Overweight, obesity and underweight in nurses in Vhembe and Capricorn districts, Limpopo

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Abstract

Background: In South Africa, anecdotal evidence concerning the prevalence of overweight and obesity in nurses is alarming, but no scientific studies have confirmed this notion. This study aimed to determine the prevalence of underweight, overweight and obesity in black nurses practising in South Africa.

Method: A cross-sectional study involving 153 nurses, aged 19-50 years and older, was undertaken in the Vhembe and Capricorn districts, Limpopo province. Height and weight were measured to determine body mass index (BMI) and physical activity was assessed by report. The World Health Organization criteria determined the BMI categories.

Results: The mean BMI of the nurses was 31.7 ± 18.1 kg/m^2. The prevalence of underweight, overweight, obesity and extreme obesity in the nurses was 2%, 27.5%, 44.4% and 7.2%, respectively. The prevalence of overweight and obesity increased with age, peaking at ages 30-39 for overweight, and over 50 years of age for obesity. Among the males nurses, the prevalence of underweight, overweight, obesity and extreme obesity were 2%, 30.6%, 36.7% and 6.1%, respectively. Corresponding figures for the female nurses were 1.9%, 26%, 48.1% and 7.7%, respectively.

Conclusion: The study revealed a high prevalence of overweight and obesity in nurses in the Vhembe and Capricorn districts, a rate that is comparable with that of the general population in South Africa. Future studies are needed to identify risk factors for the prevalence of overweight and obesity in nurses.

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Introduction

Overweight and obesity are serious public health problem worldwide. Several studies that have investigated the prevalence of overweight and obesity in many parts of South Africa have been confined to college students, children, adolescents and other population groups. However, there is a paucity of information on overweight and obesity in South African nurse practitioners, a population group which supposedly has more knowledge and education about weight disorders and management than that of the general population. Anecdotal observations of South African nurses suggest that obesity may be as prevalent in the profession as it is in the general population. The primary roles and responsibilities of professional nursing are educating patients about their health.[1] Given the significant increase in rates of obesity and the health risks associated with being obese, teaching about diet, exercise and a healthy lifestyle is, and will continue to be, the focus of most patient education in which nurses engage.[2] If these healthcare providers do not respond to obesity intervention, it may be unrealistic to expect the general public to do so.[3]

A better understanding of nurses' weight is important from three perspectives: the individual's health and well-being, the organisation's interest in fostering a healthy workforce, and nurses' potential to serve as a health role models to patients.[4] The purpose of this study was to determine the weight status of a sample of nurses aged 19 years of age and older, practising in the Vhembe and Capricorn districts in the Limpopo province.

Method

Participants

This cross-sectional study was carried out on 153 nurses from the Vhembe and Capricorn districts in the Limpopo province. Participants were purposively selected to participate in the study. All nurses practising in Vhembe (rural) and Capricorn (semi-rural)

districts were eligible for participation in the study. Exclusion criteria for participation were being younger than 19 years of age, and participants who were pregnant, ill or unable to walk unassisted. Information on age, sex and physical activity participation were collected by self-reporting.

Informed consent was obtained from each participating nurse. The managers at the individual hospitals gave permission for the study to be conducted. Data collection took place between October and November 2011. The study was carried out in accordance with the Declaration of Helsinki.[5]

Stature and body mass were measured, following the standard anthropometric methods of the International Society for the Advancement of Kinanthropometry.[6] Stature was measured to the nearest 0.1 cm with participants standing barefoot upright against a wall-mounted stadiometer. Body mass was measured to the nearest 0.5 kg. Participants were lightly dressed, wearing underwear and a T-shirt. A digital Tanita HD 309® scale (Creative Health Products, Michigan, USA) was used. Body mass index (BMI) was employed to indirectly assess adiposity, and was estimated from body mass/stature^2 (kg/m^2). Obesity was defined as morbid or extreme obesity (BMI $\geq$ 30 kg/m^2), obesity (BMI $\leq$ 30 kg/m^2), overweight (BMI of 25-29.9 kg/m^2), normal weight (BMI of 18.5-24.9 kg/m^2) and underweight (BMI < 18.5 kg/m^2), based on international criteria.[7]

Descriptive statistics (percentages and chi-square) were applied to the data using the Statistical Package for the Social Sciences® version 15.

Results

In this study, 153 nurses (49 men and 104 women) agreed to participate. Twelve nurses were excluded because of incomplete information. The mean (± standard deviation) age of the participants was 39.3 ± 10.7 years. The mean weight, height and BMI of the nurses was 78.1 ± 23.1 kg, 156.4 ± 6 cm and 31.7 ± 18.1 kg/m^2, respectively. The prevalence of underweight, normal weight, overweight, obesity and extreme obesity was 2%, 27.5%, 44.4% and 7.2%, respectively. The prevalence of overweight and obesity rose with age, peaking at ages 30-39 for overweight, and at 50 years and older for obesity (Table I). Among the males nurses, the prevalence of underweight, overweight, obesity and extreme obesity were 2.%, 30.6%, 36.7% and 6.1%, respectively. Corresponding figures for the female nurses were 1.9%, 26%, 48.1% and 7.7%, respectively.

Overweight and obesity occurred more in female nurses than in male nurses, although there was no gender-significant difference (χ^2 = 2.508, p-value = 0.643) was observed in the sample. The majority 79 (51.3%) did not participate in physical activity (Table I).

Discussion

Obesity is a growing health problem globally, and the World Health Organization has emphasised the importance of monitoring the prevalence of overweight and obesity in different populations.[8] To our knowledge, this is the first study to examine this phenomenon in these healthcare workers. The prevalence of overweight and obesity was higher in the nurses and is comparable to that in other studies that reported on the prevalence of overweight and obesity in the South African adult population.[9-11]

The high prevalence rate of overweight and obesity that was observed in the nurseswas surprising. Perhaps, changing dietary habits and physical activity patterns, as a result of modernisation and technological transformation, may be likely mediators thereof. Healthcare workers, by virtue of their increased access to information, are expected to have less risk of obesity and other health outcomes often linked to lifestyle. Several underlying issues may contribute to obesity in this nursing population. It might be possible that many of the nurses did not truly understand the health implications of being overweight and of obesity. However, this supposition is only speculative. Therefore, a study is warranted that will examine the perception and knowledge of the nurses on overweight and obesity.

It should be observed that the major staple foods in these regions, such as “mealie meal” or “pap”, and rice, are rich in carbohydrates. It may be possible that energy input in the nurses in our study

Table I: Prevalence of obesity, overweight and underweight in the nurses in the different age groups and gender

Age (years)	n	Body mass index (dependent variable)				
		Underweight, %	Normal, %	Overweight, %	Obesity, %	Extreme obesity %
19-29	32	9.4	37.5	25	25	3.1
30-39	43	-	16.3	32.6	44.2	7
40-49	53	-	13.2	32.1	45.3	9.4
50+	25	-	12	12	68	8
Gender						
Male	49	2	24.5	30.6	36.7	6.1
Female	104	1.9	16.3	26	48.1	7.7
Total	153	2	19	27.5	44.4	7.2
Physical activity						
Yes	74	-	51.7	38.1	58.8	27.3
No	79	-	48.3	61.9	41.2	72.7

was higher than energy expenditure. This positive energy balance would result in a high incidence of overweight and obesity. This is attested to by the data that are collected on physical activity. The majority of the nurses (51.5%) did not participate in any physical activity, while 48.7% said that they did so. The availability of soft drinks in the Vhembe and Capricorn districts, Limpopo, may also be a contributory factor. These explanations may provide insight into possible mediating risk factors of overweight and obesity in the nurses in our study.

In the present study, obesity was not considered on the basis of an objective measure. Also, the results may not be representative of all nurses in the province, nor in South Africa. Therefore, generalisation of the results of the study should be applied with caution. Although our study did not clearly demonstrate predisposing factors for overweight and obesity, it provides baseline data on body weight disorders in nurses in South Africa.

Conclusion

The present study highlighted a high prevalence of overweight and obesity in nurses in South Africa, a rate that is comparable with that of the general population. This might predispose nurses to developing chronic diseases, such as diabetes, hypertension and cardiovascular disease in the future. The results of this study pose a great challenge to public health workers and policy-makers. They stress the importance of preventive strategies, which should ideally start with the health providers. Further studies should be undertaken that examine risk factors for the prevalence of overweight and obesity in nurses.

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