Obesity and health problems among South African healthcare workers: do healthcare workers take care of themselves?

Skaal L, MPH, DrPH
Pengpid S, MSc, DrPH
The Department of Public Health, University of Limpopo, Medunsa Campus
Correspondence to: Professor Supa Pengpid, e-mail: supa.pengpid@ul.ac.za
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Abstract

Background: Obesity has reached epidemic proportions globally. In South Africa, 56% of white men, 49% of black men and 75% of black women have been reported to be overweight or obese. The focus of this study is on South African healthcare workers (HCW), because they are considered role models for health for patients and their communities.

Objectives: The objective was to determine the prevalence of obesity and obesity-related health problems among HCW and to compare these variables between medical and nonmedical staff at one selected public hospital in South Africa.

Methods: A questionnaire was distributed to 200 respondents from a balanced pool of randomly selected HCW (100 medical staff and 100 nonmedical staff). Self-reported body mass index (BMI), obesity-related health problems and perceptions about body weight were assessed.

Results: Seventy-three per cent of the HCW were overweight or obese, and half of them had never tried to lose weight. Females and older HCW were more obese than men and younger counterparts. There was no difference in BMI distribution between medical and nonmedical staff. About one-third of HCW reported that they suffered from obesity-related noncommunicable diseases (NCDs; hypertension 20% and diabetes 10%) and stress (32.5%). The majority of HCW had an inaccurate perception of their own weight.

Conclusion: South African HCW have a high prevalence of obesity-related NCDs. A health promotion programme targeting HCW is urgently needed to encourage weight control, urge the prevention of obesity-related NCDs and change self-perceptions of body weight, in order to improve their own health and make them better role models for the general public.

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Introduction

Noncommunicable diseases (NCDs) make the largest contribution to mortality, both globally and in the majority of low- and middle-income countries. In 2005, about 60% (35 million) of the total number of diseases globally were due to NCDs.[1] Moreover, deaths due to NCDs are projected to increase by 17% globally between 2005 and 2015, and by 27% in the African region. In Africa, the prevalence of hypertension has rapidly increased, from 3% in rural areas to more than 30% in some urban settings.[2] According to a report of the Medical Research Council, in the South African context, NCDs accounted for 37% of deaths, while cardiovascular disease and diabetes together accounted for 19% of total deaths.[3] The main aetiological factors related to NCDs are an unhealthy diet, obesity, physical inactivity and tobacco use.[1] The burden of NCDs is not only limited to the general population, it also occurs among healthcare workers (HCW). In Mexico, the prevalence of hypertension has been reported to be 22%, type 2 diabetes 8% and hypercholesterolaemia 70% among HCW.[4]

According to the World Health Organization (WHO), overweight is one of 10 leading risk factors for high mortality in developing and developed countries.[5] Obesity has reached epidemic proportions globally: at least 300 million people are clinically obese.[1] South Africa is one of the countries in Africa with the highest obesity prevalence. In 2003, Senekal et al reported that 56% of white men, 49% of black men and 75% of black women in SA were overweight or obese.[6] One of the factors that possibly contributed to the high prevalence of obesity among the black population in this study was culture-related attitudes towards fatness. South African women, especially in black populations, think that being overweight is "beautiful and attractive". Hence, the majority of overweight black women

view themselves as being of normal weight, healthy or very healthy.[6-8] Luxury foods, high in fat and energy, are becoming more accessible to urban South Africans. Shifts in dietary intake and activity patterns to higher fat intake and a lower level of physical activity are contributing to a higher prevalence of obesity.[7,9,10] Culture also shapes eating habits, and social gatherings in some South African cultures encourage overeating, particularly as there is abundance of food, especially during traditional ceremonies.[7]

To date, the problem of obesity and other associated health risk factors and behaviours among HCW in South Africa has not been addressed. HCW are considered as professionals who should have a good knowledge about health promotion, and they should act as health role models for their patients. However, it has been reported that this population has a high prevalence of certain health risk behaviours, like smoking and not seeking information about health risk factors.[11,12] A study carried out in Mexico revealed that female HCW had a 52% prevalence of obesity and a 26% prevalence of being overweight, compared to male HCW, who had a 23% prevalence of obesity and 63% prevalence of overweight.[4] A study carried out in the USA between 1982 and 2004, on the health status and obesity prevalence of HCW aged 20-64, revealed that the prevalence of obesity has increased, while the self-reported health status of HCW has decreased over time.[13] However, no similar study has yet been conducted among HCW in South Africa.

Hence, the aim of this study was to determine the prevalence of obesity and obesity-related health problems among HCW and to compare these parameters between medical and nonmedical staff at one selected public hospital. The perceptions of HCW regarding their own body weight were also assessed, and compared to their actual weight. The body mass index (BMI), disease profile and health problems of HCW were also identified, and related to the body weight.

Method

This was a quantitative, cross-sectional study, with a sample size of 200 black HCW from one selected public tertiary hospital in Pretoria, South Africa. HCW were grouped into medical staff (doctors, nurses, physiotherapists, radiographers, occupational therapists and dentists) and nonmedical staff (administrative staff and general workers). One hundred medical staff and 100 nonmedical staff members were randomly selected from a staff name list that was obtained from the Human Resources Department of the target hospital. Ethics approval was obtained from the Medunsa Research Ethics Committee (MREC/PH/82/2008:PG) and a standard informed consent form was signed by all participants.

Measures

Data were collected by means of self-administered questionnaires and anthropometric measurements. A self-administered questionnaire was used to collect data on the demographic characteristics of staff, which included the following: demographic data (gender, age, job category and work experience), health status, health problems and risk behaviours, BMI and perceptions about bodyweight. Anthropometric measurements were recorded using an electronic bathroom scale for body weight in kilograms, and a wall measurement scale for height in centimetres. Thereafter the BMI was calculated as: BMI = weight (kg) / [height (m) × height (m)]. BMI was classified according to WHO guidelines:[14] normal weight (18.5-24.9 kg/m^2); overweight (25.0-29.9 kg/m^2); obese (30.0-39.9 kg/m^2); and severely obese (≥40 kg/m^2). Participants were also asked if they were satisfied with their body weight, if they perceived themselves to be overweight, and whether they had ever tried to lose weight. All data collected from the questionnaires were coded and entered into SPSS® version 17.0 for analysis.

Results

Demographic profile of participants

Table I shows that the majority of participants were female, over 40 years of age (mean age 43.1 years), and possessed more than 10 years' work experience in public healthcare institutions. Gender and work experience did not differ between medical and nonmedical staff, but nonmedical staff comprised more older individuals (aged 40 or over) than medical staff.

Table I: Demographic profiles and job categories of healthcare workers

Variable (n = 200)		Medical n (%)	Nonmedical n (%)	Chi-square P value
Gender	Males (n = 38)	15 (39.5)	23 (60.5)	χ^2 = 2.079 P = 0.103
	Females (n = 162)	85 (52.5)	77 (47.5)	
Age	< 40 (n = 68)	40 (58.8)	28 (41.2)	χ^2 = 3.209 P = 0.050
	≥ 40 (n = 132)	60 (45.5)	72 (54.6)	
Work experience	< 10 years (n = 67)	37 (55. 2)	30 (44. 8)	χ^2 = 1.100 P = 0.184
	≥ 10 years (n = 133)	63 (47.4)	70 (52.6)	

Self-reported disease profile and health problems

HCW were asked to identify all diseases, illnesses and other health problems they were experiencing. All HCW reported health-related problems. All reported having at least one problem, while many had more than one problem or disease. Two out of five HCW (41.5%) suffered from body and joint pain. One out of three HCW (32.5%) complained about problems with stress-related symptoms. One out of three HCW suffered from NCDs such as hypertension (19%) and

diabetes (10%). Among those who suffered from diabetes, more were medical staff (57%) than nonmedical staff (43%). More nonmedical staff members reported having stress, respiratory disease and body and joint pain than medical staff members (Table II).

Table II: Self-reported disease profiles of healthcare workers (some reported more than one disease)

Self-reported health problem	Total (n = 200)		Medical (%)	Nonmedical (%)
	n	%		
Diabetes	21	10.5	12 (57.1)	9 (42.9)
Hypertension	38	19.0	20 (52.6)	18 (47.4)
Varicose veins	13	6.5	8 (61.5)	5 (38.5)
Stress	65	32.5	27 (41.5)	38 (58.5)
Heart disease	5	2.5	3 (60.0)	2 (40.0)
Respiratory diseases	15	7.5	6 (40.0)	9 (60.0)
Body/joint pains	83	41.5	34 (41.0)	49 (59.0)

Body mass index

Table III summarises the prevalence of obesity among HCW. Only 26.5% of HCW had normal BMIs: 26.5% were overweight, 37.5% were obese and 9.5% were severely obese. More female HCW (76.5%) were overweight and obese (including severely obese) than their male colleagues (60.5%). Four out of five HCW (79%) aged 40 and over were either overweight or obese, which was higher than the proportion of overweight and obesity among the younger participants (63%). There was no difference in BMI between medical and nonmedical staff members.

Table III: Body mass index classification by age, gender and job category (%)

Variables		Normal weight (%)	Over-weight (%)	Obese (%)	Severely obese (%)	P value
Total (prevalence; n = 200)		53 (26.5)	53 (26.5)	75 (37.5)	19 (9.5)	
Gender	Males (n = 38)	39.5	50.0	7.9	2.6	0.000
	Females (n = 162)	23.5	21.0	44.4	11.1	
Age	< 40 (n = 68)	36.8	30.9	29.4	2.9	0.010
	≥ 40 (n = 132)	21.2	24.2	41.7	12.9	
Job category	Medical (n = 100)	26.0	30.0	35.0	9.0	0.0722
	Nonmedical (n = 100)	27.0	23.0	40.0	10.0	

Body mass index and disease profile

Table IV shows a cross-tabulation of HCW self-reported disease profiles and their BMIs. All diseases and health problems were distributed more widely among those who were overweight, obese and severely obese compared to those who were of normal weight.

Table IV: Cross-tabulation of body mass index classification according to self-reported health problems (%)

Health disorders	Normal weight	Overweight	Obese	Severely obese
Diabetes (n = 21)	5 (23.8)	2 (9.5)	13 (61.9)	1 (4.8)
Hypertension (n = 38)	8 (21.1)	4 (10.5)	17 (44.7)	9 (23.7)
Varicose veins (n = 13)	2 (15.4)	5 (38.5)	6 (46.2)	0
Stress (n = 65)	14 (21.5)	19 (29.2)	27 (41.5)	5 (7.7)
Heart disease (n = 5)	0	1 (20.0)	3 (60.0)	1 (20.0)
Respiratory diseases (n = 15)	3 (20.0)	5 (33.3)	6 (40.0)	1 (6.7)
Body/joint pains (n = 83)	12 (14.5)	17 (20.5)	40 (48.2)	14 (16.9)

Weight satisfaction and previous attempts to lose weight

Although 73.5% of HCW in this study were found to be overweight, obese and/or severely obese, when asked about their satisfaction with their weight, 56% of medical staff and 61% of nonmedical staff indicated that they were satisfied with their current weight. Among the HCW, 40% mentioned having tried to lose weight before by dieting and exercising. Of the 80 HCW who had previously tried to lose weight, 41% were medical and 39% nonmedical staff members (Table V). Some in both groups had even tried using pills to lose weight.

Table V: Satisfaction with weight and previous attempts to lose weight

	Medical staff (%)	Nonmedical staff (%)
Satisfied with their weight (n = 117)	56.0	61.0
Had previously attempted to lose weight (n = 80)	41.0	39.0
• Followed a diet to lose weight (n = 44)	23.0	21.0
• Exercised to lose weight (n = 46)	30.0	16.0
• Used pills to lose weight (n = 6)	3.0	3.0

Perception of own weight compared to body mass index

Self-perception about body weight was cross-tabulated with BMI (Table VI). Three out of four HCW (73.6%) who were overweight perceived themselves as being of normal weight, while more than a half of HCW (57.3%) who were obese also perceived themselves as being of normal weight and 40% of them perceived themselves as being overweight. Moreover, 66.8% of those who were severely obese perceived themselves as overweight and 10% of them perceived their weight as being normal.

Table VI: Self-perception about own weight compared to actual body mass index

Self-perception about weight	Actual body mass index (%)			
	Normal weight (n = 53)	Overweight (n = 53)	Obese (n = 75)	Severely obese (n = 19)
Underweight	11.3	3.8	0	0
Normal weight	79.2	73.6	57.3	10.5
Overweight	7.5	22.6	40.0	66.8
Obese	1.9	0	2.7	21.1

Discussion

The purpose of this study was to identify and quantify the prevalence of obesity and health problems among South African HCW, and to establish the perception about their own body weight. The study revealed that about 75% of HCW were overweight, obese or severely obese. There was no difference in obesity prevalence between medical and nonmedical staff members, regardless of the different levels of education and professions. In a similar study carried out among HCW in Mexico, the prevalence of obesity was also reported to be as high as about 75%.[4] In the USA the prevalence of obesity amongst HCW has increased over time.[13] The obesity rates found among the HCW in our study were even higher than those recently reported (61%) in a survey carried out by the international pharmaceutical company, GlaxoSmithKline.[8] This study underlines the serious burden of obesity among HCW.

Senekal et al have identified poverty and low education levels as risk factors for overweight/obesity in SA.[6] In the current study, medical staff earned more than nonmedical staff members and were better educated, especially in health-related issues, yet they still had a very high prevalence of obesity. According to Kruger et al, socio-economic factors appear to be important confounding factors that modulate the relationship between diet, physical activity and the indices of obesity.[15] Several studies have also shown that ageing is directly related to obesity. According to Schutzer and Graves, activity levels progressively decrease with age.[16] Another explanation may be that the metabolic rate decreases with ageing, and translates into weight gain.[17] These findings may explain (or at least partly explain) the very high prevalence of obesity amongst HCW in the current study, where the majority of participants were aged 40 years and over.

HCW are expected to give advice and act as role models to their patients by following a healthy lifestyle, promoting health, and preventing diseases and illnesses. However, since they themselves are often overweight and/or obese, they might be reluctant to discuss issues related to a healthy lifestyle with their patients. In a recent study from the USA, compelling evidence was found that the physical activity habits of doctors and medical students influenced their clinical attitudes towards physcial activity.[18] Doctors who themselves had regular physcial activity provided better counselling and motivation to their patients to adopt such health advice.[18] A study carried out by Wright on nurses' perceptions of acceptable body size revealed that nurses were uncomfortable about giving advice about weight control to obese patients.[19]

In the current study, females were significantly more obese than males. This is in agreement with earlier studies carried out in South Africa, Israel and the United Kingdom.[20-22] South African women, especially in black populations, think that being overweight is "beautiful and attractive". Hence, the majority of overweight black women view themselves as being of normal weight, healthy or very healthy.[6-8] Similarly, Holdsworth et al reported that overweight figures among Senegalese and Ugandan women were also perceived as attractive.[23] According to Case and Menendez, men and women's opinions on relative attractiveness of body shapes could also affect the sizes to which they aspire.[24] A study among rural South African women found that most of the women were unconcerned about their weight and most obese women did not want to lose weight.[25] However, HCW need to be acutely aware of the fact that, as healthcare role models, they need to follow a healthy lifestyle, regardless of their own cultural domain.

The current study also found that the majority of HCW who were obese and severely obese perceived themselves as being of normal weight or merely overweight. This is no different from earlier studies carried out among other population groups in South Africa,[6,26] which revealed that few severely obese South African women perceived themselves as being obese and, as a result, had no intention of losing weight. As South Africans in general have a very high prevalence of obesity, the HCW may not feel uncomfortable about their weight, especially as it seems to be common in their environment. A Canadian study carried out by McLaren and Gauvin suggested that women who lived among thinner women are more likely to feel dissatisfied with their own weight than women who lived among larger women.[27] In the South African context, it seems that wealth and beauty is associated with food consumption, and a large body size, a phenomenon that demands that greater emphasis be placed on promoting health values and health concerns.

In contrast, a study by Shih and Kubo on body shape preference and body satisfaction among Taiwanese college students found that more females were not satisfied with their own body weight than males.[28] Role modelling also plays an important role in influencing female bodyweight, for example in cases where beauty, fashion and a luxurious lifestyle are linked with thinness. Similar studies carried out in the USA on self-perception of weight appropriateness

found that the majority of people misclassified their own weight status.[29] A study carried out in Japan on body perceptions found that women had a poor understanding of their heaviness/fatness in relation to their actual body weight.[30] Even though, or especially because, the general population have such misperceptions about their weight (either overweight or underweight), it is vital that HCW accurately perceive their own weight status in order to be able to perform their roles in health care better.

In the current study, approximately two out of every three staff members that suffered from joint and body pains were obese to severely obese. This is probably due to the impact of weight on weight-bearing joints, which depletes the synovial fluid and results in bones rubbing against each other and causes inflammation and pain.[31] In this study, 19% of the HCW suffered from hypertension and 10% from diabetes. These results are very similar to the prevalence of hypertension and type 2 diabetes amongst HCW in Mexico.[4] Hence, health promotion and prevention programmes are required to target HCW specifically.

Conclusion and recommendations

The findings of this study show that there is a high prevalence of obesity among HCW, irrespective of their job categories, and that half of the obese HCW had no intention to lose weight. Females and older HCW were more obese than men and their younger counterparts. There was no difference in BMI distribution between medical and nonmedical staff. One out of five HCW has developed at least one NCD, while the prevalence of other health risks is also high. HCW seemed to be accepting of their weight, and had inaccurate perceptions about their weight.

There is a need to educate HCW about the importance of the correct classification of their own body weight, a healthy body image, and the risks associated with poor perceptions about their own body weight. Changing perceptions and the acceptance of own body weight may lead to improved lifestyle habits. Collaborative efforts by various departments, ranging from nutrition to physical therapy, may be necessary to improve the health status of HCW, so that they may ultimately become better role models for their patients and communities.

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