

Psychosocial Factors Associated with Erectile Dysfunction in the Niger Delta Region of Nigeria

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Abstract

Introduction: Erectile dysfunction (ED) is a major psychosocial problem resulting in profound distress in men.

Objectives: The objectives of this study were to determine the prevalence as well as psychosocial factors associated with erectile dysfunction in the Niger Delta Region of Nigeria.

Method: A cross-sectional study involving 400 respondents attending the general outpatient clinic of University Of Uyo Teaching Hospital (UUTH) between January and March 2009 were randomly assessed for ED as well as psychosocial factors associated with it, using abridged version of international index of erectile function (IIEF-5) and the twelve-item version of general health questionnaire (GHQ-12).

Results: The prevalence of erectile dysfunction in this study was 41.5%, the prevalence was higher among respondents aged 50 and 70 years of age (38.3%). Respondents who reside in the rural areas had higher prevalence of ED (22.0%) compared to those in the urban areas (19.5%). Respondents with ED scored high on GHQ-12 indicating significant psychopathology. Thirty seven (9.2%) respondents believed ED can be caused by stress, excessive thinking or hard work; 7.3% believed that ED can be caused by demonic attack, stepping on charms or sexual infidelity; 12.2% believed that ED can result from such medical conditions as hypertension, diabetes mellitus; 19.5% thought that ED can be treated with orthodox medicine while 22.0% believed that ED can be treated using a combination of orthodox and spiritual care; 15.0% respondents believed that ED can result in reduced work ability, income, social life and sex; while 12.5% respondents believed that ED can result in permanent incapacitation for the sufferer.

Conclusion: Findings from this study show that ED affects men both physically and psychosocially. Health care providers must realize and be sensitive to the fact that sexuality is an essential part of our lives.

Keywords: Psychosocial factors; Erectile dysfunction; Niger delta region

Introduction

Erectile dysfunction is presently one of the commonest sexual dysfunctions among men in the world [1]. The National Institutes of Health (NIH) defines erectile dysfunction (ED) as the consistent inability to maintain a penile erection sufficient for satisfactory sexual intercourse [2]. The global prevalence of ED has been on the increase and it is currently projected that by the year 2025, about 322 million men will experience erectile dysfunction [3]. The ability to perform sexually is important to a man. Erectile dysfunction (ED), resulting in the loss of sexual function can lead to feelings of dissatisfaction with life and may result in stress [4]. Erectile dysfunction does not only affect the man but his partner as well including how the man interacts with friends and co-workers [5]. Men with ED tend to emotionally and physically withdraw from their partners. Not being able to physically achieve or maintain an erection may cause a man to lose his confidence, his enjoyment in life and morale. Productivity at work can also decrease because of lack of self-esteem and confidence resulting in overall decrease in the individual's quality of life [6]. Seeking professional health care for ED is a Herculean task for many men for a number of reasons ranging from lack of support, fear or denial of the issue and barriers that they place in front of themselves [7]. There is a documented association between ED and depression and treatment of ED has been reported to improve depression scale scores in men [8]. Erectile dysfunction (ED) is not necessarily dependent on age but as a man gets older his risk of developing ED increases [9].

Studies have shown that ED can be caused by such chronic medical conditions as hypertension, diabetes mellitus as well as adverse effects of therapies used for these conditions [9-11]. In the Niger Delta region of Nigeria however, because of poorly developed health infrastructure and high level of poverty, it means that men with this problem may not

have access to adequate care. It is therefore necessary to take note of the various psychosocial issues associated with ED in the region. This study will therefore add to the pool of knowledge currently available from the developing world on erectile dysfunction.

Materials and Method

Location of the study

This study was carried out at the University of Uyo Teaching Hospital (UUTH) which is located on the outskirts of Uyo, the Capital of Akwa Ibom State of Nigeria.

The State is located in the South-South Geopolitical Zone of Nigeria and is a major oil Producing Area in the Niger Delta region of Nigeria. UUTH is the only tertiary and referral health institution in the state and its environs and serve a population of about 3.9 million people [12].

Data collection

This was a cross-sectional study conducted on subjects aged between 20 and 70 years. A total of 400 male patients attending the

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general outpatient clinic for medical problems between January and March 2009 where randomly assessed for erectile dysfunction, the presence of co-morbid psychopathology as well as beliefs and attitudes about erectile dysfunction. The sample size was determined using the formula $N = z^2 p(1-p)/d^2$ [13], where 'N' is the minimum sample size, 'z' is the standard normal deviation set at 95% confidence level which corresponds to 1.96, 'p' is the prevalence of ED in Nigeria [9], while 'd' is precision which at 95% interval is 5%. Using the above formula, the calculated sample size was 379, but a total of 400 respondents were recruited at the end of the 3-month study period. They were recruited using a systematic random sampling method with a sampling interval of seven. Erectile function status of each respondent was assessed using the abridged five-item version of the international index of erectile function (IIEF-5) [14]. IIEF-5 is an efficient and accurate screening tool to identify the presence and severity of erectile dysfunction in clinical practice. Based on the scores on IIEF-5, the classifications of erectile dysfunction were as follows: 0 – 7 Severe ED; 8-11 moderate; 12-16 mild-to-moderate; 17 – 21 mild ED; and 22 – 25 no ED. The presence of co-morbid psychopathology among respondents was assessed using the 12-item general health questionnaire (GHQ -12) [15]. The GHQ-12 is a self-administered screening questionnaire designed for use in clinical settings for the purpose of detecting individuals with a diagnosable psychiatric disorder. The GHQ-12 is the most extensively used screening instrument for common mental disorders in addition to being a more general measure of psychiatric well-being. The GHQ-12 is a measure of current mental health and focuses on two major areas – the inability to carry out normal functions and the appearance of new and distressing experiences. The most common methods of scoring the GHQ-12 are bi-modal (0-0-1-1) and the Likert scoring style (0-1-2-3) [16]. For the purpose of this study, the bi-modal scoring method was used. Since the GHQ-12 is a brief, simple, easy to complete questionnaire, its application in research setting is well documented in many countries including Nigeria [17,18].

Respondents' knowledge and beliefs about erectile dysfunction was assessed with the use of a structured questionnaire.

This study passed through the ethical and research committee of the University of Uyo Teaching Hospital (UUTH) for approval.

Data analysis

The result of the study was analyzed using the statistical package for social sciences (SPSS 17.0). Comparisons of categorical data were done using the chi-square test. The P-Value of equal to or less than 0.05 (≤ 0.05) was used to determine the level of statistical significance.

Results

A total of four hundred (400) respondents were recruited into the study, 71 (17.8%) of whom were less than 29 years of age. One hundred and fifteen (28.7%) respondents were aged 30 and 49 years and 160 (40.1%) were aged 50–69 years; while 54 (13.5%) were above 70 years of age. A total of 121 (30.2%) respondents were single while 259 (64.8%) respondents were married, 12 (3.0%) respondents were either separated or divorced as shown in Table 1.

A total of 65 (16.3%) respondents had mild erectile dysfunction, 32 (8.0%) had mild-to-moderate erectile dysfunction, 24 (6.0%) respondents had moderate erectile dysfunction while 45 (11.3%) respondents had severe ED. Of the 65 (16.2%) respondents with mild ED, 15 (3.7%) had hypertension and were also taking anti-hypertensive medications, 6 (1.5%) had diabetes mellitus and were also on anti-diabetic medications, 8 (2.0) respondents with mild ED, had previous surgeries. Of the 32 (8.0%) respondents with mild

to moderate ED, 11 (2.8%) were hypertensive and had been on anti-hypertensive medications, 3 (0.8%) were on combination medication; while 7 (1.7%) respondents had undiagnosed health problems (Table 2). Four (1.0%) respondents with moderate ED had hypertension and were on anti-hypertensive medications, 8 (2.0) were on combination of medications while 5 (1.3%) had undiagnosed health conditions. Of the 45 (11.3%) respondents with severe ED, 17 (4.3%) respondents were on a combination of medications, while 10(2.5%) had previous surgical operations.

A total of 248 (62.0%) respondents had scores of ≥ 2 indicating likelihood of co-morbid psychopathology (2 is cut-off). Of this number 160 (40.0%) respondents had erectile dysfunction, while 88 (22.0%) respondents with similar GHQ-12 scores had no erectile dysfunction.

Variable	Subject		P-value
	With ED n (%)	Without ED n (%)	
Age in years			
< 29	-	71(17.8)	
30-49	13 (3.2)	102(25.5)	0.001*
50-69	101(25.3)	59(14.8)	
> 70	52(13.0)	2 (0.5)	
Marital Status			
Single	19(4.7)	102(25.5)	
Married	137(34.3)	122(30.5)	0.001*
Cohabiting	-	8 (2.0)	
Sep./Divorced	10(2.5)	2 (0.5)	
Educational Level			
NFE	1 (0.2)	3 (0.8)	
Prim. Sch.	59(14.8)	37(9.2)	
Sec. Sch.	63(15.8)	131(32.7)	0.001*
Post Sec. Sch.	63(15.8)	131(32.7)	
Occupation			
Unemployed	51(12.8)	36(9.0)	
Unskilled	32(8.0)	97(24.3)	0.001*
Skilled	39(9.8)	22(5.5)	
Professional	44(11.0)	123(30.8)	
Residence			
Rural	88(22.0)	81(20.3)	
Urban	78(19.5)	153(38.3)	0.001*

*Statistically significant, Sep.=separated NFE=no formal education Prim=Primary School, Sec. Sch.=Secondary School, Post Sec. Sch.=Post Secondary School, with ED=with erectile dysfunction, without ED=with erectile dysfunction. Four (1.0%) respondents had no formal education, 96 (24.0%) had primary school education, while 194 (48.5%) had post secondary school education. Eighty seven (21.8%) respondents were unemployed, while 167 (41.8%) respondents were professionals in their different fields of human endeavours.

Table 1: Socio-Demographic Characteristics of the Respondents and Erectile Dysfunction.

Health Condition	Severity of Erectile Dysfunction			
	Mild n (%)	Mild-moderate n (%)	Moderate n(%)	Severe n(%)
HTN. and anti-htn	15(3.7)	11(2.8)	4(1.0)	7(1.7)
Diab. and anti-diab	6(1.5)	5(1.3)	7(1.0)	11(2.8)
Comb. of medicines	21(5.2)	3(0.8)	8(2.0)	17(4.3)
Previous surgeries	8(2.0)	6(1.5)	-	10(2.5)
Undiagnosed condition	15(3.7)	7(1.7)	5(1.3)	-
Total	65(16.2)	32(8.0)	24(6.0)	45(11.3)

HTN: Hypertension, anti-htn = anti-hypertensive medication, Diab: Diabetes mellitus, anti-diabetic medication COMB: combination of medicines

Table 2: Distributions of Health Conditions and the Severity of Erectile Dysfunction among Respondents.

The mean GHQ-12 score was 3.66 ± 2.60 and range was 0-11 as shown in Table 3.

Thirty Seven (9.2%) respondents with ED as compared to 44 (11.0%) without erectile dysfunction thought that ED resulted from such social factors as stress, excessive thinking and working too hard at individual's assignment. Twenty nine (7.3%) respondents with ED as compared to 57 (14.3%) without ED believed that ED resulted from spiritual factors such as demonic attack, sexual infidelity and stepping on charms. Forty nine (12.2%) respondents with ED as compared to 72 (18.0%) without ED thought that erectile dysfunction can be caused by some medical problems such as diabetes mellitus and hypertension.

Twenty four (6.0) respondents with ED as compared to 41 (10.2%) respondents without ED believed that erectile dysfunction can be caused by substance use such as alcohol or tobacco. Seventy eight (19.5%) respondents with ED compared to 102 (25.5%) without ED believed that erectile dysfunction can be effectively treated with orthodox medications while 88 (22.0%) respondents with ED compared to 224 (56.0%) respondents without ED believed that erectile dysfunction can be treated using a combination orthodox medicine and spiritual intervention such as prayer.

Thirty four (8.5%) respondents with ED compared to 69 (17.2%) without ED believed that erectile dysfunction can lead to reduced work ability, income and sexual activity; while 60 (15.0) respondents with ED compared to 73 (18.2%) respondents without ED believed that ED can result in reduced work ability, income, social life and sexual activities.

Thirty six 36 (9.0%) respondents with ED believed that individuals suffering from ED can recover fully; while 50 (12.5%) respondents with ED compared to 41 (10.2%) respondents without ED believed that ED can result in incapacitation. All data are shown in Table 4.

Discussion

Findings from this study show that ED is common in the Niger Delta region of Nigeria. The prevalence of erectile dysfunction among respondents in this study was 41.5%. The rate was, however, lower than 57.4% reported among primary care clinic patients in Nigeria as well as 43.8% reported among married men in Ile-Ife, south west Nigeria [1,9]. The differences in prevalence rate might be due to the variation in the population studied as well as cultural and regional perceptions of ED. While the present study was hospital-based, the Ile-Ife study was community based, while the Nigerian study was multi-national involving respondents in Nigeria, Egypt and Pakistan. Erectile dysfunction was more prevalent among older respondents in this study. This finding was similar to reports from other studies [9,19-21]. Although erectile dysfunction (ED) can affect men of all ages, yet it is more common among older men.

A man's sexual activity generally declines in a slow, continuous process from adolescence through old age. Older men tend to be more worried about sexual function and express most dissatisfaction with poor sexual performance. Erectile dysfunction (ED) was more prevalent among married men, in this study compared to those who were single, divorced, separated or widowed. This finding is similar to the report of another study which also showed that ED was more prevalent among

GHQ-12 Scores	Subject		Total	Percent
	With ED n (%)	Without ED n (%)		
≤ 2	6(1.5)	146(36.5)	152	38.0
≥ 2	160(40.0)	88(22.0)	248	62.0
Total	166(41.5)	234(58.5)	400	100.0

Table 3: General Health Questionnaire-12 (Ghq-12) Scores of Respondents.

Variable	Subjects	
	With ED n(%)	Without ED n(%)
Perceived Causes of Erectile Dysfunction		
Social factors (stress, excessive thinking, working too hard)	37(9.2)	44(11.0)
Spiritual factors (Demonic attack, sexual infidelity, Stepping on charms)	29(7.3)	57(14.3)
Known medical illness (Hypertension, diabetes mellitus)	49(12.2)	72(18.0)
Substance use (alcohol, tobacco)	24(6.0)	41(10.2)
Causes not known	27(6.8)	20(5.0)
Perceived Effective Treatment of ED		
Orthodox medical care	78(19.5)	102(25.5)
Combination of orthodox medical care and spiritual care (prayer)	88(22.0)	224(56.0)
Perceived Psychosocial Effect of ED		
Reduced work ability/income and sex.	34(8.5)	69(17.2)
Reduced work ability/income only	48(12.0)	72(18.0)
Reduced work ability/income/social life and sex	60(15.0)	73(18.2)
No known effect	24(6.0)	20(5.0)
Anticipated Outcome of Illness		
Full Recovery	36(9.0)	50(12.5)
Worsening of illness	30(7.5)	42(10.5)
Incapacitation	50(12.5)	41(10.2)
Death	23(5.8)	72(18.0)
Unknown	27(6.7)	29(7.3)

Table 4: Respondents' Knowledge and Beliefs about Erectile Dysfunction.

married than unmarried men [21]. It was, however, different from the multi-national study involving Nigeria, Egypt and Pakistan which reported high prevalence of ED among single, divorced, separated or widowed respondents [1]. The observed disparity in prevalence rates among married and unmarried respondents might be due to cultural or socio-economic differences of the study population and also to interpersonal non sexual issues between the partners such as the quality of the couples overall relationship. There was also higher prevalence of ED among respondents with higher level of educational attainment (63.0%) compared to those with no formal education (0.2%).

The effect of education on ED is partly mediated by life style factors as well as such contextual variables such as current life stresses with finances, children, parents or occupation [22]. Further studies regarding the relationship between ED and level of educational attainment are hereby advocated. The prevalence of erectile dysfunction (ED) in this study was more common among respondents who live in the rural than in the urban areas. This finding is similar to the report of another study [21]. The reason for this trend of event might be due to the fact that rural dwellers have a lower level of education which is a marker for higher prevalence of non-diagnosed diseases and also to higher levels of stress, coupled with limited access to quality health care [23]. A number of risk factors were also identified among respondents with ED in this study. Such risk factors include diabetes mellitus and anti-diabetic medications. This finding is similar to the reports by other workers who showed that diabetes mellitus as well as various medications used in its treatment can cause ED [24-26]. ED is an established complication found with variable prevalence in men with diabetes mellitus whether of the insulin dependent or non insulin dependent type. Onset of ED is reported to occur at an earlier age in individuals with diabetes mellitus than in the general population [27]. The association between ED and medications is, however, confounded by the underlying medical condition as such the drug-related effects may be difficult to isolate from the effects of the disease itself. Further study is hereby suggested. About 6.7% of ED in this study was due to undiagnosed medical conditions. This goes to suggest that the causes

of ED are multifactorial. There was a high probability of psychiatric co-morbidity associated with ED in this study. A total of 62.0% of respondents consisting of 40.0% of subjects with ED and 22.0% without ED scored above the cut-off point of 2 on screening with general health questionnaire-12 (GHQ-12). Studies have shown that a lot of psychosocial distress is associated with erectile dysfunction. ED can result in depression; affect a man's enjoyment of life, his morale, productivity at work and relationship with spouse, friends and co-workers [4-6,8]. When a man cannot perform intercourse and satisfy his own and his partner's sexual needs, he can feel devastated and very much alone. From this cascade of events the couple starts to alienate themselves emotionally and physically [28]. On perceived causes of ED, it is interesting to note that some respondents still hold the erroneous belief that ED can result from demonic attack, sexual infidelity as well as stepping on charms. This is indeed worrisome as it reveals the need for intensive health education by care givers so that those affected can avail themselves of available medical assistance. It is interesting to note that in most parts of Africa, life misfortunes including ill health can be attributed to spiritual factors and this tends to shape the health seeking behaviours of most Africans [29]. The perceived effects of ED on the subjects' lives are mostly social which further strengthens the underlying psychosocial morbidity associated with erectile dysfunction among the affected [30]. The limitations of this study are that it is hospital-based; as such its findings may not be generalized to the general population. Furthermore, the questionnaire used for this study was supposed to be a self-reported diagnostic stool, its interpretation to the respondents may reduce the accuracy of the responses given.

Conclusion

Erectile dysfunction affects men both physically and psychosocially. With the demographic shift of men living longer the issue of ED will become even more prominent. Health care providers must realize and be sensitive to the fact that sexuality is an essential part of all of our lives. As clinicians, there is need to utilize or develop skills to help guide the patient. The use of different interventions to solve the troublesome problem of ED is helpful. But it is vital that interventions take into account the sophistication of human sexual relationships and the partnerships that are formed.

Health care providers should include sexual history as a normal part of the clinical assessment. In this way, we can provide holistic care that addresses the patient's physical, spiritual, psychological, and emotional needs. This may not be an easy task, but as patient advocates, it is something we should strive to achieve.

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