The Aging Male

ISSN: 1368-5538 (Print) 1473-0790 (Online) Journal homepage: www.tandfonline.com/journals/itam20

Assessment of andropause awareness and erectile dysfunction among married men in Ile-Ife, Nigeria

A. O. Fatusi, K. T. Ijadunola, E. O. Ojofeitimi, M. O. Adeyemi, A. K. Omideyi, A. Akinyemi & A. A. Adewuyi

To cite this article: A. O. Fatusi, K. T. Ijadunola, E. O. Ojofeitimi, M. O. Adeyemi, A. K. Omideyi, A. Akinyemi & A. A. Adewuyi (2003) Assessment of andropause awareness and erectile dysfunction among married men in Ile-Ife, Nigeria, The Aging Male, 6:2, 79-85, DOI: 10.1080/tam.6.2.79.85

To link to this article: https://doi.org/10.1080/tam.6.2.79.85

Published online: 28 Aug 2009.

The Aging Male 2003;6:79–85

Assessment of andropause awareness and erectile dysfunction among married men in Ile-Ife, Nigeria

A. O. Fatusi*†, K. T. Ijadunola*†, E. O. Ojofeitimi*†, M. O. Adeyemi*, A. K. Omideyi†‡, A. Akinyemi†‡ and A. A. Adewuyi†‡

**Department of Community Health, Faculty of Clinical Sciences; ‡Department of Demography and Social Statistics, Faculty of Social Sciences; and †Institute of Public Health, Obafemi Awolowo University, Ile-Ife, Nigeria*

Key words: ANDROPAUSE, AWARENESS, ERECTILE DYSFUNCTION, MARRIED MEN, NIGERIA

ABSTRACT

Andropause (also known as androgen decline in aging males) has implications for the reproductive health and quality of life of older males. Very few studies have, however, been reported among the Nigerian population on andropause-related issues. This study assesses the perspective and level of awareness of married men in Ile-Ife, South-west Nigeria, of andropause. We also assessed their experience of erectile dysfunction, using a questionnaire based on the review of the International Index of Erectile Dysfunction. The study involved 355 married men, aged between 30 and 70 years.

Our result shows a high level of misconception about andropause among our respondents, with 38.9% indicating that it is a myth, and another 23.6% attributing it to various causes other than being a natural aging process. We recorded a prevalence of erectile dysfunction of 43.8% (8.0% severe dysfunction and 35.8% moderate dysfunction). The prevalence of erectile dysfunction increased significantly with age, varying from 38.5% for age 31–40 years to 63.9% for the older age group of 61–70 years. The trend in prevalence of erectile dysfunction with age was significant ($p < 0.05$). An odds ratio of 2.82 (95% confidence interval 1.19–6.76) was recorded for the prevalence of erectile dysfunction at age 61–70 years compared with age 31–40 years. Our findings indicate a need for health education about andropause in Nigeria, and increased attention to the reproductive health concerns of males, and the older population.

INTRODUCTION

Changes in hormonal rhythms take place in men in middle age, just as in women, and have a large amount of individual variation of impact on sexuality, mood and temperament, etc.[1–6]. This phenomenon has been variously termed 'male climacteric', 'andropause', 'viropause' and 'androgen decline in aging male' (ADAM)[4–6]. The term 'male menopause'[5,6] has also been used, in the literature, to describe the condition in view of its similarity to the menopausal experience in women. Symptoms associated with andropause include decreased libido and loss of sexual potency, depression, irritability, poor concentration and memory, and bone deterioration[1–6]. Evidence in the literature indicates that andropause has a negative impact on the quality of life in men, and erectile dysfunction features prominently among the androgen-related complaints of aging men[7].

Correspondence: Dr K. Ijadunola, Department of Community Health, College of Health Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria

Received 14–2–03
Revised 11–3–03
Accepted 12–3–03

While most women do not hesitate to complain about their mid-life changes, a high proportion of men inadvertently deny the presence of these changes, especially sexually related ones, and suffer in silence. As a result, the problem of andropause or ADAM has received far less attention compared to the menopause, even among reproductive health workers. The fact that ADAM usually creeps in gradually, mostly between the ages of 40 and 55 years (unlike the female menopause which occurs at a more specific age range), and with changes that span many decades may partly explain the relatively poor state of knowledge and interest in the subject.

With increasing life span, increased focus on quality of life, and advances in medicine and therapeutics, greater attention is being paid to research and programming in the area of male sexual health in developed countries. As a result, there is increasing awareness of andropause and male sexual dysfunction among the general public and the health community. In contrast, very little attention is still being paid to male sexual issues in the developing countries. In particular there is a serious dearth of information in the literature on andropause-related issues in sub-Saharan African countries, including Nigeria. The aim of this study is to determine the level of awareness of andropause and the experience of symptoms of erectile dysfunction among married adult men in Ile-Ife, a university town in South-west Nigeria.

MATERIAL AND METHODS

Study location

The study was carried out within the Obafemi Awolowo University Campus, Ile-Ife, and its immediate environs. Ile-Ife is a semi-urban settlement in the tropical rain forest zone of South-west Nigeria and has an estimated population of 313 000. The university, with its affiliated teaching hospital, is the largest employer in the town. Peasant farming and petty trading are the leading occupations in the non-salaried sector of the economy.

Study population

Inclusion criteria for the study were a minimum age of 30 years and present marriage relationship (as a proxy for current sexual exposure). Professional health workers were excluded from the study as they may constitute a more informed group than the general public, and are also the focus of another ongoing study on a related topic. Study subjects were apparently healthy individuals. A sample size of 385 was calculated for the study, using the Computer Program for Epidemiologists (PEPI) version 3.01[8], based on an assumed prevalence of 50% for erectile dysfunction (since no previous prevalence study was found for our environment), confidence level of 95%, and a maximum acceptable difference of 5%. A total of 400 men, meeting our inclusion criteria, and who freely consented to participating in the study, were recruited through a cluster sampling procedure.

Instrument

The study instrument was a self-administered questionnaire, which was developed based on a current literature review on andropause and the International Index of Erectile Function (IIEF) assessment scale[9], a widely used, multidimensional instrument for the evaluation of male sexual function[10]. The questionnaire was appropriately translated into the local Yoruba language of South-west Nigeria, for the use of respondents with less than a high school education or who preferred the option of the Yoruba questionnaire. The questionnaire had three sections: the first section sought information on relevant demographic characteristics of the participants, the second focused on respondents' awareness and knowledge of male menopause, while the third sought information on respondents' experience relating to erectile dysfunction.

The responses in the third section of the questionnaire were graded using a five-point ordinal scale where lower values represented poorer sexual function. On the scale, zero indicated the worst degree of erectile dysfunction symptoms, while five indicated an absence of the symptom concerned. Thus, the possible scores for erectile dysfunction assessment, based on 11 relevant questions, ranged from 0 to 55. Respondents with scores of 0–25 were regarded as having severe erectile dysfunction, while those with scores between 26 and 35 were regarded as having moderate dysfunction, and scores of ≥ 36 were classified as being normal (absence of dysfunction).

The identity of our respondents was well protected as our instrument carried no information, such as name or address, that could be used to identify specific individuals.

Data analysis

Data were entered through EpiInfo (version 2000) software package and subsequently imported to SPSS (Statistical Package for Social Sciences) for analysis. Descriptive statistics was applied to determine the frequency of relevant variables in the study. Inferential statistical methods were employed to test the association between variables such as age and educational background with awareness and knowledge level, and experience of male menopause, respectively. PEPI was used for the statistical testing of trends in erectile dysfunction prevalence with age (χ^2 trend), and for calculating the confidence interval (CI) for the odds ratio of developing erectile dysfunction. Statistical significance was determined at a probability level of $p < 0.05$.

RESULTS

A total of 355 respondents out of the 400 contacted finally participated in the study (response rate of 88.8%). The demographic characteristics of the respondents are shown in Table 1, and indicate that the majority (41%) of respondents were aged between 41 and 50 years, while 27% were ≤ 40 years, and 32% were > 50 years. The majority of our respondents (88%) had completed at least high school education, and 61% were skilled professionals.

The commonest opinion expressed by our respondents regarding andropause was that it is a myth (38.9%) (Table 2). While 37.5% of respondents believed that it is a natural aging process, 23.6% attributed it to other causes including a high level of sexual activity earlier on in life (12.9%) and heredity (3.7%). As Table 3 shows, only 28.4% of respondents indicated that similarities exist between andropause and female menopause. The majority of respondents (51.6%) believed that andropause has effects on health, but only 27% expressed the opinion that such health effects are treatable. Health-care workers were indicated to be the commonest source of information (33.1%) by the 157 respondents who answered the question about their major source of information on andropause, followed by friends (26.8%) (Table 4). The Internet recorded the lowest mention by our respondents as their major source of information on andropause.

The prevalence of erectile dysfunction increased progressively with age, as the proportion of respondents classified as normal ranged from 36.1% for the oldest age group of 61–70 years to 61.5% for the youngest age group of 31–40 years (Table 5). Severe dysfunction was recorded in 1.0% of the youngest respondents, but increased to 22.2% among the oldest respondents. The pattern for moderate dysfunction was less defined, but the highest prevalence was also in the oldest group (41.7%). The association of age with the

Table 1 Demographic characteristics of respondents ($n = 355$)

	n	%
Age (years)		
31–35	42	11.8
36–40	54	15.2
41–45	68	19.2
46–50	77	21.7
51–55	36	10.1
56–60	42	11.8
61–65	29	8.2
66–70	7	2.0
Educational level		
Primary	42	11.8
Secondary	72	20.3
Graduate	148	41.7
Postgraduate	93	26.2
Professional status		
Skilled/professionals	216	60.8
Semi-skilled	79	22.3
Unskilled	60	16.9

Table 2 Respondents' beliefs about andropause

Belief	*n*	%
It is a myth	138	38.9
It is due to aging process	133	37.5
It is due to high sexual activity	46	12.9
It is hereditary	13	3.7
Other	25	7.0
Total	355	100

prevalence of erectile dysfunction was significant ($p < 0.001$). This was further supported by the results of the χ^2 test which revealed that the odds ratio of experiencing erectile dysfunction during the seventh decade of life was significantly different, almost three times higher (OR = 2.8; 95% CI = 1.19–6.76) than that of men in the fourth decade of life ($p < 0.038$) (Table 6). On the whole, 35.8% of our respondents were classified as having moderate dysfunction and 8% as having severe dysfunction.

Table 3 Respondents' awareness of the health effects and treatment of andropause

	n	*%*
Awareness of similarities between andropause and female menopause ($n = 271$)		
Yes	77	28.4
No	194	71.6
Awareness of health effects ($n = 339$)		
Yes	175	51.6
No	164	48.4
Health effect is treatable ($n = 318$)		
Yes	86	27.0
No	232	73.0

Table 4 Respondents' major source of information on andropause

	n	*%*
Health personnel	52	33.1
Friends	42	26.8
Health magazine	19	12.1
Newspaper	14	8.9
Radio	13	8.3
Television	10	6.4
Internet	7	4.5
Total	157	100

DISCUSSION

To date, the subject of andropause or ADAM has received little attention in Nigeria, and to the best of our knowledge this is the first published work on the subject from our environment. The results of this study revealed a low level of awareness of the subject among our respondents. Only a third of our respondents correctly indicated that andropause is a consequence of the natural aging process, whereas a slightly larger proportion believed that the whole issue is a myth. The fact that the majority of our respondents were of a higher socioeconomic status compared with the typical average Nigerian citizen, with regard to educational status and occupation, suggests that the level of awareness and knowledge among average Nigerians regarding andropause would be very low. A low awareness level was also recorded with regard to the fact that there could be similarities between andropause and female menopause, as only 28% responded correctly on this issue. The low level of knowledge on the possible similarity of symptoms indicates ignorance of symptoms of andropause, female menopause or both. Compared with the low level of knowledge recorded among our subjects, 59% of Canadian males expressed the belief that men experience a phenomenon similar to that of female menopause when they start getting older

Table 5 Prevalence of erectile dysfunction among respondents by age*

	Normal		*Moderate dysfunction*		*Severe dysfunction*		
Age group (years)	*n*	*%*	*n*	*%*	*n*	*%*	*Total*
31–40	59	61.5	36	37.5	1	1.0	96
41–50	82	56.6	54	37.2	9	6.2	145
51–60	42	58.3	20	27.8	10	13.9	72
61–70	13	36.1	15	41.7	8	22.2	36
Total	196	56.2	125	35.8	28	8.0	349

*Likelihood ratio $\chi^2 = 23.94$, df = 6, $p = 0.001$

Table 6 The odds ratio (OR) of experiencing erectile dysfunction in different age groups

Age group (years)	n	Frequency of erectile dysfunction		OR (95% CI)
		n	%	
31–40	96	37	38.5	1
41–50	145	63	43.5	1.23 (0.70–2.15)
51–60	72	30	41.7	1.14 (0.58–2.23)
61–70	36	23	63.9	2.82 (1.19–6.76)
Total	349	153	43.8	

χ^2 (trend) = 4.29, df = 1; $p = 0.038$; CI, confidence interval

(although only 39% were familiar with the term 'andropause') and the knowledge level increased to 74% for respondents above 55 years of age[11].

The low level of knowledge recorded in this study has significant implications for the reproductive health of elderly Nigerians, as their sexual health problems might continue to escape attention and they could thereby continue to suffer in silence. The opinion of the majority of our respondents that there is no treatment for the male andropause may reflect this position. On the other hand, lack of knowledge that ADAM has health implications, as recorded among almost half of our respondents, is an indicator that men experiencing andropausal symptoms in our environment may be attributing their symptoms to other causes. Worse still, they may be taking actions that might even impair their health and social well-being further in the bid to address their symptoms. Such actions include engaging in several flirtatious sexual relationships with younger females in the hope that this will enable them to improve their erectile functioning. The health consequences of such sexual relations with multiple partners are already well documented.

Most of the participants who responded to the question on their major source of information cited person-to-person medium (health workers 63.7%, friends 26.8%), while mass media, that could have provided more detailed information, was mentioned by about only a third of the respondents. The Internet was mentioned by just 4.5%. The pattern obtained in this respect is likely to be slightly better than that which would be obtained in the larger population of average Nigerians. The pattern expected from the general population would reflect the socioeconomic conditions of the people and would include a fairly high level of adult illiteracy, high poverty levels, inadequate access to electronic media and a culture of oral tradition as a means of information sharing. Since the majority of the population depend on other people to communicate information directly, a low level of awareness and knowledge would occur if their sources also did not have adequate knowledge, which may be the case with most 'friends' as well as with many health workers particularly at the primary care level. The issue of andropause has not featured in most health curricula previously used in the country.

A significantly higher prevalence of erectile dysfunction with increasing age was recorded in our study. Similar patterns have been obtained in other studies, and support the biological fact that testosterone levels decrease with age among various population groups, irrespective of racial background. The Massachusetts Male Aging Study[12], an epidemiological community-based study among healthy men in the USA, for example, recorded an erectile dysfunction prevalence of 39% in the age group 40–49 years, 48% in those aged 50–59 years, 57% in those aged 60–69 years and 67% among men aged 70 years and above. A recent study by Rhoden and colleagues[13] in Brazil, using a simplified version of IIEF (IIEF-5), reported an erectile dysfunction rate of 36.4% for men aged 40–49 years, 42.5% for men aged 50–59, 58.1% for the age group 60–69 years, 79.4% in men aged between 70 and 79 years and 100% among men 80 years and above. The prevalence in an Italian study increased from 2% for men aged 18–39 years to 48% in those over 70 years[14].

In terms of overall prevalence of erectile dysfunction, or even prevalence according to age group, there is a high variability in the figures reported in the literature. Compared with our overall erectile dysfunction prevalence of 43.8%, the US-based study recorded 52%[12], and studies in the UK, Japan and Denmark reported 32%, 26% and 19%, respectively[15]. In Turkey, an age-adjusted rate of 69.2% was obtained, with 33.2% being classified as mild[16]. The differences in the erectile dysfunction prevalence level obtained in various studies have been discussed in the literature

as resulting mainly from differences in the health status of study populations, the definition adopted for the condition and study methods[17,18]. Indeed, various physiological states (including levels of stress), diseases (diabetes mellitus, renal diseases and heart diseases), substance use (including alcohol and cigarettes) and medication could affect erectile function[12,16,19].

There is an urgent need to investigate these risk factors and their relationship with the level of bioavailable testosterone (assessed by appropriate laboratory methods) and prevalence of erectile dysfunction and other manifestations of andropause among Nigerian males of different ethnic groups. Similar studies to investigate the relationship of hormonal levels, risk factors and menopausal symptoms among our female population would also be relevant to programming for improved reproductive health status and quality of life of older Nigerians. Intervention studies would be particularly helpful, and should include the effects of regular exercise, stress management, adequate diet, reduction of alcohol and tobacco intake on the incidence and prevalence of andropausal symptoms.

CONCLUSION

Our results showed a low level of awareness, and poor knowledge of andropause among Nigerian men. The results equally showed that erectile dysfunction is not an uncommon phenomenon in our environment. This asymmetry between the awareness/knowledge and prevalence of symptoms most probably indicates that most of the affected individuals are keeping silent about their condition owing to various factors, among which psychosociological ones may feature prominently. The affected individuals may also not seek medical help as they lack relevant knowledge of the problem, associated factors and potential for medical treatment. On the whole, our findings indicate an urgent need for health educational programs to improve the awareness of Nigerians about andropause, and other sexual health problems of older men. Male reproductive health initiatives, including the setting up of men's health clubs, are needed to help men understand their health problems better and to provide a social environment of mutual support among men. Such programs have the potential to improve the quality of life of men, and that of their partners.

References

1. Wespes E, Schulmann CC. Male andropause: myth, reality, and treatment. *Int J Impot Res* 2002; 14:S93–8
2. Vermeulen A. Andropause. *Maturitas* 2000; 34:5–15
3. Morales A, Heaton JP, Carson CC III. Andropause: a misnomer for a true clinical entity. *J Urol* 2000;163:705–12
4. Heaton JP, Morales A. Andropause – a multisystem disease. *Can J Urol* 2001;8:1213–22
5. Schow DA, Redmon B, Pryor JL. Male menopause. How to define it, how to treat it. *Postgrad Med* 1997;101:62–4,67–8,71–4
6. Kessenich CR, Cichon MJ. Hormonal decline in elderly men and male menopause. *Geriatr Nurs* 2001;22:24–7
7. Tan RS. Memory loss as a reported symptom of andropause. *Arch Androl* 2001;47:185–9
8. Abramson JH, Gahlinger PM. Computer Program for Epidemiologists (PEPI) version 3.01. Llanidloes, Powys: Brixton Books, 1999
9. Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatric J, Mishra A. The International Index of Erectile Function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology* 1997; 49:822–30
10. Rosen RC, Cappelleri JC, Gendrano N III. The International Index of Erectile Function: a state-of-the-science review. *Int J Impot Res* 2002;14: 226–44
11. Ipsos-Reid/Organon Canada Ltd. Awareness & attitudes towards andropause among Canadians. http://www.ipsos-reid.com/pdf/media/mr02026–2.pdf. Accessed Angus Reid Group Health Care Division, Canada Inc. http://www.andropause.com
12. Gray A, Feldman HA, McKinlay JB, Longcope C. Age, disease, and changing sex hormone levels in middle-aged men: results of the Massachusetts Male Aging Study. *J Clin Endocrinol Metab* 1991; 73:1016–25

13. Rhoden EL, Tekloken C, Sogari PR, Vargas Souto CA. The use of the simplified International Index of Erectile Function (IIEF-5) as a diagnostic tool to study the prevalence of erectile dysfunction. *Int J Impot Res* 2002;14:245–50
14. Parrazzini F, Menchini Fabris F, Bortolotti A, Calabro A, Chantenoud L, Colli E, *et al.* Frequency and determinants of erectile dysfunction in Italy. *Eur Urol* 2000;37:43–9
15. Rosen RC, Cappellerie JC, Smith MD, Lipsky J, Pena BM. Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res* 1999; 11:319–26
16. Akkus E, Kadioglu A, Esen A, Doran S, Ergen A, Anafarta K, *et al.* Prevalence and correlates of erectile dysfunction in Turkey: a population-based study. *Eur Urol* 2002;41:298–304
17. Jonler M, Moon T, Brannan W, Stone NN, Heisey D, Bruskewitz RC. The effect of age, ethnicity, and geographical location on impotence and quality of life. *Br J Urol* 1995;75:651–5
18. Benet AE, Melman A. The epidemiology of erectile dysfunction. *Urol Clin North Am* 1995; 22:699–709
19. Feldman HA, Goldstein I, Hatzichristou DG, Krane RJ, McKinlay JB. Impotence and its medical and psychosocial correlates: results of the Massachusetts Male Aging Study. *J Urol* 1994; 151:54–61