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Contributing Prevalence of Overweight and Obesity amongst HIV Infected Adults in Vihiga District Hospital, Vihiga Country

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Abstract

Background: Overweight and obesity have become a health concern for both developed and developing countries with physical inactivity and unhealthy diet as its' primary determinants. This has also been reported amongst HIV affected adults on ARVs.

Objective: The aim of this study was to determine associated with prevalence of overweight and obesity amongst HIV infected adults enrolled in Comprehensive Care Clinic of Vihiga hospital, Vihiga County.

Methods: This was a baseline survey conducted from May to July, 2016 amongst HIV infected adults enrolled at Vihiga hospital. Questionnaire was used to collect data from respondents with a mean age of 36 years, 42.9% males and 57.1% females.

Findings: Approximately, 37.5% had high levels of nutritional knowledge while 30.4% and 32.1% had moderate and low levels of nutritional knowledge respectively. Approximately, 14.3% out of 23.2% of respondents with obesity assumed their weight as being healthy; 17.9% of obese respondents perceived that the community associated obesity with optimal health and 21.4% reported that the community associated thinness with HIV/AIDS.

Conclusion: The key factors that contributed to the prevalence of obesity include misconceptions of individual perception about weight gain, low level of education and poor implementation of nutritional advice given.

Keywords: HIV/AIDs; Obesity; Overweight; Kenya

Abbreviation: WHO: World Health Organization; HIV: Human Immunodeficiency Virus; AIDS: Acquired Immuno Deficiency Syndrome; ARVs: Anti-Retroviral; cART: Combined Anti-Retroviral Therapy; CCC: Comprehensive Care Center/Clinic; WC: Waist Circumference

Introduction

In the 1980's when HIV/AIDS pandemic emerged, wasting was the major metabolic consequence of the disease and was recognized as an AIDS defining criterion. With the introduction of combination anti-retroviral treatment (cART), there has been dramatic improvements in nutritional status of HIV- infected patients [1]. According to WHO (2015), Human Immunodeficiency Syndrome (HIV) is a retrovirus that infects the cells of the immune system, destroying or impairing their function. The most advanced stage of HIV is Acquired Immunodeficiency Syndrome (AIDS) overweight and obesity is defined as abnormal fat accumulation that may impair health (WHO, 2015) overweight is differentiated from obesity using BMI cutoff points, 24.9-29.9 kg/m^2 represents overweight, >30.0 kg/m^2 represents obesity. In 2014, more than 1.9 billion adults were overweight and of these 600 million were obese, 13% of the world's adult population was obese (WHO, 2015). High rate of obesity and overweight can be attributed to the success of cART, physical inactivity and unhealthy diet.

In the recent CDC study in the United States of America, it was determined that 23% of HIV positive individuals are obese compared to 36% of the general population. 40% of women in the study were obese while HIV positive men had much lower obesity prevalence than the general population men (17% versus 36% respectively) (WHO, 2011). In Africa, a study on prevalence was conducted in Rural South Africa, 20.0% of HIV infected adults were obese [2]. According to this study, the high rate of obesity was shown to be affected by factors such as age, sex, ART status, socio-economic status and educational attainment. Closer to Kenya, a study conducted in Dar-es-salaam, Tanzania showed 7% and 2% of women and men respectively were obese [3]. In Kenya, a study conducted in Western Kenya showed a high prevalence of obesity among HIV infected adults attending AMPATH clinics with 22.6% women while men were 10.6% [4]. One of every ten HIV positive Kenyan men was overweight/obese [5].

Unhealthy diet and physical inactivity have been identified as the primary determinants of the increase in incidences of obesity but the behavioral risk factors are manifestations of changing social and economic conditions. Increased consumption of food away from home, rising costs of healthy foods compared to unhealthy foods, expansion of the labor market opportunities for women, growing quantity of caloric intake with declining overall food prices and decreased requirements of occupational and environmental physical activity are the five developments that have tipped the balance between caloric intake and expense to an unfavorable equilibrium [6].

Material and Methods

This was a baseline survey which was to proceed with an intervention study later. This survey was conducted at Vihiga district hospital at the Comprehensive care clinic (CCC) from May to July, 2016 amongst HIV infected adults attending the CCC. The hospital is a level 5 hospital located in Vihiga County Western Region of Kenya. The area receives adequate rainfall. There is fairly good communication network comprising of tarmac roads which run into the outskirts of

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its environs. The major economic activity of the people around is business ranging from established supermarkets to 'jua kali sheds'. The area population is about 6000 people and the majorities are the Luhya community. A sample size of 56 respondents was determined using Kothari [7] formula since the population from which the sample size was drawn was less than 10,000. The strength of this formula is that the acceptable degree of accuracy is set. The eligible respondents included those patients who were HIV positive, registered at Comprehensive Care Center and were prompt on the clinic appointments during the period of study. Patients in Comprehensive Care Center who were below 18 years, missed clinic appointments and were not willing to sign the consent form were excluded from the study. The research went through Ethical Board to seek for ethical approval. The researcher sought approval from the hospital administration of Vihiga district hospital where the in-charge was made aware of the objectives and benefits of the research to the hospital. Participation was voluntary and based on informed consent that was signed by the participant. The researcher ensured that the research will cause no potential harm to the clients. Purposive sampling was used to select the study area due to the fact that Vihiga hospital is a referral hospital therefore it receives many of clients from all over Vihiga County and it offers comprehensive and quality services for HIV infected clients. Purposive sampling was used to select the participants of the study. Questionnaires were utilized to collect data on anthropometrics measures. The validity and reliability of the instruments were ensured. Data was cleaned, coded and entered for analysis using the Scientific Package for Social Sciences (SPSS). Data was analyzed through descriptive and inferential statistics. Quantitative data was analyzed through descriptive statistics that is frequencies, averages and percentages. Frequency tables were used for categorical variables and measures of central tendency were used for continuous variables. Inferential statistics was used in coming up with conclusion on the data obtained.

Findings

Socio-demographic characteristics of the study population

Out of the 56 respondents interviewed at Vihiga county hospital, 24 (42.9%) were males and 32 (57.1%) were females. Of the respondents 8 (14.3%) were students, 24 (42.9%) were self-employed, 10 (17.9%) were employed, 1 (1.8%) were retired and 13 (23.2%) were not working (Figure 1). Respondents who reached primary level were 17 (30.4%), secondary 18 (32.1%), college 10 (17.9%), university 9 (16.9%) and those who did not attend school were 2 (3.6%) (Figure 2).

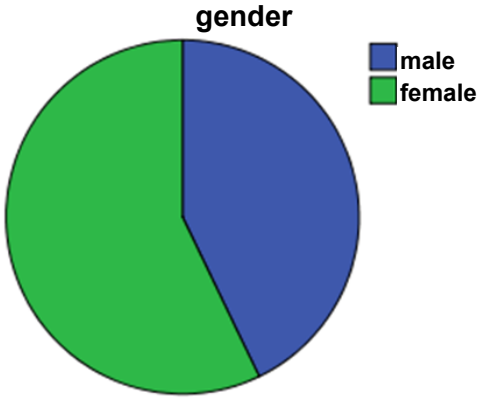

Figure 1: A pie chart showing respondents' gender 1.

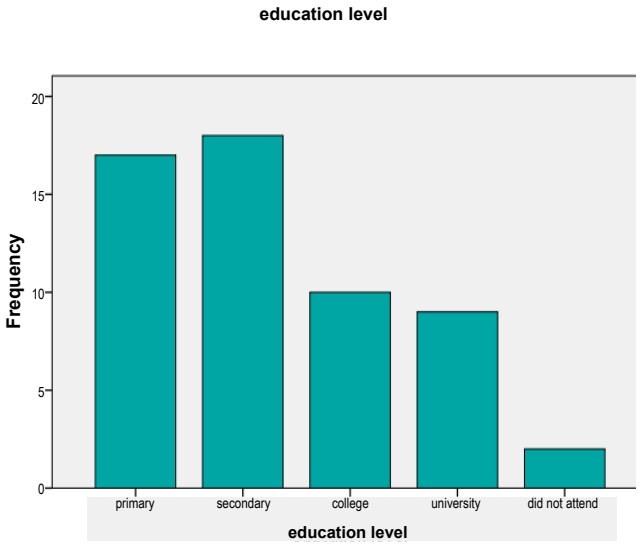

Figure 2: Bar graph showing education level.

The youngest respondent was 20 years and the oldest was 75 years. The mean age was 36 years, the mean height was 158.8 cm and the mean weight was 75.8 kg. The mode weight and height was 80 kg and 169 cm respectively. 14 (25.0%) of the respondents were single, 32 (57.1%) were married and 10 (17.9%) were separated. For religion more than half of the respondents were Christian at 98.2% (55 respondents) and 1% Muslim (1.8%). From the correlation test carried out on socio-demographic characteristics there was a significant association between education, marital status and obesity ($p>0.006$) and ($p>0.007$) respectively. For gender and employment there was a no association ($p>0.314$) and ($p>0.273$).

There was a very strong association between nutrition knowledge in relation to obesity ($p>0.032$). 37.5% of the participants had high levels of nutritional knowledge, 32.1% had moderate level of nutritional knowledge and 30.4% had low levels of nutritional knowledge. Majority of the study participants (69.6%) claimed to have received nutritional advice from a nutritionist whereas 30.4% claimed to have not received nutritional advice. The individual perceptions that were tested included how the respondents viewed their weight status, whether they thought their weight was unhealthy and their views about society that might influence their weight. From chi square tests, there was a significant association between obesity and individual perception about their weight being unhealthy ($p>0.01$), however there was no significant association between the other factors stated above. When asked about their general weight perception 8 (14.3%) out of 13 (23.2%) respondents who had class one obesity viewed their weight as being normal and 20 (35.7%) out of 40 (71.4%) of overweight respondents considered their weight to be normal. Out of 23.2% of the respondents who had obesity type 1, 17.9% had the perception that the community perceived obesity as being healthy and 21.4% had the perception that the community associated weight loss and thinness with HIV/AIDS.

There was a significant association between the activity level and obesity ($p>0.009$) from the correlation test done. 58.9% of the respondents were moderately active while 41.1% of the respondents were sedentary. There was a significant association between level of physical activity and receiving education on physical activity, however 20 (35.7%) of respondents who had received education concerning physical activity were moderately active compared to 13 (23.2%) who had not received education about physical activity but were moderately active.

Discussion

The study presents findings that showed socio-demographic characteristics and their relationship with overweight and obesity, individual perception in relation to being overweight or obese and activity level in relation obesity or overweight. During the data collection process, all the respondents were consecutively involved in the research hence no drop-outs cases. Most of the respondents 40 (71.4%) did not think that being overweight was unhealthy even though most of them 39 (69.9%) had received nutrition education about healthy weight and 21 (37.5%) had a high level of nutritional knowledge compared to 17 (30.4%) who had a low level of nutritional knowledge. The study found out majority of the respondents had the perception that the community thought obesity represented good health and thinness was associated with HIV/AIDS [8]. High levels of nutritional knowledge can be attributed to vigorous nutritional education offered at every visit by the CCC nutritionists. The results showed a positive association between education, marital status and being overweight and obese. 57.1% of the respondents who were married and 17.9% who were separated were either obese or overweight. The study showed married couples had a tendency of being obese as compared to their counterparts who were separated. A study conducted in Greek adults on marital status and education level [9]. This showed the incidence of obesity was found to be higher in married individuals compared to single or divorced individuals. It was calculated that marriage increased the risk of obesity by 2.5 times. Greatest development of obesity and overweight was seen in respondents who had secondary education (32.1%) and primary education (30.4%) compared to 16.1% and 17.9% of respondents who had a higher education of university and college respectively. This is in agreement with the found out that the greatest effect of development of obesity was observed in women lacking in higher education. The researchers attributed this finding to the fact that women with higher education level have better knowledge on issues related to caloric intake and obesity (WHO, 2006). Gender and employment did not have any impact on being obese or overweight. The study showed there was a negative association between physical activity level and obesity. Majority of the respondents 58.9% were moderately active and of these 35.7% had received physical activity education. Most of the respondents reported to engage in vigorous household activity but could not achieve any weight reduction. Obesity and overweight are the result of sustained positive energy balance, whereby energy intake exceeds energy expenditure [9]. Currently, Statin therapy has been reported to significantly lower cholesterol and low density lipo-protein levels in HIV-positive adults which has reduced adverse effects [10,11].

Conclusion

Obesity in HIV infected adults is rising to alarming levels. This rise can be attributed to wrong individual perception as the study found out most patients preferred to be obese since they considered the community associated obesity and overweight as being healthy and thinness as being HIV positive. From this study it was apparent that the individuals had high nutritional knowledge delivered by CCC nutritionists but that knowledge was not being translated into practice as evidenced by 60.7% of the respondents who did not attempt to lose weight even after receiving education.

BMI should be used together with waist hip ration and waist circumference to identify overweight or obese clients. The study found out the key factors that contributed to the prevalence of obesity were wrong individual perception about weight and community, low education level and poor implementation of nutritional advice given. Physical activity and gender was not a significant factor.

With wrong individual perception and poor nutritional practice even though having high nutritional knowledge, obesity will continue being a problem on the rise therefore there is urgent need to identify a different approach that will ensure the patients will adopt good nutritional practice on weight loss management and massive education to the HIV/AIDS clients and the community to be able to remove the notion that overweight and obesity signifies health and thinness signifies HIV/AIDS. This study recommends that the statin therapy should be incorporated to other intervention strategies aimed at addressing overweight and obesity amongst HIV infected adults.

Competing Interests

The authors declare that no conflict of interest exists.

Authors' Contributions

All authors were involved with the drafting of the research paper, critically reviewed the manuscript and approved the final version submitted for publication.

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