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RESEARCH PAPER

THE INFLUENCE OF AGE AND BODY MASS ON MALE SEXUAL FUNCTION

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ABSTRACT

This pilot cross sectional survey was designed to appraise the growing concern about the relationship between age, body weight, and sexual function. A total of 100 adult males between the ages of 18 to 40 years, and who are indigenes of Ekpoma, in Esan West Local Government of Edo State, Nigeria, participated in this study. Their weights (Kg), heights (M) and BMI were determined using standard procedures. Blood samples were also collected for the analysis of serum testosterone levels. Our findings, though subject to further investigation, suggests that there exists a relationship between age, abnormal weights and sexual function; as aging with an abnormal weight, impacts negatively on testosterone levels. It suggests also that men with abnormal weights, especially those above the age of 36 years, are likely to develop sexual dysfunction.

Keywords: Aging, Body Mass Index, Testosterone, Sexual function

INTRODUCTION

Aging and excessive weight-gain have been associated with a multitude of health issues. It is an established fact that obesity and excess body weight affects the health and wellbeing of an individual (Fontaine et al., 2003). In this era where obesity is becoming a major health problem in developed and developing countries (Hedley et al., 2004), it is therefore not surprising that obesity might be implicated in the alterations of endogenous hormonal systems. In fact, research performed about fifty years ago, established that growth hormone levels are lower in obesity than in individuals with normal body weight (Beck et al., 1964).

Of interest however, is the possible influence of age and weight on sexual function as studies on weight and male sexual hormones have had conflicting outcomes over the years. Specifically, studies conducted from 1981 to 1991 showed increase in testosterone levels of obese men on weight reduction exercises (Pritchard et al., 1999; Pasquali et al., 1988; Strain et al., 1988; Stanik et al., 1981) and following gastroplasty (Bastounis et al., 1998). In another study on fasting men, a decrease in testosterone levels was reported (Klibanski et al., 1981). However, testosterone levels remained same in a study amongst obese men undergoing weight loss therapy (Kraemer et al., 1999; Leenen et al., 1994) and on dietary restriction (Hoffer et al., 1986). In developing countries like Nigeria, it is rather unfortunate that not much research has been done in this regard. Hence, this study is intended to investigate the influence of age and body weight on sexual function amongst males in Ekpoma, Edo State, Nigeria.

MATERIALS AND METHODS

Subjects: This cross-sectional health survey was conducted among 100 adult male (18 to 40 years) indigenes of Ekpoma, Esan West Local Government of Edo State, Nigeria.

Ethical consideration: The study was part of a community based development service. It was conducted in compliance with the Declaration on the Right of the Patient (WMA, 2000). Before enrolment into the study, informed consent was obtained from all participants.

Inclusion and Exclusion criteria: Participants for this survey are only men who were not obese, non-alcoholics, non-smokers, indigenes of Ekpoma by birth, and not involved any strenuous activity. However, those who did not meet these criteria were excluded.

Study duration: The study was conducted between August and October, 2012.

Data collection and analysis: The ages of the subjects were recorded and using standard procedures, their weights (Kg) and heights (M) were obtained and BMI determined. Also, blood samples were collected for the analysis of serum testosterone level based on standard principles adopted at the Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria. The WHO reference for body mass index was used to classify subjects into under-weight (<18.5 kg/m^2), normal weight (18.5-24.9 kg/m^2) and over weight (25-29.9 kg/m^2) and consisted of 30, 40 and 30 subjects respectively.

Data analysis: Using SPSS (version 17), the data obtained were analyzed and the means compared using the student t test at $p<0.05$.

RESULTS

The results showed that age has positive influence on testosterone values but negatively influenced testosterone levels at ages greater than 36 years (figure 1). Also, a body weight that deviates from the normal range (18.5-24.9kg/m^2) negatively influenced testosterone levels (figure 2).

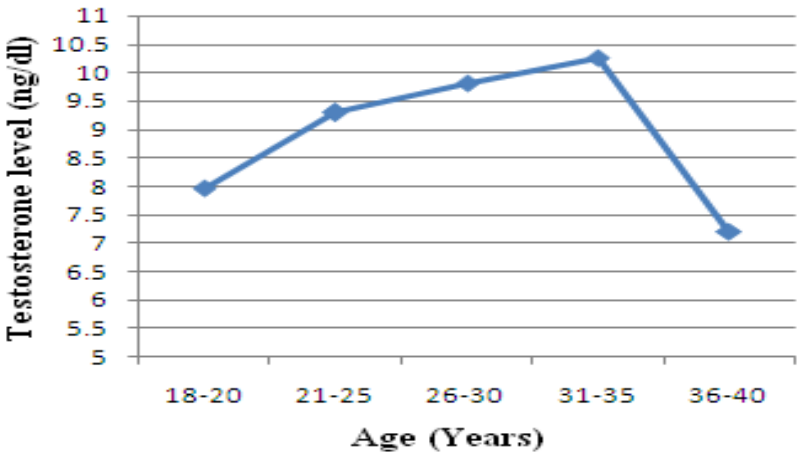

Figure 1: effect of age (years) on testosterone level

DISCUSSION

The findings of this study have shown that aging (above 36 years) has a negative impact on testosterone level. This is in line with the report that testosterone levels begin to decline by 1% at age 40 in men (Inegbenebor, 2010). By implication, there is the possibility of andropause (colloquially called "man-opause or male menopause") occurring in men.

Also, the observation that underweight and overweight negatively influences testosterone levels in men is in line with the reported health implications of obesity (Fontaine et al., 2003) coupled with the findings by Kaukua *et al.* (2003) that weight reduction in obese men enhances testosterone levels. In fact, literature has it that the testosterone is inversely associated with leptin levels in men (Luukkaa et al., 1998; Mann et al., 2003; Mayes et al., 2004) and leptin reflects the total adipocyte mass that increases with increasing body fat (Considine et al., 1996; Lissner et al., 1999). This suggests that the relationship between overweight and reduced male sexual function might be associated with leptin.

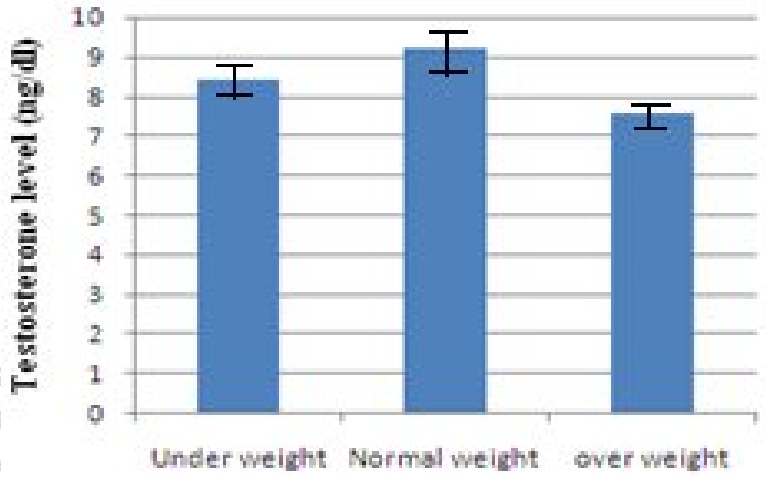

Figure 2: Effect of body weight (Kg/M^2) on testosterone level

Most importantly, lower testosterone levels have been reported to predict visceral obesity (Khaw and Barrett-Connor, 1992), and replacement doses of testosterone decreases abdominal fat mass in men with low testosterone levels (Rebuffe-Scrive et al., 1991). It is likely therefore, that testosterone plays a causal role in visceral fat accumulation. Overall, our findings suggest that for male adults of over 36 years to maintain normal sexual function, they must as well, keep their body weights within normal range.

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AUTHOR(S) CONTRIBUTION

All the authors (Dr Osifo UC. and Dr Ozor M) contributed immeasurably towards the successful completion of this study.