

## A SITUATIONAL ANALYSIS OF OBESITY CONDUCTED IN ONE SOUTH AFRICAN COMMUNITY

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### ABSTRACT

Some African communities, contrary to media portrayals of the general health perspective, might view obesity in a positive and desirable manner as a sign of affluence. Globally, obesity has reached epidemic levels (WHO, 2003). The target population for this study comprised a rural community in the Limpopo province of South Africa which is showing signs of modernisation. Such societies are generally prone to malnutrition.

The researchers suspected that there might have been a discrepancy between community members' perceived and actual body weights, with individuals accepting bigger bodies as the norm, with potentially harmful health effects. The purpose of the study was to determine the level of obesity-related knowledge of the community members, as well as to investigate community members' anthropometric measurements, perceptions and practices relating to obesity. The study used both quantitative descriptive and qualitative exploratory designs. A convenience sample ( $n=111$ ) of healthy community members participated in the study and a purposive sample was utilised for the qualitative study component. The data gathering methods included self-completion questionnaires, focus group discussions and field notes. The quantitative data were analysed using descriptive statistics, whilst the qualitative data were analysed by using content analysis. The findings illustrated obesity levels of 83.0% ( $n=92$ ) amongst the participants and a lack of awareness of the health-related risks associated with obesity. Apparently, in the Venda and Tsonga languages, the concept of "obesity" does not exist. The findings also indicated that culture-competent health education is required to address cultural concepts of obesity as portraying beauty and affluence while thinness is associated with illness and suspicions of HIV and AIDS.

**KEYWORDS:** community-based perceptions of obesity, culture congruent healthcare, cultural perceptions of obesity, obesity in South Africa, weight reduction interventions

## INTRODUCTION AND BACKGROUND INFORMATION

The Western view of obesity is biomedical whilst the African view is socio-cultural. The adage used as an oration whenever obese women pass a group of traditional Venda men, is “a woman demonstrates her beauty by the big size of her body.” Puoane et al. (2005:8) state that some South African communities do not view obesity socio-culturally in a negative manner and regard obesity as being acceptable. Friedenberg (2002:629) notes that public attitudes to obesity vary across cultures and over time. Van der Merwe and Pepper (2006:315) indicate that, from the 1960s until the 1980s, there was a notion of healthy or benign obesity in South Africa. Puoane et al. (2005:91) maintain that obesity amongst South African indigenous communities could be a sign of affluence and of eating well.

Obesity (WHO, 2003) is defined as body mass index (BMI) of 30–34.9 kg/m<sup>2</sup>, whilst severe obesity refers to a BMI of 35–39.9 kg/m<sup>2</sup> and morbid obesity a BMI of 40 kg/m<sup>2</sup> or higher. The World Health Organization (WHO, 2003) has declared the burden of obesity an epidemic in Southern Africa, resulting in co-morbid non-communicable diseases (Puoane et al., 2005:7). The health-risks associated with obesity include cardiovascular diseases, hypertension, type 2 diabetes mellitus, degenerative joint diseases, gall bladder diseases, various cancers, skin problems and infertility. Puoane et al. (2005:5) state that the South African black population is at risk of obesity-related health risks due to a sedentary lifestyle, increased wealth and poor nutritional status. In South Africa, the prevalence of obesity by body mass index (BMI) differs for men (29%) and women (56%), whilst 66% of the people in the Limpopo province are reportedly obese (Reddy, 2004:175, 183).

The causes of obesity are complex and entail changed lifestyle behaviour and eating habits, decreased levels of physical activity and ineffective emotional coping strategies. Obese individuals might only consider weight reduction when they experience symptoms of diseases. Walker et al. (2001:371) report that many individuals interpret obesity issues based on their concepts of wellness, regardless of existing risk factors.

## STATEMENT OF THE RESEARCH PROBLEM

Some South Africans accept larger body sizes as being normal. The prevalence of obesity, and its associated co-morbid diseases, causing premature deaths amongst black people, constitutes a burden of disease in South Africa. Reddy (2004:178) indicates that no specific data exists on the prevalence of obesity among community members in the Limpopo province.

## Purpose and objective of the study

The purpose of the study was to identify and address obesity-related factors in one community, in order to address these factors so that fewer people should suffer from obesity-related health consequences in future. The objective of the study was to identify community members' level of knowledge, physiological indicators, perceptions and behaviours affecting obesity rates of members of the Thulamela community in the Limpopo province of South Africa.

## Theoretical foundation

The Health Promotion Model (Pender et al., 2006:60), which integrates nursing and behavioural science perspectives on the factors influencing a person's health behaviour, underpinned the study. This model has two main determinant categories, namely individual characteristics and behaviour-specific cognition and affect. The individual characteristics focus on personal factors including the biological, psychological and socio-cultural influences. Behaviour-specific cognition and affect include aspects such as perceived barriers to action and perceived self-efficacy when contemplating health-promoting behaviour. These categories are fundamentally important when exploring culture congruent knowledge, meanings and perceptions of health issues, such as obesity.

## RESEARCH METHODOLOGY

### Research setting

The context of the study was the Thulamela area in the Vhembe District of the Limpopo province in South Africa, home to indigenous Venda and Tsonga cultural groups, who are maintaining their cultural origins, values and practices despite signs of modernisation. The 2003 national census estimated the Vhembe district's population to comprise 584 568 people of whom 68.25% (n=398 968) were Vhavenda, 26% (n=151 988) were Vatsonga, 2.3% (n=13 445) were Bapedi and 3.45% belonged to other groups (n=201 675) (Statistics South Africa, 2008).

### Research design

The study used a quantitative descriptive survey to determine knowledge related to obesity, to record anthropometric measurements and to identify obesity-related perceptions and behaviours of the adult community members. A qualitative exploratory design was adopted to explore the participants' perceptions of, and attitudes relating to, obesity as well as the meaning they attributed to obesity (Fouché & De Vos, 2005:13).

## Population and sample

The study population comprised apparently healthy adults, aged 18 to 70, residing in the community. Churches, clinics and the local radio station invited adults to participate in the study. All members of the community willing to participate in the study were included in the sample. Through convenience sampling, 111 respondents were recruited for the quantitative survey (Burns & Grove, 2005:350) whilst a purposive sample, comprising five groups with five to eight participants in each group, was recruited for focus group interviews in the qualitative phase of the study. Two groups comprised both male and female participants, two groups had only female participants, and one group had only males. After five focus group discussions, data saturation occurred.

## Data collection

Data collection took place from January to March 2008. The structured interview schedule's items requested information about independent variables such as gender, age, socio-cultural status, marital status, educational level, employment status and monthly income while the dependent variables included personal medical history, anthropometric measurements and perceptions regarding obesity. The basis for the content of the questionnaire was the variables in the Health Promotion Model, pre-tested on five respondents, excluded from the actual sample. Feedback from the pre-test resulted in ambiguous questions being clarified and repetitions being deleted. Five focus group interviews produced the qualitative data.

An interview schedule guided the focus group interviews. An audiotape recorder captured the information shared during the focus group sessions. The interviews were conducted in Tshivenda, Xitsonga and Sepedi. The first author translated the transcripts into English. The transcripts were checked by a linguist for authenticity.

## Data analysis

The quantitative data were analysed by means of descriptive statistics using SPSS version 14.0, whilst the transcribed interviews were analysed using content analysis, following Tesch's approach (Creswell, 2009:155).

## Validity, reliability and trustworthiness

The items of the questionnaire were based on a literature review to ensure content validity. Field workers were trained to collect data and were supervised throughout data gathering. Reliability was established through the use of calibrated equipment to conduct the anthropometric measurements. The structured interview schedule was formulated in English, but the researcher and the two research fieldworkers, who were

all competent in Tshivenda and Xitsonga, translated and explained each question in the first language of the particular respondent.

The trustworthiness of the qualitative data was ensured by adhering to Lincoln and Guba's principles (Polit & Beck, 2008:540). For the purposes of dependability, the fieldworkers were qualified professional nurses; the situational analysis continued for four months; and reflexivity and triangulation of various data gathering methods were utilised. Member checks ensured the credibility of the data. The principal researcher employed field notes and a self-reflection diary to control her own potential bias, perceptions, feelings and decisions pertaining to obesity.

## **DEFINITIONS OF KEY CONCEPTS**

Anthropometric measurements refer to the size, weight, and proportions of the human body (Sánchez-Castillo et al., 2003:442). All participants wore light indoor clothing for their weight and height/circumference measurements. A calibrated electronic scale recorded the weight measurements and a fibreglass tape determined the height and circumference measurements. The waist circumference of males was measured to the nearest 0.5 cm at the level of the umbilicus after normal expiration; the waist circumference of females was measured in the same way but at the narrowest point between the rib cage and the iliac crest. The cut-off point for abdominal obesity was a waist circumference of 88 cm for females and 102 cm for males. The hip circumference was measured at the level of the greater trochanter. Based on these measurements, the BMI and waist-hip ratios were calculated for each respondent.

Blood pressure was measured by means of an electronic calibrated sphygmomanometer and a standard upper arm cuff; a bigger upper arm cuff was used for participants whose arms were larger than standard. The blood pressure cut-off points for hypertension were: systolic blood pressure  $>140$  mm Hg and diastolic pressure  $>90$  mm Hg (Berman et al., 2008:552).

Blood glucose levels were measured by means of a haemoglucometer (Accu-check®), following a random capillary blood specimen taken from a finger prick with a sterile lancet needle. The normal random blood glucose values range between 3.8 mmol/l and 6.2 mmol/l (Ramsay et al., 2007:152).

## **ETHICAL CONSIDERATIONS**

The Tshwane University of Technology's Research Ethics Committee and the Limpopo Provincial Health Department granted permission for the study to be conducted. Each participant signed a written informed consent form at the onset of the study. Confidentiality and anonymity were ensured by using codes and pseudonyms.

## RESEARCH FINDINGS

The demographic findings are presented so that the other quantitative and qualitative findings can be contextualised against this background information.

### Demographic profile of the respondents

**Table 1: Correlations between demographic aspects and obesity (n=111)**

Demographic aspects	Correlation with obesity
Age range: 18 to 62 years	Obesity was evident in all age groups but higher in the age groups 30–39, 40–49 and 50–59.
Gender composition: 18 males and 93 females	More females (83.8%; n=93) than males (16.2%; n=18) participated in the study. Obesity was more prevalent among females (91.4%; n=85) than among males (61.2%; n=11). More females (87.1%; n=81) had elevated waist circumference measurements compared to males (39.0%; n=7). Waist circumference was defined as being elevated when it measured 88cm for females and 102 cm for males.
Home languages	Respondents whose home language was Tshivenda were 82.9% (n=92), Xitsonga 13.5% (n=15), Sepedi 2.7% (n=3) and others were collectively 0.9% (n=1).
Financial income	Of the respondents 28.0% (n=31) had no income or received a social grant. Of the respondents, 27.9% (n=31) had no income earned between R1 000 and R2 400 per month, with 44.1% (n=47) earning middle to high incomes of R2 401–R6 000 and 19.85% (n=22) earning more than R6 000 per month. Obesity was higher in the middle income group earning R2 400–R6 000.
Marital status	The majority (72.1%; n=80) were married.
Literacy level	Some respondents were illiterate (23%; n=26) or functionally illiterate having only attained Grade 6.

### Personal medical history and obesity-related conditions

Some obesity-related conditions existed among the respondents:

- hypertension: 24.3% (n=27);
- type 2 diabetes mellitus: 10.8% (n=12)
- arthritis: 6.3% (n=7).

Hu (2008:189) confirms that obesity is closely associated with prominent chronic lifestyle diseases. Most respondents (91.0%; n=101), acknowledged that obesity could be harmful for a person's health and some indicated that obesity was associated with

poor mobility (15.3%; n=17) and emotional problems, such as frustration (3.6%; n=4). Qualitative findings revealed that obese people feared death and experienced chronic physical discomfort (such as aches and pains all over the body) as well as emotional pain (due to being ridiculed). One participant reported:

*"I wake up every day asking myself if this would be the last day of my life."*

Another morbidly obese participant said:

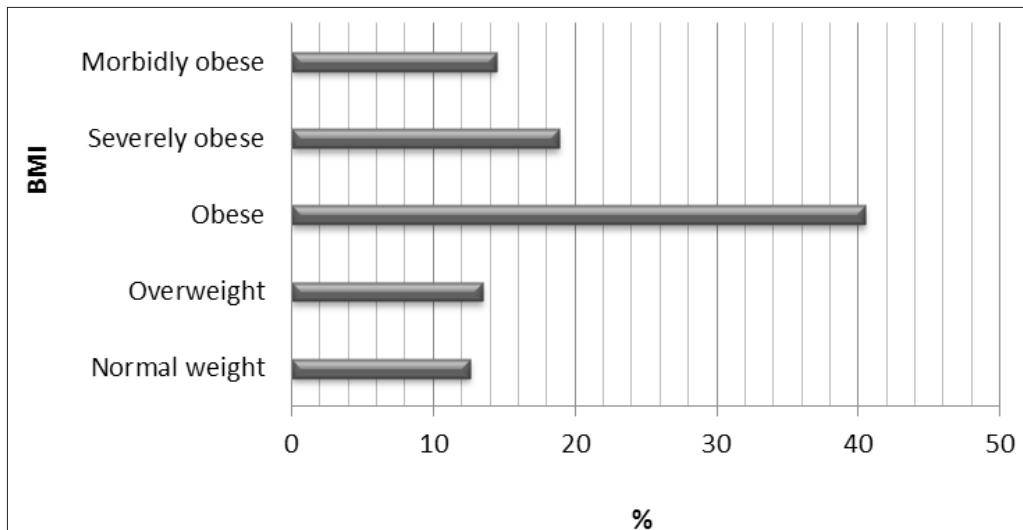
*"I would scream at night because I would feel as if someone is assaulting me with fists; my whole body was a bundle of painful masses."*

These results support the findings of other studies indicating that obesity is associated with an impaired quality of life (Jia & Lubetkin, 2005:161, Fjeldstad et al, 2008:4; Hlatky et al., 2010:297).

### **Physiological and anthropometric measurements**

As illustrated in Figure 1, only 12.7% (n=14) of the respondents had normal weights according to the WHO (2003) BMI categories, whilst:

- 14.4% (n=16) were overweight;
- 39.6% (n=44) obese;
- 18.9% (n=21) severely obese; and
- 13.5% (15) morbidly obese.

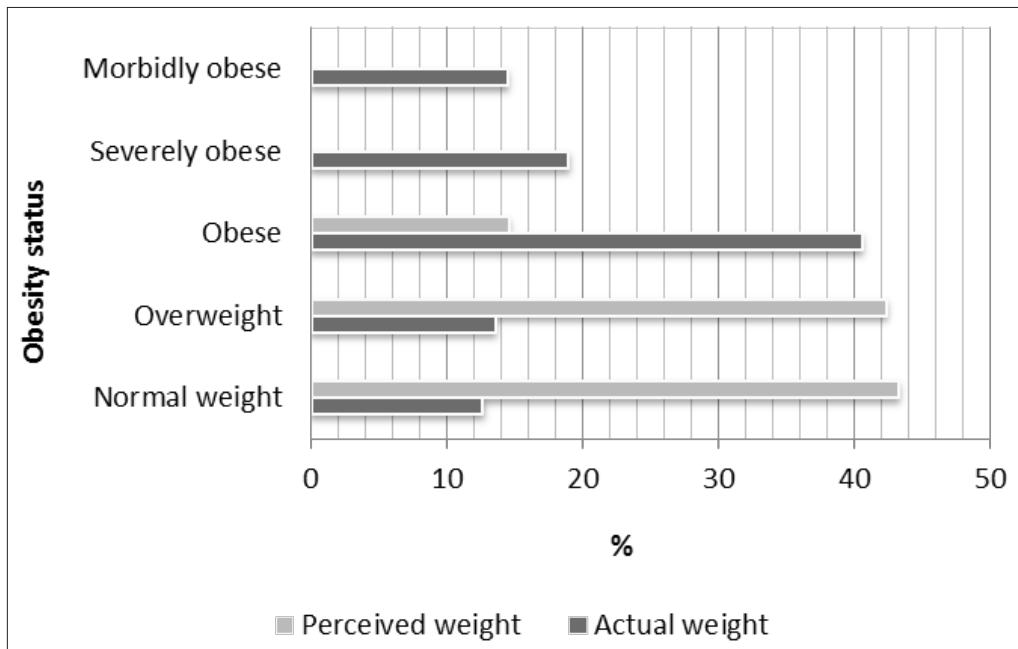


**Figure 1: The percentage of respondents per BMI category (n=111)**

From the respondents' medical histories and their anthropometric measurements, abdominal adiposity was evident in 58.6% (n= 65) while 21.6% (n=24) had elevated blood glucose levels and 57.7% (n=64) were suffering from hypertension. A study in England, conducted by Zaninotto et al. (2009:140), reported that increased prevalence of adult obesity added to the public health burden of obesity-related illnesses.

One item in the questionnaire requested the participants to self-evaluate their level of obesity as normal, overweight or obese. Figure 2 illustrates the comparison between the respondents' actual and their perceived weight categories.

Figure 2 indicates that 43.2% (n=48) of the respondents perceived their body weight to be normal while only 12.6% (n=14) were actually of normal weight. In contrast, only 14.6% (n=16) of the respondents perceived their body weight as being "obese" while 40.0% (n=44) were in fact obese. None of the respondents perceived themselves to be "severely obese" or "morbidly obese" whilst the actual combined incidence was 32.5% (n=36). A study by Puoane et al. (2005, 5) found that two thirds of their participants in Khayelitsha, Cape Town, South Africa, who were overweight, believed themselves to be thinner than they were. The participants in the Cape Town study actually thought a bigger body was more desirable, more attractive and commanded greater respect than a thinner body. However, a study conducted by the University of California in the United States of America (Ratanasiripong & Burkey, 2011:20), found that students perceived themselves to be bigger than they actually were and did not view big to be beautiful.



**Figure 2: Comparison of the actual weight BMI category with the research participants' perceived BMI category (n=111)**

### Obesity as an unknown concept

The construct “obesity” seemed to be unknown to participants, implying that no sustained weight reduction efforts were pursued. Some participants were surprised about their actual body size and that their body size had been linked to their age. Nuances that emerged from the participants’ utterances, included that the word obesity does not exist in the Tshivenda or Xitsonga languages, and the idea of “obesity” is not associated with increased fat in the body. Some of the participants’ responses were as follows:

*“We do not understand the concept of obesity.”*

*“There is no word for what you are trying to explain in the Tshivenda and Xitsonga languages.”*

The word “obesity” first appeared in the English language in the 17th century (Coombs, 1936:346). It originated from the word “obesus” derived from the Latin word “obedere.” In Roman times, the meaning of the word passed through several stages. Initially obesity meant “...that which has eaten itself fat.” Later it was used to indicate fatness, laziness and slothfulness. There is a paucity of literature regarding the meaning of the term “obesity” in languages spoken in sub-Saharan Africa. In this regard, Renzano

(2004:106) confirmed that there is no definition for obesity in the sub-Saharan African countries that do not regard obesity to be a health risk.

### **Knowledge related to the causes of obesity**

Both the quantitative and qualitative findings reveal limited insight into the causes of obesity. Only 44.1% (n=49) of the respondents viewed obesity as being due to “eating too much” and 6.3% (n=7) as a result of “inactivity”, while some respondents merely stated obesity “just happened” 18.9% (n=21), and a few respondents 8.1% (n=9) indicated obesity was a sign of good health; there is a dearth of literature to support this view. The focus groups’ results showed that the participants associated obesity with eating “food rich in vitamins”. Contrary to this view, Vitamin D deficiency actually contributes to obesity (Foss, 2009:314). Changes in lifestyle from traditional to modern practices and the use of the baobab (*Adansonia digitata*) tree trunk during birth rituals were also regarded as contributing to obesity. (Some traditional healers boil the bark of the baobab tree and use this water to wash the baby while pronouncing incantations over the newborn baby).

*“The obese person is washed by the infusion of the baobab tree”*

*“... being a big person (ukhwathesa) is in your blood and shows your blood is watery and heavy.”*

### **Knowledge of weight management strategies**

Of the respondents, 26.1% (n=29) indicated that nurses or doctors were their main sources of information for obesity management. However, most respondents (58.6%; n=65) never considered losing weight prior to the interviews conducted during this study. Of those who had tried to reduce weight, 19.8% (n=22) used physical activity and 21.6% (n=24) used ‘dieting’ as the chosen method. When asked what they would change to adopt a lifestyle conducive to weight loss, 44.1% (n=49) indicated they would change their nutritional patterns, by eating more fruits and vegetables, less fat and little sugar. In the qualitative data, participants reiterated their knowledge deficits about weight reduction strategies:

*“In the past obese people were denied food especially the fertile women who were pregnant.”*

*“A person must go on a diet and starve oneself.”*

*“Only you nurses and doctors can help as we do not know.”*

## Awareness of body size

Participants did not associate an obese body with an increased fat content in the body. One participant said:

*“... the issue of a big body is in the blood. When your body is big then it means that it is the way you are.”*

Another participant said:

*“... being fat is due to the body that is watery.”*

The participants lacked knowledge about the causes of obesity by claiming that obesity is caused “by the blood” or the “body that is watery.” Some participants were unaware of their “above normal” body size until they received feedback about their physical assessments which were met with surprise and shock. One participant said:

*“I was shocked when I was told what my weight was and what it meant ... I am shocked to realise that I weigh... more than my age.”*

However, some participants were satisfied with their large bodies despite the obesity-related feedback. The reasons for their satisfaction varied from expressions that obesity is associated with “looking like an adult” to the viewpoint that women are expected to have a big body size when they reach a certain age. One woman stated:

*“... I am happy as I am, this is how my husband likes me; if you are too thin you are no different from a child.”*

For some participants body size demonstrated comfort and growth. As such obese women are referred to as “tshiphethe” (a good round thing) and are expected to have “anathumbu ya lubaba” (a slim waistline with large breasts). Puoane et al. (2005:10) reported similar findings in their Cape Town study. Xhosa women desired to be “round and full” to demonstrate they were healthy and confident. Weight-reduction is unlikely to succeed if obesity is accepted as a sign of beauty and health, as opposed to being a health risk.

## Body size defines beauty

The participants expressed mixed messages with regard to their perceptions of the link between obesity and beauty. Some of the focus group participants indicated being heavy means you are beautiful and comforting:

*“A heavy person is beautiful.”*

*“A woman can only be called a woman by demonstrating her assets, so one must always show her beauty, anyway fat people are always beautiful and have good hearts.”*

However, some participants indicated that obesity was regarded as “ugly” and that obese people could only wear shapeless clothes. These views referred to individuals in the “morbidly obese” BMI category. In this specific context, the male participants commented, “obese women are ugly.” In what seemed to represent a change in traditional viewpoints, the female participants regarded their own shape by the cultural expectations to be obese but they no longer defined beauty by a large body size:

*“If you are fat you cannot undress in the light (clothes)...(pause)... you feel ugly...”*  
*(All the women laughed with embarrassment.)*

*“The issue of wearing shapeless clothing is serious, beautiful clothes do not fit big bodied people.”*

### **Body size is a proxy for wealth or illness**

Most focus group participants indicated that poverty contributed to obesity. However, in this study obesity levels were high in all income groups. One participant said:

*“...I am thin as you can see but I try to eat a lot as when you are big it is a sign of being mature. If you are lean you are even shy when approaching people as you cannot be associated with the people who are affluent in society.”*

In this specific community, being “well rounded,” or obese, is associated with affluence. One participant remarked:

*“... if you are rich then you are associated with comfort” (implying that obesity and “comfort” are an indication of affluence).*

Similarly, another cultural saying refers to affluent individuals as persons who:

*“... eat fat with a golden spoon and it must show by your size.”*

The focus groups’ participants indicated that when you are “thin” you look like a person who cannot take care of yourself. Amoah (2003:753) reported that social pressure might contribute to obesity in Ghana. Most obese Ghanaians in that study came from the middle-to-high income groups, were well educated and had experienced deprivation at some stage in their lives. These findings suggested that obesity symbolised affluence and the desired socio-economic status.

Some participants in the current study associated a lean body with diseases and infirmity. One participant said: “... I would rather be big than being thin and be associated with diseases especially the ... ‘big one’ (implying HIV/AIDS)’.

Many participants supported this notion that when one is “too thin” it is associated with suffering from HIV and AIDS. Similarly, Matoti-Mvalo and Puoane (2006:33) reported that participants would rather be overweight/obese than be thin and suspected of suffering from HIV/AIDS.

### **Dysfunctional body**

Most focus group participants valued a functional body but did not regard obesity to be dysfunctional. Obesity was only regarded negatively when someone became morbidly obese and lost the ability to perform everyday tasks and duties. Some participants remarked:

*“When the body is extremely big you suffer from inability to walk.”*

*“You become so immobilised by the big body. You just sit in one place with your legs stretched out...”*

### **Ridicule and shame**

Extremely ‘big bodied’ (being severely or morbidly obese) people were reportedly not respected nor socially acceptable:

*“... a person with a big body is sluggish and dirty ... they are lazy even to stand up and do things for themselves.”*

*“You cannot even work, nobody employs a fat person.”*

Morbidly obese people struggle to use ordinary public transport. Taxi drivers could make them pay double fees. Participants agreed that obese people could have unacceptable odours due to sweating, and that their snoring caused problems in their families. Reportedly obese individuals experienced emotional pain when they were ridiculed and called names like “..the fat one”, “Big Mama”, “Bumba”, and “Bulumbute” (‘a big fat worm’).

Puhl and Heuer’s (2009:941) study, conducted in the United Kingdom, also reported inequalities in employment settings, transportation systems and social settings, because obese persons were perceived to be lazy, unmotivated, lacking self-discipline, incompetent, non-compliant and sloppy.

## CONCLUSION

The WHO's (2003) formal viewpoint is that obesity is both a disease and a global epidemic aggravating various non-communicable diseases. An oxymoronic view of obesity became evident in the Thulamela municipality in South Africa: of obesity being simultaneously regarded as being unhealthy and as a sign of health and affluence. Evidently, obesity occurred amongst the affluent as well as the poor in this community. This highlights the need to develop community-based interventions, which are culturally sensitive, affordable, accessible and available to reduce the burden of non-communicable diseases associated with obesity.

## RECOMMENDATIONS

Knowledge deficits and cultural perceptions influenced the perception of obesity indicating affluence and health, while leanness was associated with ill health and suspicions of suffering from HIV/AIDS. Health awareness campaigns, focusing on informing the public of the consequences of obesity, should also be culture congruent. Registered nurses and midwives should assess obesity and related conditions and educate persons about the consequences of obesity in a culturally sensitive way.

Health promotion efforts should focus on behavioural change – it is not enough to know about obesity, appropriate actions are required. Culture-congruent multifactorial issues related to obesity should be emphasised by all healthcare workers as they are in a position to influence individuals', families' and communities' perceptions and actions. Another challenge would be to design weight reduction strategies that are culture-congruent and gender-sensitive to address the stigma associated with being either morbidly obese or "thin" in this community. Health educators could use the negative cultural perceptions of morbid obesity effectively by assisting obese persons not to become morbidly obese.

## LIMITATIONS

The findings are contextual within the municipality area of Thulamela, Vhembe District, Limpopo province, therefore the results cannot be extrapolated to other communities, without conducting similar studies in these communities.

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