

**Normative Body Image Distortion and Dissatisfaction
among Black African and White Female University
Students**

By

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ABSTRACT

Research in South Africa remains somewhat limited with regard to eating disorders across race groups. This study aimed to examine whether there were any statistically significant differences between both body image distortion and body image satisfaction between black African and white female university students.

The Image-Marking Procedure and the Movable Caliper Technique were used to assess whether participants distorted certain body dimensions (shoulders, waist, hips, and thighs). The Body Cathexis Scale was used to assess and compare body dissatisfaction between the two race groups. The assessments were conducted with a non-probability convenience sample of 20 white and 20 black African female university students.

No statistically significant difference was found regarding overall body image distortion between the race groups. This finding was replicated for each of the body dimensions measured. There were also no statistically significant differences found regarding body image dissatisfaction between the two race groups.

This study concluded that there was no statistically significant difference between both distortion and dissatisfaction components of body image of both black African and white female university students. The implications of the findings are discussed, challenging the notion that eating disorders, and aspects of eating disorders, are a Western cultural phenomenon and racially bound.

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DECLARATION - PLAGIARISM

I, **Jayde Lynne Bevis**, declare that:

1. The research reported in this thesis, except where otherwise indicated, is my original research.
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Signed



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Supervisor: Prof D R Wassenaar

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DEFINITION OF TERMS

Adolescent/ teenager	An individual between the ages of thirteen to eighteen
Body figure	The shape of an individual's body
Body schema	Representation of the positions of body parts in space, which is updated during movement
Culturally bound	limited by or valid only within a certain culture
Eating disorders	Anorexia nervosa and bulimia nervosa
Girl	Female individual under eighteen years of age
Mass media	All forms of available media, including but not limited to: television, magazines, newspapers, social media etc.
Normal population	Individuals without eating disorders
Normative	Nonclinical
Prototypical person	A typical example of what a person looks like
Weight control behaviour	Behaviours including but not limited to: dieting, exercise, purging, weight-loss medication etc.
Woman	A female individual over the age of eighteen

ABBREVIATIONS

BCS	Body Cathexis Scale
BMI	Body mass index
BPI	Body perception index
DSM-5	Diagnostic and Statistical Manual of Mental Disorders (5 th Edition)
IMP	Image-Marking Procedure
MCT	Moveable Caliper Technique
UKZN	University of KwaZulu-Natal

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

There is growing evidence in South Africa that disordered eating has increased among females from all race groups and not just among white females (Gitau, Micklesfeild, Pettifor & Norris, 2013). Eating disorders were first reported within the black African¹ race group in South Africa in 1995 (Delport & Szabo, 2008; Szabo & Allwood, 2006). According to Szabo and Allwood (2006), weight control behaviours are influenced by body image dissatisfaction. They state that this could lead to the development of eating disorders or behaviours associated with this type of disorder. They explain that it would be important to explore aspects such as body satisfaction as it is important in understanding eating disorders. They also state that cross-cultural research in South Africa is limited in this regard. When it comes to understanding the onset, development, and contributing factors of eating disorders there is very little research on the diverse race groups in South Africa.

1.2 Prevalence of eating disorders across cultures

According to Health Grove (2017) the annual mortality rate in South Africa from eating disorders has increased by 93.3% (per 100,000 people) since 1990 with females being more at risk. On their website, South Africa is ranked as the country with the fourth highest mortality rate (per 100,000 people) due to eating disorders in Africa. It must however be noted that the reliability of this data is unknown. Their website does not contain any data on how these statistics are organised by race groups in South Africa. The official South African statistics website, Stats SA (2017), also has no available data on eating disorders in South Africa. This could possibly indicate that a need for more information on eating disorders

¹ Stats SA demographic terminology

across race groups in South Africa as there seems to be little to no data available or easily accessible.

Some studies have set out to determine the prevalence of eating disorders across cultures or race groups across South Africa. In one of these types of studies Wassenaar, le Grange, Winship and Lachenicht (2000) observed that there was an indication of high levels of concern about body shape among black South African female participants. Although the prevalence of eating disorders across race groups seems to remain unknown, studies such as this suggest that black South Africans do have traits that are often associated with eating disorder pathology and eating disorders.

1.3 The problem statement

Research in South Africa remains limited on the topic of eating disorders across race and cultural groups (Szabo & Allwood, 2006; Wassenaar et al., 2000) There is no recent research in South Africa, that the researcher is aware of, that examines any differences or similarities among both body image distortion and body image satisfaction between black African and white females. One study, in South Africa, looked at the difference in body image distortion as well as body image satisfaction between two sample groups. This was a study done by Uys and Wassenaar (1996) using a normative (nonclinical) female sample and a sample of females with anorexia nervosa. Although examining the same topic, Uys and Wassenaar's (1996) study did not include a cross-racial sample, as all of the participants were white. One of the recommendations from this study was for future research to be conducted on a cross-cultural sample of anorexics in South Africa.

The current study was a partial replication of this study, changing only the sample groups. The sample groups for this current study were black African and white female university students respectively. This was done in order to contribute to bridging the gap in

research across race groups in South Africa. Due to time constraints on this study the sample of both black African and white females was a normative sample of university students and not anorexics as Uys and Wassenaar's (1996) study had recommended.

1.4 Importance/ Rationale of study

As mentioned above, there is little available information on the topic of eating disorders across race groups in South Africa. This study therefore aims to contribute to bridging the gap in research contributing to information on eating disorder pathology across races in South Africa.

In order to have a diagnosis of either anorexia nervosa or bulimia nervosa certain criteria needs to be met. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, APA, 2013) these criteria included having body weight or shape disturbances and/or self-evaluation excessively influenced by body weight and shape. This will be explained in more detail later (section 2.3). Ultimately, it is clear that a negative body image has a role to play in eating disorders.

Some of the most stable dimensions of body image are body dissatisfaction and distortion (Kimber, Georgiadas, Couturier, Jack & Wahoush, 2015). The current study will examine both body image distortion and body image satisfaction as these constructs make up one of the components that could possibly indicate the presence or vulnerability to an eating disorder or contribute to disordered eating. As previously mentioned, this will be examined by using a cross-racial comparison of both body image dissatisfaction and body image distortion. Data from this study may contribute to the limited knowledge of eating disorder pathology across racial groups in South Africa as a whole. More specifically, this study examined and provided knowledge on the differences or similarities of both body image distortion and body image satisfaction between both black African and white university

students attending university in South Africa. This study's data could also serve to indicate whether body image distortion and body image dissatisfaction are culturally (or racially) bound or whether they are just Western cultural phenomena as they have often been labelled (Coetzee and Perrett, 2011). These concepts will be discussed in more detail in the literature review (chapter 2).

This study aimed to determine whether there is a difference between black African and white female university students with regard to body image distortion and body image dissatisfaction. The study also aimed to explore the statistical relationship between both body image distortion and body image satisfaction between black African and white female university students. This was done using the method and assessment techniques described in Uys and Wassenaar's (1996) study.

The Image-Marking Procedure (Askevold, 1975) and Movable Caliper Technique (Slade & Russell, 1973) was used to assess the distortion component while the Body Cathexis Scale (Secord & Jourard, 1953) was used to assess the dissatisfaction component of the study. All three of these measures will be described in more detail later on (chapter 2 and chapter 3).

1.5 Outline of dissertation

Chapter 1 outlines the research problem and the rationale for this study. Chapter 2 follows with an overview of relevant existing literature. This chapter will include information on body image, disordered eating, risk factors, cultural perceptions and differences, ways of assessing body image, and literature on previous research relevant to the current study. Chapter 3 details the methodology of this study. Chapter 4 contains the data collected for this study as well as a quantitative analysis of the collected data. Chapter 6 includes a discussion of the data collected in relation to the literature review. Lastly, chapter 7 summarises the

main conclusions of the study and presents the limitations and recommendations for future research.

1.7 Summary

This research examines whether black African and white female university students have comparable degrees of body dissatisfaction, if any. This study also examines and compares body image distortion in black African and white female university students. There are no recent research studies that the researcher is aware of that have examined body image distortion differences between black African and white female university students.

This study is a partial replication of Uys and Wassenaar's (1996) study, using the same methodology and assessment techniques. The main difference between the two studies is the participants' demographics. This study only included black African and white female university students that belong to a normative sample. The Image-Marking procedure and the Movable Caliper Technique were used to measure body image distortion, while the Body Cathexis Scale was used to measure body image dissatisfaction between the two race groups.

The next chapter (chapter 2) will include a review of the relevant literature.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter literature relevant to the research topic will be explored and explained. This will include themes such as the history of body image, body image disturbance, disordered eating, risk factors for disordered eating, cultural differences in body preferences, ways of assessing body image disturbance, and previous research on related issues.

2.2 A brief history of body image

Previous body image research was saturated by the exploration of the “body schema” (p. 4) and gave little consideration to the psychological variables in theorizing about body image (Cash & Smolak, 2011). During the 1990s, according to Cash and Smolak (2011), there was an evolution of body image research, which included a productive period of conceptual, psychometric, and therapeutic developments. During this decade themes such as the multidimensionality of body image, scientific and clinical interest in eating disorders including assessment, prevention, and treatment of body image disorders, and cognitive-behavioural treatment approach emerged (Cash & Smolak, 2011).

The tendency to link positive personal qualities with physical attractiveness have been documented since the 1970s (Grogan, 1999). This means that people with more attractive looking bodies are often assigned more positive personality traits than individuals whom are not viewed as attractive. During the 1990s, slenderness symbolised being in control where the firm, toned body was a representation of success. Toned, slim bodies do not come naturally for most people (Grogan, 1999), so they have to be constantly vigilant through the use of eating and exercise to obtain slender ideals. Individuals whom do not conform to these ideas

often face prejudice through their lifespan. Overweight people often experience prejudice in Western cultures (Grogan, 1999).

As previously stated, slenderness is currently seen as the ideal body in women, but this was not always the case. According to Grogan (1999) during the Middle Ages, more voluptuous figures were favoured. During this era the female body was frequently portrayed by having full, round breasts and hips, and a fullness of the stomach that was idealised as a reproductive figure. This idea continued through the 1800s. The idea of slenderness is a recent phenomenon coming apparent from the 1920s (Grogan, 1999).

According to Miller and Pumariega (2001) cultural beliefs and attitudes are considered to be contributing factors to the development of eating disorders. The prevalence of eating disorders are observed to differ among racial or ethnic groups and can also change over time as cultures migrate and evolve (Miller & Pumariega, 2001). Eating disorders are said to be more prevalent in certain cultures than have been previously recognized (Miller & Pumariega, 2001).

Within Western societies, the ideal thin body type has been blamed as a reason for the possible development of eating disorders (Miller and Pumariega, 2001). There has been an increase in evidence of women's dissatisfaction with their bodies and increased pressure to conform by women especially in Western society as the image of beauty that is promoted has changed (Miller & Pumariega, 2001).

2.3 Body image and disturbances

According to Fisher and Cleveland (1958) the concept of body image is difficult to trace historically because it has been a part of a diverse number of disciplines and different levels of thought. Body image was referred to as a psychological experience of the body, focusing on the individual's attitudes and feelings towards their own body (Fisher &

Cleveland, 1958). Body image is associated with the individual's internal experiences of his or her own body and the way the individual organises these experiences (Fisher & Cleveland, 1958). The assumption is that each individual has the difficult task of meaningfully organising the sensations from his or her body. This means that body image could literally be explained as an image of an individual's own body which has evolved through the individual's experiences. According to Fisher and Cleveland (1958) the word 'image' may be misleading as it may be understood as only referring to the viewpoints that an individual holds that he or she is consciously aware of when in fact the term includes no assumptions regarding the availability of conscious knowledge of such feelings and views.

More recently body image has been defined as a person's subjective idea of his or her bodily appearance (Forrest & Stuhldreher, 2007). According to Kimber et al. (2015) this includes the individual's perception of their body shape, size, and weight. According to Fuentes, Longo and Haggard (2013) body image can also be described as a conscious representation an individual has that represents different sizes and shapes of body parts and how they are arranged to form the body as a whole. They state that this representation is often formed through predominantly visual information. They explain that a person's body image reflects what they believe their body is perceived to look like. Body image is often associated with metric characteristics of the body, while emotion and aesthetics are not necessarily needed to form this definition (Fuentes et al., 2013).

Kimber et al. (2015) found that body dissatisfaction and body image distortion are considered to be more stable dimensions of the body image construct. There are two problematic patterns associated with body image: dissatisfaction and distortion (Forrest & Stuhldreher, 2007).

2.3.1 Body image distortion

Body image distortion is defined, by Kimber et al. (2015), as the difference between one's perceived weight and actual weight. Body image distortion is also explained, by Forrest and Stuhldreher (2007), as the discrepancy between the body figure that one chooses and believes that it is the ideal and the body figure that others will find attractive.

A study by Fuentes et al. (2013), which aimed to investigate body image distortions in healthy adults, found that participants' perceived body size did not correlate with their actual body size. This could suggest that people make judgments according to a "prototypical person" (p. 350). Their results suggest that the social constructions of body image are based on the bodies of other individuals that they have observed. Their results also showed "striking distortions" (p. 350) in the participants' body image, with a large and organised over-estimation of width in relation to height. Lee and Lee (2016) found, in their study conducted in South Korea, that both over-estimation, but also under-estimation of body weight to be prevalent in scholars. They stated that these forms of body image distortion were significantly associated with depressive feelings and suicide ideation.

2.3.2 Body image dissatisfaction

Body image dissatisfaction is defined as the difference between the recognition of one's own current body compared to an ideal body weight or shape (Forrest & Stuhldreher, 2007; Furnham, Badmin & Sneade, 2002; Kimber et al., 2015). Body dissatisfaction has been observed to have an influence on weight control behaviour (i.e. dieting), which could possibly lead to further development eating disordered or the onset of eating disorders (Szabo & Allwood, 2006). Body image dissatisfaction was associated, in an adolescent sample, with the increased risk of perceived negative health (Szabo & Allwood, 2006).

Forrest and Stuhldreher (2007) state that body image dissatisfaction and distortion are closely related and can both be used as predictors for eating disorders and depression, even though they are considered to be two different concepts. They also emphasise that body image is an important component of self-esteem, especially among young people such as university students. In their study, which was aimed at examining the link between body image dissatisfaction and other health problems in college students over a five-year period, Forrest and Stuhldreher (2007) confirmed that body image dissatisfaction and distortion is prevalent among in female college goers. They found that college goers who were dissatisfied with their body image were more likely to have a distorted body image and vice versa. They stated that these results were consistent with previous findings from other similar research.

Kimber et al. (2015) state that body image distortion and dissatisfaction have both been associated with negative psychological and physical consequences. These negative consequences can include anxiety, proneness to stress, depression, and eating disorders (Kimber et al., 2015; Lee & Lee, 2016). Kimber et al. (2015) explain that body image distortion may be a preliminary primary predictor for these negative outcomes as it constitutes a cognitive misconception of one's actual body weight or shape and thus dissatisfaction with one's body follows. They explain that when adolescents and children who do not distort their body image are compared to those who do, those who do are more at risk to also have body image dissatisfaction. Therefore, body dissatisfaction is explained as an "individual-level" (p. 2155) characteristic that is significantly and positively associated with body image distortion (Kimber et al., 2015).

2.4 Disordered Eating

Black female South Africans were first reported to have experienced eating disorders in 1995 while eating disorders have been documented among white South Africans since the 1970s (Delport & Szabo, 2008; Szabo & Allwood, 2006). Jackson and Chen (2015) found that 13,5% of undergraduate women took part in three or more symptoms of eating disorders described on a brief eating disorder screening test. Although not all women will be formally diagnosed with an eating disorder, they may exhibit eating disorder symptoms during their life. The DSM-5 (APA, 2013) classifies both anorexia nervosa and bulimia nervosa under the section of feeding and eating disorders. DSM-5 (APA, 2013) outlines the main criteria of anorexia nervosa as follows:

- “A. Restriction of energy intake relative to requirements leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.
- B. Intense fear of gaining weight or becoming fat, or persistent behaviour that interferes with weight gain, even though at a significantly low weight.
- C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.” (American Psychiatric Association, 2013, p. 338).

The diagnostic criteria for bulimia nervosa is outlined in the DSM-5 (APA, 2013) as:

- “A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
 1. Eating in a discrete amount of time (ex: within a 2 hour period) an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
 2. Sense of lack of control over eating during an episode.
- B. Recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
- C. The binge eating and inappropriate compensatory behaviours both occur, on average, at least once a week for three months.
- D. Self-evaluation is unduly influenced by body shape and weight.
- E. The disturbance does not occur exclusively during episodes of anorexia nervosa.” (American Psychiatric Association, 2013, p. 345).

2.5 Sociocultural risk factors in disordered eating

According to Mohr and Messina (2015) the subjection of women to thin body ideals opens the door for body image dissatisfaction, body image disturbances, and eating pathologies. They are of the opinion that women in general display higher body dissatisfaction than men because women generally prefer a thinner body shape and lower weight. Such negative self and body views can be associated with and can produce core elements in the development and maintenance of eating disorders. Lee and Lee (2016) add that most adults who perceive themselves to be over-weight, or not the ideal body shape, will often display unhealthy weight control methods which may include skipping meals, using weight-loss pills, fasting, and maintaining a strict, often unhealthy, diet. According to Lee and Lee (2016) there has been little research on body weight under-estimation and other misconceptions of body weight and shape.

2.5.1 Objectification of female bodies

Feminist theorists argue that gender experiences obtained through socialization are often characterized by sexual objectification, which could have an outcome of self-objectification among females (Jackson & Chen, 2015). Jackson and Chen (2015) explain that self-objectification means that the individual may treat herself as an object on the basis of physical appearance. Three components make up this self-objectification theory namely; body shame, body surveillance, and appearance-control beliefs (Jackson & Chen, 2015). They explain body surveillance as seeing one's own body as an outside observer would. Body shame is explained as feeling embarrassed or ashamed of one's body. Lastly, appearance control beliefs are explained as beliefs that one can control one's appearance with sufficient effort. It is popular opinion that body-objectification is often exacerbated by the

growing presence of particular mass media portrayals of thin women (Jackson & Chen, 2015).

2.5.2 Mass media

According to popular theories women are exposed through media to mainstream sociocultural ideas of beauty and the presumed social importance of these beauty ideals to self-worth and success (Cheng, Tran, Miyake & Kim, 2017; Levine & Chapman, 2011). However, it is important to consider if exposure to the mass media actually ‘causes’ negative body image in females or not.

The media is saturated with unhealthy communication about body size ideals, weight and shapes in relation to pleasure, attractiveness, self-control, food, morality, gender, weight management, and power (Levine & Chapman, 2011). If media pressures do in fact have such a strong influence on body image ideals as sociocultural theories outline, then a great number of people would need to report experiencing those pressures with regard to body image (Levine & Chapman, 2011). According to Levine and Chapman (2011) nearly 70% of teenage girls report that images found in magazines influenced their perception of the ideal body shape. However, a significant minority actually indicated that such images cause body image dissatisfaction and motivation to change one’s current weight to match the ideal body shape.

The investment in media-based models and the internalisation of the slender beauty ideals is a steady predictor of perceived media pressure to be thin and to therefore have a negative body image due to this investment (Levine & Chapman, 2011). This does not necessarily mean that all females presented with mass media internalise these images. Looking at cross-sectional correlations between media exposure and body image Levine and Chapman (2011) state that the amount of time teenagers spend viewing appearance-focused

media is positively but modestly associated with internalisation of the thin beauty ideal, drive for a thinner body, and body image dissatisfaction. This means that although there is a positive correlation, it is only a small correlation. When media exposure is looked at as a longitudinal predictor of body image Levine and Chapman (2011) state that there are only a few studies available. However, they have found that the amount of media exposure is associated with an increase in negative body image and disordered eating among adolescents and adults. However, they also state that several of these well-conducted studies have found no significant predictive relationships in adolescents.

For the female population, media effects meet most criteria for a casual risk factor with regard to negative body image (Levine & Chapman, 2011). However, a lack of replicable longitudinal and prevention outcome data shows that commitment to mass media is at best considered a variable risk factor (Levine & Chapman, 2011). Further research is required regarding the relationship of mass media beauty ideals of thinness and signs of objectification of the female body (Levine & Chapman, 2011).

Cheng et al. (2017) believe that the predominance of “ultraslender” (p. 179) famous females in the media as well as the message conveyed, via media, that thinness is normative in female beauty can contribute to disordered eating and body image problems. They state that mass media often sexually objectify the female body and that females’ interpersonal context are often embedded with sexualized messages that emphasize only the physical presentation of a female. In their opinion these images that the media portrays can lead to females internalizing such beliefs about their bodies and thus they pursue thinness ideals. They hypothesize that this can result in the feeling of worth being based largely on one’s physical appearance or attractiveness that in turn will possibly heighten the risk of body modifying behaviours and disordered eating. Examining this view it can be said that women may turn to negative coping strategies and disordered eating in order to decrease perceived

body shame, to gain a sense of control over one's bodily appearance and to meet the previously mentioned beauty ideas (Cheng et al., 2017). Cheng et al. (2017) state that, empirically, body surveillance and the internalization of sociocultural ideals of beauty have been connected to disordered eating. They state that body shame, which they attribute to mass media, has been observed to be connected with disordered eating in longitudinal studies. They also report that some cross-sectional and prospective studies have shown support for a direct positive relationship between internalization of sociocultural ideals of beauty and eating disorder pathology. It would be important to note that these figures may be exaggerated. As previously seen, there is often a positive correlation between disordered eating and abovementioned media influences, however, this correlation is most likely modest. Therefore, it could be a source of vulnerability rather than an actual cause.

2.5.3 Friend and family influences

According to Fisher and Cleveland (1958) there is a significant relationship between boundary characteristics of individuals and certain attributes of their parents. It can be said with some assurance that the manner in which the parent conducts him or herself towards the child affects the kind of body image boundary the child will develop. This is also affected by the socialization sequences that exist among various cultures and thus, according to this assumption, body image ideals and experiences differ among different cultures.

Levine and Chapman (2011) explain that families provide primary relationships when it comes to childhood development and also play an influential role in forming attitudes, values, and beliefs in children about body image that they will carry through into their adult life. Parents express their personal beliefs and expectations about bodily appearance in the everyday lifestyle patterns that they demonstrate for dieting, exercising, eating, and evaluation of weight and shape. Parents serve as both teachers and critics in the development

of body image starting as soon as development starts in childhood. It is also important to keep in mind that the content of parental modelling and the messages portrayed differs across families, ethnicities, and cultural groups (Levine & Chapman, 2011). For example, in black American families it is assumed that there is a greater acceptance of larger body sizes, less endorsement of the thin ideal, and therefore higher body satisfaction than in white families (Levine & Chapman, 2011).

Another important social situation for the development of body image includes experiences with peers (Levine & Chapman, 2011). The amount of support of the peer appearance culture among friends plays a role in body image development (Levine & Chapman, 2011). Individuals can experience pressure to look a certain way to fit in or gain approval from certain social or peer groups. When friend groups share a common concern with their appearance and believe in weight or shape ideals, then patterns of greater body dissatisfaction are often observed (Levine & Chapman, 2011). Friends can also influence body image concerns through talk about ideal appearances and body change strategies such as dieting (Levine & Chapman, 2011).

According to Jackson and Chen (2015) pressure from friends and family can contribute to body dissatisfaction and disordered eating. They explain that this can be either directly or indirectly through the internalization of unrealistic societal appearance ideals and the comparison of appearance with peers (Jackson & Chen, 2015). From this pressure, the internalization of an unrealistic thin feminine body ideal contributes to body dissatisfaction and, in turn, body dissatisfaction increases the probability of disordered eating (Jackson & Chen, 2015).

2.5.4 Tripartite-influence and dual pathway models

The tripartite-influence model and dual pathway model have been gaining attention in recent risk-factor research (Jackson & Chen, 2015). Rodgers, Paxton and McLean (2014) state that there is empirical research from the United States, France, Japan, and Australia that has shown support of these models when applied to samples of adolescents and young females. These models both incorporate the above-mentioned sociocultural risk factors. Mass media, friends, and family influences contribute to disordered eating and to body dissatisfaction according to the tripartite-influence model (Jackson & Chen, 2015; Rodgers et al., 2014). This is done through internalizing unrealistic thin body ideals and appearance comparison to family, peers, and people portrayed in the media (Jackson & Chen, 2015; Rodgers et al., 2014).

Markey Hood, Vander Wal and Gibbons (2009) use the tripartite model to link culture and eating disorders. They state that using this model, culture can contribute to disordered eating through three factors. These factors include eating behaviours and patterns passed down through generations, ideal body size and shapes, and beliefs of health. When considering eating behaviours it must be noted that food is an important aspect in any culture (Markey Hood et al., 2009). Early socialization begins in the family environment and is influenced by members' past experiences, traditions, and habits. Friends and family influences also become important regarding the individual's eating behaviours (see section 2.4.3).

Body size ideals have been associated with disordered eating due to their impact on body image and how they make the individual feel about themselves (Markey Hood et al., 2009). Theories of eating disorders state that when a woman's ideal body size (influenced by culture) is not supported by their actual body size they may develop body image disturbances such as body dissatisfaction (Markey Hood et al., 2009).

According to Markey Hood et al. (2009) people strive for both psychological and mental health. They state that this goal is the same among all cultures regardless of differences in the manner of obtaining this goal. They explain that mental health in particular is experienced differently across different cultures. For example, in some cultures (i.e. Hispanic), disorders such as eating disorders would only be considered an illness when visible symptoms or pain are experienced.

Similar to the tripartite-influence model, Jackson and Chen (2015) argue that the dual pathway model states that an increase in perceived pressure from family, friends, media and the internalization of the thin female body ideal contribute to body dissatisfaction. This then increases the risk for eating disorder symptoms in particular, such as an increase in dieting and negative affect (Jackson & Chen, 2015).

Markey Hood et al. (2009) explain the dual pathway model (or sociocultural model) in relation to development of eating disorders. Markey Hood et al. (2009) explain that, according to this model, internalisation of the thin ideal or pressure to be thin leads to body dissatisfaction. This can then lead to negative affect and weight control behaviours (i.e. dieting). This then could also increase risk for disordered eating, more specifically to bulimia nervosa than anorexia nervosa. They state that this model is applicable across cultures.

2.5.5 Other possible important risk factors

According to Le Grange, Louw, Russel, Nel and Silstone (2006) self-esteem is often understood as a principal and potential early risk factor for the development of body image issues. They state that it has been previously observed that addressing self-esteem, while ignoring disordered eating patterns, has a negative impact on body satisfaction.

The DSM-5 (APA, 2013) states that risk factors include temperamental factors (such as children with anxieties and obsessional traits), genetic and physiological factors, and

environmental factors. Environmental risk factors as outlined in the DSM-5 (APA, 2013) state that cultures where thinness is desired (i.e. Western cultures) are more at risk to develop anorexia nervosa or bulimia nervosa. The DSM-5 (APA, 2013) states that individuals presenting with bulimia nervosa are primarily white. Both anorexia nervosa and bulimia nervosa are described by DSM-5 (APA, 2013) as occurring in more industrialised countries (i.e. United States, Europe etc.). It could thus be assumed that eating disorders are often viewed as a white individual's problem and isn't as common among other racial groups.

2.6 Is body dissatisfaction and disordered eating culturally bound?

Almost all the contributors to the field of eating pathology across cultures used the lack of reported eating disorders in certain cultures as sufficient criteria for eating pathology to be viewed as culturally bound (Nasser, 1997). This is now being challenged, as there is evidence to suggest that there are indeed eating pathologies in non-Western societies (i.e., Haynes, 1995; Szabo and Allwood, 2006). One of the earliest explanations for this was the exposure to Western cultural norms (Nasser, 1997).

According to Mwaba and Roman (2009) much research has shown a link between body dissatisfaction and eating disorders. Marais, Wassenaar and Kramers (2003) and Markey Hood et al. (2009) state that it is normally accepted that eating disorders are a Western cultural phenomena. The characteristics of Western cultures said to be connected with eating pathology include an emphasis on being thin, negative attitudes towards obesity, and the changing role of women in society (Marais et al., 2003). African women are often assumed to be protected from developing eating disorder behaviour as there is said to be less pressure on African women to be the thin 'ideal' (Coetzee & Perrett, 2011; Wassenaar et al., 2000). According to Coetzee and Perrett (2011) and Le Grange et al. (2006) eating disorders are often regarded as "culturally-bound" (p. 72; p. 402) problems as they are believed to be

less prevalent in ethnic groups such as black African cultures. Gitau et al. (2013) state that black African women are more likely to be obese in a middle-income country such as South Africa. They cite research that shows evidence that for black South African females thinness is not perceived as beautiful, but plumpness is. Coetzee and Perrett (2011) state that there are however studies that have challenged this belief and have found black South African students to have a higher drive for thinness than white students. In an ethnic comparison study, Caradas, Lambert and Charlton (2001) found that abnormal eating disorder behaviour was equally prevalent among South African girls from different ethnic backgrounds. However, white girls still indicated more body dissatisfaction than the black and coloured girls in the study. This shows that eating disorders aren't necessarily as culturally bound as they have been described in the past.

According to Wassenaar et al. (2000) theoretical models of eating disorders emphasize Western socio-cultural factors as more important than other cultures' factors in the cause of these disorders. Due to this, most studies were on the prevalence of eating pathology in white female populations normally based in Western Europe and North America. As a result disordered eating that could result in restrictive eating disorders was assumed to be a Western phenomenon. In these societies, white females are assumed to be at risk for developing eating disorder pathology while black women are assumed to be immune to these risks (Malson, 1998; Wassenaar et al., 2000). According to Marais et al. (2003) since then there has been an increase in the recorded amount of eating disorders in both developing countries and traditional cultures, it cannot be assumed that eating disorders are culturally bound. When black women adopt values that are normally associated with white Western culture, they report greater pressure to diet and tend to show more problematic eating behaviours (Marais et al., 2003). This could mean that when exposed to Western cultures, black women may show signs of disordered eating related to body satisfaction and distortion

that white women have been found to experience. Regardless of this, studies still show an unexpected result when investigating the connection between Western cultural pressures and the growing amount of eating disorders in non-Western populations.

According to Wassenaar et al. (2000) the focus of research is changing and increased attention has been shifted to focus on disordered eating in non-Western populations.

Regardless of this, they state that research in this area may find that non-Western populations are more protected from eating disorders. Research has also found that in the United States both black and white women show a marked degree of discontent with their weight and body shape (Wassenaar et al., 2000). However, information on eating disorders in the developing world still remains limited. South Africa contains a developing, quickly changing, and an ethnically and racially diverse society, which could provide a significant contribution to the understanding of eating disorders (Wassenaar et al., 2000).

According to Marais et al. (2003) there is a lack of research on eating disorders in developing countries which could be due to the fact that women in less Westernized cultures may have factors protecting them from developing eating disorders. They state that research in this area should contain a focus for identifying these protective factors rather than factors that could contribute to the possible occurrence of eating disorders in this population. It has been reported, by previous studies, that black females experience less social pressure about their weight, have a more favourable body image than white females, and are also more weight tolerant (Marais et al., 2003). Although it has been found that black females tend to have higher Body Mass Indexes (BMI) than white females, they have also been found to have less dietary constrictions and problematic eating behaviours (Marais et al., 2003).

In Szabo and Allwood's (2006) study, an urban sample of white and black South African females scored higher body dissatisfaction than black South African adolescent females from rural areas. However, the white urban adolescents still had the greatest body

dissatisfaction. Szabo and Allwood (2006) concluded that amongst adolescents the desire to be thinner, and underlying body dissatisfaction, is a common and cross-culture phenomenon in South Africa. Szabo and Allwood (2006) state that the findings from their study were consistent with the trends in body dissatisfaction over the previous ten years.

Community-based cross-cultural studies have suggested that in Westernized areas the number of black South Africans with eating disorders or eating disordered pathology would seemingly increase from the first documented cases in the 1990s (Szabo & Allwood, 2006). Data from rural samples have shown this increase to be less likely in a rural setting (Szabo & Allwood, 2006). When looking at differences between white and black South African female eating disorder patients, there were no significant differences separating black patients from white in terms of clinical presentation (Delpont & Szabo, 2008). The conclusion is that in a specific setting the clinical presentation and reporting of eating disorder symptoms would be assumed to be similar among patients irrespective of racial or language differences which they may have (Delpont & Szabo, 2008). This means that empirical differences between these two racial groups appear to be diminishing with regard to eating disorder pathology (Delpont & Szabo, 2008).

In line with the above research findings, Mwaba and Roman (2009) state that many youths in South Africa accept Western values, aspiring to Western body ideals of beauty, which may put them at a higher risk for eating disorders. Mwaba and Roman (2009) studied 150 black female university students to examine if young black females had body dissatisfaction. They found that most of the participants in their study were satisfied with their appearance. Even though their data showed that most participants were satisfied with their body, more than half reported concerns about becoming fat with more than half of the participants stating they need to start excising or go on diet.

Markey Hood et al. (2009) explain that the concept of culture is an inadequate explanation for the development of eating disorders. For many years researchers have categorised eating disorders as culturally bound syndromes believed to be found among upper to middle class females living in Westernized cultures. Markey Hood et al. (2009) argue that only a portion of the criteria of anorexia nervosa is dependent on culture and that the eating disorder itself should not be considered as a culturally bound syndrome. The portion that they are referring to is the obsession with weight and shape which is normally found among white Westernized females.

Eating disorders have been greatly studied in people of European descent and people living in industrialised (or Westernized) areas (Markey Hood et al., 2009). This could be a reason why there is more attention given to eating pathology in populations such as white females. The above literature suggests that body image dissatisfaction and eating disorders used to be assumed to be Western phenomena. However, more recently the idea that body dissatisfaction and disordered eating are culturally-bound has been challenged by new data (Markey Hood et al., 2009). Although it appears that research is still somewhat limited on this topic in South Africa, studies (i.e. Caradas et al., 2001; Haynes, 1995; Marais et al., 2003; Szabo & Allwood, 2006) have concluded that body image dissatisfaction is equally prevalent in both white and black females. Regardless of prevalence, white females still tend to show higher levels of body image dissatisfaction within these studies. Research has also recently shown that body image dissatisfaction is higher in Western societies in both black and white South African females than it is in black South Africans living in rural settings (Delpont & Szabo, 2008; Szabo & Allwood, 2006).

2.7 Cultural differences in body satisfaction and perceptions

Nasser (1997) states that it is important to consider that cultures are constantly changing. She explains that there is a tendency to view non-Western cultures as fixed and not to have moved on since early explanations, which were, most likely, based on particular groups. She stated that these original findings cannot be generalized to the rest of the same cultural population. Disordered eating is centred on the idea of thinness, which is often favoured and highly popular in certain cultures or race groups (Nasser, 1997). Nasser (1997) states that disordered eating is found in varying degrees of severity. She explains that disordered eating can merge with normative and culturally accepted types of behaviours (i.e. fasting or dieting). There has been a lack of attention to similarities between societies with limited insight regarding how societies could shape issues such as disordered eating (Nasser, 1997).

Non-Western cultures have been considered relatively immune to eating disorders for reasons such as different cultural values that do not value thinness but rather view plumpness with positive attributes such as fertility and wealth (Nasser, 1997). In Western cultures, slenderness is related to a variety of positive outcomes while being overweight is linked to more negative outcomes (Grogan, 1999; Malson, 1998; Nasser, 1997). For women in particular, the ideal body shape is slim. Individuals may experience many negative social consequences when not conforming to the slender ideal (Grogan, 1999).

Most researchers have agreed that cultural differences are primary responsible for individual body shape ideals (Grogan, 1999; Markey Hood et al., 2009). There is also an agreement that the social pressure to conform to the slender body ideal is greater in Western societies than in non-Western societies. In Western societies there have been changes over the years in body shape, weight, and size that is considered by others as attractive, healthy, and ideal (Grogan, 1999).

Within poorer cultures, thinness is often viewed as a sign of poverty, malnutrition, and/ or infectious diseases (Grogan, 1999). This means that increased weight or plumpness may be viewed more positively as it is often associated with health, wealth, and/ or prosperity within these cultures. Marais et al. (2003) explains that not all cultures stigmatize fatness; it is actually often associated with health, fertility, and femininity in certain cultures. Visible negative effects of antiretrovirals on the body may cause an HIV infected person to be stigmatized, either by others or themselves (Sharma, Howard, Schoenbaum, Buono & Webber, 2007). Negative body images have been observed in HIV infected individuals (Sharma et al., 2007). In their study examining both HIV infected and healthy women, Sharma et al. (2007) found that individuals with positive HIV status and poor self-rated health had negative body image.

Some work has looked at directly at what happens when people move from one cultural context to another with regard to body weight preferences (Grogan, 1999). For example students from rural backgrounds may move to Westernized areas to attend university. According to Grogan (1999) there is evidence to suggest that when a person moves from a society where plumpness is valued to one where slenderness is the ideal, this may lead to a change in body weight and preference. Markey Hood et al. (2009) state that immigration to Western societies could increase the risk of developing eating disorders. They state that both the acculturation process and the exposure to characteristics of Western society both play a part in the development of disordered eating.

In an ethnic comparison survey study of eating attitudes and associated body image concerns, Caradas et al. (2001) found that abnormal eating behaviour was equally prevalent among South African girls from different racial backgrounds. However, white girls still indicated more body dissatisfaction than black and coloured girls in the study According to Swami et al. (2010) cross-cultural differences exist in that the ideal body weight is said to be

thinner in more Westernized societies. Research in South Africa suggests that in some more non-Western societies, plumpness was linked with traits such as attractiveness, better health, and wealth (Gitau et al., 2013; Marais et al., 2003; Swami et al., 2010). Various researchers explain that the ideal thin body has had negative effects on women's physical, social and psychological well-being (Swami et al., 2010). Most women have normative body weight dissatisfaction (Mwaba & Roman, 2009; Swami et al., 2010). However, Swami et al. (2010) explain that this may not be true for non-western societies. According to their study, South African women from rural areas had lower body disaffection than the more urban areas. Coetzee and Perrett (2011) state that there are studies that have challenged this belief and have found black South African students to have a higher drive for thinness than white South African students. Gitau et al. (2013) state that according to available data, black African women are more likely to be overweight than anorexic in a middle-income country such as South Africa with the obesity rate among black woman being 58.5%. They state that previous research shows that for black South Africans thinness is not perceived as beautiful, but plumpness is. However, this could be changing in some sections of the population. This all suggests that eating disorders do not appear to be as "culturally-bound" as they have been described in the past.

Like many authors Caradas et al. (2001) argue that one of the biggest factors of body dissatisfaction influences could be the beauty ideal that Westernized women face; that thin is beautiful and fat is stigmatized. According to Gitau, et al. (2013) this drive for thinness, across cultures, is becoming a public health concern, as poor body satisfaction is associated with eating disorders and disordered eating habits. Mchiza et al. (2015) examined body image and body size dissatisfaction among South Africans 15 years and older using a cross-sectional survey. Body image was considered against weight and the attempt to change one's weight. Their study concluded that most South Africans have a distorted body image and are

dissatisfied with their current body weight. However, they state that recently there are often conflicts between cultural perceptions, and the Westernized desired thinness.

2.8 The increase of eating disorders among racial groups

In her study on the relationship between body image and culture, Haynes (1995) found that body image dissatisfaction positively correlated with the increased adoption of Western culture. However, this was not true for body image distortion as the three different samples (white first year students, black first year students, black rural women), each with their own degrees of Westernization, had no significant differences. There is increased vulnerability to the development of eating disorders among individuals originally from non-Western societies that are now living in a Western society (Nasser, 1997). This is not only seen in individuals whom have permanently migrated, but also in adolescents who attend school in Western societies or whom have parents employed in the West (Nasser, 1997). In her study, Haynes (1995) found that body image dissatisfaction was significantly different between black first year university students and rural black women. However, this was not the same for body image distortion as no significant differences were recorded.

Using the Eating Disorders Inventory (EDI) on a cross ethnic female university student sample, Wassenaar et al. (2000) found that black South African female students scored significantly more than their white peers on the eating disorder inventory subscales of “drive for thinness”, “perfectionism”, and “maturity fears”. They state that this could indicate a high level of concern about black females’ body shape that is reinforced by ideas of perfectionism and concerns about the expectations of others towards them. However, white students had higher body dissatisfaction than their black peers. They state that this high score on the “drive for thinness” subsection challenges the notion that black woman generally value plumpness over thinness. However, they state that it must also be noted that their participants

were urban university students and this could demonstrate different challenges that these females have compared to their rural counterparts. This study correlates with previous research findings that white female university students' hold less favourable "body-image attitudes", outlined in the EDI, than their black peers. This supports evidence that thinness is desirable in Western cultures, while there is a more traditional acceptance of heavier body weight among black African cultures. Wassenaar et al. (2000) also reported an "alarming" (p. 8) finding of black participants scoring the highest on two of the "psychological" EDI subscales. In addition to their high score on the "drive for thinness" subscales, this could mean that they have unhealthy attitudes and behaviours associated with eating disorders. According to Wassenaar et al. (2000) this finding could imply that black females are not as "immune" (p. 8) to eating disorders as has often been assumed.

Le Grange et al. (2006) state that many surveys of eating habits and attitudes have been conducted among a diverse group of girls in South Africa. Most of these surveys show that black females have scored at least as high on eating disorder pathology as white females on the measures used. Le Grange et al. (2006) had previously stated that findings from South African have demonstrated that eating disorders are appearing among groups that were previously assumed to be protected.

Mwaba and Roman (2009) studied body dissatisfaction among young black female South Africans. Using a culturally adapted version of the Body Shape Questionnaire their findings indicated low body dissatisfaction among their participants. Mwaba and Roman (2009) studied self-reports and propose that more in-depth studies should be conducted on this topic to obtain more accurate results.

Wassenaar and Mamotte (2012a) also state that several previous publications suggested that eating disorders were becoming more prevalent in the African female population, especially those who had transitioned from rural areas to a more Western way of

living. This type of living included adopting Western relationship ideals and fashion trends, as well as having access to university education (Wassenaar & Mamotte, 2012a). In the last two decades there has been an increase in literature on the prevalence of eating disorders in non-Western countries (Wassenaar & Mamotte, 2012a).

There is growing evidence that eating disorders are becoming a problem in South African racial groups, other than the white population (Gitau et al., 2013). Gitau et al. (2013) found that white females had healthier body images and a lower predisposition to eating disorder pathology than their black peers. However, white females had lower self-esteem and a higher preference to be slimmer than their black peers. These findings support previous South African research, that black African females have a greater risk for certain eating disorders than white females. They speculate that this could be due to conflicts between cultural beliefs and trying to fit in to a western society, that black Africans are slowly adopting the thinness 'norm'. This study in particular shows that although both white and black females both had body dissatisfaction, black females had higher body dissatisfaction than white females. Gitau et al. (2013) concluded that their study proves that there are racial and ethnic differences in eating habits and body image.

2.9 Assessing body image dissatisfaction and distortion

As previously mentioned (section 2.1), historical roots of the concept of body image are firmly implemented in clinical practise (Thompson, 1990). Researchers use the concept of body image to describe various phenomena that vary widely with regard to specific characteristics. However, researchers generally divide the physical appearance construct of body image into three areas. These areas include a perceptual component (estimation of body size), a subjective component (i.e. satisfaction), and a behavioural component, which focuses

on the avoidance of situations that would cause the individual to feel uncomfortable based on their physical appearance (Thompson, 1990).

Since the 1980s various researchers have studied body image disturbances in nonclinical populations (Thompson, 1990). There is general agreement among researchers that there is a large degree of dysfunction, mainly in women, particularly regarding subjective satisfaction with body size, weight, and appearance (Thompson, 1990).

Generally, when it comes to research, as previously stated (see above), clinicians tend to focus on two aspects of body image namely the perceptual component and the subjective component (Thompson, 1990). The perceptual component is more commonly referred to as size perception accuracy or the estimation of one's body size. The subjective component entails aspects such as body size, weight, and physical appearance.

2.9.1 Assessing the perceptual (distortion) component of body image

There are two main categories of measures used for the assessment of size estimation accuracy. This includes body site and whole image adjustment measures (Thompson, 1990). Body-site estimation measures require participants to match the distance of the width of two points to their own width of a specific body site or part by estimating the distance (Gardner, 2011; Thompson, 1990). Several of these methods have been developed since the early 1970s (Gardner, 2011). For example, one of the earliest (Gardner, 2011), the Movable Caliper Technique (MCT) developed by Slade and Russell (1973) consists of a horizontal bar with two lights mounted on a track. The participant is to adjust the width between the two lights to match his or her estimation of the width of a given body site or part. Once complete the actual body widths and the estimated widths are compared to calculate a percentage of over- or under-estimation. They found that individuals with anorexia nervosa overestimated their body size and specific body zones to more than individuals with no eating disorder

pathology. It is then assumed that individuals with body image distortion would display similar norms as the anorexic group. This body-site estimation procedure gave rise to a host of conceptually similar procedures. For example, Askevold (1975) created the Image-Marking Procedure (IMP), which requires participants to mark their estimated body widths on a sheet of paper that is secured on a wall (Thompson, 1990). The Body Image Detection Device (BIDD) which is similar to MCT projects a beam onto a wall that the participant then matches to his or her given body site or part (Thompson, 1990). Thompson and colleagues altered this technique to include four light beams that could be projected at the same time, which represented the cheeks, waist, hips, and thighs (Thompson, 1990). This modified instrument was referred to as the Adjustable Light Beam Apparatus (ALBA). For these and other site estimation measures, the participant's actual width is compared with the participant's estimated width and then a ratio of over or underestimation is calculated (Thompson, 1990).

Whole-image adjustment methods include having the participant presented with a life size image via video, photographic image, or mirror feedback (Gardner, 2011; Thompson, 1990). The researcher is able to alter the image to make it bigger or smaller than reality. Participants are then able to select the figure size that matches their own estimation of their body image.

It is evident that the measurement of the perceptual component of body image has changed considerably over the last 30 years. It is important to be aware that overestimation of body size on these measures has been found to be prevalent in a variety of populations and not just specifically to populations with eating disorders (Gardner, 2011). Therefore using such measurements on a 'normal' population can still be valuable for the researcher in terms of body image distortion and is not only applicable to use on clinical samples.

2.9.2 Assessing the subjective (dissatisfaction) component of body image

According to Thompson (1990) and Grogan (1999), the most widely used measures for the assessment of the subjective components of body image disturbance included schematic figures or silhouettes. Using these techniques, silhouettes ranging from very slim to very large are shown to the participant (Grogan, 1999). Participants are asked to choose the figures that they think most accurately depict their current body and also their body size ideal (Grogan, 1999; Thompson, 1990). The difference between these two images is used as an indicator of the degree of body dissatisfaction (Grogan, 1999; Thompson, 1990). According to Grogan (1999) studies using this technique have found that women show a reliable and consistent tendency to pick a smaller image than to pick their current body image.

These measures have been technically improved to allow participants to increase or decrease the figures sizes on a computer to get an exact image representation (Thompson, 1990). A similar procedure was then developed that requires participants to give a subjective rating of their estimated size width presented on a wall using the Body Image Detection Device (Thompson, 1990). Participants are asked to judge the width of the projection beam by comparing it to other individuals of the same age, gender, and height.

The mirror focus procedure, believed by Cash and colleagues to measure the affective component of dissatisfaction involved asking the participant to examine all their body in a full-length mirror for 30 seconds after which they rate their discomfort level from zero (absolutely calm) to 100 (extreme discomfort) (Thompson, 1990).

Body satisfaction questionnaires provide a quantitative measure of body satisfaction (Grogan, 1999). Most ask participants to mark the degree of agreement or disagreement with statements in relation to satisfaction of certain body parts or their whole body (Grogan, 1999). According to Thompson (1990) questionnaire measures of subjective disturbance normally focus on a wider range of the subjective component. However, some scales focus

fairly exclusively on weight or size dissatisfaction. For example, the Body Parts Satisfaction Scale (BPSS) and the Eating Disorders Inventory (EDI) are used by participants to rate their satisfaction with several body sites, yielding a summary score of general body dissatisfaction (Thompson, 1990). There are however also many questionnaire measures that focus on an assortment of more complex representations of physical appearance (Thompson, 1990). One of the first, most widely used, questionnaires is the Body Cathexis Scale (BCS) developed by Secord and Jourard (1953). The BCS comprises of 45 different body parts and functions that are rated on a five-point scale ranging from "have strong feelings and wish change could somehow be made" to "consider myself fortunate". According to Grogan (1999) the BCS is one of the earliest assessments used to assess the degree of satisfaction with the body and is also one of the most widely used measures today. Other questionnaires include the Body Distortion Questionnaire, Body Self-Relations Questionnaire (BSRQ), Body Image Automatic Thoughts Questionnaire (BIATQ), Bulimia Cognitive Distortions Scale (BCDS), Body Shape Questionnaire, and the Body Image Anxiety Scale (BIAS) (Thompson, 1990).

Another way to determine how participants feel about their body shape is to ask them. This can be done in an unstructured or semi-structured interview (Grogan, 1999). An advantage of doing this is that the participants are given the freedom to express their feelings (Grogan, 1999). This allows them to address issues that are more important to them making this technique more flexible than questionnaires. The limitation is that no quantitative data is generated (Grogan, 1999).

2.10 Previous evidence-based research studies

Besides the research findings reviewed above, there are other studies that are important to consider when considering body image and black African and white females in South Africa.

Looking at a university student sample, Wassenaar et al. (2000) found that black students had a significantly higher drive for thinness than their white peers. However, white students still had higher body dissatisfaction than their black peers. Mwaba and Roman (2009) studied body dissatisfaction among young black female South Africans. Their findings indicated low body dissatisfaction. This seems to contradict previous studies where black females reported a drive for thinness. Mwaba and Roman's (2009) study was based on self-reports and not a structured instrument. This study suggests that more in-depth studies should be conducted on this topic.

Gitau et al. (2013) state that there is increasing evidence that eating disorders are becoming a problem in South African population groups other than the white population. Through their study, they found that white females had healthier body images and had a lesser pre-disposition to eating disorder pathology than their black peers. However, they have lower self-esteem and a higher preference to be slimmer than their black peers. Their findings support previous research in South Africa, that black females have a higher risk for eating disorders than white females. Although both white and black females both had body dissatisfaction, black females had higher body dissatisfaction than white females. They concluded that their study proves that there are racial differences in eating habits (i.e. dieting) and body image. However, their study also provides evidence that there are Westernized ideals of thinness present in black urban females.

2.11 Need for more information on the topic of cross-cultural body dissatisfaction

It is clear that there is a need for more information regarding eating disorder pathology in developing countries, such as South Africa (Wassenaar et al., 2000). Szabo and Allwood (2006) state that South African data regarding cross-cultural body image dissatisfaction and how this could relate to eating disorders is still limited. Delpont and Szabo

(2008) report that although black South African individuals first reported eating disorders in 1995, there appeared to be no literature that specifically observes clinical cases of eating disorders among black female South Africans. Mwaba and Roman (2009) state that most body image studies to date tend to focus on white females, regardless of evidence that cultural factors may have an influence on body image. Future South African studies could improve understanding of eating disorder pathology in developing countries (Szabo & Clifford, 2006; Wassenaar et al., 2000) and therefore it would be worthwhile for future studies to focus on body dissatisfaction and distortion from a cross-cultural perspective.

This study therefore aims to explore whether black African and white university students experience body dissatisfaction and if there are any differences in body dissatisfaction. So far, research has shown conflicting results on this topic. This study will also take into account body image distortion, as there are no recent studies that the researcher is aware of that have examined body image distortion differences among black African and white female university students. In a similar South African study by Uys and Wassenaar (1996), on body image disturbances in anorexic and normal females, it was noted that it could be of benefit for future cross-cultural research to be done on such topics in South Africa.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter will outline the aims of the study and present the research design, sample, assessment instruments, data collection and analysis plan, and ethical considerations.

3.2 Aims of the study

This study will examine whether black African and white female university students distort their body images when asked to reproduce an accurate estimation of their body size, using the Image-Marking Procedure and the Movable Caliper Technique. It will also examine whether black African and white female university students are satisfied with their current body size, using the Body Cathexis Scale. The study will also analyse whether black African and white female university students show differences in body image distortion and body satisfaction.

3.3 Research questions

The current research aims to answer the following questions:

- 3.3.1 Is there a significant difference in body image distortion between black African and white female university students?
- 3.3.2 Is there a significant difference in body image satisfaction between black African and white female university students?
- 3.3.3 What is the statistical relationship between body image distortion and body image satisfaction between black African and white female university students?

3.4 Research Design

The study contains a quantitative design, including a comparative design. The research design partially replicated in a previous study by Uys and Wassenaar (1996) on perceptual and affective components of body image disturbances in anorexic and normal females. The main difference was that their study examined perceptual and affective components of body image in South Africa anorexic and normal weight females while this study includes a cross-racial design including only a normal (non-clinical) South African female population. This means that the participants will be black African and white female university students respectively.

3.5 Participants and sampling

The participants of this study consisted of 40 female university students. The sample included female students from two race groups, black African and white. All participants therefore had to be female and belong to the above-mentioned race groups as well as be registered students at a university during the time of data collection.

In this study nonprobability convenience sampling was used. This type of sampling is used with the initial criteria for selecting participants that are easy to reach, convenient, and readily available (Neuman, 2011). Convenience sampling is non-random sampling in which the researcher selects anyone that they come across who meets the study's sample criteria (Neuman, 2011). Basically, according to McMillan and Schumacher (2014), the sample is selected on the basis of being accessible or expedient. Convenience samples have been widely used in both quantitative and qualitative studies as this may be the best that the researcher could accomplish due to practical constraints, efficiency, and accessibility (McMillian & Schmacher, 2014). The present study is of limited scope due to financial and

time constraints. This will be discussed further in the conclusion chapter in the limitations section (section 6.4).

Neuman (2011) states that this type of sampling may be legitimate for exploratory preliminary studies. It however, often produces a non-representative sample and is not always recommended for creating an accurate sample to represent a whole population (Neuman, 2011).

Nonprobability convenience sampling also has its advantages. It is often less costly and time consuming, usually has a high participant rate, is easily administered, and can possibly be generalized to other similar samples (McMillian & Schmacher, 2014). Its weaknesses include that it can often be difficult to generalize to other subjects, it is not as representative of an identified population. The results are often dependent on unique characteristics of the sample, and there is a greater possibility for error due to researcher or subject bias (McMillian & Schmacher, 2014).

3.6 Procedure

The researcher submitted a proposal through the University of KwaZulu-Natal as part of the requirements of the MSocSc Degree in Counselling Psychology. This proposal was reviewed by two senior staff members and was then submitted to the Humanities and Social Science Research Ethics Committee (HSSREC) who forwarded the proposal to the Biomedical Research Ethics Committee (BREC). BREC granted the researcher ethical clearance (BE 406/16) to commence the study on 25 July 2016. Prior permission was obtained from the UKZN Registrar to recruit participants from UKZN's College of Humanities.

In order to recruit participants, the researcher approached lecturers at the University on KwaZulu-Natal's Howard College Campus to gain permission to inform students about

the study and the participation process during their lectures. This was unfortunately interrupted during the 2016 *Fees Must Fall Movement* as lectures were often cancelled due to student protests.

Once entry was gained into the various lectures, the researcher would inform the students during the lecture about the purpose of the study and the demographics required to participate in the research. If the students willingly volunteered after being informed about the study they were given a form to fill out indicating when they would be available to participate as well as their contact details (Appendix A).

Volunteers were contacted via the email address supplied on the participation form (Appendix A) and time slots were booked for each participant to come to the University of KwaZulu-Natal Howard College Campus' Psychology Clinic to take part in the data collection process. Fifteen- minute time slots were booked for each individual participant. Data collection took place in a private room, with a closed door, with only the female researcher present. Two participants requested to do the data collection process together, which the researcher allowed.

Before data was collected each participant was instructed to read and sign the consent form (Appendix B) if they will still happy to take part in the research study. They were also given the opportunity to ask any questions before and after they signed the consent form.

Once consent was given the participants were asked to take part in the Image-Marking Procedure (Askevold, 1975) by first estimating the width of their shoulders, waist, and hips. This was done by making markings on a large (860cm by 610cm) blank piece of paper using a felt tip pen. The researcher would give the instruction as follows,

“Pretend that this big sheet of paper is a mirror that you are looking at yourself in. I want you to draw two dots for where you think your shoulders would be on this mirror”.

This was done for the participants' shoulders, waist, and hips. Participants were told that only the width between the dots was important and not the placement on the paper, as many participants queried this. Once the process of marking their three mentioned body dimensions was complete, participants were asked to stand with their back against the piece of paper while the researcher marked, with a different colour felt tip pen, the actual width of their shoulders, waist, and hips. If the participant had a big or baggy top on they were asked to take it off or hold it tight around their body so measurements could be as accurate as possible.

The Movable Caliper Technique (Slade & Russell, 1973) was deployed next with the participant asked to move the caliper to the estimated size of their hips. This was done with the participants unable to see the measurements on the movable caliper. Once this was complete, the participant, with the help of the researcher, took the actual measurement of the participant's thigh using the caliper. These estimated and actual measurements were both recorded privately on a piece of paper.

After this, participants were given time to complete the Body Cathexis Scale (Secord & Jourard, 1953) in the privacy of the room. Clarifications on certain items were more common than others, namely; trunk, profile, elimination, and sex (male or female).

The Body Cathexis Scale, Image-Marking Procedure sheet, and Movable Caliper recording sheet were all coded with a unique number to each participant to maintain confidentiality. No names were recorded on the data capture sheets.

The estimated and actual widths of the participants' shoulders, waist, and hips recorded on the Image-Marking Procedure sheet were measured and a distortion score was calculated. The Body Cathexis Scale was scored and recorded. After this, the data was analysed into the various descriptive statistics outlined below under data analysis (section 3.8).

3.7 Data collection and measures

Data collection partially replicated Uys and Wassenaar's (1996) study on perceptual and affective components of body image disturbances in anorexic and normal females, with the use of:

- The Image-Marking Procedure (IMP), developed by Askevold (1975), was used to assess distortion of the width of the shoulders, waist and hips.
- The Movable Caliper Technique (MCT) (Slade & Russell, 1973) was used to assess distortion of the width of the thighs. The Movable Caliper Technique was used instead of the Image-Marking Procedure because according to Uys and Wassenaar (1996) this measure is considered more accurate at taking actual thigh measurements.
- The Body Cathexis Scale (Secord & Jourard, 1953) was used as a measure of body satisfaction. The BCS is in the form of a Likert scale containing 45 items. Each of the 45 items has five possible ratings, ranging from strong satisfaction to strong dissatisfaction.

Each instrument is individually described in more detail below (section 3.7.1 to 3.7.3).

3.7.1 The Image-Marking Procedure

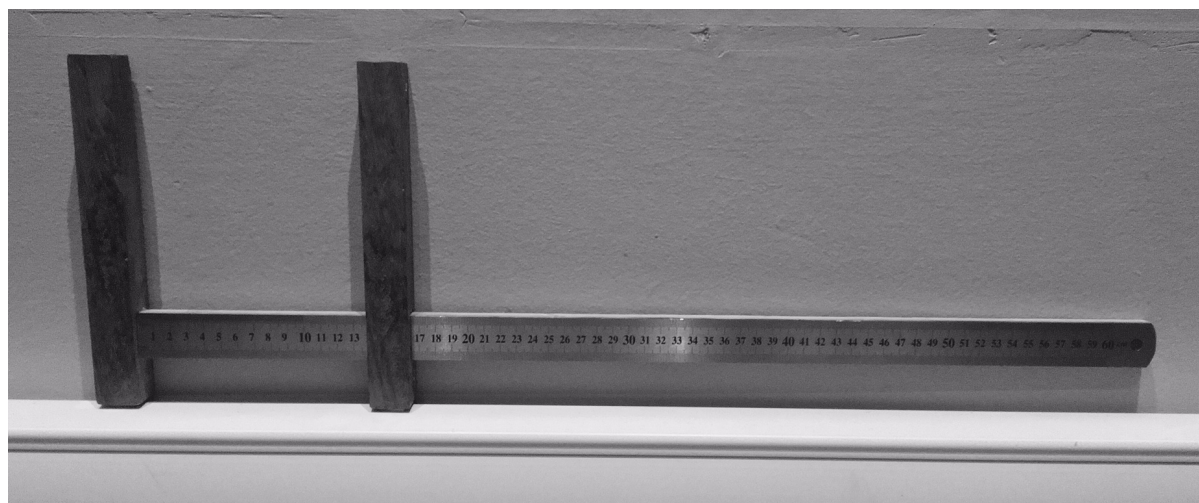
Image marking methods require participants to draw an outline of their body on a piece of paper vertically mounted on a wall, or alternatively mark this piece of paper with two dots to represent different widths of specific body parts (Farrell, Lee & Shafran, 2005). The Image-Marking Procedure was developed by Askevold in 1975 (Farrell et al., 2005; Gleghorn & Penner, 1989) and has been proven to be reliable in previous studies (e.g., Gleghorn & Penner, 1989). Frank-Stomborg and Olsen (2004) report a reliability of 0.72 to 0.92 for the Image-Marking Procedure when tested on both bulimics and a normal (non-clinical) group.

In Rodgers, Paxton and McLean's (2009) study, the Image-Marking Procedure was used for recording segmental body size perceptions in schizophrenic patients. Participants were asked to mark estimated distances between certain body parts. This information was then used to work out a body perception index (BPI) for each participant (Rodgers et al., 2009). The Image-Marking Procedure is mostly used in research studies to get body image estimates of shoulders, hips, and waist (Gleghorn & Penner, 1989). Possible body image distortion can be determined by subtracting the estimated distance from the actual distance indicated by the participants, or vice-versa if the actual is greater than the estimated (Gleghorn & Penner, 1989).

3.7.2 The Movable Caliper Technique

Similar to the Image-Marking Procedure, analogue scales require participants to adjust a pair of moveable calipers (see Fig. 1) to form a measurable horizontal separation between two markers (Farrell et al., 2005).

Figure 1. Movable Caliper



The Movable Caliper Technique has been found to be more accurate than the Image-Marking Procedure when estimating thigh width (Uys & Wassenaar, 1996). Frank-Stomborg

and Olsen (2004) reported variable reliability estimates of 0.25 to 0.94 for the Movable Caliper Technique. They stated that the Movable Caliper Technique discriminates well between anorexics and normal (non-clinical) subjects. Both the Movable Caliper Technique and the Image-Marking Procedure are considered to be body part measurement methods, which often show more variance than if a whole body measure is used (Farrell et al., 2005).

3.7.3 The Body Cathexis Scale

The Body Cathexis Scale (BCS) developed by Secord and Jourard (1953) is used to measure the degree of satisfaction with the appearance and functions of one's body (Serto, Doganavsargil & Elbi, 2009). McLester, Hardin and Hoppe (2014) describe the BCS as a measure that examines how people see their bodies. They explain that body cathexis is closely related to body image, but that it specifically focuses on satisfaction with one's body. They state that body satisfaction can be defined as either positive or negative feelings towards one's body and is considered the evaluative dimension of body image. The BCS is a 45-item self-report instrument where the individual is instructed to rate their degree of satisfaction with each body part and function using a Likert-type scale that ranges from 1 (strongly like) to 5 (strongly dislike) for each item (Serto et al., 2009). It includes many body parts and features, which include facial features, complexion, hair, hips, thighs, buttocks, waist, stomach, bust, shoulders, arms, muscle tone, weight, height, and overall appearance (McLester et al., 2014). An overall score is obtained for the BCS by summing all the responses to get a total. The higher the total score of the BCS, the higher the individual's body satisfaction (Serto et al., 2009). According to Serto et al. (2009) the BCS has been studied for reliability and validity in Turkey, and the internal consistency was found to be 0.88. Uys and Wassenaar (1996) reported that studies (i.e., Jourard & Remy, 1957; Weinberg, 1960) reported a reasonably good split-half reliability after Secord and Jourard

(1953) originally reported a split-half reliability of 0.81. The BCS has been used successfully in multiple studies incorporating body image satisfaction (e.g. McLester et al., 2014; Sertoz et al., 2009; Uys & Wassenaar, 1996).

3.8 Data analysis

As mentioned, the overall aim of the study was to determine whether there is a difference in body image distortion and body image satisfaction between black African and white female university students. The statistical relationship between the results will also be explored. To evaluate the statistical relationship between the results, a score from the Body Cathexis Scale was recorded. The body measurements obtained from the Image-marking Procedure and Movable Caliper technique were also recorded. Then, once all the data was recorded it was analysed accordingly.

Once the relevant data was collected, the researcher scored the Body Cathexis Scale. From this data obtained from the Body Cathexis Scale, the researcher worked out a mean score of body dissatisfaction. This was done for both the black African and white female sample. The researcher then made use of a one-way ANOVA to determine whether these results have a statistically significant difference.

Once all the body measurements using the Image-Marking Procedure and the Movable Caliper Technique were measured and a distortion score was recorded, the researcher worked out a body perception index (BPI) percentage (defined by Slade & Russell, 1973) for each body part of each participant measured. This was done by using the formula: $\text{Body perception index (BPI)} = \frac{\text{average perceived body size}}{\text{actual size}} \times 100/1$ (Slade & Russell, 1973). An overall body perception index was then calculated for each participant. This was done by finding the average BPI for each participant based off the BPI they received for each body part.

A mean BPI score was calculated for each body part as well as an overall body score for both the black African and white female sample. After the mean BPI of each body part and overall was recorded for each sample group a one-way ANOVA was used to determine whether there was a statistically significant difference of BPIs between sample groups.

3.9 Ethical considerations

In this section ethical considerations applicable to the current study will be presented applying the framework suggested by Wassenaar and Mamotte (2012b).

3.9.1 Collaborative partnership

After receiving provisional ethics approval, the researcher obtained gatekeeper's permission from the University of KwaZulu-Natal's Registrar to recruit participants from the College of Humanities before any contact was made with participants. The researcher then negotiated with the relevant lecturers to gain entry into their lectures and recruit participants. During the lectures, the purpose of the study was described to the students and the data collection process was also briefly explained. Many lecturers informed their students that it would be a worthwhile exercise to take part as they too may be doing research for degree purposes one day and could have an opportunity to learn from the procedure of the data collection.

3.9.2 Social value

As mentioned in the previous chapter (chapter 2) there is a need for more research on the topic of body image distortion and dissatisfaction in South Africa. This is due to the lack of research including black African participants and conflicting findings from available studies on African women (i.e., Delport & Szabo, 2008; Mwaba & Roman, 2009; Wassenaar et.al, 2000). The findings from this study could add social value to future researchers or

professionals trying to understand body image distortion and dissatisfaction across race groups. The study may also lead to information that could aid the understanding of eating disorder pathologies among South African race groups as well as interventions to minimise eating disordered pathology.

3.9.3 Scientific validity

As previously mentioned the methodology of the current study is partially based on a previous study by Uys and Wassenaar (1996), which yielded conclusive results. It is therefore assumed that the current study also maintains scientific validity. All the instruments (Image-Marking Procedure, Movable Caliper Technique, and Body Cathexis Scale) have been found to be valid and reliable. This was previously explained in more detail (section 3.7).

The initial target number of participants (100) was reduced due to 40 due to the *Fees Must Fall Movement* making access to participants a difficulty. The safety of participants was more important than reaching the original participant target number. The research is also for degree purposes, which limited the time available for data collection. However, with the reduced amount of data that study was still considered to be scientifically valid. There was also no funding available for this study, which contributed to its limited scope.

3.9.4 Fair selection of participants

As previously explained nonprobability convenience sampling was used in this study.

Although convenience sampling is not always the best type of sampling to use in social research (Wassenaar & Mamotte, 2012b), participants for this study needed to be attending a university (easily assessable and convenient) and thus this type of sampling for the current study should not have an effect on the results. The researcher appealed to students in various

lectures and were allowed to volunteer as long as they were female and either black African or white.

3.9.5 Favourable risk/benefit ratio

There were no major risks or benefits for the participants that volunteered to participate in the research. If the participants requested feedback, the researcher offered to provide it to them after the completion of the research. There was a space provided for them on the consent form (Appendix B) to indicate if they wanted to receive feedback or not. Feedback will be sent to the requesting participants ($n=25$) via email after the completion of the study. This could be viewed as a possible indirect benefit for participants.

A minor harm was however possible and mentioned in the information sheets. The topic of body image distortion and dissatisfaction could be sensitive to certain participants and could possibly cause distress. If any aspect of the study happened to cause distress to the participants they were informed to tell the researcher so the necessary referral to student/health support services could be made. No participants asked for a referral to any of the above-mentioned services.

3.9.6 Independent ethics review

Before submitting the proposal for ethical clearance, it was reviewed and approved by the School's Research and Higher Degrees Committee. Ethics approval for the study was obtained from the Biomedical Research Ethics Committee (BREC) (BREC REF NO: BE406/16, see Appendix C) after Registrar's permission to recruit students on campus was also obtained (Appendix D).

3.9.7 Informed consent

Informed consent was obtained from each participant before any part of the data collection took place. An information sheet (Appendix B) accompanied the consent form. The information sheet explained the necessary information about the study, which included what was expected of each participant and the potential risks and benefits. This information sheet also served to inform participants that research participation was strictly voluntary and that they could withdraw from the study at any point without penalty.

3.9.8 On-going respect for participants

During the data collection process, the researcher ensured that the rights and welfare of participants were protected and assured the confidentiality of the information collected. All data was collected in a private room with only a female researcher present. The participants' identity will be kept private and confidential at all times and no identifiers or names were used in the write up of this research study so all data sheets are anonymous.

All data received, as well as sign up forms and consent forms, will be stored in a locked cupboard in the researcher's office and will be destroyed in five years' time.

As previously mentioned, the participants were allowed to withdraw from the study at any given time. However, none chose to do so. The participants were also allowed to request feedback on the study findings and 25 participants elected to do so.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter contains the results obtained from the study. The following chapter (chapter 5) will contain a discussion of the results presented in this chapter.

4.2 Sample

A total of 40 female university students participated in this study. A total of 50% of the participants were white females while the other 50% were black African females. The students that participated were undergraduate, Honours, or Masters students during the period of data collection (2016-2017). Most of the students (95%) were recruited from lectures at the University of KwaZulu-Natal's Howard College Campus. Only four participants (5%) (all being white females) were referred to the researcher by word of mouth (see Appendix E).

4.3 Differences in body image distortion

To calculate body image distortion for each participant both the Movable Caliper Technique and the Image-Marking Procedure were used. The Movable Caliper Technique was used to assess distortion of the thighs while the Image-Marking Procedure was used to assess distortion of shoulders, waist, and hips. The participants' estimated width of each body part was compared to the actual width of the same body part and a difference or distortion score was computed. Using this data a body perception index score (BPI) was calculated for each participant's assessed body part as well as an overall BPI. A BPI score of less than 100% indicates that the participant underestimated the width of the assessed body part while a BPI score of more than 100% indicates that the participant overestimated the width of the

assessed body part (Blood, 2005). Thus, the greater the percentage (over 100%), the greater the overestimated distortion and the lower the percentage (under 100%), the greater the underestimated distortion.

4.3.1 Shoulders

Table 1 below shows descriptive statistics relevant to the distortion component pertaining specifically to the participants' shoulders.

Table 1. Body Perception Index of Shoulders: Descriptive Statistics

	Highest	Lowest	Mean	Standard Deviation	Median	Mode
White	217.73%	67.95%	105%	0.31	96.11%	N/A
Black African	129.64%	72.38%	96.37%	0.16	93.40%	N/A

4.3.1.1 Mean shoulder BPI score

On the perception of the width of the shoulders the white sample had a mean BPI of 105% ($SD=0.31$) while the black African sample had a mean BPI of 96.37% ($SD=0.16$). This indicates that the white sample tended to slightly overestimate their shoulders while the black African sample tended to slightly underestimate their shoulders.

4.3.1.2 Statistical significance between white and black African sample groups' shoulder estimations

A one-way ANOVA was used to determine if there was any statistically significant difference between the two samples' results. The use of a one-way ANOVA (at a 5% significance level) on Statgraphics indicated no significant difference between the means of

the two groups ($F= 1.25$; $df= 1$; $p\geq 0.05$). Although black Africans tended to underestimate the width of their shoulders while the white group tended to overestimate the width of their shoulders, the difference was not found to be statistically significant.

Although no statistically significant results were found between the black African and white female sample when comparing the means, this data was still conclusive and significant with regard to the research question. This means that distortion of the shoulders was similar between both of the race groups of this study. Indicating that both the race groups had a non-significant amount of difference (if any) between distortions of the shoulders.

Although not statistically significant, data indicated that the black African women in this study believed that their shoulders were smaller than they actually were while the average white female believed that her shoulders were bigger than they actually were. However, most participants from the white and black African sample were both found to underestimate their shoulder width. This suggests that a minority of white female participants that distorted their shoulders by overestimating them had a large degree of discrepancy. This is clear when considering the standard deviation of each sample, as the white sample had a higher standard deviation than the black African sample. This was also evident when considering both samples' highest and lowest scores.

When considering the highest and lowest scores from each sample group, the white sample had both the highest and lowest scores as well as the biggest range between the two. This indicates that the amount of distortion within the white sample was greater than within the black African group.

4.3.2 Waist

Table 2 below shows descriptive statistics relevant to the distortion component pertaining specifically to the participants' waists.

Table 2. Body Perception Index of Waist: Descriptive Statistics

	Highest	Lowest	Mean	Standard Deviation	Median	Mode
White	126.40%	66.79%	100.17%	0.20	103.32%	N/A
Black African	193.77%	66.03%	93.08%	0.26	86.63%	N/A

4.3.2.1 Mean waist BPI score

On the perception of waist width, the white sample had a mean BPI of 100.17% ($SD=0.20$) while the black African sample had a mean BPI of 93.08% ($SD= 0,26$). This indicates that the white sample very slightly overestimated the width of their waist while the black African sample underestimated the width of their waist.

4.3.2.2 Statistical significance between white and black African sample groups' waist estimations

A one-way ANOVA yielded no significant difference between the means of the two groups ($F= 0.94$; $df= 1$; $p \geq 0.05$). This means that while the black African sample tended to underestimate the width of their waist, the white sample only slightly overestimated the width of their waist. The difference was not statistically significant.

No statistically significant differences were found when comparing the means of both the white and black African samples. However, the data is still significant to the research question. The data for the waist dimension showed that there was no significant difference between the two race groups. Both samples had little to no difference in distortion of the waist.

Although non-significant, the black African sample had lower mean scores than the white sample. The overestimated distortion mean for the white female sample was minimal

(0.17%). Therefore it is assumed that the average white participant did not distort her waist. The average black African participant believed that her waist was smaller than it actually was, while the average white female did not distort her waist. Regardless of the black Africans' mean score being an underestimation, it still demonstrated the most distortion of the two samples.

When observing the highest and lowest distortion scores from each sample group, the black African sample had both the highest and lowest scores and the biggest range between the two.

4.3.3 Hips

Table 3 below shows descriptive statistics relevant to the distortion component pertaining specifically to participants' hips.

Table 3. Body Perception Index of Hips: Descriptive Statistics

	Highest	Lowest	Mean	Standard Deviation	Median	Mode
White	139.31%	73.97%	106.71%	0.20	109.33%	N/A
Black African	151.51%	63.35%	94.78%	0.29	89.62%	N/A

4.3.3.1 Mean hips BPI score

On the perception of the width of the hips the white sample had a mean BPI of 106.71% ($SD=0.20$) while the black African sample had a mean BPI of 94.78% ($SD= 0.29$). This indicates that the white sample overestimated the width of their hips while the black African sample underestimated the widths of their hips.

4.3.3.2 Statistical significance between white and black African sample groups' hip estimations

Once again a one-way ANOVA yielded no significant difference between the means of the two groups ($F= 3.64$; $df= 1$; $p\geq 0.05$). This means that although the black African sample tended to underestimate the width of their hips and the white sample overestimated the width of their hips, the difference was not statistically significant.

No statistically significant differences were found when comparing the means from both samples. This however, is significant to the study as it indicates that the race groups showed similar amounts of distortion on the dimension of their hips, suggesting that there was little to no difference in the amount of distortion each race group displayed with regard to their hip dimension.

The black African sample had a lower mean score than the white sample. The average black African female in this study believed that the width of her hips was smaller than what it actually was, while the white sample believed that the width of their hips were bigger than it actually was. Most of the black African sample underestimated the width of their hips, while most of the white sample overestimated hip size. This is in line with the mean distortion score of each sample group.

When observing the highest and lowest scores from each sample, the black African sample had both the highest and lowest scores. This means that the black African sample also had the greatest range of distortion scores.

4.3.4 Thighs

Table 4 below shows descriptive statistics relevant to the distortion component pertaining specifically to the participants' thighs.

Table 4. Body Perception Index of Thighs: Descriptive Statistics

	Highest	Lowest	Mean	Standard Deviation	Median	Mode
White	150.00%	87.15%	120.88%	0.15	120.64%	N/A
Black African	160.33%	70.44%	117.60%	0.24	119.29%	N/A

4.3.4.1 Mean thigh BPI score

On the perception of the width of the thighs the white sample had a mean BPI of 120.88% ($SD=0.15$) while the black African sample had a mean BPI of 117.60% ($SD= 0.24$). These results indicate that both the black African sample and white sample overestimated the width of their thighs, with the white sample's estimation being slightly greater than the black African sample.

4.3.4.2 Statistical significance between white and black African sample groups' thigh estimations

Once again a one-way ANOVA yielded no significant difference between the means of the two groups ($F= 0.27$; $df= 1$; $p\geq 0.05$). Both sample groups were found to overestimate the size of their thighs with the white sample group's overestimation being greater than the black Africans. However, this difference was not statistically significant.

Thighs were measured with a different instrument and method than the other body dimensions. As previously mentioned, thigh width was estimated and measured using the Movable Caliper Technique (MCT). Although the difference between the two race groups was not statistically significant, it is still conclusive and significant to the study's research questions. The data indicated that there was little to no difference between the degree of thigh distortion between the two race groups.

For the first time, both the black African and white samples had an overestimated mean distortion score. The white sample's mean score was higher than the black African sample's, but only by a small amount (3.28%). Both the black African and white female samples believed that their hips were wider than they actually were. In accordance with these findings, almost all participants overestimated hip size.

When comparing the highest and lowest distortion scores, the black African sample was found to have both the highest and the lowest score.

4.3.5 Overall body distortion

Table 5 below shows descriptive statistics relevant to the distortion component pertaining specifically to the participant's overall BPI.

Table 5. Body Perception Index of Overall Body Distortion: Descriptive Statistics

	Highest	Lowest	Mean	Standard Deviation	Median	Mode
White	122.66%	76.96%	103.82%	0.13	105.26%	N/A
Black African	147.82%	70.69%	97.62%	0.16	96.60%	N/A

4.3.5.1 Mean overall BPI score

The overall mean BPI for the white sample was 103.82% ($SD= 0.13$) while the black African sample had a lower mean BPI of 97.62% ($SD= 0.16$). These results indicate that overall the white sample slightly overestimated the width of the assessed body parts while the black African sample underestimated the overall width of the assessed body parts.

4.3.5.2 Statistical significance between white and black African sample groups' overall BPI scores

Again, a one-way ANOVA yielded no significant difference between the means of the two sample groups ($F= 1.85$; $df= 1$; $p \geq 0.05$). This means that although the black African sample tended to underestimate the width of their bodies, while the white sample tended to overestimate the width of their bodies, the difference was not statistically significant. When observing an overall body distortion score, no significant differences were found when comparing the means from both race groups. This however, was significant to the study as it indicated that overall both race groups showed a similar or no difference in distortion of their bodies.

When observing each sample's mean distortion score as a whole (made up of shoulders, waist, hips, and thighs combined), the white sample was found to have a slightly overestimated mean and the black African sample had a slightly underestimated mean (both within 4% difference of no distortion). This could mean that, overall, both sample groups did not have a very distorted image of their body dimensions as a whole. However, while the white sample believed their overall body dimensions were slightly bigger than they actually were, the black African sample could have believed the opposite. The white sample's score also indicated that they had a greater overall body distortion score than the black African sample.

When comparing the highest and lowest overall body distortion scores, the black African sample once again obtained both of these scores. This indicates that the black African sample had the greatest range of distortion scores.

4.4 Body satisfaction

To calculate body satisfaction for each participant, the Body Cathexis Scale was used. The BCS is scored out of a maximum of 225. The higher the score obtained on the BCS, the more satisfied that the participant is with her body. Table 6 below shows the descriptive statistics relevant to the body satisfaction component of the study.

Table 6. Body Cathexis Scale Descriptive Statistics

	Highest	Lowest	Mean	Standard Deviation	Median	Mode
White	185	102	149,05	20,82	155	135
Black African	193	111	158,15	21,43	156,5	176

4.4.1 Mean Body Cathexis Scale scores

Out of a maximum score of 225 on the Body Cathexis Scale, the white sample had a mean score of 149.05 ($SD=20.89$) and the black African sample had a higher mean score of 158.15 ($SD= 21.43$). This means that the black African sample had a higher mean body satisfaction than the white female sample.

4.4.2 Statistical significance between white and black African sample groups

A one-way ANOVA was again used to determine if there was any statistically significant difference between the two samples results. The use of a one-way ANOVA (at a 5% significance level) indicated no significant difference between the means of the two sample groups ($F= 1.85$; $df= 1$; $p \geq 0.05$). The white sample had a lower mean, than the black African sample, indicating higher body dissatisfaction within the group. However, this

finding is not statistically significant and therefore body dissatisfaction was not significantly different between the two sample groups.

While exploring statistical relationships within the data, the highest and lowest scores obtained on the BCS were considered. A female from the black African sample obtained the highest satisfaction score, while a female from the white sample was found to have the lowest satisfaction score. Although these findings were non-significant, when looking at the highest and lowest scores, the difference between both of the samples' satisfaction scores were both less than ten score points. This cannot be considered a very large difference, indicating that body satisfaction was statistically similar between the two sample groups. This is congruent with the main body dissatisfaction finding. Both black African and white female university students displayed no statistically significant differences in body dissatisfaction.

4.5 Over- and underestimation of width of body parts

Table 7 below shows the number of participants in each sample group that either under or overestimated the width of the body parts being assessed using both the Image-Marking Procedure and the Movable Caliper Technique. The estimated scores were converted to a Body Perception Index (BPI) with the use of the formula outlined in the previous chapter under the section of data analysis (section 3.8). As previously explained, a BPI of 100% would indicate that the estimated size was the same as the actual size and there is therefore no distortion. Any BPI under 100% would be an indication of underestimation, while any BPI above 100% would indicate an overestimation.

No participants obtained a BPI of 100% for any of the body parts assessed which would have indicated no distortion. However, one white female only slightly distorted (overestimated) her shoulders (by less than 2%) as well as one white female had a very

slightly distorted (overestimated) overall BPI (<2%). One black African female also only slightly distorted (overestimated) her waist (<2%).

Table 7. Number of Participants that Distorted Body Parts by Race Group

	Shoulder	Waist	Hip	Thigh	Overall
Overestimated					
White	9	11	12	18	14
Black African	7	4	6	17	9
Underestimated					
White	11	9	8	2	6
Black African	13	16	14	3	11

As can be seen from the table above most white females tended to overestimate the size of most of their body parts. They also had an overestimated total distortion score. The only body part that was mostly underestimated by the white sample was their shoulders.

This was almost the opposite for the black African sample. They tended to underestimate most of their body parts but still had an overestimated total distortion score. The only body part that was mostly overestimated by the black African sample was their thighs.

4.6 Additional findings: correlations

4.6.1 Correlations within white sample group

In the white sample, significant positive correlations were found between the shoulders and overall average distortion ($p < 0.05$) as well as between hips and overall average distortion ($p < 0.05$). No negative correlations were found.

4.6.2 Correlations within black African sample group

In the black sample significant positive correlations were found between shoulders and waist ($p < 0.005$); shoulders and hip ($p < 0.005$); shoulders and overall average distortion ($p < 0.001$) as well as waist and hips ($p < 0.005$); waist and overall average distortion ($p < 0.001$) and lastly between hips and overall average distortion ($p < 0.001$). Again, no negative correlations were found.

4.7 Summary of results

Table 8 below indicates the summary of the mean scores for both body dissatisfaction and distortion for both the white and black African samples.

Table 8. Mean Scores of White and Black African Female University Students

	Body Image Satisfaction	Body Image Distortion Body Perception Index (%)				
	BCS	Shoulder	Waist	Hip	Thigh	Overall
White	149.05	105.05%	100.17%	106.71%	120.88%	103.82%
Black African	158.15	96.37%	93.08%	94.78%	117.60%	97.62%

There were no statistically significant results found when comparing the means of each individual body part and overall distortion within groups, as well as comparing the results from the BCS using one-way ANOVAs within groups.

The above results show that there was a difference in body image distortion between black African and white female students. However, this difference was not statistically significant. This same result was replicated for each body part assessed (shoulders, waist,

hips, and thighs) and for the overall distortion score for each group. When looking at the mean scores, the black African sample was found to have underestimated mean score for all the body parts assessed except for thighs, for which they had an overestimated mean score. The white sample was found to have an overestimate mean score for all of the body parts assessed, with their waist estimation being the closest to their actual size and the least distorted.

There was no statistically significant difference found between body image satisfaction between the black African and white female samples. This was concluded even though the black African sample had a higher body image satisfaction score on the Body Cathexis Scale than the white sample.

Overall, the results concluded that there was no statistically significant difference in body image distortion and dissatisfaction between black African and white female university students. These results will be discussed in more detail in the following chapter (chapter 5).

CHAPTER FIVE

DISCUSSION

5.1 Introduction

In this chapter, the results presented in chapter four (Results) will be discussed in terms of the aims and research questions described in chapter three (Methodology) and the literature review (chapter 2). The conclusion, recommendations, and limitations of the study will follow in the next chapter (chapter 6).

There will be a discussion on whether black African and white female university students from this study distort their body images when asked to reproduce an accurate estimation of their body size. The discussion will also conclude whether black African and white female university students have a similar degree of satisfaction with their current body size. Lastly, whether black African and white female university students show any statistically significant differences in body image distortion and body satisfaction will be discussed.

5.2 Comparison of body image distortion among race groups

The first research question (3.3.1): “Is there a significant difference in body image distortion between black African and white female university students?” will be discussed based on the results outlined in section 4.2.

The third research question (3.3.3): “What is the statistical relationship between body image distortion and body image satisfaction between black African and white female university students?” will also be briefly explored with regard to the distortion component and the dissatisfaction component will be briefly explored in the next section (section 5.3).

5.2.1 Body distortion summary and previous research findings

No statistically significant differences were found between the two race groups regarding distortion of shoulders, waist, hips, thighs, and overall. This suggests that there was a similar amount, or no difference, with regard to distortion of the body dimensions and body as a whole between black African and white female university students.

Haynes' (1995) study yielded similar results regarding perceptual distortion. There were no statistically significant differences found in distortion between her three sample groups, which included white first year students, black African first year students, and black African rural women. A lack of a significant difference regarding distortion has also been demonstrated in other studies without a cross-racial sample. Uys and Wassenaar's (1996) study indicated that there was no significant distortion with regard to normal and anorexics' shoulders, hips, and overall body.

Dolan, Birtchnell and Lacey (1987) also examined a normal (nonclinical) sample using the Image-Marking Procedure. In their study the female sample overestimated all of the body dimensions measured (chest, waist, and hips). When looking at the BPI score of the waist and hips, Dolan et al. (1987) participants had a mean BPI score of 127.88% for the waist and 115.60% for the for the hips. The current study yielded slightly different results. There was no indication of the racial composition of Dolan et al. (1987) study conducted in Great Britain. The white sample's results from the present study were the most similar. However, the width of the waist had a lower mean score of 100.17% and the hips also had a lower mean score of 106.71%. The black African sample's mean scores were not similar due to them all being an underestimation.

Looking at other research, the tendency would be to assume that there would be distortion within the samples (i.e., Forrest & Stuhldreher, 2007; Fuentes, et al., 2013; Mchiza et al., 2015) and that the black African sample would have a lesser degree of distortion (i.e.,

Mwaba & Roman, 2009). The distortion that the white female samples would hypothetically be expected to be overestimation, as white women are assumed to have lower body satisfaction and believe they are bigger than they actually are. Farrel et al. (2005) stated that the overestimation of body size is one of the components of body image disturbance and may play a role in the maintenance of anorexia nervosa. It is assumed that white females are at a greater risk to have body image disturbances and eating disorders as it is often considered a Western cultural phenomenon (Marais et al., 2003). For this reason, white females from this study were hypothesized to display overestimation of the width of their body dimensions.

Fuentes et al. (2013) found that healthy adults' perceived body size did not correlate with their actual body size. Their study indicated mainly overestimation of width in relation to the height. This was consistent with the all of the body dimensions examined in the present study, but only for the white sample group. The black African sample was only found to overestimate thighs on average. However, the black African sample's data still supports Fuetes et al.'s (2013) finding that body size did not correlate with their actual size. In South Lee and Lee (2016) found that overestimation and underestimation were both prevalent in high school students. This is consistent with the current study as the two sample groups showed both under- and overestimation, with no statistically significant differences between the amount of distortion between the two race groups

The white sample was found to have the highest mean value for each body part assessed, as well as overall body image distortion. All of these mean scores indicated an overestimation of their actual body dimensions. However, this did not necessarily imply that they distorted each body part the most. When looking at the distortion of the waist, the black African sample distorted this body part the most, however, it was distorted by underestimation. The white sample had the closest estimation to actual width of their waist, only overestimating it by 0.17%. The black African sample also had the greatest

overestimation of the thighs and therefore also demonstrated the more distortion of the thighs than the white sample. There were also few differences (if any) between the distortion of the two race groups. This rejects the above-mentioned idea that black African females would have a lesser degree of distortion as they were found to have the same amount of distortion as white females in this study.

All of the distortions observed from the white sample were overestimations of the individual's actual size. Klesges' (1983) study explains this as their findings suggested that under- and normal weight females overestimate their weight, which correlates with research on anorexics. This is congruent with the idea that overestimation of body size is a feature of anorexia nervosa (Dolan et al., 1987). However, Thompson and Thompson (1986) found that most (95%) normal weight females tended to overestimate their body size by 25%. This trend, outlined by Thompson and Thompson (1986), was not demonstrated in any of the white female sample's mean distortion scores. However, it could serve to explain that the overestimation demonstrated by the white females was within 'normal' limits. This, however, would need to be explored further. The black African sample was found to have the greatest distortion of the waist dimension. This distortion was an underestimation. Szabo and Allwood (2006) found that both black and white South Africans living in an urban area had a desire to be smaller.

Overall, there was no statistical significance found when comparing the means of each body dimension as well as the overall distortion score of the two sample groups. This concludes that, according to the data from this study, black African and white female university students did not have any statistically significant differences in body image distortion. Black Africans attending university in a large metropolitan city were found to have the same degree of body image distortion as their white counterparts..

5.3 Comparison of body image dissatisfaction between race groups

The second research question (3.3.2): “Is there a significant difference in body image satisfaction between black African and white female university students?” will be discussed in this section.

5.3.1 Body image dissatisfaction summary and previous research findings

As previously stated, the black African sample was found to have a higher degree of body image satisfaction than the white sample but this difference in mean scores was not found to be statistically significant. This implies that, according to this study, black African females attending university in a large metropolitan city did not show any significant degree of difference in body image satisfaction when compared to their white peers. The black African data from this study could even be different to data collected from the same race group living in different, more rural areas (Haynes, 1995). The possible reasons or causes for this conclusion will be discussed later (section 5.6).

Haynes (1995) found that there was a difference in body satisfaction between both white and black first year students when compared to black rural women. However, in concordance with the current study, Haynes (1995) found that there was no statistically significant difference in body satisfaction between white and black first year students. Other previous studies with similar findings to the current study will be discussed below (section 5.3.3).

Looking at other previous research reviewed, there are some similarities with previous studies on a similar topic. It must be noted that these studies did not use the BCS and therefore the comparisons must be viewed with some caution.

According to Klesges' (1983) theory, both overweight and anorexic individuals will often report themselves as weighing significantly more than they actually do and therefore

also experience negative affect about their bodies and themselves. He states that studies have found that body image disturbances found in obese and anorexic individuals are not more serious or prevalent than in normal or nonclinical samples. It would therefore be assumed that dissatisfaction would be present even in a normative sample as well as distortion that would be overestimated in nature.

Although it appears that research is still somewhat limited on this topic in South Africa, many studies (i.e. Caradas et al., 2001; Marais et al., 2003; Szabo & Allwood, 2006) have observed that body image dissatisfaction is equally prevalent in both white and black South African females. Regardless of prevalence, white females still tended to show higher levels of body image dissatisfaction in these studies. This is similar to the current study as there was no statistically significant difference found between body dissatisfaction of black African and white female university students. However, when having a closer look at the results, the white females showed slightly lower satisfaction scores than the black African participants. The two studies discussed below also yielded similar results.

A study including both black and white South African adolescent participants demonstrated that both white and black South African females living in urban or Westernised areas had greater levels of body dissatisfaction than black South African females from rural areas (Szabo & Allwood, 2006). However, white urban South African adolescents still had the greatest body dissatisfaction. Although this study is not concerned with the amount of dissatisfaction, it is similar as the scores for both black and white South Africans living in urban areas obtained similar scores, with white females showing a greater but non-significant degree of dissatisfaction.

Coetzee and Perrett (2011) found that abnormal eating behaviour was equally prevalent among South African schoolgirls, regardless of race group. However, they still found that white schoolgirls had more body dissatisfaction than their black African sample.

Although the current study did not investigate abnormal eating behaviour as such, both of these studies suggest that black African and white females may have more similar body image dissatisfaction than previously assumed.

5.4 Discussion of additional findings

In this section, additional comparative findings with regard to correlations within the sample groups are discussed further.

5.4.1 Correlations within white sample group

As previously stated in the results chapter, there were positive correlations between both the distortion of the shoulders and overall distortion as well as between the distortion of the hips and the overall distortion among the white sample. This indicates that the more this sample distorted their shoulders, the higher their overall distortion would be and vice versa. This finding was the same between the amount of distortion of hips and the amount of overall distortion as well, as one goes up so will the other.

5.4.2 Correlations within black African sample group

As previously stated in the results chapter, there were positive correlations between shoulder and waist distortion, shoulder and hip distortion, shoulders and overall distortion, waist and hip distortion, the waist and overall distortion, and between the hips and overall distortion. This indicates that the more a black African woman distorted her shoulders, the more she distorted her waist and vice-versa. This relationship would be the same between the shoulders and hips or overall distortion. The more a black African woman distorted her waist, the more she would be found to distort her hips and vice-versa. This relationship would be the same

between the waist and overall distortion. Lastly, the more a black African woman distorted her hips the more she would be found to distort her overall body dimensions.

5.5 Are the findings racially (or culturally) bound?

Caradas et al. (2001) found that a drive for thinness was higher in black Africans than whites. Marais et al. (2003) concluded that in both developing countries and traditional cultures reported prevalence of eating disorders has increased.

For many years, eating disorders have been assumed to be a Western cultural phenomenon with Western culture being associated with eating pathology (Marais et al., 2003). Therefore it is assumed that white, Westernized, individuals would demonstrate more body image distortion and dissatisfaction than black African individuals. The current study found that there were no significant differences in body image distortion and dissatisfaction between races, so this challenges this popular assumption.

As previously mentioned, there were no significant differences observed between the two race groups that participated in this study. This was found for both the body image distortion and dissatisfaction components. According to this study, there was no difference between both body image distortion and dissatisfaction between black African and white female university students. This means that, according to this study, body image distortion and dissatisfaction were not as culturally bound as many other researchers have previously believed (i.e., Coetzee & Perrett, 2011; Le Grange et al., 2006). This could also imply that certain aspects (i.e., dissatisfaction and distortion) of possible eating disorder pathology could also not be as culturally bound as it was previously believed and reported (Marais et al., 2003).

5.6 Possible explanations of the results

All the participants from this study were females attending a university in a metropolitan area. It could be assumed that university students are all, to some degree, exposed to a common, probably Western, culture in this setting. From the literature reviewed, Marais et al. (2003) questioned whether eating disorders were as culturally bound as once believed to be. They cited evidence that there was growing prevalence of eating disorders in developing countries. This could mean that when black African women are exposed to more Western cultures and pressures, they may show increased signs of disordered eating related to body satisfaction and distortion (Marais et al., 2003). Szabo and Allwood's (2006) study involving adolescent participants demonstrated that a sample of white South African females and a sample of black South African females both living in urban or Westernized areas had greater recorded body dissatisfaction than black South African females from rural areas. However, white urban adolescents still had the greatest body dissatisfaction. They state that data from rural samples have concluded that this increase in urban areas is less likely in a rural setting (Szabo & Allwood, 2006). This could be a source of the lack of significant differences between black African and white female university students in the present study. However, Haynes (1995) had previously found that there was a significant difference in body image dissatisfaction when comparing black African first year students to black African rural women. The same significance was also found when she compared white first year students to black African rural women with regard to dissatisfaction. Regardless of race or cultural background, both groups were attending university in the same urban area. It may be assumed that both groups were exposed to the similar 'Western' culture in this urban area (Marais et al., 2003). Haynes' (1995) study had the same non-significant result with regard to body image dissatisfaction and distortion between black African and white female first year university students. Attending the same university, the participants of this study are

assumed to experience similar social pressures and beauty ideals. This could possibly explain why no statistically significant differences were found between body image distortion and dissatisfaction between the groups.

Other factors could have influenced the results of this study. These could include possible social demand effects, which could have influenced participants' estimations (Farrell et al., 2005). Participants may have felt the need to make themselves smaller or bigger than they actually wanted to because of what they thought the researcher might have thought of them if they did otherwise (Farrell et al., 2005). It is possible that the black African sample underestimated the width of most of their body dimensions due to the Western cultural belief of the thin beauty ideal (Caradas et al., 2001). From this theory, the participants may have felt social demands to do so in the presence of the researcher who was a white female.

Studies have shown that participants who took part in a study similar to the present one immediately after they had eaten a big meal were more likely to make larger body size estimations (Farrell et al., 2005). Low mood has also been found, to contribute to larger estimations in this type of research (Farrell, et al., 2005). This was not considered in the present study so there is no way to determine whether either of these constructs had any effect on the results. However, it was assumed that these factors would affect both samples in the present study equally, but they were not controlled for (see section 5.8).

Limitations of the current results and study as a whole will be discussed in more detail in the next chapter (chapter 6).

5.7 Summary

No statistically significant differences in body image distortion were found between black African and white female university students in the present sample. There was also no statistically significant difference in body image dissatisfaction between black African and

white female university students. The statistical relationship between these results was also explored within this chapter. Although no statistically significant differences were found between the results, the data answered the research questions. The data indicated that there was no difference between both distortion and dissatisfaction between the two race groups.

When observing the distortion component of this study, the white female sample distorted all of their body parts by perceiving them as larger than they actually were (overestimation). The black African sample did the opposite when it came to distortion of all body parts except the thigh dimension, which they too overestimated. Most of the distortions by the white sample were overestimations of their actual width, while most of the distortions displayed by the black African sample were underestimations of their actual width. However, as mentioned, there were no statistical differences in the degree of distortion, but the difference in the direction of distortion was noteworthy. Interestingly, the white female sample also displayed the least distortion of the waist. This distortion was so minimal that it could be assumed that the white female sample had an accurate view of their width when comparing estimation to the actual size.

Although not statistically significant, the white female sample had the highest degree of distortion for all of the body dimensions assessed (including overall body size), except for the width of the waist. The black African sample had the highest amount of distortion of the waist. This was an underestimation of their actual size. This means that the black African sample viewed their waists as smaller than they actually were while the white female sample showed little to no distortion on this body part. This is something that warrants further attention (see section 5.8). It would also be interesting to understand why the white female sample showed overestimation that would normally be observed when assessing an anorexic sample (Klesges, 1983), while the black African women mostly demonstrated underestimation. Uys and Wassenaar's (1996) white anorexic sample was found to

overestimate every bodily dimension except for their shoulders. They were also found to overestimate their overall body size.

Examining the dissatisfaction component of this study, the white female sample had a lower score on the BCS and therefore had lower, but not significant, body satisfaction than the black African sample. Regardless of this, the difference between the means were minimal and not statistically significant. The amount of dissatisfaction that each sample demonstrated was not a focus of this study.

Both the white and black African samples demonstrated similar body image satisfaction and body image distortion overall. This could be for several reasons but it is hypothesized this may be because both of these samples were both attending university in a metropolitan urban area. The samples probably shared a common culture to some degree, possibly including the popular belief of the thin beauty ideal (Caradas et al., 2001; Levine & Chapman, 2011; Nasser, 1997; Swami et al., 2010), which was not controlled for in this study. It is hypothesized that with both the samples being exposed to Western societal norms to some degree, results would be similar (Marais et al., 2003). It is assumed that if these results had to be compared with a black African sample from a rural area, there would be significant differences as they would not have been exposed to the Western ideas of beauty. However, Haynes (1995) found this not to be true as there were no statistically significant differences when comparing Westernized black African and white females with black African rural females with regards to distortion.

Gitau et al. (2013) argue that black African women are more likely to be overweight in countries such as South Africa and that evidence suggests that for black South Africans thinness is not perceived as beautiful, but bodily fullness is positively valued. After reviewing literature, such as this study, it seems odd that the black African sample would underestimate most body dimensions and have a non-significant difference when compared

to white females if popular belief suggests that fullness is viewed as favourable among local African cultures (Gitau et al., 2013). This is a finding that would need to be explored further. However, a change in perception may be linked to the presence of and exposure to Western values and body image ideals (Marais et al., 2003). Previous studies suggested that with black Africans acculturating and becoming more westernized, eating disorder pathology, such as distortion and dissatisfaction, is becoming more prevalent among local black African women (i.e. Marais et al., 2003).

There is relatively little South African research with which to compare the results of this study. Most studies incorporate different aspects of disordered eating pathology or they use different assessment measures or excluded racial and/or cultural comparisons. Klesges (1983) long ago pointed out contradictory findings in the body image literature, possibly caused by all the different procedures used to measure body image. This limits comparability and can account for much of the unexplained variance. This comment could still apply, as many more recent studies still used different body image measurements (e.g. Coetzee & Perrett, 2011; Fuentes et al., 2013; Forrest & Stuhldreher, 2007; Kimber et al., 2015; Marais et al., 2003; Szabo & Allwood, 2006). This also limits data with which to compare the current study.

This study has several limitations. These, and recommendations, will be discussed in more detail in the next chapter (chapter 6).

5.8 Future research

For future research, the current study generates several suggestions. Although non-significant to the study, patterns were noted within the data, which could be worth investigating further. For example, why did the black African female sample distort their waist by underestimating it while the white female sample did not indicate distortion?

There is a large amount of variability in the assessments used in body image studies (Farrell et al., 2005). Changing the methodology of this study to incorporate a qualitative design may help to explain the variance that could be found in quantitative studies such as this one, due to factors such as demand characteristics (see section 5.6). Using a qualitative approach could allow the participants to freely speak or write about any social demands they may feel as well as give information on factors such as mood and hunger (Farrell et al., 2005), which may influence the results.

It could also be of value for future studies to compare the study's data to a black African rural sample similar to Haynes' (1995) study. This could aid in understanding whether the results were based on Westernization of the participants.

CHAPTER SIX

CONCLUSION

6.1 Introduction

In this final chapter, the main conclusions of this study will be summarized. There will also be a section on the relevance of this study and its findings. This chapter will also cover any limitations of this study that could have influenced the data collected or the study as a whole. Lastly, recommendations for future research of the same nature will be explored and discussed.

6.2 Main conclusions of the study

This study set out to determine whether there were any significant differences in body image distortion between black African and white female university students. The study also set out to determine whether there were any significant differences in body image dissatisfaction between black African and white female university students. Lastly, the researcher wanted to explore the statistical relationship between body image distortion and body image satisfaction between black African and white female university students.

No statistically significant differences were observed in the body image distortion between black African and white female university students. There were no statistically significant differences in each body dimension assessed (shoulders, waist, hips, and thighs) for distortion as well as the overall body dimension. It was also concluded that there was no statistically significant difference in body image dissatisfaction between black African and white female university students from the data obtained in this study. Lastly, the statistical relationship between both body image distortion and body image satisfaction was explored in depth in the previous discussion chapter (chapter 5). Although there were no statically

significant differences found in both body image distortion and body image dissatisfaction between the two race groups when comparing the means, there were many interesting non-significant differences observed within the data. These were discussed in detail in the previous discussion chapter (chapter 5).

Overall this study concludes that there was no statistically significant difference in body image distortion and body image dissatisfaction between black African and white female university students.

6.3 Relevance of the study and its findings

This study and its findings may be relevant to understanding similarities or differences in body image distortion and body image satisfaction among white and black African race groups in South Africa. This also seems relevant to eating disorders and disordered eating behaviours among different race groups in South Africa. Distortion and dissatisfaction are two of the main components associated with problematic body image (Forrest & Stuhldreher, 2007; Kimber et al., 2015), which could lead to eating disorders. Therefore, investigating these two components among different race groups provides potentially useful information.

This study concluded that black African and white female university students did not show any statistically significant differences in both body image distortion and body image dissatisfaction. This finding is both similar and contradictory to previous research done on similar topics. It is however, difficult to directly compare this study to other previous studies, as there are a variety of different assessment measures used when assessing body image. This will be discussed in more detail in the limitations section (section 6.4) below.

This study hopefully serves to contribute to the limited, but growing, information on eating disordered behaviours in South African race groups. This is one of the few South

African studies that the researcher is aware of that indicates that black African females from urban areas are not as different overall to white females in terms of how much they distort their body and how dissatisfied they are with their body image. This study could also serve to contribute to future research on the topic and to further understand eating disordered behaviour among race groups. This information could also be beneficial when considering treatment plans for such behaviours.

6.4 Limitations

In this section the limitations of the study will be presented and discussed.

6.4.1 The Fees Must Fall Movement

In 2016 the *Fees Must Fall Movement* took place on multiple university campuses across South Africa. This occurred during the second half of the academic year suspending lectures across campuses due to its violent nature. As previously mentioned, this study set out to capture data from university students using the University of KwaZulu-Natal's Psychology Clinic as the venue to collect data. Data collection was unfortunately disrupted because of the *Fees Must Fall Movement*. Many participants did not want to come to campus during this time and there was ongoing confusion about the cancellation of lectures and whether students would be on campus or not. There were also times that the protests would start up in the middle of the day, suspending scheduled data collection. Due to this, the researcher had to reduce the initial target enrolment in order to complete the dissertation in the specified time allocated. There was unfortunately no extra time for unplanned disruptions.

6.4.2 Limited time period

As previously mentioned, this study was conducted towards the researcher's MSocSc (Counselling Psychology) degree. Due to this fact, there was a limited timeframe in which the study could be conducted. There was also no funding obtained for this study and therefore the researcher was unable to have a research assistant to combat the limited time available.

6.4.3 Limited sample size

As previously mentioned, this study enrolled fewer participants than originally proposed. There were also difficulties locating white female students at the University of KwaZulu-Natal and therefore this study inadvertently enrolled two students from another university who were referred by word of mouth. This should however, not have affected the study in any way, as being a student at UKZN was not a specific prerequisite for the study. This did however, deviate slightly from the proposal submitted to BREC and therefore a protocol deviation was submitted to BREC for approval. BREC noted and condoned the deviation (see Appendix E).

This study may have also been more conclusive if there was a bigger sample. However, even with the limited number of participants this study may contain relevant information on the questions asked.

6.4.4 Assessment measures used

This study used three different assessment measures to measure both body distortion and dissatisfaction. These three assessment measures included the Image-Marking Procedure and Movable Caliper Technique to assess distortion and the Body Cathexis Scale to assess dissatisfaction. All these measure have been found to be valid and reliable in previous studies (see section 3.7) but there are nevertheless limitations to using these measures.

Firstly, as discussed briefly in the discussion section, Klesges (1983) explains that body image literature has many contradicting findings, which is most likely caused by the many different assessment measures used in each study. This is still true today, as the researcher could not find many studies that had used the exact same measures as the current one. This made it difficult to compare results with previous research as many studies have used different measures to assess body image distortion and dissatisfaction. This makes it nearly impossible to directly compare results and comparisons can only be used as a guideline.

Grogan (1999) states that even studies using such procedures often produce inconsistent results. This could be due to the lack of sensitivity of techniques to account for situational factors such as the previously mentioned possible demand techniques (see section 5.6) as well as an interaction with clinical and personality factors (Grogan, 1999). This means that the techniques used to assess the distortion component of body image in this study may have been sensitive to many different external factors, which could have provided the researcher with an inaccurate result. Observing the methodology and design of the current study, factors such as these were not accounted for and thus it is unknown if they had any effect on the final results and conclusion.

Factors such as a possible inconsistency in how the procedures were explained as well as how far or close the participant was standing to the paper during the Image-Marking Procedure could have also affected the amount of distortion that was observed. The distance between the paper and the participant could have created an unintentional perceptual distortion, which may have influenced the participant to draw their estimated width either bigger or smaller than they intended to. This distance was not strictly controlled during the data collection process. It was observed that when participants stood closer to the paper, at

the start, they would make themselves smaller than the individuals who stood further away when the instructions were being provided.

Another factor which could have affected the results was the amount of clothing the participants were wearing. Both the Movable Caliper Technique and Image-Marking Procedure required the researcher to accurately record the actual width of body parts by either marking the individuals' body dimensions widths against their actual body or accurately fitting a caliper onto their thigh. Both of these measures do not account for the size error that clothing could provide. Every effort was however made by the researcher for this not to be an issue by either asking the participant to remove baggy clothing or to pull it tightly against their bodies. However, this consideration may have not been enough to eliminate the effects of different clothing thicknesses. It can be assumed that clothing variance impacted both race groups.

6.4.5 Cross-sectional study

A cross-sectional study is a study such as the current one, where information is examined in one point in time (Neuman, 2011). This could mean that factors such as social demand effects or having a big meal before data was collected (see section 5.6), could have influenced the results as data was collected once off. Having a longitudinal research design could have created more room to observe and control these factors. Longitudinal research is conducted on individuals across more than one point in time (Neuman, 2011). However, it must be noted that certain instruments used in this study may have a test retest bias, which could make a longitudinal study unviable. This would have to be explored in detail should the research design be changed if this study was ever to be revised or replicated.

6.5 Recommendations

Considering the study's limitations there are a few important points to note if this study had to be replicated, or for future research on the same topic.

The first recommendation would be to allow enough time for the research, especially the data collection component to be conducted. It would be a good idea to plan in enough time in case of unexpected setbacks beyond the researcher's control.

It is recommended that future research on this topic include a bigger sample to yield a more conclusive result. It could also be of value to include a larger variety of individuals in the study and not just university students. It could also be interesting to include and examine more race groups in future research or compare the findings of the black African university students to those of black African and white women from rural settings, expanding on what Haynes (1995) did in her study. This could provide useful, updated information and possibly suggest reasons (i.e. exposure to Western lifestyle norms) why this study found black African and white female university students have no statistically significant differences in body image distortion and dissatisfaction.

It would also be important to fully understand the assessment measures used so that their limitations can be considered. It could be beneficial to develop a strategy to account for limitations in using these types of assessments such as social demand and other factors mentioned above. It would be important to also make sure that each instruction given to participants, and where the participant stands in relation to the paper during the Image-Marking Procedure, are more standardised. Other procedures could also be more standardised, such as making sure that when measuring the participants' thighs with the movable caliper that it is being fitted in the exact place each time.

For future research a longitudinal research design instead of a cross-sectional one should be considered. This could possibly help eliminate factors such as the above-mentioned

social demands or simple factors such as having a meal before taking part in the study, which could affect the results. This is more likely to be eliminated if the data is collected from each individual more than once over a period of time, or multiple measures by different research assistants during the same sampling visit, and could provide the researcher with a more accurate average result.

Obesity is rapidly reaching epidemic proportions in South Africa (Tugendhaft, Manyema, Veerman et al., 2015). The present study focussed only on implications of body image and satisfaction issues for anorexia nervosa and bulimia nervosa. Future South African work on this must include persons struggling with obesity.

It is lastly recommended that more research be done on this topic across different race groups in South Africa. There is still a need for more information on topics such as this as there are many contradictory findings and also few studies available that the researcher is aware of. More research on similar topics would add to the growing knowledge of problematic body image and eating disordered pathology across race groups in South Africa.

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APPENDIX A

PROSPECTIVE PARTICIPANT INFORMATION

Prospective Participant Contact Information

My name is Jayde Bevis. I am a Counselling Psychology Masters student studying at the University of KwaZulu-Natal, Howard College campus.

I am interested in learning about normative body distortion and body satisfaction in black African and white female university students. I will do this by administering the “Body Cathexis Scale”, as well as getting estimates and actual measurements of various body parts (shoulders, waist, hips, thighs).

Please note that providing me with your details does not commit you to partaking in this study. You are welcome to withdraw from this study at any given time. All information in this study will be strictly confidential.

Please provide me with your details that I am able to contact you on below:

Name:	
Contact number:	
Email address:	
Race:	

Please indicate preferred days and times (by ticking the correct box) to partake in the study.

Monday		12:00-16:00
Tuesday	09:00- 12:00	
Wednesday		13:00-16:00
Thursday	09:00-12:00	13:00-16:00
Friday	09:00-12:00	13:00-16:00

**Please note that your participation will take around 10-20 minutes depending on your pace when completing the above-mentioned tasks.*

Thank you for your interest in this study. I will be in contact with you shortly.

Regards,

Jayde Bevis
jaydebevis@gmail.com

APPENDIX B

CONSENT FORM

Applied Human Science,
College of Humanities,
Howard Collage Campus,
University of KwaZulu-Natal

INFORMED CONSENT LETTER

Dear Participant

My name is Jayde Bevis. I am a Counselling Psychology Masters student studying at the University of KwaZulu-Natal, Howard Collage campus, South Africa.

I am interested in learning about normative body distortion and body satisfaction in black African and white female university students. I will do this by administering the “Body Cathexis Scale”, as well as getting estimates and actual measurements of various body parts.

Please note that:

- Your confidentiality is guaranteed as your identity and data will be kept confidential at all times and will only be referred to by a number.
- The collected data will be used for purposes of this research only.
- Data will be stored in secure storage and destroyed after 5 years.
- You will be asked to complete the “Body Cathexis Scale”, as well as provide an estimate the size of your shoulders, waist, hips and thighs.
- A female researcher will also take the actual measurements of the above mentioned body parts within a private space.
- Your participation is strictly voluntary; you need not participate at all, or you may withdraw from the study at any given time, whether this is before, during or after data collection has taken place. You will not be penalized in any way for taking such an action.
- The research aims to discover whether there is a difference in body image distortion and satisfaction in black African and white female university students.
- Your involvement is purely for academic purposes only, and there are no financial benefits involved.

- If you would like feedback regarding the outcome of this study please indicate this below. Please note that no individual feedback regarding your data will be given at any time.
- If any aspect of this study causes you any distress, please let us know and we will arrange the relevant student/health support services for you.
- Please cross out the incorrect option:
I would/ wouldn't like feedback regarding the study.
Email address (only if you would like feedback): _____

I can be contacted at:

Email: jaydebevis@gmail.com

Phone number: 071 876 0200

My supervisor is Prof Douglas Wassenaar who is located at the School of Applied Human Science, Pietermaritzburg campus of the University of KwaZulu-Natal.

Email: wassenaar@ukzn.ac.za

Phone number: 033 260 5373

This study has been reviewed and approved by the Biomedical Ethics Research Committee (BERC) approval number BE406/16. If you are unhappy about any ethical aspects of this study you may contact BREC through:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research office, Westville Campus, Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, South Africa

Tel: 031 2604769 Fax: 031 2604609

Email: BREC@ukzn.ac.za

Thank you for your contribution to this research.

DECLARATION

I, (print full name), _____ hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I desire to do so.

Signature of participant

Date

APPENDIX C

BREC ETHICAL CLEARANCE LETTER



25 July 2016

Miss BL Bevis (216072304)
 Discipline of Psychology
 School of Applied Human Sciences
 Humanities
jaydebevis@gmail.com

Dear Miss Bevis

Title: Normative body image distortion and dissatisfaction among black African and White female university students.
Degree: MSocSci
BREC REF NO: BE406/16

EXPEDITED APPLICATION

The Biomedical Research Ethics Committee has considered and noted your application received on 13 July 2016.

The conditions have now been met and the study is given full ethics approval.

This approval is valid for one year from 25 July 2016. To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2015), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be RATIFIED by a full Committee at its meeting taking place on 16 August 2016.

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Professor J Tsoka-Gwegweni
 Chair: Biomedical Research Ethics Committee

cc supervisor: wassenaar@ukzn.ac.za
 cc postgraduate administrator: Khanyilet@ukzn.ac.za

Biomedical Research Ethics Committee
 Professor J Tsoka-Gwegweni (Chair)
 Westville Campus, Govan Mbeki Building
 Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 2486 Facsimile: +27 (0) 31 260 4609 Email: brec@ukzn.ac.za

Website: <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>



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APPENDIX D

REGISTRAR'S PERMISSION TO CONTACT STUDENTS LETTER



18 May 2016

Miss Jayde Lynne Bevis (SN 216072304)
 School of Applied Human Sciences
 College of Humanities
 Howard College Campus
 UKZN
 Email: jaydebevis@gmail.com

Dear Miss Bevis

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"Normative Body Image Distortion and Dissatisfaction Among Black African and White Female University Students".

It is noted that you will be constituting your sample by administering the "Body Cathexis Scale" as well as getting estimates and actual measurements of body dimensions with Black and White female students, who are willing to participate, from the Howard College Campus.

Please ensure that the following appears on your questionnaire/attached to your notice:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using 'Microsoft Outlook' address book.

Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

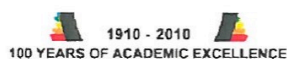
MR SS MOKOENA
REGISTRAR

Office of the Registrar

Postal Address: Private Bag X54001, Durban, South Africa

Telephone: +27 (0) 31 260 8005/2206 Facsimile: +27 (0) 31 260 7824/2204 Email: registrar@ukzn.ac.za

Website: www.ukzn.ac.za



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APPENDIX E

BREC CONDONED PROTOCOL DEVIATION LETTER



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

RESEARCH OFFICE
BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 260-4609
Email: BREC@ukzn.ac.za
Website: <http://research.ukzn.ac.za/ResearchEthics/BiomedicalResearchEthics.aspx>

02 October 2017

Miss BL Bevis (216072304)
Discipline of Psychology
School of Applied Human Sciences
Humanities
jaydebevis@gmail.com

Dear Miss Bevis

Title: Normative body image distortion and dissatisfaction among black African and White female university students.

Degree: MSocSci

BREC REF NO: BE406/16

I wish to advise that your letter dated 12 September 2017 submitting a Protocol Deviation and Request for Condonation of Deviation has **noted and condoned** by a sub-committee of the Biomedical Research Ethics Committee.

The Committee will be advised of the above at the meeting to be held on 14th November 2017.

Yours sincerely

Mrs A Marimuthu
Senior Administrator: Biomedical Research Ethics
AM/MM

APPENDIX F
BODY CATHEXIS SCALE

The Body Cathexis Scale Questionnaire

On the following pages are listed various parts or functions of your body.

You are asked to indicate which things you are satisfied with exactly as they are, which things you worry about and what you would like to change if it were possible, and which things you have no feelings about one way or the other.

Consider the items following and encircle the number which best represents your feelings according to the following scale trying to be spontaneous and honest in your responses:

- 1. Have strong feelings and wish change could somehow be made**
- 2. Don't like, but can put up with**
- 3. Have no particular feelings one-way or the other**
- 4. Am satisfied**
- 5. Consider myself fortunate**

Please ensure that you complete all 45 responses onto the next page.

1. Hair	1 2 3 4 5
2. Facial complexion	1 2 3 4 5
3. Appetite	1 2 3 4 5
4. Hands	1 2 3 4 5
5. Distribution of hair over body	1 2 3 4 5
6. Nose	1 2 3 4 5
7. Fingers	1 2 3 4 5
8. Elimination	1 2 3 4 5
9. Wrists	1 2 3 4 5
10. Breathing	1 2 3 4 5
11. Waist	1 2 3 4 5
12. Energy levels	1 2 3 4 5
13. Back	1 2 3 4 5
14. Ears	1 2 3 4 5

15. Chin	1 2 3 4 5
16. Exercise	1 2 3 4 5
17. Ankles	1 2 3 4 5
18. Neck	1 2 3 4 5
19. Shape of head	1 2 3 4 5
20. Body build	1 2 3 4 5
21. Profile	1 2 3 4 5
22. Height	1 2 3 4 5
23. Age	1 2 3 4 5
24. Width of shoulders	1 2 3 4 5
25. Arms	1 2 3 4 5
26. Chest	1 2 3 4 5
27. Eyes	1 2 3 4 5
28. Digestion	1 2 3 4 5
29. Hips	1 2 3 4 5
30. Skin texture	1 2 3 4 5
31. Lips	1 2 3 4 5
32. Legs	1 2 3 4 5
33. Teeth	1 2 3 4 5
34. Forehead	1 2 3 4 5
35. Feet	1 2 3 4 5
36. Sleep	1 2 3 4 5
37. Voice	1 2 3 4 5
38. Health	1 2 3 4 5
39. Sex activities	1 2 3 4 5
40. Knees	1 2 3 4 5
41. Posture	1 2 3 4 5
42. Face	1 2 3 4 5
43. Weight	1 2 3 4 5
44. Sex (male or female)	1 2 3 4 5
45. Trunk	1 2 3 4 5