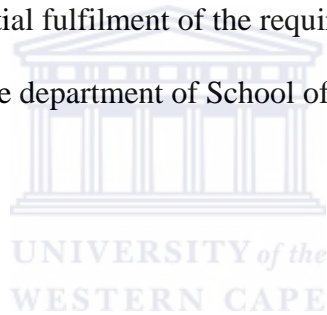


I

AN EXPLORATION OF THE PERCEPTIONS ABOUT BEING THIN, HIV/AIDS  
AND BODY IMAGE IN BLACK SOUTH AFRICAN WOMEN

TANDIWE MATOTI-MVALO

A minithesis submitted in partial fulfilment of the requirements for the degree of  
Masters in Public Health in the department of School of Public Health , University of  
the Western Cape.



Supervisor : Prof T. Puoane

November 2006

## Table of contents

Keywords .....	IV
<b>Abstract</b> .....	<b>1</b>
Declaration:.....	3
Acknowledgements.....	4
Chapter 1 - Introduction.....	5
1.1 An overview of obesity .....	5
1.2 Problem Statement: .....	6
1.3 Background of the study: .....	7
Chapter 2 -Literature Review.....	9
2.1 Definition of obesity .....	9
2.2 History of obesity.....	9
2.3 Determinants of obesity: .....	10
2.3.1 Obesogenic environment .....	10
2.3.1.1 Globalization.....	10
2.3.1.2 Urbanization and The Nutrition Transition.....	11
2.3.2 Dietary intake.....	12
2.3.3 Physical activity .....	12
2.3.4. Socio-cultural factors .....	13
2.3.4.1 The social learning theory.....	13
2.3.4.2 The evolutionary theory .....	14
2.3.4.3 Perceptions, beliefs and attitudes .....	14
2.3.5 Other factors associated with obesity .....	16
2.3.5.1 Education .....	16
2.3.5.2 Socio-economic status .....	16
2.3.5.3 Stress .....	16
2.3.5.4 Parity .....	17
2.3.5.5 Genetics.....	17
Chapter 3: Research design and methodology.....	18
3.1 Aim of the study: .....	18
3.2 Objectives: .....	18
3.3 Research Hypothesis:.....	19
3.4 Study Design:.....	19

### III

3.5 Setting: .....	19
3.6 Target population: .....	19
3.7 Sample size and procedure: .....	19
3.8 Selection Criteria .....	20
3.9 Training of fieldworkers / research assistants:.....	20
3.10 Data collection tools: .....	21
3.11 Measuring Instruments: .....	21
3.12 Data Collection methods:.....	22
3.13 Data collection: .....	22
3.14 Validity and reliability: .....	24
3.15 Data Analysis: .....	24
3.16 Limitations of the study: .....	25
3.17 Ethical statement.....	28
Chapter 4: Results Presentation .....	26
4.1 Findings of the quantitative data.....	26
4.1.1 Demographic Characteristics of the Sample.....	26
4.1.2 Anthropometric measurements .....	26
4.1.3 Perceptions .....	28
4.2 Findings of the qualitative data:.....	32
4.2.1 The group that did not associate thinness with HIV/AIDS.....	32
4.2.2 The group that strongly associated thinness with HIV/AIDS.....	34
4.3 A summary of the similarities and the differences between the two groups .....	37
Chapter 5: Discussion .....	37
Chapter 6: Conclusion and Recommendations .....	44
References:.....	46
Addendum1 : Consent Form.....	57
Addendum 2 : Focus Group Discussion Guide.....	58
Addendum 3 : Questionnaire.....	59

AN EXPLORATION OF THE PERCEPTIONS ABOUT BEING THIN, HIV/AIDS  
AND BODY IMAGE IN BLACK SOUTH AFRICAN WOMEN

Tandiwe Matoti-Mvalo

Student No: 9451281

**Keywords**

Obesity

Thinness

Black women

Body image

Ideal body weight

Actual body weight

Perceived ideal body weight

Perceptions

HIV/AIDS stigma

Cardiovascular disease



## ABSTRACT

### AN EXPLORATION OF THE PERCEPTIONS ABOUT BEING THIN, HIV/AIDS AND BODY IMAGE IN BLACK SOUTH AFRICAN WOMEN

MPH minithesis, Department of School of Public Health, University of the Western Cape.

This study explored the perceptions of black South African women residing in Khayelitsha, Site B about thinness, HIV/AIDS and body image.

Obesity is a major public health problem in developed as well as developing countries. The HIV/AIDS epidemic has been escalating in sub-Saharan Africa and has been said to be the leading cause of death in South Africa. This means that South Africa is being devastated by a double burden of two concurrent epidemics and these are having an effect on each other. Obesity is one of the risk factors for non-communicable diseases (NCDs), while on the other side HIV/AIDS is characterized by severe weight loss and carries a stigma, which has been said to prevent women from adhering to lifestyle behavior modification especially weight loss, for the purpose of preventing non-communicable diseases (NCDs). This study was therefore conducted to explore these perceptions, beliefs and attitudes among black African women. Data was collected through interviews, direct measurements of weight and height and focus group discussions. The analysis was done using Microsoft excel and the statistical package of SAS version 8. More than 80% of the women who participated in the study were overweight or obese and thought that being overweight or obese was healthy. Large body size had many positive attributes such as dignity, attractiveness and having enough money to feed your family. Whilst some were aware

that being overweight and obese was a risk factor for NCDs, they still preferred to be overweight because they did not want to lose weight and risk being associated with HIV/AIDS. This study shows that there are socio- cultural factors that influence the decisions that black South African women make in terms of adopting healthy behaviors. This poses a challenge among policy makers and implementers. There is a need to develop appropriate messages that will address the prevention of all conditions without compromising the other.



**Declaration:**

I declare that AN EXPLORATION OF THE PERCEPTIONS ABOUT BEING THIN, HIV/AIDS AND BODY IMAGE IN BLACK SOUTH AFRICAN WOMEN is my own work, that it has not been submitted before any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.



Tandiwe Matoti-Mvalo

November 2006

Signed:.....

## **Acknowledgements**

This study would not have been possible without the help and continued support of my supervisor Prof Thandi Puoane.

I also wish to extend a word of appreciation to Jabulisiwe Zulu and Lungiswa Tsolekile of the School of Public Health as well as all the field workers (Community Health Workers of Site C and Dietetics final year students) who helped with the data collection.

I also wish to acknowledge the women who participated in the study and gave their time to be interviewed.

The financial support from the NRF is also greatly appreciated.

I thank my family for their unwavering support and encouragement throughout this study.

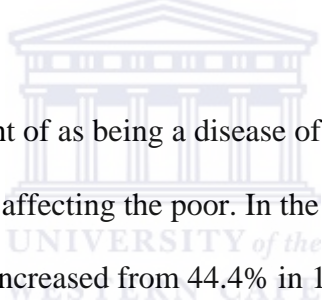




## Chapter 1 - Introduction

### 1.1 An overview of obesity and HIV/AIDS

Obesity is a growing public health problem globally. According to the World Health Organisation (WHO), overweight is one of ten leading risk factors in developed countries that contributes to the burden of disease measured by disability adjusted years of life (DAYLs) (WHO,2000). Obesity has been a significant public health concern in developed countries and is emerging as an epidemic even in developing countries especially those in economic transition (Popkin,1994), where malnutrition has historically been the critical challenge such as China , Brazil and South Africa. It is estimated that more than 1 billion of adults in the world are overweight and that at least 300 million of them are obese (IASO, 2004).



Obesity was previously thought of as being a disease of the affluent, however, this is no longer the case as it is now affecting the poor. In the past decade, in South Africa, the prevalence of obesity has increased from 44.4% in 1991 (Steyn et al, 1991) to 56.6% in 1998 ( Puoane et al,2002). A national survey done during 1998 amongst all population groups in South Africa, reported a 27% prevalence of overweight (Body Mass Index (BMI) 25-29.9) and nearly a third (32%) of obesity (BMI >30) (Puoane et al, 2002). Black women seem to be the most vulnerable. A study undertaken among urban and rural women showed that 36% of urban black women and 25% of rural black women in South Africa are obese and in the population as a whole, 30% of women are obese (Steyn et al, 2001). This is a public health concern because obesity is one of the major risk factors for non-communicable diseases (NCDs), such as type 2 diabetes (Pi-Sunyer, 1990), coronary heart disease (CHD) (Hubert, 1983), hypertension (Dreyer et al, 1989), gallbladder disease

(Renzaho, 2003) and certain types of cancers (Garfinkel, 1985). In the past decade the focus of public health programmes has been the eradication of malnutrition and control of infectious diseases. Meanwhile NCDs are having a devastating effect on black South Africans, whilst simultaneously HIV/AIDS also continues to devastate Sub-Saharan Africa and particularly South Africa. According to Bradshaw et al, (2000) the mortality profile indicates that HIV/AIDS is the leading cause of death in South Africa accounting for 30% of all deaths, followed by cardio vascular disease (CVD) at 17%. Amongst the top 20 specific causes of premature mortality burden, women have a higher proportion of deaths due to HIV/AIDS, stroke, hypertensive heart disease and diabetes.

The HIV/AIDS pandemic has been ravaging countries throughout the world, however sub-Saharan Africa seems to be hit the worst as compared to Europe and America where obesity is a bigger problem. Africa is home to only 10% of the world's population however more than 60% of its people are infected with the disease. In 2001 it was estimated that 4.7million South Africans were suffering from HIV/AIDS (AIDS in Africa, 2005).

### **1.2 Problem Statement:**

It has been found in a number of studies (Puoane et al,2005;Puoane et al,2006) that black South African women are not keen to adhere to healthy lifestyle behavior modification such as weight loss, partly due to the stigma of weight loss being associated with HIV/AIDS wasting syndrome. It is of great concern that at a time when people should be avoiding risk factors for CVD especially obesity, some people

are becoming obese to free themselves from being stigmatized as having HIV/AIDS . To date there have been no studies to explore if people do prefer to be overweight than to be thin to avoid being seen as having HIV/AIDS. This study aims at exploring the existence of this perception, among women residing in Khayelitsha and body image.

### **1.3 Background of the study:**

This study forms part of a larger study called “Promoting Healthy Lifestyles”, which is funded by the National Research Fund, and has been ongoing for the past 5 years. The main aim of the larger study was to design and implement interventions to reduce the risk factors for cardiovascular disease in partnership with the women at risk and the community. A baseline survey aimed at collecting data to investigate the interplay and relationship of environmental factors with psychosocial factors and traditional risk factors for CVD, such as diabetes, hypertension and obesity, and determine if these factors play a role in facilitating poor health outcomes for the target population was undertaken in 2005.

The objectives of the main study are:

- To identify populations who have migrated from rural areas and the length of stay to the township
- To assess the influence of cultural, social, psychological and environmental factors in the development, control and prevention of non-communicable diseases
- To make recommendations to the policy makers on appropriate intervention to prevent the epidemic of NCDs

As an NRF bursary recipient, this thesis forms a portion of the study. The aim of the current study was to explore the perception that a thin person is infected with HIV/AIDS and the effect of this perception on the women's body images.



## Chapter 2 -Literature Review

In this chapter, a review of the literature to obtain a broader view of the problem of obesity was performed.

### 2.1 Definition of obesity

Obesity can be described as an imbalance between energy input (derived from food eaten) and energy output (energy used by the body to perform normal tasks) as a result, excess energy is then stored in fat cells, which expand or increase in numbers (Goedecke et al, 2005). Burton et al, (1993) defined obesity as an overload of body fat often resulting in a considerable deterioration of health. The WHO, (2000) defines obesity as a BMI ( $\text{weight}/\text{height}^2$ ) of above 30 and a BMI of between 25-29.9 is defined as overweight.

### 2.2 History of obesity

Obesity was initially recognized as a disease by Hippocrates (Burns, 1993) when he stated “ persons who are naturally very stout are more liable to sudden death than are thin persons”. However, during Hippocrates time, obesity was not a well known medical state and only in the late 19<sup>th</sup> and start of 20<sup>th</sup> century did the condition receive more attention. In the past, in Sub-Saharan Africa there was no clear definition of obesity instead overweight and obesity have been seen as signs of wealth, good health, optimism and happiness (Renzaho, 2003). These cultural preferences for larger body sizes in people from developing countries were also reported in white people from developed countries at the turn of the 20<sup>th</sup> century. At the time in North America obesity was admired and wealthy consumers were thought to exhibit their wealth around their waists. Fat cheeks and big stomachs were visual


cues that individuals were not infected with the then dreaded slim tuberculosis (Grivetti, 2001). After the 2<sup>nd</sup> World War, the preference for larger body size by Americans disappeared and was replaced by a preference for lean body size promoted by the media especially television and some professions such as ballet. (Grivetti, 2001)

## **2.3 Determinants of obesity**

There are a number of factors, which contribute to the rising obesity epidemic. These include socio economic and cultural factors, an obesogenic environment (an environment that promotes obesity) as well as belief and attitudes about body weight.

### **2.3.1 Obesogenic environment**

#### **2.3.1.1 Globalization**



In South Africa, the current obesity epidemic is partly due to globalization, which is the driving force behind replacement of traditional diets rich in vegetables and fruit with diets rich in animal fats and low in carbohydrates (Renzaho, 2003). In the United States of America (USA) it has been found that only 38% of meals are eaten at home and that most Americans have never cooked a meal from basic ingredients because people choose to eat at the abundant fast food restaurants and some use food from machine vendors (Gardner & Halweil, 2000). The WHO, (2000) estimates that by the year 2020, NCDs such as diabetes, cancers, hypertension and cardiovascular diseases, will cause more than 67% of the world's burden of disease which will be a rise of more than 40% from the current burden of disease. This rise is largely attributed to globalization, where there's been an increase in the global food trade with large transnational companies dominating, which use strong global brand names and highly

forceful marketing strategies modified for local markets. The increase in the availability of foods that are high in sugar, salt and fat is affecting the choices that people make as far as their diets are concerned (Chopra et al, 2002). In addition the availability of low cost imported foods, especially meat products, results in nutritionally detrimental decisions by the consumers to consume nutrient-poor foods rather than healthier alternatives. Global trade has brought about some improvement to the standard of living and access to health care and services but has also brought about negative aspects, especially in countries like the Federated States of Micronesia (FSM) where 88% of the population is made up of adults above 20 years of age. 80% of the adults are overweight (Cassels, 2006).

### **2.3.1.2 Urbanization and The Nutrition Transition**

In South Africa, since 1994 with the abolishment of apartheid laws that restricted black population groups from residing in urban areas, there's been an increase in movement of these groups of people from rural to urban areas. When people change their living areas, their lifestyle including eating habits and physical activity change too. This has led to what is called the nutrition transition where there is a shift from traditional foods rich in fibre towards meat and dairy products with high levels of saturated fats including highly refined foods (Bourne, 1996). The changes in the diet and activity patterns result in higher rates of obesity. Most countries have experienced a shift in dietary patterns over the last few decades and that include an increase in the consumption of fat and added sugar in the diet, an increase in animal food products and a decrease in total cereal and fiber intake. A major change also associated with the nutrition transition, is the change in economic structure, which promotes a shift

towards occupations that require less activity, and more people end up in sedentary jobs (Popkin, 2001).

### **2.3.2 Dietary intake**

In rural areas, the diet mainly consisted of grains and plant based foods but as soon as people move to urban settings, the diet becomes high in fat and highly refined foods, for example, in 1940, Fox reported that the African population in South Africa consumed a traditional diet with only 16% of the total energy from fat. In 1990, this figure had increased by more than 50% to 26% of total energy from fat (Mollentze et al, 1993). These results also showed that people who have lived in cities for most of their lives consumed a higher percentage of fat up to 30% in comparison to those who had spent less than 20% of their lives in the cities who consumed around 22% (Bourne, 1996). This is certainly the case in the Federated States of Micronesia (FSM) where traditional diets comprised of plant foods, such as yams, coconut, arrowroot and bananas, and animal foods such as fresh water tuna, reef, pelagic fish, crustaceans and birds, which have now been replaced by rice, sugar, refined foods, and fatty meats such as corned beef and turkey tail which are deemed inedible in the United States of America because they are just gristle and fat (Cassels, 2006).

### **2.3.3 Physical activity**

The role of physical activity in the prevention and management of obesity has been well documented (Goedecke et al, 2005). Physical activity has the potential to be a very powerful tool in the fight against the obesity epidemic because people who exercise regularly have been shown to adhere to dietary intervention, have improved self efficacy and better long term weight loss maintenance (Donnelly et al, 2004) The



Transition and Health during Urbanisation (THUSA) study in South Africa which examined the role of physical activity on weight loss and maintenance showed that physical inactivity was the major determinant of overweight in black adult females in the North West province and that women who were fairly active tended to be less overweight than those who were inactive (Kruger et al, 2002). In another survey on 550 economically active South Africans, that investigated the factors associated with overweight and obesity, self reported inactivity was a main risk factor in determining obesity (Senekal et al, 2003). Although physical activity has been shown to be beneficial, fear of losing weight because of the stigma associated with HIV/AIDS, is also a factor (Puoane et al, 2003).

#### **2.3.4. Socio-cultural factors**

##### **2.3.4.1 The social learning theory**

Developmental research suggests that perceptions about body weight develop as early as the second decade of life when children reach adolescence and their bodies become their focus as a result of all the changes (Slap et al, 1994). The preference for specific body sizes in females is believed to be learned in social and cultural contexts (Markey et al, 2002) Children learn about what is considered to be beautiful and attractive at a very young age within their social and cultural context (Davidson et al, 2000) Parental influences, both directly and as well as indirectly, are said to be prominent in children's development of ideas about what is the ideal female figure (Stice, 1998).

The media, which reflect and promotes cultural beliefs and values, also influences the perceptions that the youth develop with regard to body weight (Field et al, 1999)

#### **2.3.4.2 The evolutionary theory**

Whilst most of the research on body image perceptions focuses on the learned perceptions and preferences, Singh, (1993), suggested that these preferences could also be due to a universal, evolutionary preference for curvaceous female body shapes and he stresses that the waist – to-hip ratio (WHR) is important in understanding the influence that body shape has on perceptions about attractiveness and health.

According to Singh, (1993), women who have smaller WHRs are preferred to women with larger WHRs regardless of their age and ethnicity. He suggests that this preference is as a result of the fact that women with smaller WHRs have better health outcomes and even reproductive capacity and thus this evolutionary perspective is not only due to men's visual inclinations but reflects adaptive selection for mating.

#### **2.3.4.3 Perceptions, beliefs and attitudes about body weight**

Perceptions of body weight are influenced by the large cultural diversity of South Africa. Amongst black women, it has been reported that a perception that being overweight and even obese is desirable and has many positive connotations (Kumanyika, 1993 & Mvo et al, 1999). Puoane et al, (2002) have shown that South African women have inaccurate perceptions about their body weight. Twenty two percent of the women of all races perceived themselves as overweight whilst in fact 56.6% actually were overweight and only 16% of the black women perceived themselves, as being overweight whilst in fact 26.7% were overweight and 31.8% were obese.

There have been few studies that have examined the factors associated with weight gain in urban black women. Clark et al, (1999) conducted a study on ethnic

differences in body image attitudes and the perceptions among women infected with HIV, which revealed that African American women who were infected with HIV tried to gain weight. This preference for big body size in African American, HIV patients is also prevalent in the general population of Africa (Bourne & Steyn, 2001).

Couper, (2004), suggest that the obesity epidemic is on the rise and is fuelled by amongst other factors, lack of basic education about HIV/AIDS which gives rise to statements like 'if you are fat then you don't have AIDS. This is certainly the case in the Pacific Islands where obesity is associated with a high spirit, sexual attractiveness, beauty and fertility (Brewis et al, 1998). In the Saudi Arabian community there is a similar preference for obesity as it is considered a sign of beauty, good health and wealth (Rasheed, 1998).

Puoane et al, (2005) in a study called "Big is Beautiful", explored some of the perceived advantages of being overweight amongst lay women employed as community health workers in an urban township. Being overweight meant that one was taken good care of by the husband, it also meant that one was able to stir big pots and would not be blown away by the strong Cape Town wind. Being thin on the other hand was associated with unhappiness, ill treated by their husbands and most importantly with having HIV/AIDS. This fear of being associated with HIV/AIDS outweighed all the knowledge the community health workers had about the disadvantages of being overweight and they actually preferred to be overweight.

### **2.3.5 Other factors associated with obesity**

#### **2.3.5.1 Education**

Some studies have found a relationship between education and obesity. The national South African Demographics Health Survey (SADHS) of 1998 found that incorrect perception of one's body weight was related to a low standard of education and that in black women, the lower the standard of education, the higher the BMI and vice versa. (Puoane et al, 2002). Kumanyika, (1993), also found that poverty, low standard of education and low status employment increased susceptibility to obesity and also exacerbated its progression.

#### **2.3.5.2 Socio-economic status**

Socio-economic status proved to be inversely associated with BMI when adjustments for age, marital status, smoking, exercise, ethnicity and health status were made in a longitudinal study that investigated the influence of socio economic status, ethnicity and lifestyle on body mass index (Sundquist & Johansson, 1998).

#### **2.3.5.3 Stress**

High levels of stress associated with urban living were shown to increase the risk of obesity in a study conducted by Steyn et al, (1997), amongst 15 – 64 year old men and women in the Cape Peninsula. Overgaard et al, (2004), also conducted a study amongst Danish nurses that revealed that psychological stress tended to increase the risk of overweight and obesity.

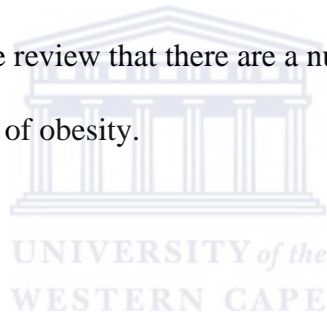
#### **2.3.5.4 Parity**

The Health and Retirement study in the USA among 4 523 couples to investigate the influence of parity on weight, showed that for women there was a 7% increase in the risk of obesity for each additional child. (Arroyo et al, 1995)

#### **2.3.5.5 Genetics**

Some people are genetically prone to develop obesity than others. Scientific evidence points to the fact that there is a genetic component to obesity in humans of about 25%, based on BMI correlation studies conducted between family members, adoptees and their biological families and also between twins (Bouchard & Perusse, 1988).

It is evident from the literature review that there are a number of factors that contribute to the development of obesity.



## **Chapter 3: Research design and methodology**

In this chapter the method used in data collection and data analysis will be discussed including measures used to ensure validity and reliability.

### **3.1 Aim of the study:**

To explore the perception that a thin person is infected with HIV/AIDS and the effects of this perception on the women's body image.

### **3.2 Objectives:**

1. To obtain anthropometric measurements to calculate BMI for the women.
2. To identify women's perceptions regarding their actual, desired and perceived ideal body weight.
3. To compare actual body weight with desired and also perceived ideal body weight
4. To compare the group that associates thinness with HIV/AIDS with the one that does not associate thinness with HIV/AIDS in terms of age and education level
5. To compare the two groups in terms of knowledge, beliefs and attitudes about signs and symptoms of HIV/AIDS.

### **3.3 Research Hypothesis:**

The majority of the women in Khayelitsha, Site C associate thinness with HIV/AIDS, and prefer to be overweight to free themselves of this stigma.

### **3.4 Study Design:**

This is a descriptive exploratory study describing the perceptions and characteristics of the participants using both quantitative and qualitative research methods.

### **3.5 Setting:**

The research took place in Khayelitsha, a large black township with a population of between 350 000 and 900 000, in the Western Cape Province of South Africa. The research took place in Site C which consists predominantly of informal houses. The average number of people per household is 5.6 and more than 40% of the population is unemployed. (The social economy of Khayelitsha, 2002)

### **3.6 Target population:**

Black African women (between the ages of 18 and 70 years) living in Site C of Khayelitsha.

### **3.7 Sample size and procedure:**

There were 6 CHWs working on the project at the time of the survey. Each CHW is allocated an area of about 150 households. CHWs were used to recruit participants where they work. Each CHW submitted a census of women residents in their target area and a random selection of households was done from the sample of 1100. Over

sampling was done to accommodate those households that did not qualify, declined to participate, were unable to participate or had relocated.

Participants were invited to meet at a central venue. Three venues were identified for the purpose of data collection. These were the Christiaan Mehlo Health Centre, Nolungile Primary School and the Bayathandwa Crèche all in Site C. The participation rate in the study was 98.5%. For the focus group discussion, the participants were purposely selected based on their perceptions about thinness and HIV/AIDS. Two focus group discussions with 8 participants in each group were held, one with the group that had a strong association of HIV/AIDS with thinness and one with the group that did not have an association.

### **3.8 Selection Criteria**

The inclusion criteria included females of the households who had lived in the township for at least one year (had to be their primary residence), who were over the age of 16 years, and had no mental disabilities that would prevent them from full participation in the study.

### **3.9 Training of fieldworkers / research assistants:**

Four final year B.Sc Dietetics students from UWC and four trained interviewers as well as six CHWs were trained to conduct the interviews and to take anthropometric measurements. Using the CHWs ensured optimal participation as they were known and trusted by the community.



### **3.10 Data collection tools:**

As part of the questionnaire for the larger study, the researchers included a section to assess the perceptions of the women regarding actual, desired and ideal body weight as well as the association of body size with HIV/AIDS. The questionnaire was developed in English and translated into Xhosa because the majority of Khayelitsha residents are Xhosa speaking. It was piloted on a population with similar characteristics as the study population who were not part of the study, to determine the length, the flow, the duration and also clarity of the questionnaire. Corrections were made accordingly.

### **3.11 Anthropometry:**

The women were weighed using a calibrated bathroom scale manufactured by Soehnle, Germany. They were measured wearing light clothing and bare footed. Their weights were rounded of to the nearest 0.5-kilogram.

Height was measured using a meter stick. Subjects were asked to stand barefooted with their backs and buttocks and heels as close to the wall as possible. The head was positioned in such a way that the angle of the eye and the opening of the external auditory meatus were on a horizontal line. Height was measured to the nearest 0.1 cm.

To ensure reliability of the scales, they were calibrated before the onset of the study and at midpoint of the data collection.

### **3.12 Data Collection methods:**

Three data collection methods were used:

1. Body image pictures (silhouettes) to explore perceptions about body weight and body image. This method was chosen because the silhouettes are easier for women to choose from than asking them to give answers about their weight in kilograms.
2. Anthropometric measurements (weight and height) in order to calculate BMI of all participants.
3. Focus group discussions, to explore the perception that thinness is associated with HIV/AIDS. The focus group discussion was seen as an appropriate method of collecting information, about perceptions in this population. This method enables people who share similar characteristics to discuss issues that will not be easily raised in face-to-face interviews because some people are less intimidated in a group by interviewers than in face to face interviews.

### **3.13 Data collection:**

Data was collected during July to September 2005.

To identify women's perceptions regarding actual, desired and ideal body weight.

Body shape drawings (silhouettes) originally developed by Stunkard et al 1983 were used. These have been validated and adapted for use in the South African population (Mciza et al, 2005). Eight drawings ranging from very thin (1) to very obese (8), were presented to participants, who were asked to select a figure that corresponded to the

questions 1) which image would you like to be and 2) which image is healthy and disease free.

To identify women who perceive thinness as being related to HIV/AIDS and those women who do not, the women were shown the 8 drawings and asked to select the one they associated with HIV/AIDS. They were also given an option to say they did not associate any of the drawings with HIV/AIDS.

To compare the two groups in terms of knowledge, beliefs and attitudes about signs and symptoms of HIV/AIDS, two focus group discussions were held with two groups of 8 -10 women in each group separately. One group of those who associate thinness with HIV/AIDS, and the group that did not associate thinness with HIV/AIDS.

Questions discussed included:

1. Most people think that if a person is thin, he/she may be HIV positive, what are your views about this?
2. Do you think people prefer to be overweight so as not to be labelled as having HIV/AIDS?
3. Overweight is one of the risk factors for cardiovascular diseases, do you think people would prefer to be overweight and be at risk for CVD rather than be thin and be associated with HIV/AIDS?

Focus group discussions were facilitated by the principal investigator (PI) a student with 2 research assistants. It was facilitated in Xhosa, a local language. Discussions were recorded on a tape recorder, and notes were also taken. Discussions were continued until saturation was reached, that is until no new information was raised.

Focus group discussions guidelines were used during the discussions to ensure that the important points are discussed.

### **3.14 Validity and reliability:**

Training of fieldworkers ensured standardized data collection procedure. The quality of the data collected was checked daily by the student (PI) (a qualified dietician), and some anthropometric measurements were repeated on randomly selected participant daily to ensure reliability of data. The use of body shape pictures that have been adapted and validated for the South African population, (Mciza et al, 2000) further ensured validity of the data. Multi triangulation (using different methods e.g. qualitative and quantitative methods to collect data, more than one observer to collect, transcribe and analyse the data) further ensured reliability of the data. After analyzing the data collected with focus group discussions, it was discussed with participants to ensure that it is a true reflection of their discussions.

### **3.15 Data Analysis:**

The data cleaning and coding ran concurrently with the data collection and was done by a researcher with experience in data capturing, which helped in eliminating gaps in understanding the data, which could then be followed up immediately. The data was checked for mistakes using double entry to enter the data and only those BMI's that fell between 12 – 60 were included. The Statistical Package of SAS version 8 and Microsoft Excel were used. BMI was calculated using the quatelet index, which is  $\text{weight}/\text{height}^2$ . The BMI was classified as follows:  $<18.5$ = underweight, between  $18.5-24.9$  = normal weight, between  $25-29.9$ =overweight and  $>30$  = obese (WHO, 2000) The images were grouped to make the analysis clearer into four groups as

follows: image 1 and 2 were underweight, image 3 and 4 were normal weight and image 5 and 6 were overweight and image 7 and 8 were obese. Confounding was controlled for and statistical significance was determined.

Focus group discussions were transcribed, translated into English, and analyzed for content by the PI and the two research assistants to ensure validity. Direct quotes from the focus groups were used to illustrate perceptions and attitudes of participants.

### **3.16 Limitations of the study:**

The recruitment was only done in the areas of Site C where there are CHWs. This means that not all the residents had the chance to participate in the study and the results of the study may be biased because the women are from areas that are exposed to CHWs and therefore exposed to more health information than areas without CHWs. The study was conducted during working hours, and although Site C has a very high unemployment rate, those women who were at work during the day are not part of the sample.

### **3.17 Ethics**

The research protocol for this mini-thesis was approved by the Ethics committee of the University of the Western Cape. The rights and welfare of the participants were protected. The participants were guaranteed that all information given would be confidential. Written consent was obtained from all participants. Participants were also assured that they could choose to stop participating at any time.

## **Chapter 4: Results Presentation**

In this chapter the results of the data collected through qualitative and quantitative research methods including the demographic characteristics of the participants will be presented.

### **4.1 Findings of the quantitative data**

#### **4.1.1 Demographic Characteristics of the Sample**

A total of 532 women were visited and recruited and 524 women participated in the study, a response rate of 87%. The age of the women ranged from 16 to 70 years. A large percentage of the women were unemployed (71.6%), 4.6 % had seasonal work and only 7.9% were employed with a mean income of R791 per month, 15.9% were self-employed. Eighty two percent of the women had not had a paying job in the past year and 18% were involved in volunteer work. 39% of the women were married, 38.5% were single, 8.8% were separated, 3.2% divorced and 10% were widows.

Thirty seven percent of the women had attained 7 years of primary school education (grade 1 to grade7), 34.6% between 8-10 years of schooling (grade 8 to grade 10) and 18% had between 11-12 years of schooling (grade11 to grade12). Only 0.6% had tertiary education and 9.5% had never had any formal schooling and were therefore illiterate. The number of people living in the participant's households varied from 1 through to 15 with an average of 5 people per household.

#### **4.1.2 Anthropometric measurements**

Of the 532 women who participated in the study, anthropometry was obtained in 520 women because there were 12 women for whom BMI 's could not be calculated

because they either had a weight value or a height value missing or recorded erratically. The average weight was 79.02 kg and the average height was 1.6m. The average BMI was 31.8, which is above 30, a cut off measure for obesity. Table 1 below presents the anthropometric data of the participants.

Table 1: Anthropometric measurements of participants (n=520):

Variable	Number of women who responded	Mean	Std deviation
Weight (kg)	520	79.017	19.045
Height (m)	520	1.576	0.068
BMI	520	31.839	7.615

Missing values: 12

Figure 1 below shows the actual BMI distribution of the participants. The BMI is classified into the following categories a) underweight = body image 1&2, b) normal weight = body image 3&4, c) overweight = body image 5&6 and d) obese = body image 7&8

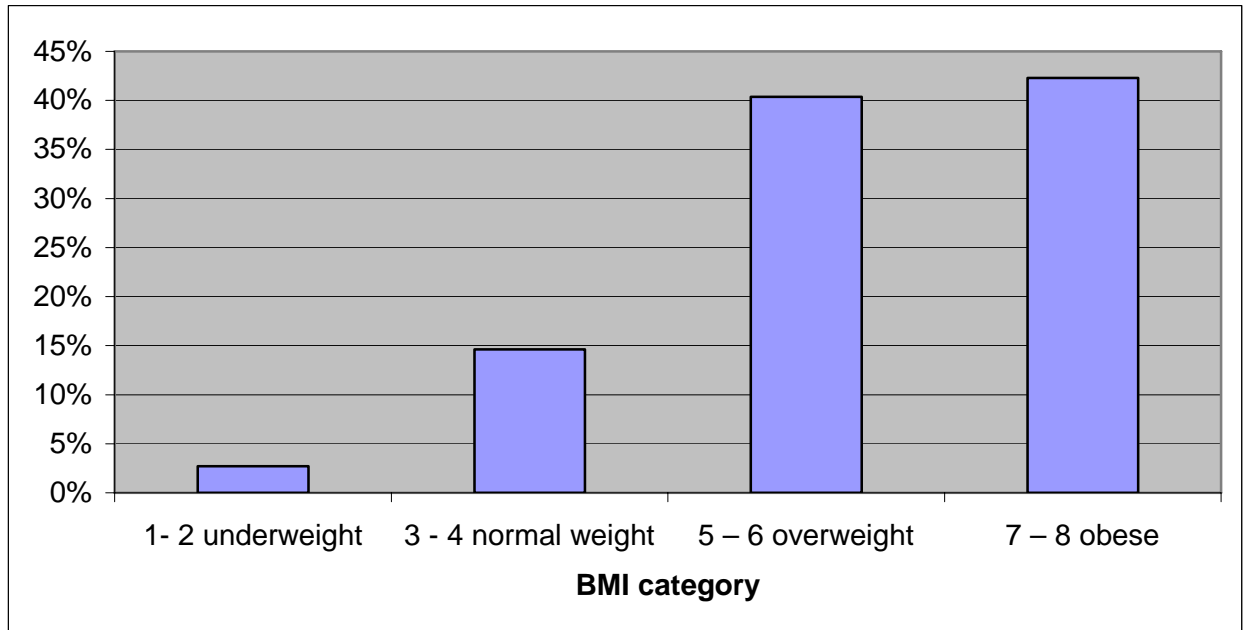


Figure 1: BMI distribution of the population

#### 4.1.3 Perceptions about body image

Participants were presented with eight drawings ranging from very thin (1) to very obese (8), and they were asked to select a figure that corresponded to the (i) image they would like to be, (ii) the image that they thought was healthy and disease free and (iii) the image they associated with HIV/AIDS. Responses are shown in Figure 2.



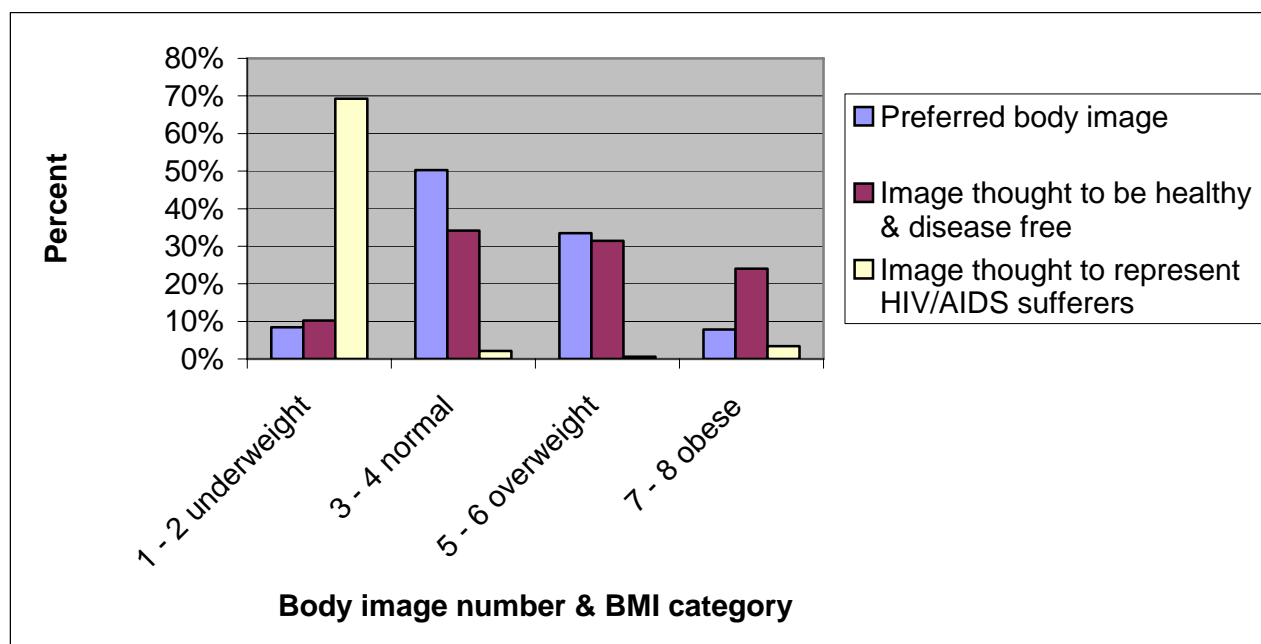


Figure 2: Perceptions of participants about body image

Sixty nine percent of the women associated the underweight image with HIV/AIDS. Only 10.2% associated the same underweight image as healthy and disease free, and 8.4% chose the underweight as the preferred body image. Over fifty percent of the women wanted to be in the normal weight category and 34.2 % of them thought that being in the normal weight category was healthy and disease free. Over a third (33.5%) women preferred to be in the overweight category and 31.4% thought that being overweight was healthy and disease free. Only 7.8% of the women preferred the obese category, while 24% thought that being obese was healthy and disease free. The participants were asked to choose an image that would represent someone with HIV/AIDS and a quarter (25%) of women said that you could not tell that someone has HIV/AIDS by looking at the person and 75% chose the thin figures (results not shown on graph).

The second step in the analysis compared the participant's perceived ideal body image by actual BMI. Participants had to choose an image that they thought represented an

ideal women from a range of body images numbered 1 (thinnest) to 8 (biggest). Their choice was then compared with their actual BMI. The findings are displayed below in Table 2.

Table 2: A comparison of Perceived ideal body image to actual BMI of the women (n=513)

Actual BMI

Category	Underweight BMI < 18.5	Normal weight BMI 18.5 – 24.9	Overweight BMI 25 - 29.9	Obese BMI >30	Total
Underweight	<b>2</b> ( <b>0.4%</b> )	3 (0.59%)	16 (3.12%)	23 (4.48%)	44 (8.58%)
Normal	7 (1.36%)	<b>44</b> ( <b>8.6%</b> )	96 (18.7%)	110 (21.44%)	257 (50.1%)
Overweight	3 (0.59%)	21 (4.09%)	<b>77</b> ( <b>15%</b> )	71 (13.84%)	172 (33.52%)
Obese	2 (0.4%)	7 (1.36%)	18 (3.5%)	<b>13</b> ( <b>2.5%</b> )	41 (8%)
Total	14 (2.72%)	75 (14.6%)	207 (40.3%)	217 (42.3%)	513 (100%)

Two (0,4%) women were underweight and thought that being underweight was ideal, 44 (8.6%) were normal weight and thought that being normal weight was ideal, 77

(15%) were overweight and thought that being overweight was ideal, whilst 13 (2.5%) were obese and happy to be obese. Just over 30% of the women would like to be overweight and of these women 0.59% were underweight, 4.09% were of normal weight, 15% were overweight and 13.84% were obese. Eight percent of the women would like to be obese and of these women 0.4% were underweight, 1.36% were of normal weight, 3.5% were overweight and 2.5% were obese.



## **4.2 Findings of the qualitative data:**

The objective of the qualitative data was to compare the beliefs and attitudes of the group that has a strong association between HIV/AIDS and the risk factors for CVDs and the group that does not.

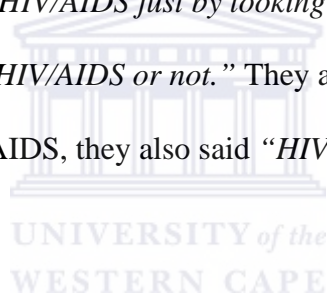
Results were summarised according to questions discussed and will be presented in the next paragraphs.

### **4.2.1 The group that did not associate thinness with HIV/AIDS.**

#### **(Group 1)**

According to this group, the only way one could determine one's HIV status, was through blood testing.

*“You cannot tell that one has HIV/AIDS just by looking at them, only blood testing can confirm whether one has HIV/AIDS or not.”* They also expressed that there was a difference between HIV and AIDS, they also said *“HIV can be cured if caught early but AIDS cannot be cured.”*



#### **Signs and symptoms of HIV/AIDS**

Signs and symptoms of HIV/AIDS raised by the group included involuntary weight loss, swollen glands behind the ears, loss of strength, inability to eat anything, dark pigmentation marks and rashes on skin, sore throat, sores in genital area, madness and diarrhoea. One participant added, *“People with HIV feel and look weak all the time.”*

#### **Do you think people prefer to be overweight so as not to be labelled as having HIV/AIDS?**

Participants felt that even if one has diabetes or tuberculosis, they lose weight, so it is not that if you lose weight you definitely have HIV/AIDS. They however felt that they

would rather be slightly overweight but not obese than to lose weight and let people think they had HIV/AIDS. They also added that some of them were losing weight voluntarily because they belonged to the Healthy Lifestyles club which encouraged them to lose weight by eating less fatty foods and exercising. They were however quick to point out *“You can tell when someone loses weight by choice like us and when they are sick.”* They said the difference was that they were beautiful and *“fresh”* and one participant also added *“our skins are glowing but if you lose weight because you are sick, then your skin becomes dull and you look tired.”*

### **How does one get infected with HIV?**

There were mixed feelings about how one gets infected with HIV. One participant said, *“It is an organism that people are born with, which if one is unlucky then develops into HIV.”* Another added *“You can get it in rivers if you swim naked and the worm-like organisms enter via your genital area.”* Some were certain that one is infected through having sexual intercourse without using a condom with someone who is infected with the virus.

### **It seems as though people are afraid of being associated with HIV/AIDS, what is the reason for this?**

The group agreed that in their community HIV/AIDS still carries a very bad stigma. *“In this community people with HIV/AIDS are seen as people who were sleeping around and no one wants people to say filthy things like that about them.”* Another participant added, *“People think that if you have the disease then you are going to die soon it is like a death sentence.”*

### **Overweight is one of the risk factors for cardiovascular**

**Diseases, do you think people would prefer to be overweight and be at risk for CVD rather than be thin and be associated with HIV/AIDS?**

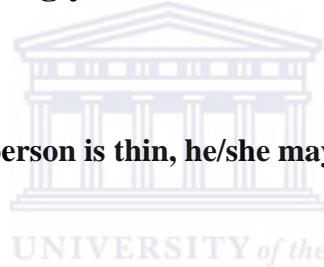
The group was certain that being overweight is linked to high blood pressure and diabetes, however it was desirable to be big because as a women you look dignified, people can see that you have enough money to feed yourself and your family and that women in the traditional way are beautiful when they have big hips. *“I would rather be round and pretty than to be thin because people will think I have AIDS!”*

*“It is part of our culture that women should be round with big hips. Thin women are valued less than big women in our culture”*

### **4.2.2 The group that strongly associated thinness with HIV/AIDS.**

**(Group 2)**

**Most people think that if a person is thin, he/she may be HIV positive, what are your views about this?**



Participants felt that a large number of people in the community were infected with HIV/AIDS and that as a result these people were very thin. *“these days, most people especially the youth are losing weight because of the HIV/AIDS that is so abundant in this community, everyday you hear this one and that one also have the disease.”*

**Is there no other disease that would cause people to loose weight?**

It was mentioned that diabetes causes weight loss but that they had never heard of young people with diabetes and that the HIV/AIDS was affecting mostly young people with the exception of a few adults. *“You can’t have diabetes at a young age but you lose weight because of AIDS until it kills you”*

**So then, would you say people prefer to be overweight than to lose weight and be associated with HIV/AIDS?**

This group felt that being overweight protected them from being stigmatised in the community and that it was desirable to be overweight than to be thin and associated with HIV/AIDS. *“Yes, because it is not pleasant when rumours and gossip goes around the neighbourhood about being positive ”* one participant exclaimed with many nodding as she spoke.

**How does one get infected with HIV?**

The majority thought that infection occurred through having unprotected sex with a prostitute or someone who has been infected with the virus. One participant related, *“I heard that there were oranges a couple of years back that were injected with the virus and that all people who ate from those oranges would be infected and end up dying”*.



**What are some of the signs and symptoms of HIV/AIDS?**

They all agreed that infected people change in the way they look because their mouths become dry, the skin becomes dry and has pimples and lesions that take a long time to heal. The others added that the hair becomes dull and very weak; diarrhoea occurs often and often people with HIV/AIDS lack an appetite for food.

**Overweight is one of the risk factors for cardiovascular diseases, do you think people would prefer to be overweight and be at risk for CVD rather than be thin and be associated with HIV/AIDS?**

The response was a definite yes and once again it was said that people gossip and spread ugly rumours about people who are losing weight, that they have AIDS and that they have been promiscuous and that brings shame on the person and the family name. One participant added *“even if you have AIDS and you suddenly gain weight then people think you are well again, I know a girl, she is fat and pretty now you cannot say she was sick.”*





### 4.3 A comparison of knowledge, attitudes and beliefs between the two groups

Table 3: Table of differences and similarities between the two groups

	Group with strong association between thinness and HIV/AIDS (group1)	Group with no association between thinness and HIV/AIDS (group2)
Diagnosis	By looking at the person	Only through blood testing
Symptoms	Dry mouths, dry skin with pimples, lesions that take a long time to heal, hair is dull and very weak, diarrhoea and lack of appetite	Involuntary weight loss, swollen glands behind the ears, loss of strength, inability to eat anything, dark pigmentation marks and rashes on skin, sore throat, sores in genital area, madness and diarrhoea
Desire to loose weight	None because of stigma associated with thinness	None because of stigma associated with thinness

Table 3 shows differences in the diagnosis and in some of the symptoms of HIV/AIDS between the two groups as well as similarities in the perceptions about weight loss. This chapter presented the results of both the qualitative and the quantitative data that was gathered for the study. These will be discussed in the next chapter.

## Chapter 5: Discussion

The aim of this study was to explore the perceptions that a thin person is infected with HIV/AIDS and the effects of these perceptions on the women's body image.

Forty percent of women who participated in the study were found to be overweight (BMI >24.9) and 42.3 % were obese (BMI > 29.9). Only 0.4% was underweight (BMI <20) Similarly, a national study of 1998 (Steyn,et al, 2001) found that few South African women were underweight (5.6%), while a large percent 56.6% were overweight and obese (Puoane et al, 2002).

There was a high prevalence of overweight and obesity in this community even though the unemployment rate was very high probably due to the nutrition transition leading to consumption of high fat , low carbohydrate and fibre diets (Bourne,1996). Obesity has been emerging as a significant public health problem in developed countries and even in developing countries especially those in economic transition which includes South Africa (Popkin, 1994). Similar findings have been reported by de Swart et al, (2004), who, in a livelihood, poverty and food security study of the poor in Cape Town, found a high prevalence of obesity (71%) among the women. These findings were supported by those of Puoane et al, (2005), who in a similar population reported a high prevalence (95.5%) of obesity among CHWs, who are residence of Khayelitsha township. These findings also confirm those of Chopra and Puoane, (2003), who reported that although CHWs were aware that consuming a diet rich in fat may lead to high blood pressure and diabetes, they were consuming these food because they wanted to be round so that people may not realize that they are poor.

The weight of the women in this study was not significantly associated with age or educational status, which is contrary to the findings of Puoane et al, (2002) who found that older women had higher BMI levels as well as those who had 1-12 years of schooling. The findings of this study are also contrary to the findings of Sandquist and Johansson, (1998), who also found that women who had a lower level of education tended to have higher BMI levels. This is probably due to the fact that the women in this study came from the same socio-economic background and shared similar environmental and cultural background, which have been reported to be a contributory factor in the development of obesity (Puoane et al, 2002)

Forty percent and 42.3% of the women in the current study were in the overweight and obese categories respectively whilst 33.5% preferred being overweight and 7% preferred being obese. A large percent of women thought that an ideal woman looked best when she was overweight (BMI 25 – 29.9). Similar findings have been reported by Parker, ( 1995), who investigated perception of beauty and body image among Black American girls and found that African American girls' perceptions of body image and beauty differed from that of White American girls (Parker et al., 1995). To African American girls, beauty is judged on the basis of "how one moves" rather than on what one weighs. In addition, a beautiful woman is the one who accepts who she is, and believes in herself. To black women, body weight is not the issue but rather appearance and how clothes fit. Similarly, Kumanyika, (1993), who studied beliefs and attitudes of African American women toward body weight, reported that overweight women perceived themselves as attractive. Among black South African women similar findings were reported by Puoane et al, (2005), who found that CHWs

believed that “big is beautiful”. They also believed that if one has big hips and arms, they would not be blown away by the wind, and they would be able to stir big pots with ease and also that they would be treated with dignity and respect by the community.

More than 40% perceived a large body size (BMI >25) as representing individuals who are healthy and free from disease. In addition, more than thirty percent thought being overweight was healthy and 24% thought that being obese was healthy. On the other hand, a thin body size was seen as representing individuals who are affected by HIV/AIDS.

The high percentage of women who are and prefer to be overweight and who believe that being overweight is healthy has also been documented by a number of researchers, who found that being overweight had many positive connotations such as being affluent, happy, well taken care of by the husband, in African communities (Brewis et al, 1998; Rasheed, 1998; Mvo et al, 1999 & Puoane et al, 2005). The results of this study support these findings. The women in this study also expressed the positive attributes that were attached to being overweight and obese and these pose a challenge for the prevention and management of NCDs.

Obesity has been shown to be a risk factor for NCDs and it has to be brought under control to contain the NCDs epidemic in South Africa (Puoane & Hughes, 2005). A similar situation exists in the United States of America where obesity is on the increase among all adult Americans, although the African American women seem to be worst of than their white counterparts. NHANES III showed a prevalence of

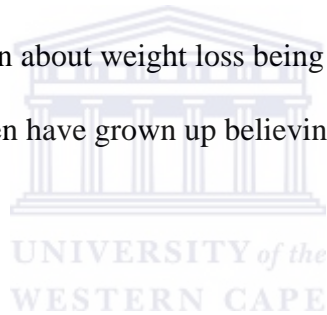
obesity of 65.8% among black women and 49.2% among white women. Although weight loss has been reported to be beneficial in reducing the prevalence NCDs, black women have been reported to be less successful and participate less than their white counterparts in weight loss efforts, with high dropout rates and are unlikely to keep the weight they have lost of (Goldstein, 1992; Horm & Anderson, 1993 & Williamson et al, 1992)

The WHO, ( 2003) developed a global policy for the prevention and treatment of NCDs, which includes diet and physical activity. The policy aims to promote healthy lifestyles by promoting the increase of the consumption of fruit and vegetables, limiting the amount of sugar, fats and salt added to food, increasing the availability and affordability of healthy foods, increasing physical activity, promoting simple labelling of foods as well as maintenance of healthy body weights. This study has proven that black women have cultural barriers to adopting healthy behaviours that poses a serious challenge to the health professionals who are supposed to implement this WHO policy.

For the community to actively participate in health promotion and disease prevention programmes, it is important for the health professionals to understand some of the beliefs, perceptions and attitudes that are valued by the community so as to be able to plan and implement programmes that are suited to the different community needs. In the current study 75% of the women had a strong association of thinness between HIV/AIDS whilst only 25% had no association of thinness and HIV/AIDS.

It was found in the qualitative part of this study that the group with a strong association of thinness and HIV/AIDS felt that you could diagnose a person with the

disease by looking at the person whilst the other group felt that you could only be certain of one's diagnosis only through blood testing. Both groups knew that some people loose weight due to other reasons for example voluntarily and also due to other diseases like diabetes and tuberculosis but the group with a strong association of thinness and HIV/AIDS felt that in young people the only reason they would lose weight would be if they were infected with the disease. This is similar to the belief Americans had around the 20<sup>th</sup> century when tuberculosis (TB) was rife and strongly associated with thinness (Grivetti, 2001). For many years in South Africa people with TB have been identified by the weight loss including other signs and symptoms and perhaps this is part of the reason for weight loss to be associated with disease. The theory of social learning (Stice,1998) which focuses on learned behaviours can perhaps explain this perception about weight loss being so closely linked to ill-health because this is what the women have grown up believing as a result of the belief of their parents.



Much effort has been put on programmes that are meant to teach South African communities about HIV/AIDS, yet in this community 69.3% of the women who participated in this study think that one can tell by looking at a people whether or not they have HIV/AIDS. There is still a great stigma attached to being infected with the disease in this community and this is evident because the participants said they would rather be overweight and obese than to loose weight and have people think that they too have been infected. Being infected was strongly associated with being promiscuous but surprisingly there was a lot of misinformation about the route of infection with two stories emerging, one about oranges being injected with blood containing the virus and the other about organisms that enter people who swim in

rivers. These were spread via word of mouth and perhaps this mode of spreading information should be exploited by giving women the correct information in simple clear understandable language so that they can spread the correct information.

It is therefore clear that the majority of these black women are not keen to adhere to lifestyle and behaviour modification programs such as weight loss because of the stigma of HIV/AIDS attached to being thin. In light of these findings the study hypothesis is therefore accepted as true.



## **Chapter 6: Conclusion and Recommendations**

It is evident from the research that the urbanised black women in this community have misconceptions about body image. The majority of the women in the study associated thinness with HIV/AIDS as a result they preferred to be overweight than to be stigmatised as having HIV/AIDS. Even those participants who knew that obesity was a risk factor for NCDs, still preferred to be overweight or obese than to lose weight and risk being associated with HIV/AIDS.

South Africa will continue being faced with the double burden of obesity and HIV/AIDS unless health education messages are formulated in such a way that they include the prevention of all diseases and not HIV or NCDs separately. Health promotion messages should be aimed at promoting healthy lifestyles. The poor should be educated that they do not need to prove that they can afford to feed themselves by being overweight and many of their beliefs that are detrimental to their health should be dispelled. Culturally sensitive programmes that are suited in terms of the content of the message as well as being cost effective for the women are needed. For the health care professionals who work with these communities, it is important to understand the beliefs, attitudes and perceptions that exist within the communities.

As part of the school curriculum, children should be taught from a young age about the prevention of NCDs so as to counteract the strong cultural influences that they may be exposed to in their communities because obese children are likely to become obese adults.



In this community it has been proven that women are still not sure about the way HIV is transmitted and it still carries a great stigma for those who have been infected and their families, therefore part of the health promotion programmes should begin by evaluating the clarity of messages that are sent out to the people and evaluate the medium (television, posters and billboards) used to send these messages.

To address this problem a multi disciplinary team effort is needed which should include changes in policy making. This should include changes in the environment, making it less obesogenic and conducive to physical activity (making space available for physical activity) and dietary changes (making healthier food choices available even in spaza shops and school tuck shops).



**References:**

Aids in Africa. Facts, Info and Encyclopaedia article.2005

<http://www.absoluteastronomy.com/encyclopedia/a/ai/aidsinafrica3.htm>

(Date last accessed 29 September 2005)

Arroyo, P. ; Avila-Rosas, H. ; Fernandez, V.; Casanueva, E. & Galvan, D. (1995) Parity and the prevalence of overweight. *Int J Gynaecology and Obstetric*, 48:269-272

Bouchard, C. & Perusse, L. (1988) Heredity and body fat. *Annual Review of Nutrition*, 8:259-277

Bourne, L.T. (1996) Dietary intake in an urban African population in South Africa – with special reference to the nutrition transition. Thesis for Doctoral Philosophy. University of Cape Town, South Africa.

Bourne, L.T. & Steyn, K. (2001) Rural/Urban Nutrition – related differentials among adult population groups in South Africa, with special emphasis on the Black population. *South African Journal of Clinical Nutrition*, 13(1)

Bradshaw, D. ; Groenewald, P. ; Laubscher, R.. ; Nannan, N. ; Nojilana, B. ; Norma, R. ; Pieterse, D. & Schenieder, M. (2003) Initial burden of disease estimate for South Africa, 2000. Cape Town:

South African Medical Research Council.

<http://www.mrc.ac.za/bo/bod.html>

(Date last accessed 18 June 2005)

Brewis, A. A. ; McGarvery, S. T. ; Jones, J. & Swinburn, B.A. (1998) Perceptions of body size in Pacific Islanders. *International Journal of Obesity and Related Metabolic Disorders*, 22(2): 185-189

Burns, C. (1993) The role of nutrition education in weight loss therapy. PhD Thesis, Department of Medicine, the University of Sydney, Sydney.

Chopra, M. & Darnton-Hill, I. (2004) Tobacco and obesity epidemics: not so different after all? *BMJ*, 328: 1558 – 1560

Clark, R. (1999) Ethnic differences in body image attitudes and perceptions among women infected with HIV *Journal of the American Dietetics Association*, 6:735-738

Couper, I. D. (2004) Reframing the HIV/AIDS debate in developing countries: setting the scene. *Rural Remote Health*, 4(2): 280



Davidson, K. K.; Markey, C. N. & Birch, L. L. (2000) Etiology of body dissatisfaction and weight concerns among 5 year old girls. *Appetite*, 35:143-151

Donnelly, J. E. ; Smith, B. ; Jacobson, D. J. ; Kirk, E.; Dubose, K. ; Hyder, M. et al. (2004) The role of exercise for weight loss and maintenance. *Best Pract Res Clin Gastroenterology*, 18:1009-1029

Dyer, A.R.& Elliot, P. (1989) The INTERSALT study: relations of body mass index to blood pressure. INTERSALT Co-operative Research Group. *Journal of Human Hypertension*, 3:229-308

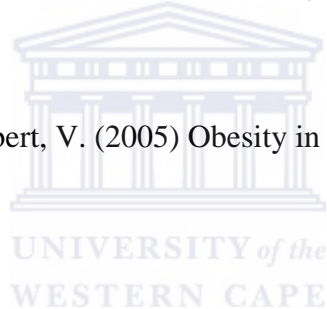
Field, A. E.; Cheung, I. ; Wolf, A.M.; Herzog, D.B.; Gortmaker, S. L. & Colditz, G. A.(1999) Exposure to the mass media and weight concerns among girls. *Pediatrics*, 103 (3):E36

Fox, F.W. (1940) Diet in the urban locations as indicated by the survey. In : M Janisch (ed). *A study of African income and expenditure in 987 families in Johannesburg*. City of Johannesburg, Department of Non-European and Native Affairs.

Gardener, G. & Halweil, B. (2000) Underfed and overfed: the global epidemic of malnutrition worldwide. Washington, DC: *Worldwide Watch*

Garfinkel, L. (1985) Overweight and cancer. *Ann Intern Med*,103:1034-1036.

Goedecke, J.H. ;Jennings, C. & Lambert, V. (2005) Obesity in South Africa. *Chronic Diseases of Lifestyle since 1995-2005*. Chapter 7



Grivetti, L. (2001) Psychology and cultural aspects of energy. *Nutrition Review*, 59:S5-S12

Hubert, H.B. ; Feinleib, M. ; McNamara, P.M. & Castelli, W.P. (1983) Obesity as an independent risk factor for cardiovascular disease: a 26-year follow-up of participants in the Framingham Heart Study. *Circulation*, 67:968-977.

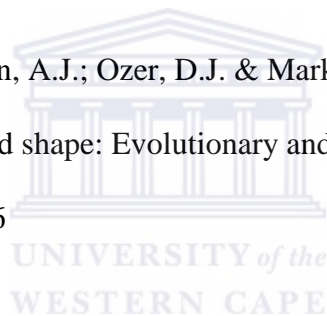
International Association for the study of Obesity (IASO) (2003-2004) *IASO Annual Review*, London: IASO

Khan, M.K. & Bowman, B. (1999) Obesity: a major public health problem. *Annual Review of Nutrition*, 19: xiii-xvii

Kruger, H.S.; Venter, C.S.; Voster, H.H. & Margetts, B.M. (2002) Physical inactivity is the major determinant of obesity in black women in the North West Province, South Africa: the THUSA Study. *Transition and Health During Urbanisation of South Africa. Nutrition*, 18:422-427

Kumanyika, S.K. (1993) Special issues regarding obesity in minority populations. *Ann Intern Med*, 19:650-654

Markey, C.N. ; Tinsley, B.J. ;Eriksen, A.J.; Ozer, D.J. & Markey, P.M. ( 2002) Preadolescents' Perceptions of Females'body size and shape: Evolutionary and Social learning perspectives. *Journal of Youth and Adolescence*, 31 : 137-146



Mciza, Z.; Goedecke, J.H.; Steyn, N.P. ; Charlton, K.; Puoane, T. ; Meltzer, S. ; Levitt, N.S. & Lambert, E.V. (2005) *Public Health Nutrition*, 8 (5):509-519

Mollentze, W.F.; Moore, A.; Joubert, G.; et al. (1993) Cardiovascular risk factors in the black population of Qwaqwa. *South African Journal of Clinical Nutrition*, 6:50-51

Mvo, Z.; Dick, J. & Steyn, K. (1999) Perceptions of overweight African women about acceptable body Size of women and children. *Curationis*, 22:27-31

Overgaard, D.; Gamborg, M.; Gyntelberg, F. & Heltmann, B.L.(2004) Psychological workload is associated with weight gain between 1993 and 1999: analyses based on the Danish Nurse Cohort Study. *Int J Obes Relat Metab Disord*, 28:1072-1081

Parker,S.; Nichter,M.; Nichter,M.; Nuckovic,N.; Sims,C. & Ritenbaugh,C. (1995) Body image and weight concerns among African merican and White adolescent females: Differences that make a difference. *Human Organization Publications*,54 No 2

Pi-Sunyer, FX. (1990) Obesity and diabetes in blacks. *Diabetes Care*, 13:1144-1149.

Popkin, B. (2001) The Nutrition transition and obesity in the developing world. *Journal of Nutrition*,131: 871-873

Popkin, B.M. (1994) The nutrition transition in low-income countries: an emerging crisis. *Nutrition Reviews*, 52 (9):285-295

Puoane, T.; Bradley, H. & Hughes, G. (2005) Obesity among black South African women. *Human Ecology Special*, 13: 91-95

Puoane, T.; Fourie, J.M.; Shapiro, M.; Rosling, L. & Tshaka, N. (2005).”Big is beautiful” – an exploration of urban black women in South Africa. *SAJCN*, 18:6-15

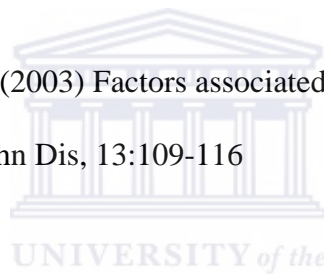
Puoane, T. & Hughes, G. (2005) Impact of the HIV/AIDS pandemic on non-communicable disease Prevention. *SAMJ*, 95:28-31

Puoane, T.; Steyn, K.; Bradshaw, D. et al. (2002) Obesity in South Africa: The South African demographic and health survey. *Obesity Research*, 10: 1038-1048

Rasheed, P. (1998) Perception of body weight and self-reported eating and exercise behavior among obese and non-obese women in Saudi Arabia. *Public Health*, 112(6):409-414

Renzaho, A.M.N. (2003) Fat, rich and beautiful: changing socio-cultural paradigms associated with obesity risk, nutritional status and refugee children from sub-Saharan Africa. *Science Direct: Health & Place*, 10 (1): 105-113

Senekal, M.; Steyn, N.P. & Nel, J.H. (2003) Factors associated with overweight / obesity in economically active South African populations. *Ethn Dis*, 13:109-116



Singh, D. (1993) Adaptive significance of female physical attractiveness : role of waist-hip ratio. *J. Pers. Soc. Psychol.*, 65 (2): 293-307

Slap, G.B.; Khalid, N.; Paikoff, R.L. & Brooks-Gunn, J. (1994) Evolving self image, pubertal manifestations and pubertal hormones: Preliminary findings in young adolescents girls. *J. Adolesc. Health*, 15 (4 ):327-335

Stephensen, J.; Kumanyika, S. & Keil, J.E. (1994) Attitudes toward body size and dieting: differences between elderly black and white women. *American Journal of Public Health*, 84:1322-1325

Steyn, K.; Gaziano, T.A.; Bradshaw, D.; Laubscher, J. & Fourie, J.M. (2001) Hypertension in South African adults: Results from the Demographic Health Survey, 1998. *Journal of Hypertension*, 19 (9):1717-1725

Steyn, K. ; Jooste, P.L.; Bourne, L.; Fourie, J.M.; Badenhorst, C.J.; Bourne, D.E. ; Langenhoven, M.L.; Lombard, C.; Triter, H. ; Katzenellenbogen, J.; Marais, M. & Oelofse, A. (1991) Risk factors for coronary Heart disease in the black population of the Cape Peninsula. The Brisk Study. *South African Medical Journal*, 79:480-485

Steyn, K. ; Katzenellenbogen, J.M.; Lombard, C.J. & Bourne, L.T. (1997) Urbanization and the risk for chronic diseases of lifestyle in the black population of the Cape Peninsula, South Africa. *Journal of Cardiovascular Risk*, 4:135-142

Stice, E. (1998) Modelling of eating pathology and social reinforcement of the thin-ideal predict onset of bulimic symptoms. *Behav. Res. Ther.*, 36 (10):931-944

Stunkard, E.T.; Sorenson, T. & Schlusinger, T. (1983) Use of the Danish adoption register for the study of obesity and thinness. In Kelly, S.S.; Rowland, L.P.; Sidman, R.L.; Matthys, S.W. Ed. *Genetics of Neurological and Psychiatric Disorders*. New York: Raven Press:115-129.

Sundquist, J. & Johansson, S. (1998) The socio-economic status, ethnicity and lifestyle on body mass index in a longitudinal study. *International Journal of Epidemiology*, 27,1:57-63



The Social Economy of Khayelitsha (2002), Demographic Information

<http://www.local.gov.za/DCD/ledsummary/khayelitsha/socialeconomy.html>

( Date last accessed July 2006)

World Health Organisation. Physical Status: The use and interpretation of anthropometry. (1995)

Technical Report Series 854. Geneva, Switzerland, World Health Organisation.

World Health Organisation. (2000) Obesity: preventing and managing the global epidemic. World Health

Organisation Technical Report Series : 894 . Geneva, Switzerland, World Health Organisation.



**CONSENT FORM:**

I..... am willingly taking part in the Healthy  
Lifestyles Community Survey of the School of Public Health in The University of  
The Western Cape. I know that I can choose to withdraw at any time.

DATE:



**Focus group discussion Guide:**

What is HIV/AIDS?

What are the signs and symptoms of HVI/AIDS?

Do you think people prefer to be overweight so as not to be labelled as having HIV/AIDS?

How does one get infected with HIV?

Are people afraid of being associated with HIV/AIDS and why?

Overweight is one of the risk factors for CVD, do you think people would rather be Overweight than to be thin and associated with HIV/AIDS?



**COMMUNITY SURVEY 2005****SECTION 1****Demographics**

1. Date of Birth: (dd/mm/yy)

2. Sex

1=Male 2=Female

3. Age

..... years

4. First, are you married, separated, divorced, widowed or have you never been married?

Married	1
Separated	2
Divorced	3
Widowed	4
Never been married	5

5. Employment status

Employed	1
Unemployed	2
Self-employed	3
Temporal employment	4

6. Household income per month

R

7. Education level

What is the highest standard you have passed at school?

Never went to school.	1
Is still at school	2
Standard 3 or less	3
Standard 5	4
Standard 6-8	5
Standard 9-10	6
Tertiary diploma / degree	7
Other	8

8.1 Did you work for pay during the past year?

1=Yes 2= No

8.2 Did you do volunteer work during the past year?

1=Yes 2= No

Office

--

--










Vegetables	More=1	Less=2	Same=3	Don't eat
Fatty food	More=1	Less=2	Same=3	Don't eat
salty food	More=1	Less=2	Same=3	Don't eat
Sweet food	More=1	Less=2	Same=3	Don't eat

20. After moving to the city did you ever feel lonely or isolated

1=Yes lonely	2=Yes isolated	3=Not at all
--------------	----------------	--------------

21. After moving to the city did you ever feel that you were discriminated because of the following

1= Colour	2=Gender	3=Education
-----------	----------	-------------

22. When was that?

.....

23. Do you think moving to the city made your life better in terms of

Poverty	1=Yes	2=No
Friends	1=Yes	2=No
Relationships with other people	1=Yes	2=No
Relationships with other family members	1=Yes	2=No

24. Did your weight change since you moved to the city

1=Yes I gained	2= Yes I lost	3= No change
----------------	---------------	--------------

25. Why do you think your weight changed?

More Happy	1
Less happy	2
I don't know	3

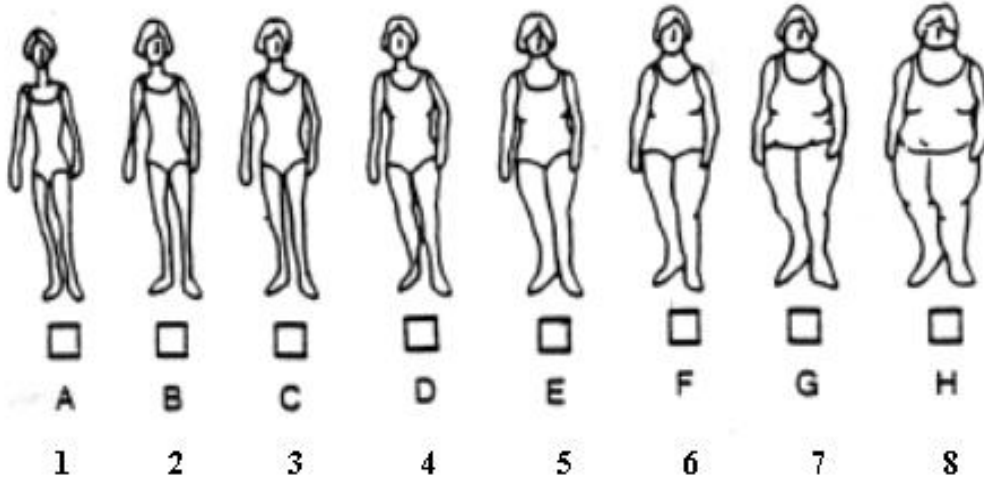
26. What problems have you experienced since moving that have caused you stress

Competition/ Materialistic	1=Yes	2=No
Less Sharing/ Individualistic	1=Yes	2=No
Cost of things/ food	1=Yes	2=No

**Issues about body weight or perceptions**

27. Which of the following images would you say belongs to someone who HIV/AIDS positive

Figure 1b.

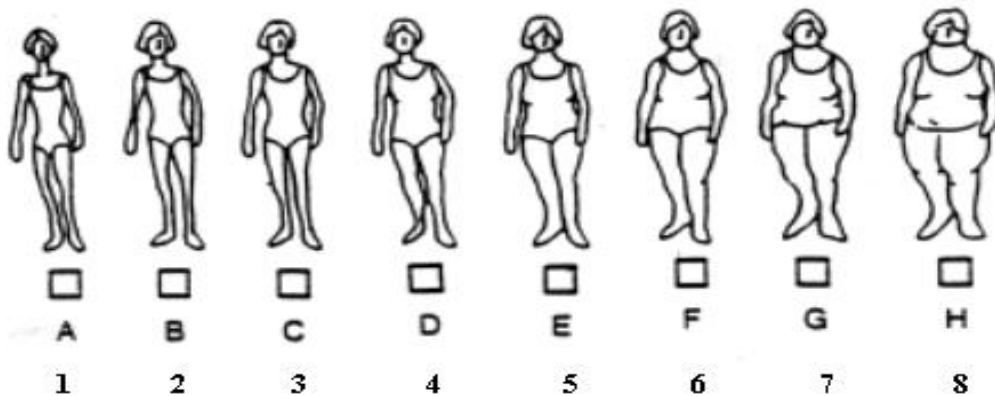


9= Cannot tell



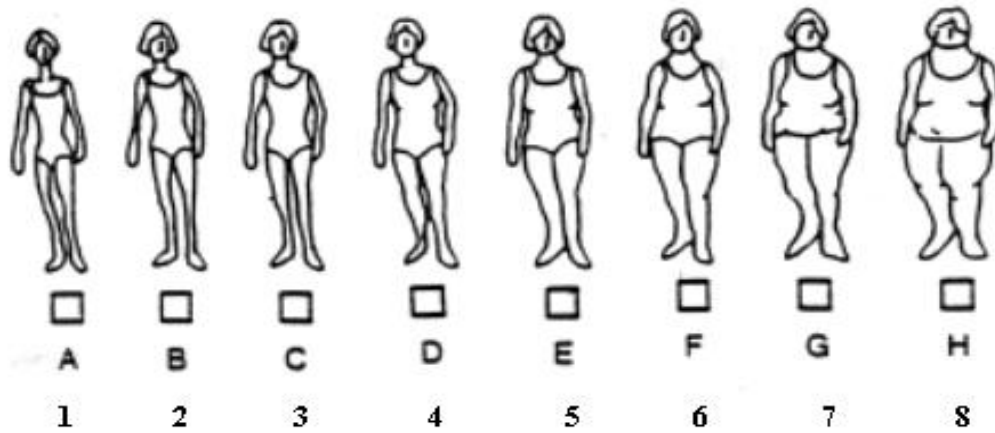
28. Which of the images would you like to be?

Figure 1b.



29. Which of the images is the most healthy and free from disease?

Figure 1b.



**SECTION 2**  
**Medical History**

1. How do you rate your overall health?

Very good (almost never sick)	1
Good (sick for about 2 weeks last year)	2
Fair (sick for about 4 weeks last year)	3
Poor (often sick)	4
Very poor (mostly sick)	5

2. Have you ever had any of the following diseases in the past year?

Tuberculosis	1=Yes	2= No
ARD (Acute respiratory diseases of the lungs)	1=Yes	2= No
Bad coughs	1=Yes	2= No
Asthma	1=Yes	2= No
Cancer	1=Yes	2= No
Diabetes mellitus	1=Yes	2= No
High blood pressure	1=Yes	2= No
Heart disease	1=Yes	2= No
Stroke	1=Yes	2= No



Bone disease	1=Yes	2= No
--------------	-------	-------

### **Physical Activity**

1. How many minutes a day do you usually walk from work, school or shopping/ going to the shop?

Less than 5 minutes	1
At least 5 but less than 15 minutes	2
At least 15 but less than 30 minutes	3
At least 30 but less than 45 minutes	4
At least 45 minutes	5

2. During leisure time, how often did you walk for at least 15 minutes at a time

Less than once a month	1
Once a month	2
2-3 times a month	3
Once a week	4
More than once a week	5

3. During a usual week, how often do you watch television?

Less than 1 hour a week	1
At least 1 hour a week but less than 7 hours a week	2
At least 1 hour a day but less than 2 hours a day	3
At least 2 hours a day but less than 4 hours a day	4
4 or more hours a day	5

4. In comparison with other men (women) of your age, do you think your work (volunteer work) is physically much lighter, lighter, the same as, heavier, or much heavier?

Much lighter	1
Lighter	2
The same as	3
Heavier	4
Much heavier	5

5. After work are you physically tired

Never	1
Seldom	2
Sometimes	3
Often	4
Always	5

6. During the week how much time did you spend

preparing meals or cleaning up from meals?

Less than ½ hour per day	1
At least ½ hour but less than 1 hour per day	2
At least 1 hour but less than 1 ½ hours per day	3
At least 1 ½ hours but less than 2 hours per day	4
2 or more hours per day	5

7. During the week how much time did you spend doing major cleaning activities such as shampooing carpets, scrubbing floors, washing windows etc.

Less than once a month	1
Once a month	2
2-3 times a month	3
Once a week	4
More than once a week	5

8. During the week how much time did you spend doing routine cleaning such as dusting, laundry, vacuuming, changing bed sheets or grocery shopping?

Less than once a month	1
Once a month	2
2-3 times a month	3
Once a week	4
More than once a week	5

9. During the week how much time did you spend doing heavy outdoor work such as chopping wood, shovelling, etc

Less than once a month	1
Once a month	2
2-3 times a month	3
Once a week	4
More than once a week	5

10. During the past year did you participate in any of these activities or in any other similar activities not included on the list?

Yes	1
No	2

11. How often did you play sports or exercise during the past year?

Never or less than once a month	1
---------------------------------	---

Once a month	2
2-3 times a month	3
Once a week	4
More than once a week	5

12. In comparison with others of your own age do you think your recreational activity is much less, less, the same as more, or much more?

Much Less	1
Less	2
Same as	3
More	4
Much more	5

### **Social Support**

1. How many close friends do you have (people you feel at ease with, can talk to about private matters, and can call on for help)?

None	1
1 or 2	2
3 to 5	3
6 to 9	4
10 or more	5

2. How many relatives do you have that you feel close to?

None	1
1 or 2	2
3 to 5	3
6 to 9	4
10 or more	5

3. How many of these friends or relatives do you see at least once per month?

None	1
1 or 2	2
3 to 5	3
6 to 9	4
10 or more	5

4. Do you belong to any social, recreational, work, church or other community groups?(For example, social clubs, groups, church choir, exercise groups, PTA, scouts, charity or community service)

Yes	1
No	2

5. What is the total number of groups to which you belong? .....

### **Approach to life**

1. In general, how often do you attend the main worship service of your church or otherwise participate in organizational religion (such as watching services on TV, listening to services on the

radio, participating in Bible study groups, etc.)?

Nearly every day	1
At least once a week	2
A few times a month	3
A few times a year	4
Less than once a year	5
Not at all	6

2. What is true about your family?

We pray together	1=Always	2=Some-times	3=Never
We eat together	1=Always	2=Some-times	3=Never
We go to church together	1=Always	2=Some-times	3=Never

### **Health Care Access and Utilization**

1. Is there a particular place that you usually go to when you are sick or need advice about your health?

Yes	1
No	2

2. What kind of place is it that you usually go?

Clinic	1
Hospital	2
Doctor's office	3
Community health worker	4
Traditional healer	5

3. Thinking about the place you usually go for help with your medical problems, in general, how much do you trust them to take good care of you? Do you trust them

Very much	1
Somewhat	2
Not very much	3
Not at all	4

4. Have you seen a dentist in the past 12 months?

Yes	1
No	2
Don't know	3

5. When was the last time you went to a doctor or other health professional for a routine physical exam or general check-up; that is when you were not sick or pregnant?

Within the past year	1
At least 1 year but less than 2 years ago	2
At least 2 years but less than 4 years ago	3
5 or more years ago	4
Never	5

6. Overall, how hard has it been for you to get health services you have needed?

Very hard	1	<input type="checkbox"/>
Fairly hard	2	<input type="checkbox"/>
Not too hard	3	<input type="checkbox"/>
Not hard at all	4	<input type="checkbox"/>

7. Are you currently covered by Medicaid or public aid?

Yes	1	<input type="checkbox"/>
No	2	<input type="checkbox"/>

### Food frequency

1. What type of milk do you drink?

Full cream milk	1	<input type="checkbox"/>
2% milk	2	<input type="checkbox"/>
Skim milk	3	<input type="checkbox"/>
Powder milk	4	<input type="checkbox"/>

2. What type of beverage do you drink?

Coffee	1	<input type="checkbox"/>
Tea	2	<input type="checkbox"/>
Rooibos tea	3	<input type="checkbox"/>

3. How much sugar do you add to you coffee?

1/2 tsp	1	<input type="checkbox"/>
1 tsp	2	<input type="checkbox"/>
2 tsp	3	<input type="checkbox"/>
more than 2 tsp	4	<input type="checkbox"/>

4. What type of bread do you eat?

White	1	<input type="checkbox"/>
Brown	2	<input type="checkbox"/>
Wholewheat	3	<input type="checkbox"/>
Home-made	4	<input type="checkbox"/>
Other	5	<input type="checkbox"/>

5. Wat type of spread do you use on your bread?

Butter	1	<input type="checkbox"/>
Hard brick margarine	2	<input type="checkbox"/>
Soft(Tub) margarine	3	<input type="checkbox"/>

6. Do you eat fruit?

Yes	1	<input type="checkbox"/>
No	2	<input type="checkbox"/>

6.1 How often do you consume fruit?

Once a day	1	<input type="checkbox"/>
------------	---	--------------------------

Twice a day	2	<input type="checkbox"/>
More than 3 times a day	3	<input type="checkbox"/>
Once a week	4	<input type="checkbox"/>

7. Do you eat vegetables?

Yes	1	<input type="checkbox"/>
No	2	<input type="checkbox"/>

7.1 How often do you consume vegetables?

Once a day	1	<input type="checkbox"/>
Twice a day	2	<input type="checkbox"/>
More than 3 times a day	3	<input type="checkbox"/>
Once a week	4	<input type="checkbox"/>

8. How often do you eat food such as:

A. Tripe (pense)

1-3 times a week	1	<input type="checkbox"/>
4-7 times a week	2	<input type="checkbox"/>
Once a month	3	<input type="checkbox"/>
Never	4	<input type="checkbox"/>

B. Red meat:

1-3 times a week	1	<input type="checkbox"/>
4-7 times a week	2	<input type="checkbox"/>
Once a month	3	<input type="checkbox"/>
Never	4	<input type="checkbox"/>

C. Chicken:

1-3 times a week	1	<input type="checkbox"/>
4-7 times a week	2	<input type="checkbox"/>
Once a month	3	<input type="checkbox"/>
Never	4	<input type="checkbox"/>

D. Pork/ pig feet:

1-3 times a week	1	<input type="checkbox"/>
4-7 times a week	2	<input type="checkbox"/>
Once a month	3	<input type="checkbox"/>
Never	4	<input type="checkbox"/>

E. Sour milk:

1-3 times a week	1	<input type="checkbox"/>
4-7 times a week	2	<input type="checkbox"/>
Once a month	3	<input type="checkbox"/>
Never	4	<input type="checkbox"/>

F. Fat cookies:

1-3 times a week	1
4-7 times a week	2
Once a month	3
Never	4



