the interview was conducted. They were made to sign or thumb print the consent form based on their level of education.

The study was carried out in two stages, namely the screening and diagnostic stages. In the screening phase, one of the authors, who is a senior registrar in Psychiatry, attended the weekly urology clinic in the hospital. On each clinic day he went through the records of new patients and sorted out those referred to the clinic for infertility. The purpose of the study was explained to them, and their informed written consent was obtained. They were then interviewed using the socio-demographic data collecting sheet and HADS. All respondents with a score of 8 and above in either or both of the subscales of HADS were scheduled for another interview within a period of 2 weeks using MINI. The diagnosis was established based on the ICD-10 diagnostic criteria for current depressive disorder or anxiety disorder.

The data obtained from the study were analyzed using the Statistical Package for Social Sciences for Windows, version 15. Descriptive statistics were applied to all continuous variables. The student *t* test was used to compare age and HADS scores of the respondents with psychological distress and those considered normal. The Chi square test was used to compare social demographics characteristics of the respondents and psychological distress. Cohen's kappa coefficient was used to compare the initial diagnosis made using the HAD score and the final diagnosis using MINI. All tests of statistics were carried out at a 5% level of probability.

Results

A total of 81 respondents with a mean age of 35.1 ± 6.7 years participated in the study. They were all gainfully employed at the time

Table 1 Socio-demographic characteristics of the respondents.

| Variable | Frequency (N) | Percentage (%) |
|-----------------------------|---------------|----------------|
| Education | | |
| Formal education | 56 | 69.1 |
| No formal education | 25 | 30.9 |
| Income/day | | |
| <1 US\$ | 16 | 19.8 |
| >1 US\$ | 65 | 80.2 |
| Traditional treatment | | |
| Yes | 46 | 56.8 |
| No | 35 | 43.2 |
| Alcohol use | | |
| Yes | 9 | 11.1 |
| No | 72 | 88.9 |
| Cigarette smoking | | |
| Yes | 12 | 14.8 |
| No | 69 | 85.2 |
| History of STI ^a | | |
| Yes | 29 | 35.8 |
| No | 52 | 64.2 |
| History of divorce | | |
| Yes | 19 | 23.5 |
| No | 62 | 76.5 |
| Marital status | | |
| Having spouse | 72 | 88.9 |
| No spouse | 9 | 11.1 |

^a Sexually transmitted infection.

of the study. The detailed socio-demographic characteristics of the respondents are shown in Table 1. All the respondents underwent the screening phase of the study, while 26 (32.1%) of them were invited for the second stage of the study. The mean anxiety and mean depression scores were 4.8 ± 2.7 and 6.3 ± 3.6 , respectively. The relationship between the HADS score and the socio-demographic

characteristics of the respondents is shown in Table 2. Twenty-three (28.4%) respondents were found to be psychologically distressed. The most common form of psychological distress was depression. Fourteen patients (17.3%) were found to be depressed, while 9 (11.1%) had a generalized anxiety disorder. There was no significant difference between the age of those with psychological distress and normal respondents ($t = 0.39, p = .70$). The mean number of years of education among the respondents was 8.5 ± 6.0 years. There was no significant difference between the years of education of the two groups ($t = 0.56, p = .58$). The relationship between the socio-demographic characteristics of the respondents and psychological distress is shown in detail in Table 3.

Discussion

The respondents of this study were predominantly young people that have been married for a variable length of time without a child of their own. This is comparable to the observations made by other studies carried out in Africa [6–9]. The implications of this finding are quite numerous and of public health importance. Due to their young age, these men are likely to be sexually active with multiple partners, all in an effort to father a child. The high rates of precedent sexually transmitted infection (STI) in these respondents should not be viewed only as a possible risk factor for infertility, but might be responsible for the spread of HIV/AIDS in the Sub-Saharan African region as rightly observed by other studies [5,8,9]. Another implication of the young age of the respondents is the loss of productive time and money in search of a cure for infertility. More than 50% of the respondents were patronizing alternative care providers' in addition to orthodox care, thereby expending valuable resources.

About 25% of the respondents had a history of marital discords resulting in divorce for no other reason than infertility, while 11.1% had no spouse at the time of the study. This is comparable to the

Table 2 Mean HADS scores by socio-demographic characteristics.

| Variable | Anxiety score | Statistics | Depression score | Statistics |
|-----------------------------|---------------|----------------------|------------------|----------------------|
| Education | | | | |
| Formal education | 4.9 ± 2.3 | $t = 0.355, p = .72$ | 5.8 ± 3.4 | $t = 2.02, p = .050$ |
| No formal education | 4.7 ± 3.5 | | 7.5 ± 3.6 | |
| Income/day | | | | |
| <1 US\$ | 4.7 ± 2.8 | $t = .241, p = .812$ | 6.7 ± 3.5 | $t = .463, p = .65$ |
| >1 US\$ | 4.9 ± 2.7 | | 6.2 ± 3.6 | |
| Traditional treatment | | | | |
| Yes | 4.1 ± 2.3 | $t = 2.94, p = .005$ | 7.1 ± 3.4 | $t = 2.33, p = .023$ |
| No | 5.8 ± 2.9 | | 5.3 ± 3.6 | |
| Alcohol use | | | | |
| Yes | 6.1 ± 3.7 | $t = 1.13, p = .288$ | 5.1 ± 3.0 | $t = 1.26, p = .233$ |
| No | 4.7 ± 2.5 | | 6.5 ± 3.6 | |
| Cigarette smoking | | | | |
| Yes | 4.7 ± 3.5 | $t = .19, p = .849$ | 6.8 ± 3.2 | $t = 0.49, p = .631$ |
| No | 4.9 ± 2.6 | | 6.2 ± 3.6 | |
| History of STI ^a | | | | |
| Yes | 4.4 ± 2.5 | $t = 1.18, p = .24$ | 6.4 ± 4.4 | $t = .109, p = .913$ |
| No | 5.1 ± 2.8 | | 6.3 ± 3.1 | |
| History of divorce | | | | |
| Yes | 6.9 ± 3.9 | $t = 4.12, p = .001$ | 9.9 ± 4.6 | $t = 5.81, p = .001$ |
| No | 4.2 ± 1.9 | | 5.3 ± 2.4 | |
| Marital status | | | | |
| Having spouse | 4.5 ± 2.3 | $t = 4.44, p = .001$ | 6.1 ± 3.5 | $t = 1.37, p = .193$ |
| No spouse | 7.3 ± 3.7 | | 7.8 ± 3.9 | |

^a Sexually transmitted infection.

Table 3 Relationship between psychological distress and socio-demographic characteristics.

| Variable | Normal | Psychologically distressed | Statistics |
|-----------------------------|-----------|----------------------------|---------------------------------------|
| Education | | | |
| Formal education | 42 (75.0) | 14 (25.0) | $X^2 = 1.03$, $df = 1$, $p = .42$ |
| No formal education | 16 (64.0) | 9 (36.0) | |
| Income/day | | | |
| <1 US\$ | 10 (62.5) | 6 (37.5) | $X^2 = 0.81$, $df = 1$, $p = .37$ |
| >1 US\$ | 48 (73.8) | 17 (26.2) | |
| Traditional treatment | | | |
| Yes | 30 (65.2) | 16 (34.8) | $X^2 = 0.35$, $df = 1$, $p = .64$ |
| No | 25 (71.4) | 10 (28.6) | |
| Alcohol use | | | |
| Yes | 7 (77.8) | 2 (22.2) | $X^2 = 0.45$, $df = 1$, $p = .71$ |
| No | 48 (66.7) | 24 (33.3) | |
| Cigarette smoking | | | |
| Yes | 8 (66.7) | 4 (33.3) | $X^2 = 0.01$, $df = 1$, $p = 1.00$ |
| No | 67 (68.1) | 22 (31.9) | |
| History of STI ^a | | | |
| Yes | 19 (65.5) | 10 (34.5) | $X^2 = 0.12$, $df = 1$, $p = .81$ |
| No | 36 (69.2) | 16 (30.8) | |
| History of divorce | | | |
| Yes | 4 (21.1) | 15 (78.9) | $X^2 = 24.99$, $df = 1$, $p = .001$ |
| No | 51 (82.3) | 11 (17.7) | |
| Marital status | | | |
| Having spouse | 51 (70.8) | 21 (29.2) | $X^2 = 2.56$, $df = 1$, $p = .14$ |
| No spouse | 4 (44.4) | 5 (55.6) | |

^a Sexually transmitted infection.

observation made in other studies in Africa [6–9]. The high rates of marital discord and divorce not only predispose these patients to STI but could also be a factor responsible for the high rates of psychological distress and its consequences in other situations in life.

The majority of the respondents in this study have formal education which may be the reason for seeking orthodox care, as education is likely to influence the health seeking behavior of individuals.

The use of psychoactive substances by the respondents in this study is quite low. Earlier studies had reported a positive relationship between infertility and psychoactive substances in other parts of the world [15]. This factor may not be very important in our patients.

The cost of infertility treatment can be enormous. In this study, 19.8% of the respondents earn less than 1 US dollar per day which will not enable them to bear the cost of treatment. This problem is further complicated by the absence of a health-insurance policy to cover the care of infertility.

The rate of psychological distress in this study was found to be 28.4%. The majority of the respondents with psychological distress were suffering current depressive illness (17.3%), while 11.1% had a generalized anxiety disorder, based on ICD-10 criteria. The rate of psychological distress is comparable to that reported among infertile couples in the Netherlands by Lechner et al. [16]. However, Lechner et al. reported a higher incidence of generalized anxiety disorder as compared to depression. The differences observed may be due to the fact that their study included both genders. The rate of psychological distress reported in our study is also similar to the observation made by Volgsten et al. in a study on infertile couples [1]. They reported a rate of 30% with depression being the most common disorder,

followed by generalized anxiety disorder. However, the prevalence reported in our study is lower than that reported by Ahmadi et al. in Iran which was 42.9%, with depression again being the most common disorder [15]. The observed difference may be due to the methodological differences in the two studies. Ahmadi et al. only used the Beck depression inventory to diagnose depression, while our study involved the use of both HADS and MINI to establish a diagnosis based on ICD-10 criteria. The only quantitative study carried out in Africa reported high rates of psychological distress symptoms but made no attempt to establish a definitive diagnosis [2]. As such, it would be difficult to compare it with the findings of this study.

The only identifiable risk factor of psychological distress among our respondents is the history of divorce from their spouses due to infertility. By contrast, the findings of Ahmadi et al. imply that cigarette smoking and a low level of education were risk factors of psychological distress among their subjects. The lack of a documented relationship between other socio-demographic characteristics of the respondents and psychological distress may be explained by the relatively small sample size of our study.

The main limitations of this study consist in the fact that it is a cross-sectional study involving a small sample size and that it is hospital based; as such it may not reflect a finding applicable to the population in general. The strength of the study lies in the methodology and instruments used for establishing the diagnosis of psychological distress.

In conclusion, the rate of psychological distress is high among men presenting with infertility. The HADS is a simple screening instrument which is useful for the identification of psychological distress among males with infertility. There is a need for urologists to be familiar with the psychological distress of their patients, as this

has been shown to improve adherence to treatment and the overall quality of life of their patients.

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