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Prevalence of Erectile Dysfunction Among Patients Seen in Family Medicine Clinic of Bowen University Teaching Hospital, Ogbomosho, Nigeria

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ABSTRACT

This study aimed to determine the prevalence and severity of erectile dysfunction among men presenting at the Family Medicine Clinic of Bowen University Teaching Hospital Ogbomosho. A cross-sectional descriptive survey was used and consenting adult male subjects aged 31 to 70 years were recruited for the study. A structured questionnaire was used to obtain information and the presence and severity of ED was determined by self-rated sexual activity questionnaire. The overall prevalence of erectile dysfunction was 40.2% and 18.5% of the respondents had mild erectile dysfunction while 4.0% of the respondents had severe erectile dysfunction. The

association between erectile dysfunction and increasing age, polygamy, low socio-economic status, no formal education and living below poverty line was statistically significant. Prevalence of erectile dysfunction is high in Ogbomosho, Nigeria. Therefore erectile dysfunction should be asked about routinely and sensitively in primary care practice because it has been postulated that erectile dysfunction is a sentinel symptom in patient with cardiovascular disease.

Keywords - Erectile dysfunction, polygamy, socio-economic status, Ogbomosho, Nigeria.

1. INTRODUCTION

Erectile dysfunction is defined as the inability to achieve and maintain a penile erection adequate for satisfactory sexual intercourse.[1] The aetiology of erectile dysfunction could be psychological, organic, or of mixed aetiology with both factors present.[2] The psychological causes are more common in young men less than 35 years of age and elderly men (more than 65 years) starting a new relationship.[3] These psychological aetiological factors include; problems in a relationship, anxiety about sexual performance, depression, bereavement, tiredness and stress, guilt about sex, unresolved homosexual feelings and an unattractive partner.[4],[5] The organic causes are common in men aged fifty years and above, with common diseases of the elderly like diabetes mellitus, hypertension and arteriosclerosis accounting for the cause in more than one-half of the men with erectile dysfunction.[5],[6] It has been postulated that erectile dysfunction is a sentinel symptom in patient with cardiovascular disease.[7] Risk factors shared between erectile dysfunction and cardiovascular disease include obesity, cigarette smoking, hypertension, diabetes mellitus and hyperlipidaemia.[8] .

ED is perceived in some Nigerian communities as inability to go more than one round of sex and those with this problem never achieve erection again for several hours after initial brief round of sex. However, a round of sex that can last long enough (from foreplay to orgasm) to satisfy his partner is not considered as weak erection or ED.[9] The number of men estimated to have erectile dysfunction worldwide in 1995 was 152 million, and this is projected to reach 322 million by the year 2025 due to increased adoption of lifestyles which may culminate in erectile dysfunction.[5],[6] The prevalence of erectile dysfunction varies widely in studies from different countries. It was estimated to be 18.4% in men aged ≥ 20 years in the United States,[10] 49.4% in Canada[11] and 63.6% in Hong Kong.[12] In a study in Qatar the prevalence of erectile dysfunction among Qatari patients was 66.2% among hypertensive patients and 23.8% among non-hypertensive controls. ED is underreported in Nigeria because the sufferers are shy to discuss the sexual problem with medical practitioners and are also afraid of being stigmatized by the community. In a cross-cultural study carried out in four major Nigerian cities, reported in 2003, the overall prevalence of erectile dysfunction among men aged 35-70 years was 57.4%.[13].

The aim of this study was to determine the prevalence and severity of erectile dysfunction among men presenting at the Family Medicine Clinic of Bowen University Teaching Hospital Ogbomoso.

2. STUDY AREA

Ogbomoso is located 100km north of Ibadan, the Oyo state capital, in the south-western part of Nigeria. The projected population for the year 2010 was 721,171, spread over five local government areas. This was calculated from the 2006 census[14] figure of 699,487. The indigenous people are from the Yoruba ethnic group

and most of the population is engaged in farming or trading, while a few are civil servants. There are two degree awarding institutions-Ladoke Akintola University of Technology and The Nigerian Baptist Theological Seminary which attract people from other ethnic groups into the town. Bowen University Teaching Hospital, a government General Hospital, the newly-commissioned LAUTech Teaching Hospital, a few primary health centres and an increasing number of private hospitals, meet the healthcare needs of the population.

Ethical considerations

The Ethics Committee of the Bowen University Teaching Hospital, Ogbomoso granted approval for the study. Informed consent was also obtained from the participants before commencement of the study.

3. SUBJECTS AND METHODS

The study was conducted at the Family Medicine Clinic of the Bowen University Teaching Hospital, Ogbomoso between March and July, 2011. A cross-sectional descriptive survey was used and consenting adult male subjects aged 31 to 70 years presenting at the Family Medicine Clinic were recruited for the study. The inclusion criteria included all consenting and sexually active adult male patients aged 31 to 70 years, patients in stable relationship with a sexual partner for at least 6 months prior to the time of study. The Exclusion criteria included all acutely ill or mentally incapacitated adult male patients, patients who were on L-dopa-containing drugs and patients with major systemic disease like hepatic and renal disease.

A systematic sampling method was used to select the participants. The lists of patients which attend the Family Medicine clinic was taken as a sample frame, and from a review of records an average of 60 patients were estimated to attend the clinic per day during the period of the study. On every clinic day, the patients' folders were serially assigned a number code from 01-60 in order of their arrival at the clinic. One random number, β was selected by picking one out of squeezed pieces of papers numbered 1 to 3. The patient whose folder had the serial number corresponding to β was then recruited as the first subject. Subsequently, the owners of folders with serial number $\beta + 3$, $\beta + 6$, $\beta + 9$, and so on were recruited for the study until the required sample size was obtained for the day. If the selected patient did not meet the inclusion criteria, the very next patient was selected. This procedure was repeated every clinic day until the required total sample size was obtained. An identification sticker was placed on each of all recruited patients' folders to avoid a repeat selection. This sampling method yielded 400 participants aged 31 to 70 years.

A structured questionnaire was used to obtain information on age, ethnicity, marital status, occupation, nationality, educational level and religion of the subjects. The presence and severity of ED was determined by self-rated sexual activity questionnaire.

3.1 Allocation into social classes

Allocation into one of the five social classes was based on occupation, employment, monthly income and educational level according to a scoring system designed by Olusanya[15] for Nigeria and other African countries as follows:

A. Occupation

Score

1. Professionals, Top civil servants, Politicians and Businessmen
2. Middle-level bureaucrats, Technicians, Skilled artisans and well to do traders
3. Unskilled workers, those in general whose income will be at or below the National minimum wage of N7,500.00 per month and the unemployed.

B. Level of educational attainment

Score

- 0 Education up to University.
- 1 Secondary or Tertiary level below the University (e.g. College of education School of Nursing, Polytechnic etc)
- 2 No schooling or primary level only.

Each subject's social class was obtained by adding the scores from A and B above as follows;

| TOTAL SCORE | SOCIAL CLASS |
|-------------|--------------|
| 1 | Class 1 |
| 2 | Class 2 |
| 3 | Class 3 |
| 4 | Class 4 |
| 5 | Class 5 |

3.2 Instrument for determining erectile function

Erectile dysfunction was assessed by a single question adapted directly from the widely accepted National Institutes of Health (NIH) consensus conference definition of ED as inability to attain and or maintain penile erection sufficient for satisfactory sexual intercourse.[4]

Respondents self-rated their erectile function by answering this question.[13] 'Using the following categories, how would you define your sexual performance in the last six months?

- (a) Always able to have and to keep an erection during sexual intercourse; signifying no ED.
- (b) Generally able to have and to keep one erection during sexual intercourse; signifying mild ED.
- (c) Sometimes able to have and to keep one erection during sexual intercourse; signifying moderate ED.
- (d) Never able to get or to maintain an erection sufficiently hard for sexual intercourse; signifying severe ED.

3.3 Data Analysis

The administered questionnaires were sorted out and coded serially. Data analysis was done using the 15th

version of the statistical package for social scientists (SPSS) software. The information and data entered were summarized and represented in tables, frequencies and percentages. Chi square test was used to determine the associations between erectile dysfunction and some socio-demographic factors. P-value of less than 0.05 was taken as being statistically significant.[16]

4. RESULTS

A total of 400 male patients participated in the study and the age-group with the highest frequency (108, 27.0%) of the respondents were 31-40 and 51-60 years. Almost all the respondents (388, 97.0%) were married and a great number of them were Yorubas (372, 93.0%). Overwhelming majority of the respondents were Christians (324, 81.0%) and more than one-half of them were self employed (241, 60.2%). Almost one-third (127, 31.8%) of the respondents were from the social class III and nearly all of them (381, 95.2%) lived above the poverty line of more than 6,000 Naira (\$38) monthly.[17]

The prevalence of erectile dysfunction among the respondents was 40.2%. Considering the severity of erectile dysfunction, 18.5% of the respondents had mild erectile dysfunction while 4.0% of the respondents had severe erectile dysfunction. The prevalence of erectile dysfunction increased consistently with age and this association is statistically significant ($p = 0.000$). The prevalence of erectile dysfunction among respondents who were married was 41.5% while none of the respondents who were single had erectile dysfunction.

The respondents with no formal education had the highest prevalence of erectile dysfunction (60.5%) while the respondents with university education had the least prevalence (29.1%) of erectile dysfunction ($p=0.000$). While considering the employment status of the respondents, unemployed or retired respondents had the highest prevalence (19, 76.0%) of erectile dysfunction while the prevalence of erectile dysfunction among respondents who were employed was 28.4% ($p=0.000$). The respondents living below the poverty line had highest prevalence (63.2%) of erectile dysfunction. There was significant association between income and prevalence of erectile dysfunction ($p = 0.037$)

The prevalence of erectile dysfunction was highest (71.1%) among respondents of social class V and lowest (27.8%) among those belonging to social class I ($p = 0.000$). Erectile dysfunction was commoner among men of polygamous family setting (60.3%) compared to respondents who were of monogamous family set up (37.0%) ($p = 0.01$).

5. DISCUSSION

The overall prevalence of erectile dysfunction in this study was 40.2% and this means that out of every five men of the age group studied, at least two would have one degree of erectile dysfunction or the other. Therefore, erectile dysfunction constitutes a burden to most adult men in Ogbomoso and its environ. Unfortunately, because of the

sensitivity of the issue of sexual function, many men still suffer in silence and do not bring up this issue when consulting their doctors. Also, ignorance, low level of education, poor healthcare seeking attitude and poverty may contribute in one way or the other to this high prevalence of erectile dysfunction in this environment. The prevalence found in this study is similar to what was reported by Fatusi et al[18] in Ile-Ife South-Western part of Nigeria. They found a prevalence of 43.8% among respondents in a community based study. But, the prevalence obtained from this study is a little lower than the prevalence found in a similar study that was jointly conducted in four major Nigerian cities (Lagos, Ibadan, Kano and Enugu) where the prevalence of erectile dysfunction was found to be 57.4%.[13] The high prevalence found in this study is not limited to Nigeria alone, in Morocco,[19] a prevalence of 53.6% was found while 52.0% was found in United State of America.[20] In this study, age was found to be a significant factor for developing erectile dysfunction. Apart from the fact that the prevalence of erectile dysfunction increased with increasing age, its severity also increased with age. In this study, the prevalence and severity of erectile dysfunction increased significantly after the age of 50 years. In a similar study, Cho et al reported that prevalence and severity of erectile dysfunction increased rapidly after the age of 40 years.[21] This trend was also noted in the Massachusetts Male Aging Study conducted in United State of America.[20] This increase in prevalence of erectile dysfunction with age is not surprising because the prevalence of risk factors for developing erectile dysfunction especially chronic medical illnesses like hypertension, diabetes mellitus, vascular diseases and depression increase with age.[2] Among the twelve respondents who were single in this study, none of them had any degree of erectile dysfunction. This may be attributed to the fact that all of them were of the younger age grouping which are usually devoid of many chronic medical illnesses predisposing to erectile dysfunction. Also, the fact that they represent a small proportion of the respondents (3.0%) in this study may be another reason why none of them had any degree of erectile dysfunction.

Furthermore, it was discovered from this study that men in polygamous marriage had a higher prevalence of erectile dysfunction when compared to men married to only one wife. This may not be unconnected with increased anxiety in attempting to satisfy multiple partners that is usually associated with polygamy. However, from the study conducted by Cho et al[21] as well as that conducted by Moreira et al[22] in Brazil, they found no significant association between marital status and prevalence of erectile dysfunction.

In this study, people living below the poverty line had higher prevalence of erectile dysfunction and the association between poverty and erectile dysfunction was statistically significant. Also more severe form of erectile dysfunction was found among respondents living below poverty line. People who are poor are less likely to seek healthcare which may leave chronic illnesses predisposing

to erectile dysfunction undetected in them. A similar finding was reported in a study conducted in the United States of America where more severe form of erectile dysfunction was found among people described as being poor.[23] In the same vein, low income was reported by Cho[24] to be associated with higher prevalence of erectile dysfunction among Korean men when compared with those of higher income.

The prevalence of erectile dysfunction in this study was lower among respondents with higher educational attainment. Also subjects of social class V had a higher prevalence of erectile dysfunction compared to those of social class 1. A possible explanation for this is that men who are more educated, as well as those who are of better socio-economic standing, stand the chance of being better informed of possible risk factors associated with erectile dysfunction, thereby avoiding them. Furthermore, these categories of men are likely to make good use of healthcare facilities where chronic diseases that predispose to erectile dysfunction can be detected early and managed effectively, thereby preventing or delaying the onset of erectile dysfunction in them. A similar trend was observed by Berrada among Moroccan men, where erectile dysfunction was found to be lower in those with higher educational and economic status.[19]

6. CONCLUSION

The prevalence of erectile dysfunction among the subjects attending Family Medicine Clinic in Ogbomoso, Nigeria is on the high side and it is significantly associated with increasing age, low level of education, low socio-economic status, polygamy and living below the poverty line. Therefore erectile function should be asked about routinely and sensitively in primary care practice. Routinely asking men about their erectile function therefore provides another opportunity for healthcare professionals to assess and identify undiagnosed cardiovascular disease and diabetes mellitus, as well as to use the development of erectile dysfunction as a marker for disease progression.

Table 1: Sociodemographic Characteristics of the Respondents

| Variable | FREQUENCY | PERCENTAGE |
|--------------------------|-----------|------------|
| Age group (years) | | |
| 31-40 | 108 | 27.0 |
| 41-50 | 91 | 22.7 |
| 51-60 | 108 | 27.0 |
| 61-70 | 93 | 23.3 |
| | | |
| Marital status | | |
| Single | 12 | 3.0 |
| Married | 388 | 97.0 |
| | | |
| Ethnic group | | |
| Yoruba | 372 | 93.0 |
| Ibo | 9 | 2.2 |
| Hausa | 12 | 0.5 |

| | | |
|-----------------------------|-----|------|
| Others | 17 | 4.3 |
| | | |
| Religion | | |
| Christianity | 324 | 81.0 |
| Islam | 76 | 19.0 |
| | | |
| Educational level | | |
| No formal education | 48 | 12.0 |
| Primary | 111 | 27.8 |
| Secondary | 91 | 22.7 |
| Post secondary < university | 64 | 16.0 |
| University | 86 | 21.5 |
| | | |
| Employment status | | |
| Employed | 134 | 33.5 |
| Self-employed | 241 | 60.2 |
| Unemployed/Retired | 25 | 6.3 |
| | | |
| Income | | |
| Above poverty line | 381 | 95.2 |
| Below poverty line | 19 | 4.8 |
| | | |
| Social class | | |
| I | 62 | 15.5 |
| II | 48 | 12.0 |
| III | 127 | 31.8 |
| IV | 125 | 31.2 |
| V | 38 | 9.5 |

Table 2: Association Between Erectile Dysfunction and Sociodemographic Characteristics

| | No ED N (%) | ED N (%) | Total N (%) |
|--------------------------------------|----------------|-------------|-----------------|
| Age group (years) | | | |
| 31-40 | 92 (85.2%) | 16 (14.8%) | 108 (100.0%) |
| 41-50 | 68 (74.7%) | 23 (25.3%) | 91 (100.0%) |
| 51-60 | 55 (50.9%) | 53 (49.1%) | 108 (100.0%) |
| 61-70 | 24 (25.8%) | 69 (74.2%) | 93 (100.0%) |
| $\chi^2 = 90.611, df = 3; p = 0.000$ | | | |
| Marital status | | | |
| Single | 12 (100.0%) | 0 (0.0%) | 12 (100.0%) |
| Married | 227 (58.5%) | 161 (41.5%) | 388 (100.0%) |
| | | | |

| | | | |
|--------------------------------------|----------------|-------------|-----------------|
| Educational level | | | |
| No formal education | 19 (39.5%) | 29 (60.5%) | 48 (100.0%) |
| Primary | 56 (50.5%) | 55 (49.5%) | 111 (100.0%) |
| Secondary | 58 (63.7%) | 33 (36.3%) | 91 (100.0%) |
| Post secondary < University | 45 (70.3%) | 19 (29.7%) | 64 (100.0%) |
| University | 61 (70.9%) | 25 (29.1%) | 86 (100.0%) |
| $\chi^2 = 21.177, df = 4; p = 0.000$ | | | |
| Employment status | | | |
| Employed | 96 (71.6%) | 38 (28.4%) | 134 (100.0%) |
| Self-employed | 137 (56.9%) | 104 (43.1%) | 241 (100.0%) |
| Unemployed/Retired | 6 (24.0%) | 19 (76.0%) | 25 (100.0%) |
| $\chi^2 = 22.010, df = 2; p = 0.000$ | | | |
| Income | | | |
| Above poverty line | 232 (60.9%) | 149(39.1%) | 381 (100.0%) |
| Below poverty line | 7 (36.8%) | 12 (63.2%) | 19 (100.0%) |
| $\chi^2 = 4.353, df = 1; p = 0.037$ | | | |
| Social class | | | |
| I | 46 (72.2%) | 16 (27.8%) | 62 (100.0%) |
| II | 34 (70.8%) | 14 (29.2%) | 48 (100.0%) |
| III | 82 (64.5%) | 45 (35.5%) | 127 (100.0%) |
| IV | 66 (52.8%) | 59 (47.2%) | 125 (100.0%) |
| V | 11 (28.9%) | 27 (71.1%) | 38 (100.0%) |
| $\chi^2 = 26.558, df = 4; p = 0.000$ | | | |

Table 3: Prevalence And Severity Of Erectile Dysfunction

| VARIABLE | FREQUENCY | PERCENTAGE |
|---|-----------|------------|
| ERECTILE DYSFUNCTION | | |
| YES | 161 | 40.2 |
| NO | 239 | 59.8 |
| SEVERITY OF ERECTILE DYSFUNCTION | | |
| NO | 240 | 59.8 |
| MILD | 73 | 18.5 |
| MODERATE | 71 | 17.7 |
| SEVERE | 16 | 4.0 |

Conflict of Interest

There was no conflict of interest

REFERENCES

- Asif Muneer, Jas Kalsi, Irwin Nazareth, Mani Arya. Erectile dysfunction. *BMJ* 2014;348:g129 doi: 10.1136/bmj.g129.
- Wagner G, Mulhall J. Pathophysiology and Diagnosis of Male Erectile Dysfunction. *BJU Int.* 2001; 88(3):3-10.
- Melman A & Gingell JC. The epidemiology and pathophysiology of erectile dysfunction. *J Urol.* 1999; 161:5-11.
- National Institutes of Health Consensus Development Panel on impotence. *JAMA* 1993; 270(1):83-90.
- Wagner G, Saenz de Tejada I. Clinical review and update on male erectile dysfunction. *BMJ* 1998; 316:678-82.
- Johannes CB, Araujo AB, Feldman HA, Derby CA, Kleinman KP, McKinlay JB. Incidence of erectile dysfunction in men 40-69 years old: Longitudinal results from Massachusetts Male Aging Study. *J Urol.* 2000 Feb; 163(2):460-63.
- Shaeer KZM, Osegbe DN, Siddiqui SH, Glasser DB, Jaguste V. Prevalence of erectile dysfunction and its correlates among men attending primary care clinics in three Countries: Pakistan, Egypt and Nigeria. *Int J Impot Res.* 2003; 15(1):8 - 14.
- Quek KF, Sallam AA, Ng CH, Chua CB. Prevalence of sexual problems and its association with social, psychological and physical factors among men in a Malaysian population: A cross-sectional study. *J Sex Med.* 2008; 5:70-6.
- Guay AT, Spark RF, Bansal S, Cunningham GR, Goodman NF, Nankin HR, Petak SM, Perez JB. American Association of Clinical Endocrinologist: Medical Guidelines for Clinical Practice for the evaluation and treatment of male sexual dysfunction. A couple's problem. *Endocrinol Pract.* 2003; 9:78-95.
- Selvin E, Burnett AL, Platz EA. Prevalence and risk factors for erectile dysfunction in the US. *American Journal of Medicine,* 2007, 120:151–157.
- Grover SA et al. The prevalence of erectile dysfunction in the primary care setting. *Archives of Internal Medicine,* 2007, 166:213–219.
- Siu SC et al. Prevalence of and risk factors for erectile dysfunction in Hong Kong diabetic patients. *Diabetic Medicine,* 2001, 18:732–738.
- Shaeer KZM, Osegbe DN, Siddiqui SH, Glasser DB, Jaguste V. Prevalence of erectile dysfunction and its correlates among men attending primary care clinics in three Countries: Pakistan, Egypt and Nigeria. *Int J Impot Res.* 2003; 15(1):8 - 14.
- National Population Census 2006 .National Population commission, Ogbomosho.
- Olusanya O, Okpere E, Ezimokhai M. The importance of social class in fertility control in a developing country. *West Afr J Med.* 1985; 4:205-12.
- Araoye M O Research Methodology with Statistics for health and social science. 1st edition, Ilorin; Nathadex ; 2003:2861.
- Ravallion M, Shaohua C, Sangraula P. Dollar a day: The World Bank Economic Review, Feb 23, 2009: 163-84.
- Fatusi AO, Ijaluola KT, Ojofeitimi EO. Assessment of andropause awareness and erectile dysfunction among men in Ile-Ife, Nigeria. *Aging male* 2003; 6(2):79-85.
- Berrada S, Kadri S, Mechakra-Tahiri S, Nejari C. Prevalence of erectile dysfunction and its correlates: a population-based study in Morocco. *Int J Impot Res.* 2003; 15(1):3-7.
- Feldman H, Goldstein I, Hatzichristou D, Krane RJ, McKinlay JB. Impotence and its medical and psychosocial correlates, result of the Massachusetts Male Aging Study. *J Urol.* 1994; 151:54-61.
- Cho BL et al. Prevalence and risk factors for erectile dysfunction in primary care: results of a Korean study. *Int J Impot Res.* 2003; 15:323-28.

- [22]. Moreira Jr ED et al. Prevalence and correlates of erectile dysfunction: results of the Brazilian study of sexual behavior. *Urology* 2001; 58:583-588.
- [23]. Laumann EO, Paik A, Rosen RC. The Epidemiology of Erectile dysfunction: Results from the National Health and Social Life Survey. *Int J Impot Res.* 1999; 11(1):60-4.
- [24]. Jonler M et al. The effect of age, ethnicity and geographical location on impotence and quality of life. *Br J Urol.* 1995; 75:651-55.