Media influence on body ideals and body image in rural Nicaragua

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Abstract

Many studies have shown that media exposure is positively correlated with both body dissatisfaction and disordered eating behaviours, especially but not exclusively, among young women. In the West, the media's emphasis on a narrow range of 'attractive' body types, which are unusually slim or lean, together with rising population levels of obesity maintains a disparity between media's ideal bodies and people's real bodies. The scant research carried out among non-Western populations is also finding similar media effects. The present research investigated whether media influence shapes body ideals and body image among an ethnically diverse rural Nicaraguan population. Using mixed methods and employing novel measures, I hoped to overcome some of the methodological shortcomings of previous studies.

This research comprised of four main studies. The aim of Study 1 was to identify whether media exposure was associated with male and female body size ideals and with general body satisfaction levels among adults in three rural communities with varying levels of media access. There were few village level differences in ideal body size: However, for women, ideal body size ideal was associated with media exposure in the predicted direction. Furthermore, higher media pressure and internalisation of media ideals was significantly associated with lower body satisfaction levels in men and women respectively. While findings supported previous evidence of media influence to some degree, the nature of the visual stimuli used could have been limiting the true picture.

Study 2 employed 3D figure modelling software and qualitative methods to ascertain men's perceptions of attractive female body size and body shape, sampling men from two locations with very different levels of media access. Men in the high media village made much slimmer female bodies with fuller breasts than those in the low media village. Furthermore, media exposure did predict ideal body size and some aspects of body shape. However, a fuller lower body shape was not associated with media exposure and was preferred by all men, suggesting some aspects of Nicaraguan men's preferences were influenced by other factors.

Studies 3 and 4 investigated women's body size and shape ideals using a similar methodology to that of Study 2. Psychometric questionnaires further measured women's media belief, body image and eating behaviours. Women were sampled from two high

media access communities, one Mestizo and one Creole, and from one low media access Mestizo community. While there were few group differences in women's body ideals, the high media access Mestizo sample were more dissatisfied and felt more pressure from media than both the low media access Mestizo sample and the high media access Creole sample, supporting previous research in suggesting that media may influence women of some ethnic groups differently.

Study 5 looked at children's perceptions of body size, their body size ideals and to further identify if exposure to media imagery, specifically via television viewing, was associated with those perceptions and ideals. This study was longitudinal in design, testing children in communities with varying levels of media access at four time points. Mixed models were used to maximise the analytical power of the data set. Measured across time, television viewing was found to significantly contribute to children's perception of their own body size, their body size ideals and their body size satisfaction.

Together, the findings from these studies provide a rich and nuanced picture of Nicaraguan perceptions of attractiveness and provide evidence that exposure to visual media, in this case via television, with its high focus on a narrow range of slim and lean 'ideal' body types, predicts preferences for slimmer bodies and greater body dissatisfaction among a non-Western non-White population in a similar, but not an identical manner as in White, Western populations.

Dedication

This thesis is dedicated to my husband, Lindel Solis Zenon.

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Definitions of terms used

The following key terms or concepts are defined for their use within the context of this thesis. They may have been used similarly or differently in previous literature and elsewhere.

Western

Refers to contexts and mainstream culture of predominantly English speaking countries of the U.S, Canada, the U.K, and Australia, and Northern European countries.

Non-Western

Refers to contexts which are not included in the definition of Western and generally have a different culture. These could be industrialised non-Western nations such as Japan, or previously colonised or economically developing nations such as Nicaragua.

Traditional appearance ideals or body ideals

Generally referring to the appearance ideals or body ideals of non-Western cultures as contrasted with 'mainstream' Western culture's thin and muscular body ideals

Body image

'Body image refers to the multifaceted psychological experience of embodiment, especially but not exclusively one's physical appearance' (Cash, 2004, p.1). A combination of perceptual and attitudinal components, it is useful to think of body image as an 'active process which the individual engages in to modify, ameliorate and come to terms with their body in specific temporal and cultural locations' (Gleeson & Frith, 2006, p. 88). I refer to these two definitions because together they encapsulate the idea that a) body image is not just experienced via body size and shape and that b) it is not a reified construct, but one that is continually in process, a 'feedback loop' between the individual and their environment.

Appearance schema

An individual's flexible construction of the ideal appearance comprised of person-salient and often culturally shaped components or concepts and built over the lifetime.

Body / appearance dissatisfaction

Refers to a perceived and undesired 'gap' between an individual's perception of their body / appearance and the body / appearance they want to have.

Racial / racially

The terms ‘racial’ and ‘racially’ are only used in contexts where physiological differences between populations of broadly African, Caucasian and Asian descent are discussed. There is only one ‘race’: the human race.

Ethnic group / ethnic group identity

Ethnic group refers to a community or population of people who share a culture or ancestral background. Ethnic group identity refers to a person’s sense of belonging to an ethnic group.

Bootylicious

The term ‘bootylicious’ is used to appraise the sexual attractiveness of a woman and was first coined by the male rapper Snoop Dogg and later appropriated and popularised by the female singer Beyoncé. I borrow the term to refer to the ideal body shape of Nicaraguan men in the male Daz study in Chapter 4.

Glossary

TVE – hours of television viewing during an average week

USTV - frequency of viewing television shows originating from U.S / English-speaking countries.

USFM - frequency of viewing films originating from U.S / English-speaking countries.

SPTV - frequency of viewing television shows originating from Latin American / Spanish-speaking countries.

SPFM - frequency of viewing films originating from Latin American / Spanish-speaking countries.

USMED - composite variable to incorporate USTV and USFM.

SPMED - composite variable to incorporate SPTV and SPFM.

Chapter 1. Introduction

This thesis examines body attractiveness in the rural Caribbean coast of Nicaragua. The underlying rationale for this research is to aid in a better understanding of what factors contribute to body dissatisfaction and ultimately eating disorders. In many Western populations body dissatisfaction prevails to such an extent that is has been termed a 'normative discontent' (Rodin, Silberstein, & Striegel-Moore, 1984). While certainly not the only factor involved, evidence strongly suggests that exposure to media imagery can have a negative effect on individuals, and lead to body dissatisfaction, also a key risk factor for clinically diagnosed eating disorders such as Anorexia Nervosa. The mass media purposely create and perpetuate unrealistic and unachievable appearance standards with the aim of creating desires in people to sell products and drive the economy. In Western media, appearance ideals are predominantly based on extreme slimness for women (commonly referred to in the literature as the 'thin ideal') and lean muscularity for men ('the muscular ideal'). A key methodological challenge for researchers however, is that in the West, media is so pervasive in the environment it is almost impossible to measure its effect on people's ideals and behaviours outside of a laboratory setting. The research presented in this thesis took advantage of what could be called a 'natural laboratory': in rural South Eastern Nicaragua there was still considerable variation in media exposure among discrete populations due to the ongoing electrification of small communities in the region. This unique situation potentiated a clearer investigation of the extent of media influence on perceptions of body attractiveness and body image in a non-Western, non-media saturated population.

Body attractiveness can be considered from multiple perspectives. Evolutionary theory can be used to understand the optimal physical characteristics for reproduction and what factors may bias attention to these. Alternatively, sociocultural and visual cognitive perspectives can be used to consider how culture, through direct social transmission or via cultural artefacts (i.e. media) can influence body ideals, which in turn have implications for body image and mental health. In this opening chapter I will outline why our appearance matters from an evolutionary standpoint, followed by a consideration of the significance of body size and shape in particular and the mechanisms that may be responsible for changes in body

attractiveness judgments. I then go on to discuss the particular influence of the media in shaping body ideals, and how sociocultural theories can be used to explain the role of media in the development of body image concerns. Further background literature pertaining to each facet of the research is discussed more specifically in the introductions of the five empirical chapters.

1.1 Why we care about our appearance: evolutionary perspectives

According to the literature, the fact that our appearance matters is a 'robust and replicable finding'; good-looking people not only have an easier time finding a mate and producing offspring (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002; Thornhill & Gangestad, 1999), but get treated better by life in general (Etcoff, 2002; Swami & Furnham, 2008) so it is no wonder that we invest a lot of time and money on how we present ourselves to the world. The billions of pounds spent on beauty and grooming products worldwide attest to the fact that concern with an attractive physical appearance is not merely superficial (Etcoff, 2002).

Whether we live in the 21st century or in an 'environment of evolutionary adaptedness' (Tooby & Cosmides, 1990), our external physical appearance can provide an observer with a lot of information about what lies inside: plump rosy cheeks indicate a good blood flow and skin elasticity, attributes associated with health and youthfulness, while wrinkled, saggy skin indicates a lack of moisture or collagen, features often signifying ageing or ill health. Evolutionary theory argues that certain physical traits have been selected for because of what they can tell an observer about the holder's 'mate credentials', whether that be signalling the possession of 'fitter' genes or an ability to provide material resources. In this manner, traits that can reliably and consistently indicate health and thus reproductive potential become 'attractive' to observers.

According to evolutionary theory, when it comes to finding a mate and reproducing, men and women face different sets of problems and therefore employ different strategies. Women are primarily concerned with a man's ability to provide security and resources if she is going to invest her body and a lot of her time in carrying and raising offspring for him. One of the main problems men face is successfully identifying women who are both sexually accessible and fertile. Age and health are two obvious factors which can impact a woman's overall reproductive value and her fertility status. While these qualities cannot be directly

known, certain external physiological cues (for example, clear, smooth skin, shiny hair, good muscle tone) can provide reliable indications of a woman's 'mate value' (Buss & Schmitt, 1993) and thus become 'attractive' to men. While a man's physical appearance can provide useful information on his mate value (e.g., certain physical characteristics may indicate high testosterone levels or a good immune system), it is generally less salient in women's judgments of male desirability (Buss, 2003).

1.2 Body size or body shape?

Morphological features that have been considered important in judgements of attractiveness in women and men include faces (Bleske-Rechek, Kolb, Stern, Quigley, & Nelson, 2014; Perrett et al., 1998), facial and body symmetry (Simmons, Rhodes, Peters, & Koehler, 2004; Weeden & Sabini, 2005), and leg length (Sorokowski & Pawlowski, 2008). However, body size and shape have been the most studied physical cues to attractiveness (Swami & Furnham, 2008).

Body size and shape are primarily determined by the amount and distribution of body fat an individual possesses. Over the decades, there has been much debate in the literature as to whether body fat distribution, as measured by the Waist-to-Hip ratio (WHR - waist circumference in cm / hip circumference in cm) or total body fat, as measured by the body mass index (BMI – weight in kg / height in m^2) is the best measure of optimal body fat and thus the more 'universal' cue to attractiveness. Singh (1993) argued that for any physical feature to be deemed a universal marker of attractiveness it must be shown to have a connection to physiological mechanisms that regulate some aspect of fitness such as health or fertility, and that therefore, there should be a correlation between variation in attractiveness of said feature and the variation in reproductive potential and success. He further argued that WHR was the 'first pass filter' in judgments of female attractiveness because of its connection to female hormones and therefore a woman's reproductive status. Female hormones cause a gynoid pattern of fat distribution on the hips and consequently a curvaceous-shaped body, while male hormones cause an android pattern of fat deposition around the abdomen, resulting in a more tube-like body shape. A WHR of 0.7 is said to be the most attractive in women because it signals the distribution of body fat which indicates optimum levels of female hormones and therefore a good potential mate. Studies show that

women with lower WHR have higher levels of the hormone estradiol, potentially increasing probability of conception and thus increasing fitness (Jasienska, Anna, Ellison, Susan, & Thune, 2004). Furthermore, a low WHR was found to be an independent predictor of pregnancy among women undergoing artificial insemination (Zaadstra et al., 1993). However, Tovée and colleagues (1999) pointed out that anorectics, who are often amenorrhoeic and so have zero fertility, can also have a WHR of 0.7 (Tovée et al., 1999). While there has been considerable criticism of Singh's earlier methodology (Tassinary & Hansen, 1998; Tovée & Cornelissen, 2001) and findings (Freese & Meland, 2002; Voracek & Fisher, 2002) more recent studies appear to add support to his theory: in the U.S, observers rated photographs of women taken before and after cosmetic surgery to reduce their waist size. Using liposuction, fat cells were redistributed from the waist onto the hips and buttocks. The 'after' photographs with the lower WHR were judged as more attractive, regardless of whether the women's BMIs were higher or lower after surgery (Singh & Randall, 2007), even among samples from Asian and African populations, further confirming that WHR is involved in attractiveness judgments cross-culturally (Singh, Dixson, Jessop, Morgan, & Dixson, 2010).

Many authors, however, have argued that body size, expressed as BMI, is the most salient cue in attractiveness judgments (Mo et al., 2014; Swami, Antonakopoulos, Tovée, & Furnham, 2006; Swami, Knight, Tovée, Davies, & Furnham, 2007; Swami & Tovée, 2005a; Wetsman & Marlowe, 1999). WHR and BMI tend to be positively correlated (that is, as weight increases, fat is distributed onto the waist and hips), but when a set of images were manipulated so that higher BMI bodies had lower WHRs, these bodies were still not preferred over lower BMI bodies with higher WHR, strongly suggesting that BMI was the more dominant cue of attractiveness (Tovée, Hancock, Mahmoodi, Singleton, & Cornelissen, 2002). Furthermore, using an empirically-supported statistical model of fat deposition, Cornelissen et al. (2009) demonstrated that the part of body curvaceousness that results from the function of BMI is what predicts attractiveness judgments, and not any 'residual' WHR curvaceousness.

More recent research however, has focused less on debating a single 'universal' cue to attractiveness and more on investigating why and how physical cues may be foregrounded or downplayed across varying ecological or sociocultural contexts (see Bateson, Tovée,

George, Gouws, & Cornelissen, 2014; Bleske-Rechek et al., 2014; Marlowe, Apicella, & Reed, 2005; Swami, 2015). The optimal BMI can vary both intra-culturally (Swami & Tovée, 2009) and cross-culturally (Mo et al., 2014; Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, Cunningham, et al., 2010; Swami, Henderson, Custance, & Tovée, 2011), suggesting that environment must play a significant part in shaping salient cues to attractiveness. Evolutionary theory argues that to be useful to the observer, attractive physical cues need to be adaptive, and therefore flexible (Gallup & Frederick, 2010). In a cross sectional study, findings by Tovée and colleagues (Tovée, Swami, Furnham, & Mangalparsad, 2006) suggest this preference plasticity: Zulu men and women who had migrated to the U.K during the previous 18 months had significantly slimmer body size preferences than their compatriots who were still living in rural South Africa. However, their preferences were not (yet?) as slim as those of U.K born citizens of both African and Caucasian descent who had almost identical mean BMI preferences. Similarly, preferences of rural Malaysians with a low socio-economic status (SES) differed substantially from relatively high SES urban Malaysians and U.K men, who both preferred a similarly slender female body (Swami & Tovée, 2005a). Furthermore, for women in rural Malaysia BMI was the main cue to men's attractiveness: they preferred a heavier, tubular-shaped male body while both the urban Malay and U.K samples were more led by shape cues and preferred a relatively slim, v-shaped male body.

1.3 Mechanisms of preference change

So what factors in the environment drive differences in judgments of body size attractiveness? Wetsman and Marlowe (1999), in their research with Hadza foragers from Tanzania, argued that mechanisms of adaptation adjust body size and shape preferences according to local food resource availability. Similarly, rural Zulus judged overweight bodies as being the most attractive: in areas with relatively poor diets and high levels of disease, a high BMI can indicate a good nutritional status and access to resources, and /or the absence of serious illness, particularly HIV in the case of South Africa (Tovée et al., 2006). While it is known that obesity impairs fecundity, many obese women still manage to conceive and produce children (Brewer & Balen, 2010), so choosing a mate with a heavier BMI in an environment where there is a higher chance that this signifies more immediate, survival based health benefits such as lack of disease or access to nutritional resources, seems to

makes sense. This behaviour could be seen as 'valence learning', whereby observers deduce the link between a visible feature and another underlying 'value', most frequently health related (Boothroyd, Tovée, & Pollet, 2012). This mechanism could also explain how the migrant Zulu group discussed earlier were gradually adapting their preferences to the local environment in the U.K, where a heavy body is more likely to be associated with a fatty diet, lack of exercise, and a lower socio-economic status (SES), and a thinner body connotes relative health and a higher SES (Tovée et al., 2006). Similarly, adolescent girls in Fiji associated the acquisition of a thin body with success in a modern globalised economy and believed a heavier body represented 'outdated' traditional ways of life (Becker et al., 2002).

The 'visual diet' theory proposes another possible mechanism of change in preferences, whereby sufficient exposure to a specific range of stimuli will make that range become 'normal' and further judgements will always be biased in that direction (Boothroyd et al., 2012). In an experimental study participants viewed the same set of images of 10 female bodies before and after an 'adaptation' phase, whereby two groups were exposed either to 'narrow' or 'wide' versions of the bodies for 5 minutes. Even after such a short duration of exposure, the group who 'adapted' to the narrow bodies rated them as more attractive and more 'normal' in the post-adaptation test. Interestingly, the same did not occur for those who viewed the wider adaptation images. A weakness of this study however, was that they did not consider if this effect was body specific, or if the same size adaptation would occur with non- body objects (Winkler & Rhodes, 2005). In a correlational study, Zimbabwean women who had emigrated to the U.K and watched more western television content appeared to conform to the Western 'thin ideal' and experience more body dissatisfaction than their compatriots at home. This study lends support to the theory that the visual diet presented by Western media had an effect on the women's body image. However, the samples in this study were not representative of the population (they were all individuals who had chosen to emigrate to the U.K), and SES was unknown, so these findings could be as a result of other group differences (Swami, Mada, & Tovée, 2012).

1.4 Western media influence on body ideals

While not the only factor, one key difference between populations may be degree of access and exposure to Western media, typically replete with imagery that generates and endorses

prevailing Western appearance ideals. Whether because of genetics or socially-constructed gender bias, women in particular face pressure from media-generated cultural ideals of beauty (Buss, 1994; Calogero, Boroughs, & Thompson, 2007), although men are not immune from media pressures to conform to certain appearance standards (Rodgers, Ganchou, Franko, & Chabrol, 2012).

The media are populated with a narrow range of appearance types, often portraying unattainable and potentially unhealthy representations of beauty. While there are conflicting views about the stability of female body ideals presented in the media since the early 20th century (Byrd-Bredbenner, Murray, & Schlussel, 2005) there is a general consensus that female fashion and glamour models have always been thinner than average women (Silverstein, Perdue, Peterson, & Kelly, 1986; Tovée, Mason, Emery, McCluskey, & Cohen-Tovée, 1997; Voracek & Fisher, 2002). Furthermore, as women's actual bodies have become on average heavier over the same time period (Byrd-Bredbenner et al., 2005; Mazur, 1986), the potential gap between 'real' and 'ideal' has widened. Today's female models are super thin and extra tall, male models are muscular, v-shaped and square-jawed: Ordinary women and men are told they should aspire to these ideals if they want to be considered attractive and desirable. In the West, the health implications of this situation are already well documented (López-Guimerà, Levine, Sánchez-Carracedo, & Fauquet, 2010) and studies have found that media exposure is associated with body image concerns and disordered eating among young women (Grabe, Ward, & Hyde, 2008; Stice & Shaw, 2002) and body dissatisfaction, unhealthy dieting and excessive exercising in men (Barlett, Vowels, & Saucier, 2008; Blond, 2008; Edwards, Tod, & Molnar, 2014). The scant research carried out among non-Western populations has also found similar effects: adolescent girls in Fiji were found to be rejecting a heavier, traditional body ideal and becoming more dissatisfied with their bodies after novel exposure to western television (Becker et al., 2002).

1.5 Sociocultural perspectives

Sociocultural perspectives help to explain the different ways individuals and groups are affected by their social and cultural environment. The sociocultural model is often used to examine what part the mass media play in the awareness, acceptance and internalisation of the 'thin ideal', and whether it directly predicts behaviours such as dieting or disordered

eating (Stice, 1994; Thompson, Van Den Berg, Roehrig, Guarda, & Heinberg, 2004; Tiggemann, 2011). The model posits that:

- Socially and /or culturally constructed appearance ideals exist;
- These appearance ideals are transmitted via various routes such as the mass media, peers, and family;
- Whereby they may become internalised (accepted as the 'norm') to the point that the individual measures her / himself in relation to that ideal;
- Leading to satisfaction or (more usually) dissatisfaction, depending on how near or far they consider themselves from their internalised ideal.

Studies have found that both televisual and print media exposure are associated with a drive for thinness, and that those individuals who have high levels of internalisation are even more negatively affected by continued exposure to thin ideal media content (Harrison & Hefner, 2006). Thin ideal internalization does not occur overnight but is a gradual process of chronic exposure to certain kinds of media content. Studies have shown that internalisation usually starts before the onset of adolescence (Evans, Tovée, Boothroyd, & Drewett, 2013) and its association with media exposure is stronger now than it was in the 90s (Grabe et al., 2008). When a discrepancy is perceived between the ideal and the actual body, dissatisfaction can occur. While relatively few cases of body dissatisfaction will lead to a clinical diagnosis of an eating disorder (Stice, Gau, Rohde, & Shaw, 2017), it nevertheless impacts upon the physical, psychological and emotional well-being of affected individuals and populations (Fiske, Fallon, Blissmer, & Redding, 2014; Stice, 2002).

Two other key processes that may moderate or mediate the relationship between body ideals, body dissatisfaction and disordered eating behaviours are social comparison and schema activation (López-Guimerà et al., 2010). Social comparison theory states that individuals evaluate themselves using comparisons with those they consider to be not too socially disparate from themselves. Comparisons may be made in an 'upward' direction, where the person being compared to is considered in some way 'superior', or alternatively they may be in a downward direction where the other person is considered to be inferior in the characteristic in question (Festinger, 1954). It follows then that if a lot of thin-ideal media images are present in what constitutes an individual's daily social interactions they will constitute a 'group' for making social comparisons: in the U.K, people spend on average

over 3 hours and 30 minutes a day watching television (Ofcom, 2017) and more than 80% of the population access the internet on a daily basis (Office for National Statistics, 2017), meaning social comparisons are highly likely to be made with people seen in the media. The media further encourage people to upwardly compare by selling products and lifestyles that are promised to 'improve' the consumer's life, implying that the consumer is already lacking and thus inferior to the media ideal. Experimental research has shown that females who identified with thin models were happier with their bodies than females who did not. Furthermore, they were more satisfied with their bodies following exposure to their favourite thin celebrity, whereas a control thin celebrity did not have the same effect. Therefore, while the women in both conditions were making social comparisons, those who compared themselves more favourably to a celebrity were less unhappy with their bodies (Young, Gabriel, & Sechrist, 2012).

A schema is a cognitive framework that holds a set of beliefs, feelings, and ideas that become 'shortcuts' for dealing with a vast amount of information relating to a particular concept (Markus, 1977). In the case of a Western 'thin ideal', the schema is made up of beliefs such as: 'physical attractiveness is very important'; 'thin is attractive'; 'women can, and need to, shape their bodies'; 'being fat is a sign of failure and loss of self-control'. In the West, the pervasive presence of mass media constantly reinforcing these beliefs is central in creating and activating the 'thinness schema' (Levine & Smolak, 2006). Studies among Western samples suggest that from a young age this schema is firmly established as a result of growing up in an environment saturated with the thin body ideal. The thinness schema may be formed subconsciously and not 'activated' (internalized) until later in puberty, when social pressures to have a certain type of body are increasing for the young adult (Smolak & Levine, 2001). In other contexts, activation of a thinness schema may occur much later in life, or it may not occur at all: there may be activation of an appearance schema that is constituted from a different set of beliefs and feeling about how a person should look. In the context of the current study, the latter possibility needs to be kept in mind: models and frameworks developed to explain the mechanisms that may trigger body dissatisfaction in Western populations may not be a perfect fit across all cultural contexts.

1.6 Facing methodological challenges: the current research

While progress has been made in understanding the influence of media exposure on body image, clarity is still needed. Part of the problem arises from methodological issues. In the West, exposure to media imagery and media messages is so pervasive and chronic across the lifespan that potential study participants may have already reached a 'saturation point', making it difficult to control the measure of media exposure. While laboratory studies that examine effects of short-term media exposure certainly increase our understanding of its influence on body image concerns, external validity is compromised (Want, 2014). Naturalistic correlational studies may be more valid in this respect, but they are unable to ascertain whether media's thin ideals create body dissatisfaction, if those who are already dissatisfied with their bodies are drawn toward thin ideal media, or if there is some other unconsidered factor at work (Grabe et al., 2008). Longitudinal and prospective studies have demonstrated that media exposure predicts body image concerns and disordered eating behaviours among girls (e.g., Becker et al., 2002; Schooler & Trinh, 2011) however their number are too few to make any firm claims (Levine & Murnen, 2009).

Studies that sample non-White, non-Western populations are also still sadly lacking. Moreover, there is a need for more detailed and nuanced descriptions of the participants and the cultural contexts in which studies are conducted, rather than simply 'bunching' cultural groups, by nationality for example (Holmqvist & Frisén, 2010).

The present research aimed to be naturalistic, correlational and longitudinal in design. Employing a mixed methodology, five empirical studies investigated media influence on body ideals among Nicaraguan adults and children, and on body image among Nicaraguan women. The first study carried out (Study 1) aimed to measure adults' perceptions of, and preferences for, female and male body size and investigate whether media exposure was associated with a preference for slimmer body sizes and with lower levels of general body satisfaction. Studies 2 and 3 expanded the enquiry to consider female body shape and body size ideals among men and women respectively. These studies utilised a novel '3D' methodology that was able to capture participants' 'personalised' body ideals. Study 3 additionally investigated women's body image and eating behaviours employing culturally-adapted validated psychometric measures. Studies 2 and 4 utilised qualitative research methods to further explore cultural appearance ideals, body image and media influence in

men and women. Study 5 measured children's perceptions of body size, and their current and future (adult) body size ideals. The study also investigated whether television exposure was associated with higher accuracy in body size judgements, slimmer body ideals, and with lower levels of appearance satisfaction among children.

In the following chapter I describe and discuss the methods and measures used throughout the studies, including the development of novel visual stimuli. Chapters 3 to 7 contain the five empirical studies. Chapter 8 draws findings together for a general discussion, and further reflects on the strengths and weaknesses of the research. Finally, some suggestions for future directions are offered.

A version of the men's ideal female body study in Chapter 4 has been submitted to the Journal of Evolution and Human Behaviour.

Chapter 2. Methods

In this chapter I explain the methods employed in the research, and detail the modification of existing measures and the development of new measures to ascertain the body ideals and body image of people in rural Nicaragua. I begin by describing the study location and population to highlight the challenges faced when deciding what methods would be most suitable in this context. I then discuss the importance of selecting the most appropriate methods, particularly those instances such as the present study where the adoption of a slightly more ethnographic approach was required, due to its nature as a previously unstudied, non-Western population. I outline what I was aiming to measure to justify my choice of existing validated psychometric measures and then describe the process of adapting and modifying those measures, some from the outset, others in the field or during the 3 year data collection period. I then discuss the use of visual stimuli in attractiveness and body image research and why I felt it was important to consider developing new visual stimuli designed specifically for this project, and go on to describe the process in some detail. In the next section, I describe how I measured body ideals and body image of rural Nicaraguan children, employing a new figural scale and a set of cartoon-style visual 'prompts' developed specifically for this research. In the last section I outline why I chose to incorporate qualitative approaches and describe the methods I used.

2.1 The study site and population

The Pearl Lagoon Basin is located on the Southern Caribbean coast of Nicaragua in Central America. Geographically, the region could be described as remote and fairly inaccessible: there are almost no roads in the area so travel between the communities scattered around the shores of the lagoon and up its tributaries is dependent upon forms of water transport. The terrain around the huge lagoon is dense jungle, interspersed with areas of '*potrero*' where Mestizo farmers have cleared land to graze cattle. However, traditional farming techniques are still used by many indigenous peoples. The local economy is based mainly on fishing and farming.

The region is populated mainly by people of Creole, Garifuna, and Miskitu ethnicities, although numbers of Mestizo people moving into the area are increasing rapidly. Creole

people are generally of mixed Afro-Caribbean / indigenous descent. Garifuna people identify as of predominantly Afro-Caribbean descent. Miskitu people are indigenous native Indians. Mestizo people are generally of mixed Spanish European / indigenous descent. Most villages in this region of Nicaragua are inhabited predominantly by people of one particular ethnic group. For example, in the two Mestizo villages sampled in this study, numbers of inhabitants from other ethnic groups probably consisted of less than 2% of the local population (field observation). Pearl Lagoon (referred to in this thesis as Lagoon for brevity), the largest community sampled in this research, is ethnically a little more diverse, but still mainly populated by Creole people.

Most of the communities in the region have a population of between 800 to 1,000 inhabitants, although some are considerably smaller - Square Point has only about 50 adult inhabitants, and some are much larger - Lagoon has a population of about 2,000 (Accion Medica Cristiana, 2014). All of the communities had at least a primary school where younger children could attend classes in the mornings. Literacy levels in the population were relatively low and quite variable among both children and adults (field observation). Most people were religious to some extent and all the communities had at least one church, with the majority having several different churches of mainly Christianity-based faiths (e.g. Anglican, Moravian, and Catholic). Generally speaking, within the Mestizo and Miskitu communities families are traditionally 'conjugal' (i.e. mother, father, children), although many couples are not officially married. In the Creole and Garifuna communities, marriage is even less common, and children are often raised single-handedly by mothers, or by other family members while the parent or parents leave the village to seek work elsewhere. In the rural Mestizo communities particularly, adulthood can begin very early: many girls become mothers at 12 or 13 years and boys usually begin to work around the same age. As a result, many young people in these communities do not complete their secondary education (field observations).

Participants for the five studies in this thesis were recruited in several communities in the region. The largest community, Lagoon, lies on the far south shore of the lagoon and has had a regular electricity supply, and thus high access to media, for at least two decades. On the northwest coast of the lagoon lies the tiny Garifuna community of Square Point, which has no electricity supply and thus very limited media access. South of Square Point is Kahkabila,

a Miskitu village with about 820 inhabitants that has had a regular electricity supply for approximately eight years. Orinoco and Marshall Point are two slightly larger Garifuna / Creole communities that sit side by side on the northern shore of the main lagoon. They have had electricity from a generator for about 14 hours a day for the last 8 years, and so have relatively high media access. Pueblo Nuevo (from herein referred to as Pueblo), a Mestizo village with a population of around 900, is located on the shores of the Wawashang River and has had electricity from a generator for about 10 hours a day for the last 8 years, thus also having relatively high media access. Pedregal, also a Mestizo community with about 900 inhabitants, is situated on the banks of the Patch River. Until very recently the community had no regular electricity supply, although four or five households had small solar panels. These considerable differences in villages' media access and media exposure levels created ideal conditions in which to compare the body ideals of groups of Nicaraguans who otherwise differed little in their ecological and socioeconomic environment. As there were no magazines, cinemas, or high street advertising in the whole region, and few people had regular internet access, media exposure was measured as television viewing quantity, frequency, and content type.

2.1.1 Adjustments concerning participant recruitment, consent and debriefing

In the West, individuals younger than 18 require parental consent before participating in any research approved by an academic ethics committee. Within the local cultural context of our research population, the age at which an individual is considered an adult is often considerably younger: girls as young as 12 and 13 may already be mothers, and boys who go to work are considered as 'men' (i.e., adult not child). Telling people that they could not participate because they were not considered by us to be 'adults' would be highly culturally insensitive. Therefore, some individuals under the age of 18 took part as 'adult' participants in Studies 1-4.

All participants (adults and children) were provided with a verbal description of the study at the beginning of their 'interview' (the local term people used for study participation) and further informed that they could withdraw from any part or all of the study at any time. Adult participants also gave their consent verbally. Parents or teachers verbally consented on the behalf of child participants in Study 5. While in Western contexts it is standard practice to gain written consent, in the present research this would have been problematic,

both from a cultural and a logistical perspective. Literacy levels in this population varied considerably: while most children now attend primary school, many adults (particularly women in the rural Mestizo communities) have never learned to read and write. Furthermore, there were no local stationery or printing services and transporting bundles of paper data in such an exposed and watery environment for long distances would have been impractical.

As the original project design was longitudinal (i.e. participation would have been ongoing), adult participants were not given a full debriefing at the end of their interview, but were thanked for their participation and asked if they had any comments or questions. In Study 5 (the only longitudinal study in this thesis), children who participated at T4 were given a very simple final debrief in which I thanked them for their participation in our research over the years which would help us to understand better how television or the internet might influence how people in different parts of the world feel about their appearance and their bodies. They were also invited to make any comments or ask any further questions.

Selecting appropriate measures

Table 2.1. Measures of body ideals and body image used across all studies

		Study 1 (adult TBS)	Study 2 (male Daz)	Study 3 (female Daz)	Study 5 (child TBS)
Visual stimuli	TBS	yes	yes	yes	yes
	Daz 3D	-	yes	yes	-
	C.A.P	-	-	-	yes
Psychometric measures	BAS	yes	-	yes	-
	SATAQ-3	yes	-	yes	-
	BSQ-8c	-	-	yes	-
	EAT-26	-	-	yes	-

TBS – Ten Bodies Scale; C.A.P – Children's Appearance Prompts; BAS – Body appreciation Scale; SATAQ-3 - Sociocultural Attitudes Towards Appearance Questionnaire-3; BSQ-8c - The Body Shape Questionnaire 8-c; EAT-26 - The Eating Attitudes Test-26

Unlike the majority of previous studies on body ideals and body image, the present study was carried out in a non-urban, non-Western location populated by peoples of non-White

ethnic groups. Therefore it was imperative to identify and employ methods and measures that were tried and tested where possible, but would also provide the best chance of identifying rural Nicaraguan body ideals and local experiences of body image. See Table 2.1 for a summary of measures used across studies.

In psychological research the importance of selecting the most suitable methods for measuring the concept or behaviour under study cannot be overstated. Whatever method is used it must measure what it purports to be measuring and do so reliably. If the concept or behaviour being investigated is mismeasured, the data, and consequently the analysis and results, will be misinformed and thus misinterpreted (Thompson, 2004). To minimize this possibility most researchers endeavor to utilize existing validated measures that are suitable for the population being studied. However, in the fields of attractiveness studies and body image research most methods of measurement have been developed and validated in Western contexts for Western populations. If they are to be utilised within different cultural settings or ethnic groups, it is imperative to ensure that they are suitable for the specific population under study: a particular measure might be very good at assessing body dissatisfaction among White female undergraduates but that does not mean it will do so effectively among a community sample of Asian men for example (Thompson, 2004). In particular, efforts must be made to ensure that there is congruence between the meanings of concepts or ideas contained in the measure with those of the cultural group being studied. In addition to generating unreadable or incorrect data and misguided analysis, administering an unsuitable measure could potentially cause confusion and distress for participants.

2.2 Using psychometric measures

When designing the studies in the research project as a whole, I was keen to employ existing validated psychometric measures and questionnaires wherever possible to facilitate comparisons with findings from previously published studies. I spent several months researching which measures of body ideals, body image satisfaction, media influence and eating behaviours produced consistent results and seemed the best fit for my requirements. I identified measures that had been validated in Spanish as well as English because most of the population in rural Nicaragua speak at least one, if not both, of these languages.

Researchers often translate existing measures into another language while validating the modified version in the new population at the same time. However, it must be remembered that even though a measure may be validated in Spanish, it may not be understood in the same way in Nicaragua or any other central or South American population as it is in a Spanish population (see Llorente, Gleaves, Warren, Pérez-de-Eulate, & Rakhkovskaya, 2014).

Before going to the field, I identified four widely used validated measures that I judged to be the most suitable for use in this Nicaraguan population; The Body Appreciation Scale (BAS, Avalos, Tylka, & Wood-Barcalow, 2005), The Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3, Thompson et al., 2004), The Body Shape Questionnaire 8-c (BSQ 8-c, Cooper, Taylor, Cooper, & Fairbum, 1987), and The Eating Attitudes Test -26 (EAT-26, Garner, Olmsted, Bohr, & Garfinkel, 1982). I sought advice from Dr. Amanda Minks (University of Oklahoma), an anthropologist who had worked for many years with indigenous peoples in the region, regarding the appropriateness of these measures for this population. She considered that the BAS would be acceptable, but that the other three questionnaires contained many concepts that were not culturally or conceptually relevant. For example, asking people about their intake of carbohydrates ('I try not to eat food with a high starch content' – EAT-26) would 'make no sense in a country where most people do not have enough to eat and never really feel full, and don't even know what a carbohydrate is' (personal communication). On Dr. Minks' advice, I did not use the BSQ and the EAT for most of my studies. However, after some discussion with the project leader, I employed them in Study 3, which investigated women's body image and eating behaviours initially in those communities which, relatively speaking, had been considerably exposed to Western media ideals and thus were most likely to be familiar with Western concepts referenced in the questionnaires. I decided that the best approach to take would be to initially try them out, see how they were received, and to modify them, even remove them from the study design, if and where necessary.

2.2.1 Measuring media exposure and attitudes

In all studies media exposure was measured with participants verbally responding to simple questions relating to the quantity and frequency of television viewing and to identify people's favourite shows or TV channels. As well as being asked how many hours of

television they had watched in the last 7 days, participants were asked how frequently they watched 'Western' TV shows and films originating from U.S / English-speaking countries (referred to throughout this thesis as USTV and USFM respectively), and TV shows and films originating from Latin American / Spanish-speaking countries (SPTV and SPFM respectively).

Nicaraguans are exposed to a wide range of media content from across the globe, not just from the U.S or Western Europe: there are many television channels broadcasting from Mexico, Central and South America, and there even appears to be demand for 'Black people's pictures'- films that originate from West African countries such as Nigeria (field observation). Therefore, portrayals of women on Nicaraguan television may vary more than in Western contexts: *telenovelas* or *novelas* (Latin American soaps) and music videos, usually originating from Latin American and Caribbean countries often show bodies that are more curvaceous below the waist with fuller hips, thighs and buttocks (field observation). Studies in the U.S have also shown that there are alternative idealised body shapes to the western 'thin ideal', most often appropriated by Latina or African-American females (for example see Anderson-Fye, 2004; Schooler, 2008). Therefore it was important to use measures of media exposure which differentiated between types of content viewed, thus allowing for the possibility that even with media exposure, local people might find a female body type other than a Western 'thin ideal' the most attractive. There is a very limited literature on body ideals and body image among Central American populations as a whole (see Anderson-Fye, 2004; Boothroyd et al., 2016; Caqueo-Urízar et al., 2011; Mellor, McCabe, Ricciardelli, & Merino, 2008; Vander Wal, Gibbons, & del Pilar Grazioso, 2008) and none of these studies used any visual measure to ascertain what a 'Central American' ideal female body may look like.

In Studies 1 and 3, a modified version of the SATAQ-3 (Thompson et al., 2004) was also administered to measure attitudes towards, and acceptance of, media's appearance standards. The SATAQ-3 is a revised version of the original questionnaire (Heinberg, Thompson, & Stormer, 1995) consisting of 30 items measured on a 5-point Likert scale (agree strongly; agree slightly; neither agree nor disagree; disagree slightly; disagree strongly). The measure contains four subscales: belief in media as a source of information about appearance; perceived media pressure on appearance; internalisation of media's body ideals; and internalisation of an 'athletic' ideal. The SATAQ-3 has been successfully used in

both Spanish-speaking Western populations (Sánchez-Carracedo et al., 2012) and in various non-Western populations (e.g., Fiji -Becker et al., 2011; Taiwan - Chang et al., 2013). The 30 items in the measure relate to three distinct types of media: television, movies, and magazines. As there were no magazines generally available to people in this region of Nicaragua, any items that related solely to magazines were removed. Items that related to magazines and television were modified to mention television only. During testing on my first trip to the field I found that similarly to previous studies (see Sánchez-Carracedo et al., 2012) the negatively worded items caused confusion for participants, resulting in unclear responses and noisy data. After discussion with the project leader a decision was made to remove these items. Preliminary analyses showed that even with these items removed, the remaining scale items held a four factor structure. After removing the aforementioned items from the measure, I further modified those retained where necessary to make the English more understandable for Creole-speaking participants. For example, the term 'fashion' was replaced with the local word 'style', 'movies' was replaced with 'pictures', and the phrase 'to lose weight' was replaced with 'to get more meagre'. The modified measures can be found in 8.9 Appendix A. Throughout the thesis I refer to SATAQ as a measure of 'media belief'.

2.2.2 Measuring body satisfaction

The Body Appreciation Scale (BAS) measures general levels of body satisfaction. The 13-item measure was originally developed and validated for use among women in the U.S (Avalos et al., 2005), and later for use among men (Tylka, 2013). It has also been used to measure body satisfaction in non-Western and non-White populations (Cotter, Kelly, Mitchell, & Mazzeo, 2015; Swami & Chamorro-Premuzic, 2008; Swami & Jaafar, 2012). The Spanish version was developed and validated with a sample of Spanish male and female adolescents (Lobera & Ríos, 2011). Studies among most populations have shown that the scale has a one factor structure, although there is evidence that this may not always the case (see Swami & Chamorro-Premuzic, 2008; Swami & Jaafar, 2012). I chose to use the BAS because when I started the research there was no published literature on body image in Nicaragua, so it could not be assumed that there would be measurable levels of body dissatisfaction within this population: a measure which was sensitive to small changes in levels of positive body attitude had more potential to capture any 'first signs' of hypothesized negative media influence on body image. The BAS was administered in Studies 1 and 3.

For Study 2, which investigated media influence on men's perceptions of attractive female body size and shape, I had also intended to use BAS and SATAQ-3. The data for this male sample was collected by the other researcher on the project as he was living between the two villages to be sampled. However, after initial piloting and discussion, I decided to employ qualitative methods to investigate men's female body ideals and television influence rather than utilising psychometric measures that did not appear to be suited to the men in this sample.

2.2.3 Measuring body shape concerns and disordered eating behaviours

Study 3 investigated media influence on women's body ideals, and further considered its impact on their body image and eating behaviours. I chose to use shortened versions of measures wherever possible to keep the overall duration of the task to a minimum, particularly important in a population where participants were not used to participating in surveys or research.

To measure body shape concerns, a shortened version of the original Body Shape Questionnaire (Cooper, Tayor, Cooper, & Fairburn, 1987) was utilised. The BSQ-8c (Evans & Dolan, 1993) performs just as well as longer versions of the measure in both English and Spanish speaking Western populations (Pook, Tuschen-Caffier, & Brähler, 2008; Warren et al., 2008). One study with a sample of Colombian adolescents found that the original BSQ items loaded on to two factors rather than just one, suggesting that Latin Americans may interpret or experience body shape concerns differently than Spanish-speaking groups from the U.S or Europe (Castrillón Moreno, Luna Montaño, Avendaño Prieto, & Pérez-Acosta, 2007). I considered it important to keep in mind the possibility that within an ethnically diverse and non-White Nicaraguan population, I may encounter similar ethnic differences in the experience of body image.

To measure disordered eating behaviours I employed the shorter version of the original 40-item Eating Attitudes Test (Garner & Garfinkel, 1979). The EAT-26 (Garner et al., 1982) has been validated for use in screening disordered eating behaviours among non-clinical samples as well as being employed as an outcome measure in clinical settings in both Western (Calado, Lameiras, Sepulveda, Rodriguez, & Carrera, 2011; Harrison & Cantor, 1997) and non-Western populations (Anderson-Fye & Lin, 2009; Becker et al., 2002; Caqueo-Urízar et

al., 2011). I found this measure to be generally comprehensible for those young women who had potentially been exposed to Western body ideals via television for most of their adult lives. The difficulty arose when interviewing women who had very limited lifetime access to media. Often I would have to explain the words or concepts contained in the scale. For example, upon reading the item 'I am aware of the calorie content of foods that I eat': participants would often immediately say 'yes'. I would then ask them if they knew what calories were or what they represented. The vast majority of participants would then say 'no', whereupon I would give a brief explanation and mark their response as 'never'. Sometimes, when it was clear that a participant did not sufficiently understand the meaning of an item, I would either omit that item or, more often, cease to administer any further items on the measure. I felt that this was the best strategy to keep participants from experiencing any unnecessary stress or anxiety. Some may argue that if an item has to be explained, it is somehow invalidating its intended meaning but I would disagree: when carrying out research in a cultural context other than that for which the measure was validated it is imperative to ensure complete understanding of the items' concepts, not only for the current study, but also to aid in future modification of the measure for use in other studies. Certainly, results generated need to be analysed carefully, taking into consideration any modifications made to the measure either prior to, or during testing.

2.2.4 Using psychometric measures with children

Study 5 looked at the influence of media on the development of body image and body ideals in children. I discussed my aims with a colleague, Dr. Elizabeth Evans, who had carried out similar research among children in the U.K using measures including the Children's Eating Attitudes Test. Findings from her studies suggested that even among Western populations there may be problems with using this measure with young children (see Evans et al., 2013). Consequently, I decided not to administer any psychometric measures or questionnaires, at least at the initial stages. As well as the potential problem of an existing measure containing concepts that reflect Western culture, relatively low levels of literacy are the norm in this part of Nicaragua meant that it was more appropriate to measure children's beliefs about body size using visual stimuli which are not dependent upon reading or language comprehension skills. The development and use of the novel visual stimuli used in this study are described and discussed later in this chapter.

2.3 Using visual stimuli to measure body ideals and body image

2.3.1 Using figural scales

One of the main aims of the research was to assess Nicaraguans' perceptions of attractive body size. As literacy levels in the study population varied it was important to use a measure that could be administered equally and successfully across all participants.

Sets of images known as figural scales are often used in body image research and attractiveness studies because they are an uncomplicated, quick method to ascertain participants' perceptions. Early figural scales comprised of sets of simple line drawings or silhouettes (Henss, 1995; Singh, 1993; Stunkard, Sørensen, & Schulsinger, 1983; Thompson & Gray, 1995). There are several disadvantages with this type of scale. Firstly, the figures are usually presented on one page and in ascending order of size, meaning participants' choices are often heavily influenced by the stimuli arrangement (Gardner & Brown, 2010). Secondly, these scales were not anthropometrically validated, but relied on general and rather subjective categories such as 'underweight', 'normal weight' or 'overweight'. This suggests that generated data may not be particularly fine-grained or accurate. Perhaps even more importantly, the line drawing figures often do not look realistic, bringing their ecological validity into question.

Some attempts have been made to make the figures in such scales look more 'realistic' by incorporating facial features or hair detail into artist drawn figures (e.g., Marlowe et al., 2005; Pulvers et al., 2004). Visual stimuli based on photographs of real men and women went a considerable way towards improving the ecological validity of the stimuli. Furthermore, such scales are based on real bodies with measurable dimensions, meaning participants' preferences can be quantified more accurately (Swami, Salem, Furnham, & Tovée, 2008). However, there is still the problem of controlling confounding factors that result from using real bodies with all their natural variation.

Another important shortcoming of many figural scales is that they typically depict a Northern European phenotype, with light skin and hair colour. It is important that the images used in figural scales reflect the phenotypic appearance of a study population because humans tend to be attracted to the 'average' of a class of visual stimuli in their environment, whether that be faces (Trujillo, Jankowitsch, & Langlois, 2014) or bodies

(Winkler & Rhodes, 2005). If the stimuli used are based on figures that approximate the average phenotypic appearance, judgments of attractiveness are thus likely to be more valid. Conversely, if the phenotypic appearance of the figures is too discrepant from the average (and thus potentially optimally attractive), it is likely that participant's choice is a product of unsuitable stimuli rather than what the observer really thinks. One scale that has at least attempted to depict a more 'multi-ethnic' phenotype (Pulvers et al., 2004) is still based on rather poor artist's drawings in black ink that may be adequate for measuring perceived levels of adiposity, but perhaps slightly inadequate when choosing one as an 'ideal'. Some researchers have taken up the challenge to develop new visual stimuli that better reflect their samples' phenotypic appearance: in their study comparing the female body shape preferences of African Hadza men in rural Tanzania with U.S undergraduates, Marlowe et al (2005) developed a scale consisting of two sets of five line drawings, one set depicting a black woman, the other a white woman. Another cross-cultural study that compared men's breast preferences in New Zealand, Samoa and Papua New Guinea generated visual stimuli suitable by manipulating digital photographs for size and skin colour (Dixson et al., 2011).

2.3.2 Developing a figural scale for a Nicaraguan population

In order to measure the body size ideals of Nicaraguan men, women and children, and minimize the problems discussed above, we developed a new set of figural scales. The Nicaraguan population is ethnically very diverse: the predominant ethnic groups in the study site were Creole, Garifuna, Miskitu and Mestizo. In general terms, people of Creole and Garifuna ethnic groups usually have dark skin and eyes and tightly curled hair. Miskitu people are considered Indian or 'red-skinned' (local term), with mid to dark skin and dark, often reddish, wavy hair. Mestizo people are generally lighter skinned than both (but not 'White' in a Northern European sense) with comparatively straight dark hair. I must reiterate that this is a very broad generalization: in reality there is almost as much variation in phenotypic appearance within ethnic groups as there is between them, reflecting Nicaragua's variously colonized past. In short, while there is some variation in phenotypic appearance between ethnic groups, the vast majority of Nicaraguans still have a darker skin and hair pigmentation than most Northern European Caucasians. As such, it was considered

imperative to construct a visual scale that better reflected the phenotypic appearance of the local population and therefore improve participant engagement with the task.

The figures in the scale were created by Professor Martin Tovée using the averaged data of the anthropometric measurements of 908 adult women and 588 adult men aged 18-30, collected as part of the Map Me project (Jones, Tovée, & Ruto, in press; Parkinson et al., 2015) using a mobile KX-16 3D body scanner ($[TC]^2$ Labs, Apex, NC, USA). 3D body surface scans were used to capture the size and shape of each participant's body via a set of 14 infra-red sensors positioned around the inside of the scanner cubicle. Up to 250,000 points in 3D space were recorded using the light reflected onto the body's surface (there was some variation in number depending on the size of the body). Thus this information corresponded to the size and shape of the participant's body, and was stored offline by the scanner's software and subsequently converted into a polygon mesh. In addition to being scanned, participants' height and weight were measured to calculate Body Mass Index (BMI – weight (kg) / height (m^2)). Together, the weight and shape data within each weight category were summed, resulting in nine sets of measurements that represented nine weight categories: emaciated, underweight; normal-low; normal-mid; normal high; overweight; obese; very obese; severely obese. This procedure was followed separately for the measurements for men and women. These final measurement categories were then used to create the figures for the figural scale in the Daz Studio 3D software package (version 4.6). The female 3D model Victoria 5.1 (V5) and the 3D male model Michael 5.0 (M5) were used. The women were shaped using the V5 morphs, the Genesis Evolution head and body, the feminine touch morphs. The bodies were then covered using the "JK Ceil" dark skin texture and the Victoria 5 Elite pony tail hair with the black hair texture (all from www.Daz3d.com). The bodies used to create the men were shaped using the M5 morphs, the Genesis Evolution head and body morphs. The bodies were covered using the "JK Ceil" dark skin and the "Alexios" dark hair package (all from www.Daz3d.com). The men were wearing the B25 shorts in green and women the B25 shorts and B25 sports bra both in green. The faces were not obscured, as has been done in some previous studies (e.g., Mo et al., 2014) as it was felt that the local population might find blurred faces too strange. Each image was rendered and exported as a full colour JPEG file. The images were then printed in full colour and laminated on separate cards measuring approximately 11cm x 16cm.

While testing for Study 1 during my first trip to the field, I noticed that some participants did not judge any of the bodies as 'too thin': 20% of women (8 out of 40) and 21% of men (8 out of 38) said that none of the male images were 'too thin'. More than 32% of women (13 out of 40) and 8% of men (3 out of 38) said that none of the female images were 'too thin', even though the thinnest female image represented a BMI of 16.1. As I was concerned about floor effects, before returning to the field the following year an extra very underweight body (BMI 15) was added into all versions of the scale. As there was no available scan data for such underweight bodies, the image was created by extrapolating down from the previously thinnest image. The adult scales are referred to as the Ten Bodies Scales (TBS). Refer to Table 2.2 for BMI values of all the TBS images. It is worth noting that the final BMI values of the images are not placed at regular intervals (e.g., 16, 18, 20). However, they do emanate from true dimensions of the body scans of real people in the different weight categories. See 8.9 Appendix B for all of the TBS images.

In the second phase of data collection where the aim was to increase sample sizes, I utilised this new ten-image version of the TBS. Consequently, some of the responses, particularly those that were more likely to pertain to the extreme ends of the TBS scale (i.e., least attractive body size, perceptions of too fat or too thin) could potentially have been affected by this change in measurement. Therefore subsequent analyses of those studies which used the TBS take this possibility into account.

Table 2.2. BMI values of the 10 images in all sets of TBS stimuli

Image number	Adult female	Adult male	Child girl	Child boy
1	15.0	17.7	14.3	14.3
2	16.1	18.8	15.3	15.4
3	17.0	19.8	16.5	16.6
4	17.8	20.4	17.2	17.3
5	18.4	22.6	17.5	17.5
6	19.6	24.4	17.6	17.7
7	21.8	25.7	20.5	20.5
8	25.1	28.3	22.7	22.5
9	31.8	32.2	25.0	25.0
10	36.5	35.8	27.3	27.7

2.3.3 Measuring ideal body size and body shape in '3D'

Because of its simplicity and ease of use, the TBS figural scales enabled fairly large numbers of Nicaraguan participants to be tested in often difficult conditions. However, the scales were designed to measure perceptions of and preferences for body size only, and not any other aspect of appearance, such as body shape. In Studies 2 and 3, I employed a method with greater potential to capture an expression of 'true' preference, unrestricted by the preconceived assumptions of the researcher's measures. The Daz Studio programme enables the manipulation of a 3D figure in many dimensions including, but not restricted to, morphological changes to the size and shape of different parts of the body. The model used to create the figures was Stephanie 6 from the Genesis 2 package. The model was given a darker skin tone and hair colour that did not represent a specific racial or ethnic group but minimized the 'European-ness' associated with most visual scales (Gardner & Brown, 2010).

Using a range of sliders, the figure in the interface can be altered in real time to re-present onto the computer screen the participant's perception of the ideal female body. The programme contains more than 90 sliders for altering different parts of the body, however the number available for use in this study was limited to a total of 20, 6 'full body' options (e.g., 'emaciated', 'heavy', 'pear-shaped') and 14 sliders for specific areas (e.g., breasts,

waist, hips, buttocks). This was done for several reasons: Firstly, many of the sliders relate to body parts that were not relevant to this study (e.g., fingers, hands, feet); secondly, even fully 'computer competent' participants tend to use only about a third of the total available sliders (Crossley, Cornelissen, & Tovée, 2012); and lastly, to prevent the task from being too long and arduous for participants. The software interface is illustrated in Figure 2.1, and Table 2.2. Table 2.1 lists the sliders used to adjust the bodies.

The visual representation of the participant's ideal body created in the programme can then be saved as an image file. The image files are later reopened to measure the participant-created figures, just like real bodies, using the 'measuremetrics' function in the Daz Studio software which functions like a 'digital tape measure'.

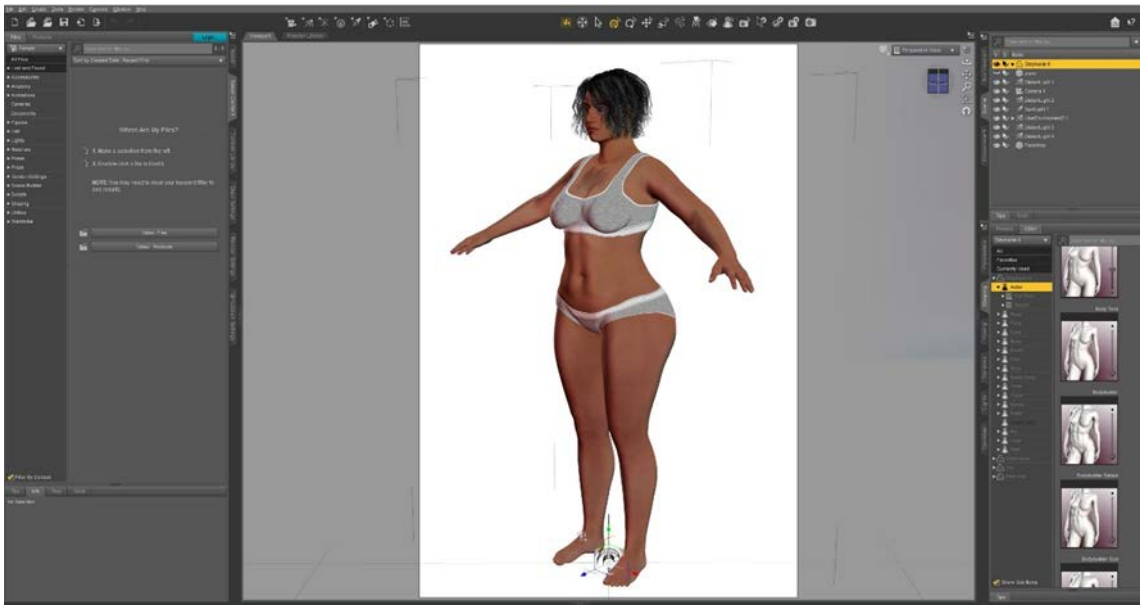


Figure 2.1. The Daz Studio interface with example figure displayed.

There are a couple of potential downsides to using the 3D method to measure body ideals. Firstly, it is a more time-consuming method of data collection than using a simple 2D scales, and so is not ideal for testing large samples of participants when time or resources are limited. Thus, in Study 2 and 3, smaller samples of male and female participants respectively were recruited and tested than in Study 1. Additionally, some degree of familiarization with the computer interface is required, so it may not be suitable for all types of participants, such as older people, very young children, people with vision or co-ordination difficulties, or simply those individuals who are not familiar with a computer keyboard. As most of our prospective participants would fall in to the latter category, some adjustments were made to

the protocol that had been used in previous studies (see Crossley et al., 2012). Instead of spending time on training and potentially demanding too much of our participants, the researcher (that is myself or my colleague) carried out the figure manipulation task in the Daz programme but following the participants' verbal instructions.

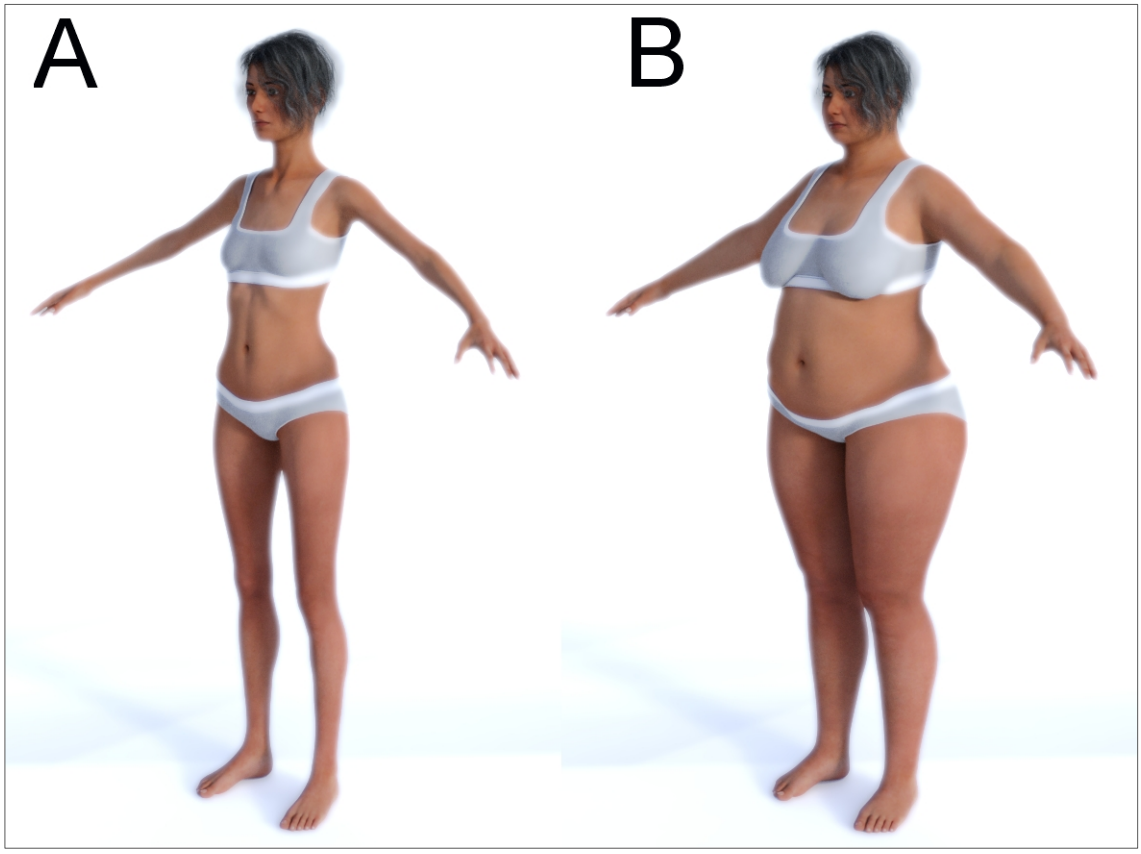


Figure 2.2. 'Starter' bodies used in Studies 2 and 3. Body A has a BMI of 12.9, body B has a BMI of 35.

Before starting the actual task, the researcher would first open a 'trial body' in the interface to demonstrate to the participant the full range of body size and body shape adjustments available to them. As in previous studies (Crossley et al., 2012) participants created their ideal body twice, from two different 'starter' bodies, one obese (BMI 35) and one severely underweight (BMI 12.9) This was done to minimize possible anchoring effects. The starter bodies are shown in Figure 2-2.

Table 2.3. The 20 sliders available to participants for adjusting the female figure in the Daz Studio interface

Body region		Slider name
Global body	1	Body size
	2	Emaciated
	3	Heavy
	4	Pear figure
	5	Voluptuous
	6	Weight
Arms	7	Arm thickness
Chest region	8	Breast implants
	9	Breasts natural
	10	Chest adjustment
	11	Young breast
Trunk	12	Love handles
	13	Waist width
	14	In out (stomach)
Hips and buttocks	15	Glutes size (1)
	16	Glute lower width
	17	Glute size (2)*
	18	Hip width
Legs	19	Thighs size
	20	Thighs thickness

* A second Glute size slider was added to accommodate male participants' desire to create larger buttocks

2.3.4 Measuring children's perceptions of body size and body size ideals

The majority of studies with samples of young children have utilized figural scales to assess perceptions of body size and body image (see Tatangelo, McCabe, Mellor, & Mealey, 2016 for a review). This method just requires the child to 'look and point', so does not rely on reading ability. It is also suitable for younger children who tend to have a short attention span. However, low correlations between measured child body size and perceived body size have been found with some scales (Collins 1991), suggesting that younger children are perhaps not yet able to perceive or express their own body size. However, it could also indicate problems with the construct validity of the scale. Similarly to adult versions, many scales contain rather crude, unrealistic looking figures that may prove difficult for young children to identify with (Lombardo, Battagliese, Pezzuti, & Lucidi, 2014). It has been argued

that the rationale for keeping the figures in such scales very simple without any details or defining characteristics is to enable their use across cultural groups (Lombardo et al 2014). However, I would argue that younger children would then find it quite hard to identify with the figures and make the cognitive 'leap' needed to perceive that a figure drawing represents them in some way.

2.3.5 Children's TBS scale development

As for Nicaraguan adults, a 2-dimensional figural scale was developed to assess children's perceptions of body size and body size satisfaction. The images in the children's versions depict a child of 10-11 years of age. Similarly to the adult TBS, the body sizes in the images were based on composites of 99 female body scans and 91 male body scans as part of the MapMe project (Jones et al., in press; Parkinson et al., 2015). The method of their construction was identical to that described for the adult TBS earlier in this chapter (see section 2.4.2). The two sets of nine bodies were created in Daz Studio (version 4.5) using the female V5 model and the male M5 model (www.Daz3D.com). The girl's bodies were shaped using the V5 morphs, the Genesis Evolution head and body morphs (including the Genesis Child morphs), the feminine touch morphs (www.Daz3d.com) and the preteen morphs (from www.renderosity.com). These bodies were then covered using the "JK Ceil" darker skin textures and the Victoria 5 Elite pony tail hair in black (www.Daz3d.com). The boys' bodies were shaped using the M5 morphs, the Genesis Evolution head and body morphs and the preteen morphs. The bodies were again covered using the "JK Ceil" darker skin texture and the "Alexios" darker hair package (www.Daz3d.com). The boys were wearing the B25 shorts in green and the girls were wearing the B25 shorts and B25 sports bra both in green. As in the adult TBS, faces were not blurred or obscured to try and maintain a 'normal' appearance for the images. The images were rendered and exported as jpeg files, and then printed in full colour onto cards measuring approximately 11cm x 16cm which were then laminated. As mentioned previously, an extra thin image was introduced to both sets of images at the second data collection time point (T2). The final ten-image version of the figural scale is called the Children's Ten Bodies Scale (CTBS). The TBS version used was taken into account in the analysis of participants' responses to items that were likely to involve the two extreme ends of the scale.

2.3.6 Children's appearance satisfaction and sociocultural influences

Some studies suggest that other sociocultural sources of information and behavioural learning, such as friends and family, may have more influence than media imagery (Dohnt & Tiggemann, 2006b; Tatangelo et al., 2016; Tatangelo & Ricciardelli, 2015) particularly in non-Western populations (McCabe et al., 2015). Therefore, after the second field visit I decided to introduce some new measures that would assess the influence of family, friends and media on children's appearance ideals and further measure their appearance satisfaction. In the previous data collections, children appeared to engage quite well with the CTBS, so it seemed logical to use a visual method to measure these constructs.

In their study assessing media influence on the body image of preadolescent girls, Dohnt and Tiggemann (2006b) used a set of images that were similar in format to those of Harter and Pike's (1984) Pictorial Scale of Perceived Competence / Social Acceptance. The authors did not give any detail about the particular images they used, but Harter and Pike's images were based on simple line drawings, somewhat like a character from a children's story book or animated cartoon. The Nicaraguan children in this sample reported watching cartoons more than any other type of TV content, so designing visual stimuli based on cartoon characters had a good chance of capturing their interest and potentially aid in their understanding of the questions.

To develop the figures for the visual stimuli, I first identified which cartoon characters were children most familiar with and enjoyed the most. Girls mentioned most frequently Dora the Explorer and Barbie. Boys mentioned most frequently Ben 10 and Spiderman. I felt it was important to use characters that looked like they were also children. I used Dora the Explorer as my reference for the girl's version of the stimuli and Ben 10 as a reference for the boy's version. Both of these characters clearly look like children, perhaps Dora looks like a six year old and Ben 10 looks like a nine or ten year old. Using these characters as references, an artist created the two main characters, giving them darker skin and hair colour. A total of 10 images were created, 4 measuring boys' and girls' appearance satisfaction, and 6 measuring sociocultural influences. All images were printed in colour on to cards measuring 21 x 15.5 cm and laminated. I have named the set of visual stimuli the Children's Appearance Prompts (CAP). See Appendix C for all of the CAP images.

Girls' appearance satisfaction was measured using the two images depicting the same female cartoon character standing alongside a large mirror. In the first image the girl is smiling, in the second one she is looking sad. Following the procedure outlined in Dohnt and Tiggemann (2006b), but adapting the language, the child was told, 'This girl here (indicating the smiling girl) is happy with her appearance, she likes to see how she looks. This girl here (indicating the sad girl) she not happy with her appearance, she no like to see how she looks. Which girl favour you more? (Creole English – 'which girl looks more like you?)'. Once the child had selected one of the images, they were asked, 'Are you always or sometimes happy / sad with your appearance?' In this way, the responses are scored from 1 – 4, with 1 meaning always not happy and 4 meaning always happy. The boys' appearance satisfaction was measured in the same way, using the two images of the male cartoon character.

To measure the three main sociocultural influences, family, peers and the media, the remaining 6 images were employed. The image to assess the influence of peers on boys shows a group of three boys. The child was told, 'These three boys are friends. This boy here (pointing to one character in the image) he likes to see how his friends look, he want to copy them, be like them. This boy here (pointing to another character in the image) he *sometimes* likes to see how his friends dress, he *sometimes* wants to be like them. This boy here (pointing to the third character) he no like see how his friends look, he no want to copy them, be like them. Which boy is more like you?' If a child reported wanting to be like his friend, he was then asked to name his friend, and describe in what way he wanted to be like him. Girls were assessed in the same manner using the image depicting three girls.

To assess media influence a similarly structured protocol is used with the images containing three characters watching television. 'These three girls are friends and they like to watch television together. This girl she like to see the girls and ladies on the television and she want to favour (look like) them, she want to be like them. This girl she sometimes want to favour the girls or the ladies on television. This girl she like to watch television too, but she not want to favour the girls or ladies on the television. Which girl is more like you?' Sometimes I would give an example of any television character that the child had mentioned already earlier in the interview to aid understanding. If the response was positive, that they would like to be like someone on television, I further asked for the name of that character, and why the child

wanted to be like them. Boys were tested in the same manner using the images depicting boys watching TV.

To assess influence of parents / adult family members, the child was shown the image depicting the appropriate gender cartoon character standing alongside an adult that looks like a family member. The child was told 'this boy / girl like to see how his papa / mama dress, how he behave, he want to be like his papa. Do you have someone in your family who you would like to be like?' In Nicaragua, many children are brought up by family members other than their mother or father, so it made sense to keep the question broad and refer to any adult family member. If the response was affirmative, I asked the name of that adult and their relationship to the child and in what way they wanted to be like them.

2.4 Qualitative approaches

Qualitative methods were employed in Studies 2 and 4 to gather data which would support and extend findings from the quantitative data analysed in Studies 2 and 3. 'Inquiry from the inside' (qualitative methods) and 'inquiry from the outside' (quantitative methods) are not polar opposites, but complementary approaches that help us to understand both the context and the facts of the research topic (Evered & Reis, 1981):

'*[Qualitative researchers] seek answers to questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasize the analysis and measurement of causal relationships between variables, not processes'* (Denzin & Lincoln, 2011).

Coming from an anthropological background, I also understood the value of 'seeing what's there' rather than simply approaching the research with a fixed set of assumptions and hypotheses, particularly in a previously unstudied population. Quantitative methods require a positivist stance to the research: they necessarily remove the context in order to scrutinize the variable in question with more control (Guba & Lincoln, 1994). Data generated through the use of qualitative methods have a greater ability to approximate the research findings to 'real life' by getting closer to people's own perspectives (Denzin & Lincoln, 2011). Space is also given for 'the discovery dimension in inquiry' allowing the researcher the possibility of finding unanticipated aspects of the research theme to emerge and come to the surface,

rather than a priori applying a hypothesis (Guba & Lincoln, 1994). This is especially relevant where there is limited existing knowledge about the context or setting in which the data were gathered, such as in the current study.

2.4.1 Method choice

Qualitative methods can include participant observation, one-to-one semi-structured or unstructured interviews, and focus group discussions. While individual interviews enable the researcher to focus on one voice, they may cause the participant to feel less relaxed and under more pressure to talk. The same could be said of a discussion group, where intra-group dynamics could influence who speaks and who does not: this may be especially true for men particularly when discussing sensitive topics (Diedrichs, Lee, & Kelly, 2011). However, seeking prior advice from a local informant can help to establish the likelihood of group dynamics preventing some individuals from speaking. Another practical factor to consider in selecting a method was available time: While in some cases, organizing a focus group with five or six people may prove more time consuming than doing individual semi-structured interviews.

I chose to employ focus group work because of its greater ability to bring out the individual-social relationships that contribute towards people's attitudes and behaviours than one-to-one based interview techniques (Denzin & Lincoln, 2011). I also considered focus groups to be the most suitable format within our time constraints, and the fact that potential participants lived in close proximity to each other (i.e., in the same village). Once in the field, further discussions with local informants as to the best ways to engage local people in our research confirmed this to be the most suitable method: villagers are very familiar with group discussions as their weekly community meetings have the same format.

I used thematic analysis to interpret the qualitative data generated from the focus group discussions in Studies 2 and 4. I selected this type of analysis because it is the foundational method used in qualitative research (Braun & Clarke, 2006), therefore suitable for my level of expertise. Thematic analysis is a fairly flexible method, relative to other analytic methods (e.g., grounded theory) which are often tied to a particular epistemological position. Thematic analysis aims to seek out and organize patterns from within a data set, and can be 'deductive' or 'inductive': that is analysis can be driven by the researcher's initial research

questions or by the patterns that appear from the data themselves (Braun & Clarke, 2006). This was a particularly important consideration in the present research whereby the population was previously 'unstudied', but evidence from previous studies among similar populations (e.g., Fiji, Becker et al, 2002) shaped initial research questions.

2.5 Ethical approval for the research

Ethical approval for all studies in this research was granted by The Faculty of Medical Sciences Ethics Committee, Newcastle University on 19th May 2014. Application No: 00756/2014. As the project progressed, updates and amendments received ethical approval subsequent to this date.

Chapter 3. Study 1: Adult body size ideals and media influence

3.1 Introduction

The purpose of this study was to measure perceptions of body size among men and women in a rural Nicaraguan population and to examine the impact of media exposure on perceptions of body size and body satisfaction. The study was originally intended to have a longitudinal design, to identify if there was the hypothesized causal relationship between media exposure and body ideals. The plan was to test the same group of villagers prior to, and at least one year after, the village of Pedregal had received electricity. As a control, participants in Pueblo and Kahkabila, which already had electricity and thus regular media access, were to be tested at the same two time points. However, at the time of completing the last data collection for this study, Pedregal still had not received electrification. As such, this study remained correlational in design, examining the relationship of media exposure with body ideals and body satisfaction both between subjects, by comparing people in villages with and without regular media access, and across individuals.

3.1.1 Ideal female body size

It is well established that in 'The West' (here I refer to the regions North America, North West Europe and Australasia) and in some non-Western but industrialized nations (e.g., China, Japan) the ideal female body size is very slim. A BMI of as low as 18 (in Japan for example) and on average around 20 is consistently rated most attractive by both male and female observers (Crossley et al., 2012; Swami, Caprario, Tovée, & Furnham, 2006; Swami, Neto, Tovée, & Furnham, 2007). In non-Western populations there is often a preference for a heavier female body (Yu & Shepard, 1998). However there may be variation within a population: rural and lower socio-economic status (SES) groups often judge a heavier female body more attractive, while urbanized or high SES groups may have preferences closer to those found in Western populations (Boothroyd et al., 2016; Brewis & McGarvey, 2000; Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, & Cunningham, 2010; Swami & Tovée, 2005a). This suggests that exposure to Western media, part of the 'modernity package' that arrives with rapid urbanisation, may similarly be driving those preferences for a slender female body (Swami & Tovée, 2005a).

Specifically in the Latin American region (here I refer to Central and South America and the Caribbean) studies on body ideals are scarce, but several have found that the ideal female body size was somewhat larger than typically found in Western populations (Gray & Frederick, 2012; Laus, Costa, & Almeida, 2015). Previous studies with Nicaraguan samples also showed that peak BMI preferences were high relative to comparable samples from Western nations, and those of rural populations were higher still (Boothroyd et al., 2016; Jucker et al., 2017). Furthermore, television viewing alone and not education, hunger or SES predicted the preference for a slimmer female body among rural Nicaraguan women (Boothroyd et al., 2016). Together, these findings strongly implicate exposure to media, typically replete with imagery that endorses a Western 'thin ideal', in driving female body size preferences across cultural groups.

It is important to consider ethnicity as a factor that may shape or influence appearance standards, including body size, differently across groups. In the U.S for example, African American men and women found a heavier female body with fuller buttocks optimally attractive while their White compatriots preferred a slimmer, fuller busted female figure (Overstreet, Quinn, & Agocha, 2010). It may also be the case that preferences differ among ethnic groups in Latin America in general and within Nicaragua more specifically. Due to centuries of colonisation, most Latin American nations are ethnically very diverse and Nicaragua is no exception (see 2.2.1 for descriptions of ethnic groups sampled in this study). To date, there are apparently no published studies examining 'traditional' body ideals of these ethnic groups (or any of the others) within Nicaragua so it is not known if perceptions of attractive bodies are similar to those found in other non-Western, non-industrialised contexts. It is entirely possible that in the cultural tradition of a particular ethnic group a slim body size is judged as most attractive regardless of any exposure to Western body ideals, in which case, there would be no appreciable change in body size ideals to measure following exposure to television. However, with this caveat in mind, and based on previous findings discussed above, it was predicted that the ideal female BMI will be lower in samples with high media exposure than in samples with low media exposure.

3.1.2 Ideal male body size

The majority of published research on male body attractiveness focuses on the rise of the 'muscular ideal' in Western society, where men are increasingly expected to aspire to a lean,

v-shaped torso with a developed musculature if they wish to be considered attractive (Leit, Pope, & Gray, 2001). However, the present study did not investigate preferences for body shape or muscularity, only body size as measured by BMI. Previous studies have found differences in ideal male body size within both Western (Swami, Smith, et al., 2007) and non-Western populations. For example, rural Malaysian women preferred a male body with a BMI of around 26, whereas their urban compatriots in Kuala Lumpur preferred a BMI of around 21, more similar to that of the UK sample. Furthermore, while both the Kuala Lumpur and U.K sample showed a strong preference for a 'v' shaped male torso, with a narrow waist and a wide chest, the sample of rural Malaysians did not exhibit such a shape preference and made their attractiveness judgments based on body size (Swami & Tovée, 2005b). These findings could be considered contradictory if it is assumed that a rural Malaysian population hold 'traditional' stereotypical gender roles and thus have gender-stereotyped body ideals (i.e. small, slim women and large, muscular men). A more likely explanation is that the v-shaped body preference found in the urban Malaysian and U.K samples is being driven by Western media's heavy endorsement of a 'muscular ideal' male body standard. As previous research on ideal male body size is scant and non-existent within a Nicaraguan population, no firm predictions were made regarding what might be the ideal male body size for men and women, or how media exposure might influence it.

3.1.3 Acceptable body size

In the West, there is high stigmatization of fatness. As well as being perceived as the antithesis of Western ideal body standards which are based on slimness and leanness (Swami, 2015), fatness is often associated with negative personality traits and low economic status (Brewis, 2011). However, among some populations there is more acceptance of heavier bodies and attitudes in general towards weight are more positive (Dijkstra, Barelds, & van Brummen-Girigori, 2015), especially in cultures or ethnic groups where body size may not be so central to conceptions of physical attractiveness (Cunningham, Roberts, Barbee, Druen, & Wu, 1995). By contrast, in Western settings thinness is not only accepted as the dominant female appearance standard, but is also associated with positive personality traits (Hart, Sbrocco, & Carter, 2016) and higher socio-economic status (James, Nelson, Ralph, & Leather, 1997). In some environments however, thinness is perceived negatively: it can be a sign of disease or poor health (Tovée et al., 2006) diminished reproductive potential

(Zaadstra et al., 1993) and low SES (Hill, Delpriore, Rodeheffer, & Butterfield, 2014). Therefore, the current study also measured acceptable male and female body size and examined the role of environmental factors, in particular media exposure, in shaping local perceptions of a normal body size.

3.1.4 Body satisfaction and media

There is plenty of evidence to suggest that media exposure is associated to some degree with negative impacts on body satisfaction among both women (Grabe et al., 2008) and men (Barlett et al., 2008; Blond, 2008) in the West, and among women in non-Western populations (Becker et al., 2002; Mellor et al., 2008). Indeed, previous research showed that media exposure predicted dieting behaviours among rural Nicaraguan women (Boothroyd et al., 2016). In the present study, associations of media consumption with body satisfaction levels and dieting were also examined.

3.1.5 Study aims and predictions

The present study aimed to establish male and female body size ideals of men and women in rural Nicaragua, and investigate whether media exposure was associated with preferences. By comparing samples from high media and low media villages which were otherwise ecologically and socio-culturally comparable, possible confounding variables such as SES and hunger were minimized, enabling a clearer assessment of the role of media exposure, specifically television viewing (TVE), on body size ideals. Based on the discussed literature, the main predictions were:

- The ideal female body will be slimmer in high TVE villages than in low TVE villages
- Ideal female body size will be negatively associated with TVE
- No firm predictions were made for ideal male body size
- Cut-off for acceptable body size will be lower in the high TVE villages, and higher in the low TVE villages
- Larger body sizes will be judged less favourably in high TVE villages
- Media belief will be higher in high TVE villages
- Body satisfaction will be lower in high TVE villages
- Body dissatisfaction will be positively associated with TVE

3.2 Method

3.2.1 Participants

A total of 127 male and female participants were recruited by word of mouth in Kahkabila (*n* = 41), Pueblo Nuevo (*n* = 40), and Pedregal (*n* = 46). Eighty four participants were tested during the first fieldtrip (T1), and 43 were tested approximately six months later (T2). All participants were only tested once. Across the sample, mean age was 19.46 years old (*S.D* 4.66; range: 12-31), and 49.6% (*n* = 63) were female. Participants self-identified their ethnic group as either Mestizo (65%, *N* = 83), Miskitu (22% *N* = 28), mixed Miskitu and Creole (6.3% *N* = 8), mixed Mestizo with Creole or Miskitu (2.4%, *N* = 3) or Garifuna (< 1%, *N* = 1). Spanish was the most frequent native language, reported by 66.9% *(N* = 85) of participants, followed by Miskitu, 18.9% (*N* = 24), and Creole 14.2% (*N*= 18).

3.2.2 Measures

Body size perception and ideals

Body size perceptions and body ideals were measured using the male and female versions of the Ten Bodies Scale (TBS), a novel figural rating scale which I discuss fully in Chapter 2. Participants were asked to select: their perceived current body size; their ideal body size; most attractive and least attractive opposite sex body size; and any bodies that they considered to be either too fat or too thin for their own sex and for the opposite sex. They were also asked to arrange the bodies in order of their attractiveness.

Television viewing

Fifty three percent (*n* = 68) of participants had a television in their own home, 37% (*n* = 47) had access to a television in a neighbour's home, and 9.4% (*n* = 12) reported that they had no regular access to a television. Participants reported how many hours of television they had watched in the previous seven days (TVE), and how frequently they tended to watch U.S originating / English language television programmes and films (forthwith referred to as USTV and USFM respectively), and Latin American originating / Spanish language television programmes and films (SPTV and SPFM respectively). Frequency of viewing the four content types was measured on a scale from 4 to 0 (4 = daily or every other day, 3 = once a week, 2 = a few times a month, 1 = rarely, 0 = never). In addition, participants were asked to verbally name their favourite television shows or type of televisual content.

Media beliefs

A modified version of The Sociocultural Attitudes Toward Appearance Questionnaire-3 or SATAQ-3 (Thompson et al., 2004) was used to measure awareness and acceptance of media generated appearance ideals. It contains four subscales: media as a source of appearance information; perceived media pressure to conform to appearance standards; general internalization of media's appearance ideals; and internalization of an 'athletic' appearance ideal. See 2.3.1 for a detailed description of the measure and the modifications.

Education and income (SES)

Participants reported the level of education attained (e.g., completed primary school, some secondary school, further education, etc.) and the total number of years schooling they had completed. The average number of years in education was 7.15 (*S.D* 3.86; range: 0-15). Participants also reported their earnings during the previous year. Average annual income was equivalent to U.S $753.50 (*S.D* 1301.72; range: $0 - $9600).

Hunger and weight status

Participants reported their hunger level on a scale of 1 (famished, starving) to 10 (painfully full), how many hours had passed since their last meal, and whether it had been a snack (8.7%; *n* = 11), a medium -sized meal (78.7%; *n* = 100), or a large meal (12.6%; *n* = 16). Average hunger level was 4.95 (*S.D* 0.88; range: 3 - 7) and hours since last meal was 4.34 (*S.D* 3.17; range: 0.2 - 22). Participants were also asked whether they were trying to lose weight, not trying to change their weight, or trying to increase their weight.

Anthropometrics

To calculate participants' BMI, height was measured to the nearest 0.5cm with a standard tape measure, and weight was measured to the nearest 0.1kg, using a WeightWatchers™ digital scale. Participants were asked to remove footwear and outer clothing before measurement. Chest, waist and hip circumferences were measured to the nearest 0.5cm with a standard tape measure to calculate body shape cues such as Waist to Hip Ratio (WHR).

Body satisfaction

The Body Appreciation Scale or BAS (Avalos et al., 2005) was administered to establish participants' attitudes towards their bodies in general. A measure that can detect subtle

changes in body satisfaction will be better placed to capture any small effect of relatively recent or low level media exposure. See 2.3.2 for full description of the measure.

3.2.3 Procedure

In each village, participants were tested individually in a quiet room with a desk. Participants were asked if they preferred to be interviewed in Spanish or English. The experimenter explained that they would be asked some questions about themselves and then they would look at some computer generated pictures of lightly clothed men and women and be asked to give their opinions about them. They were reassured that their participation was completely voluntary, that they could decline to answer any questions or stop completely at any time, and that all their responses would remain anonymous. Participants were further assured that we were interested in their own opinion, and that there were no 'right' or 'wrong' answers to the questions. Firstly, demographic information was collected, with the experimenter entering the participants' verbal responses directly into a laptop. Participants were then weighed and measured for anthropometrics. Next, the TBS cards depicting the participant's own sex were spread out on the table in a random order in two lines of five. The participant selected the image they considered as most similar in size to their current body and their 'ideal' body. Next, participants were asked to indicate any images they considered to be too thin and then any they considered to be too fat. In the second part of the task, participants were presented with the TBS of the opposite sex, and asked to select the body size they considered to be the most attractive, the least attractive. As with the same sex task, participants were asked to select any images they considered to be too fat or too thin. The images were then cleared away and participants responded to the BAS and the modified SATAQ-3 questionnaires. The participant was asked if they would prefer to read the questionnaire aloud themselves or if they would prefer it to be read aloud to them. The questionnaire was always read out loud to ensure full understanding of the items. Participants were encouraged to ask for further explanation if there was anything they did not fully understand. Participants gave their responses aloud and in ink on a laminated copy of the questionnaire, while the experimenter entered the responses directly into the laptop. Each interview lasted approximately 40 minutes and participants were compensated the equivalent of 4 U.S Dollars in local currency for their time.

3.3 Data analysis

Inspection of boxplots and Shapiro-Wilks tests showed that some predictor and outcome variables had non-normal distributions. This was not unexpected, as the samples had been drawn from locations purposely selected for their differences. For each analysis the same procedure was followed. Where the data of a variable were not normally distributed, a transformation was carried out before running the analysis. In some cases, even after transformation, data remained non-normally distributed, so both parametric and non-parametric tests were run and results compared. Where overall pattern of results from the two types of test did not essentially differ, the results of the parametric tests were interpreted. All results reported here are from parametric ANOVA tests unless otherwise stated. All assumptions of normality were checked in each analysis and where violations occurred these have been reported. Pearson's correlations were used to look for associations between ideal body size and media viewing variables. Chi-Square tests were used when looking for differences in percentages of participants who judged obese bodies as least attractive using the 9 and 10 image versions of the TBS. Binomial logistic regressions were run to look for the effect of location group and gender on likelihood of choosing an obese body as least attractive.

3.4 Results

3.4.1 Ideal body size

Independent samples t-tests found no significant difference in means of the BMI that women had selected as their ideal body size and the BMI that men had selected as the most attractive in the opposite sex, $t(109.5) = -0.726$, $p = .469$, equal variances not assumed), and in means of the BMI that men had selected as their ideal body size and the BMI that women had selected as the most attractive in the opposite sex, $t(125) = -1.583$, $p = .116$. As such, further analysis of ideal female and ideal male body size collated men's and women's responses to these two items. Unadjusted means and standard deviations for ideal male and female BMI of the three locations are shown in Table 3.1.

Table 3.1. Unadjusted means and standard deviations for ideal female BMI and ideal male BMI by location group

	Kahkabila	Pedregal	Pueblo
Number participants	41	46	40
Ideal female BMI*	20.93 (2.71)	19.79 (3.09)	19.62 (2.52)
Ideal male BMI*	22.43 (2.14)	23.09 (4.43)	21.76 (2.26)

* $p < .05$ ANOVA tests for location group differences.

Ideal female body size

Across the whole sample, mean ideal female BMI was 20.1 (*S.D* 2.83). A one-way ANOVA was run to assess location differences in ideal female BMI. A square root transformation was applied to the data. As can be seen in Figure 3-1. Distribution of values for ideal female BMI (square root transformed) by location group. Blue boxes show the interquartile range (IQR). Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the circles, boxplots of the transformed data revealed several outliers. As they were genuine participant responses and there was homogeneity of variances, as assessed by the Levene's test ($p = .856$) the test was carried out. There was a significant main effect of location, $F(2, 124) = 3.062$, $p = .046$, partial $\eta^2 = .049$, such that Pueblo had the lowest ideal BMI and Kahkabila had the highest. However Tukey Kramer post hoc tests found all pairwise p values > .05.

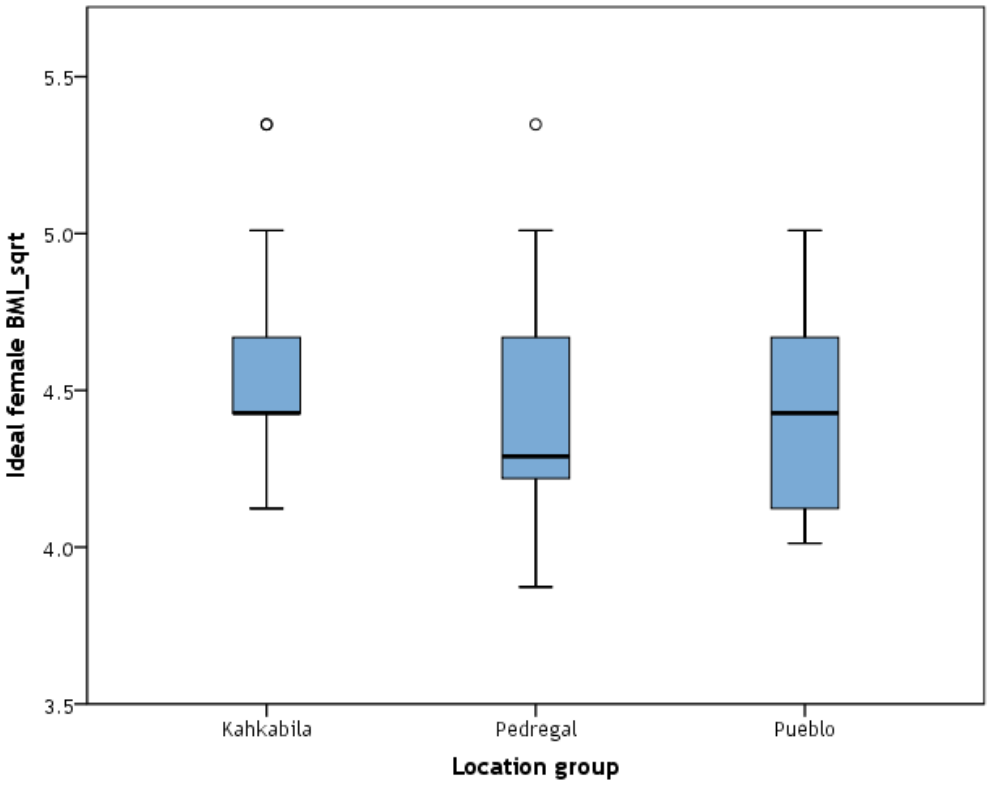


Figure 3.1. Distribution of values for ideal female BMI (square root transformed) by location group. Blue boxes show the interquartile range (IQR). Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the circles

Ideal male body size

Across the whole sample, mean BMI for ideal male body size was 22.46 (*S.D* 3.22). A one-way ANOVA was run to assess location differences in ideal male body size. A natural log transformation was applied to the moderately skewed data, see Figure 3-2 for boxplots of the data. However, three outliers with residuals over 3 remained and the Shapiro Wilks test for normality was violated (p = .002). The three outliers were then removed and the analysis was run again. The distribution of the data as assessed by Levene's test improved, p > .05, but the patterns of results remained the same. As such results from the transformed data including the outliers are reported as there was no justification to remove valid data points and Welch's ANOVA was interpreted. There was no significant difference between location groups, $F(2, 81.21) = 1.658$, p = .197.

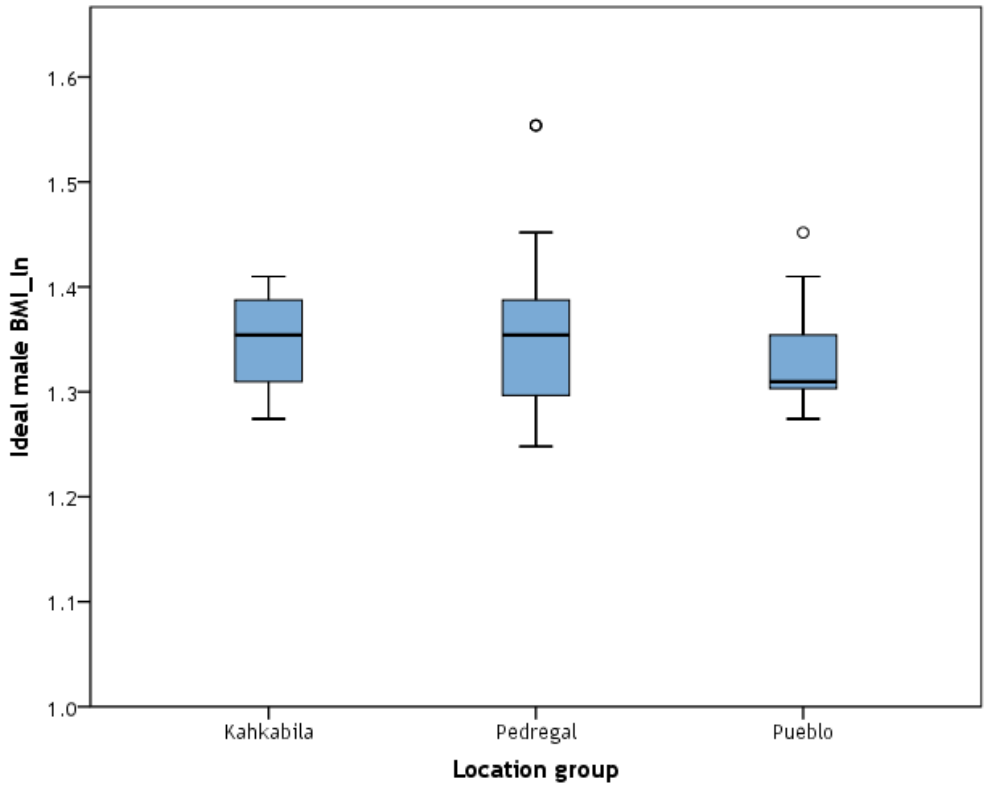


Figure 3.2. Distribution of values for ideal male BMI (natural log transformed) by location group. Blue boxes show the interquartile range (IQR). Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the circles

3.4.2 Group comparisons of sample descriptives and predictor variables

Group differences in means for sample descriptives and predictor variables were assessed using a series of ANOVAs, means and standard deviations are reported in Table 3.2. There were no significant differences between location groups for age, $F(2, 124) = 0.84$, $p = .43$, or income, $F(2, 124) = 0.76$, $p = .47$. Participants in Kahkabila however were significantly more educated than those in Pueblo, who were significantly more educated than those in Pedregal, $F(2, 124) = 44.67$, $p < .001$; Tukey post hoc ps < .001. Pedregal participants had significantly more children than those from Kahkabila, Welch's $F(2, 26.90) = 4.173$, $p = .026$. The Pueblo mean number of children was intermediate but not significantly different from either. There was no difference between groups for reported hunger level, $F(2, 124) = 1.54$, $p = .22$, but Kahkabila participants had eaten more recently than those from both Pedregal and Pueblo, $F(2, 124) = 5.61$, $p < .005$, post hoc ps < .05) who did not differ significantly from each other. There were no significant difference between groups for participant BMI, $F(2, 124) = 0.90$, $p = .41$, or WHR, $F(2, 124) = 0.64$, $p = .53$.

Table 3.2. Means and standard deviations of sample descriptives and predictor variables by location group

	All	Kahkabila	Pedregal	Pueblo	
N participants	127	41	46	40	
% female	50	51	48	50	
Age (years)	19.5 (4.66)	18.7 (4.26)	20.0 (5.63)	19.6 (3.76)	
Earnings ($)	753 (1,301)	584 (1,389)	741 (1,490)	941 (929)	
Education (years)	7.2 (3.86)	10.1 (2.02)	4.1(4.01)	7.7 (2.30)	**
N children	1.8 (1.35)	1.3 (0.47)	2.5 (1.77)	1.5 (0.91)	*
Hunger level	5.0 (0.88)	5.2 (0.82)	4.9 (1.03)	4.8 (0.71)	
Hours last meal	4.3 (3.17)	3.1 (2.13)	4.7 (3.47)	5.2 (3.35)	*
Weight status	1.5 (0.79)	1.4 (0.83)	1.6 (068)	1.4 (0.87)	
% dieting	18.9	22.0	10.9	25.0	
BMI men	22.7 (3.40)	22.1 (2.37)	22.1 (3.44)	22.7 (3.21)	
BMI women	23.4 (3.57)	24.2 (3.59)	23.2 (3.90)	22.8 (3.17)	

** $p < .01$; * $p < .05$.

3.4.3 Group comparisons of television viewing variables

Means and standard deviations for all television viewing variables by location are shown in Table 3.3. A two-way ANOVAs were run to assess gender and location group differences. The non-normal data for TVE outcome variable were transformed using a natural log. There was no significant interaction between gender and location, and no main effect of gender (*p*s >.05). However, there was an effect of location group, $F(2, 99) = .11.311$, $p < .0001$, partial η2 = .186. Tukey's post hoc tests showed that Pedregal watched significantly less television than both Kahkabila and Pueblo, *p*s < .01, who did not differ from each other, $p = .421$.

To reduce the number of predictor variables where respective pairs were highly correlated, two composite variables USMED and SPMED were created by summing frequency scores of USTV with USFM, and SPTV with SPFM respectively. For SPMED, although Levene's homogeneity of variances was just below .05, inspection of the scatterplot of the residuals plotted against the predicted values gave enough evidence that the variances were

sufficiently homogeneous to proceed. There was no interaction between gender and location group, p = .152. There were significant main effects of gender, with men watching SPMED more often than women, $F(1, 121) = .7.180$, p = .006, partial η2 = .061, and of location group, $F(2, 121) = 21.177$, $p < .0001$, partial η2 = .259. Tukey post hoc tests showed that unsurprisingly Pedregal watched SPMED less frequently than both Kahkabila and Pueblo, ps < .0005, who did not differ from each other, p = .338. For USMED there was no interaction between gender and location group, p = .787, but there were significant main effects for gender with men watching more frequently than women, $F(1, 121) = 21.285$, $p <$ .0001, partial η2 = .150, and for location, $F(2, 121) = 44.998$, $p < .0001$, partial η2 = .427. Pedregal watched USMED less often than Kahkabila and Pueblo ps < .0005, who did not differ from each other (p = .99). As there were no gender differences in hours of weekly television viewing (TVE), gender differences in viewing frequency suggest that the men watched TV 'little and often' while women watch less frequently but commit to more time each 'visit': watching 2 or 3 hour-long *telenovelas* twice a week would generate a lower frequency score than someone who watched only 20 minutes of news every day. This possibility is supported by the qualitative data gathered on participants' programme preferences.

Table 3.3. Means and standard deviations for TVE and composite variables for frequency of viewing content type

	Kahkabila	Pedregal	Pueblo	
TVE (hours per week)	10.86 (6.84)	3.80 (5.33)	13.28 (9.22)	**
USMED (frequency)$^{+}$	5.78 (1.79)	2.67 (1.93)	5.73 (2.01)	**
SPMED (frequency)$^{+}$	5.71 (1.58)	3.83 (2.42)	6.30 (1.68)	**

** $p < .01$. Pedregal always differed significantly from the other two samples who did not differ from each other. + - significant difference by gender, with men watching more frequently than women.

Table 3.4. Frequency of *novela* viewing for men and women from open question shows that 54% of women reported watching *novelas* daily or frequently, whereas only 17.2% of men reported watching with the same regularity. It is important to note that this part of the dataset was based on verbal comments so it is possible that some participants did not

mention certain types of content but may have actually watched them. However, it seems feasible that when asked for their favourite viewing content, participants were more likely to proffer answers that reflect what they were watching regularly. I report these data to illustrate the complexity of measuring television exposure and to give a fuller picture of the study population.

Table 3.4. Frequency of *novela* viewing for men and women from open question

	Women		Men	
Frequency	Number	%	Number	%
watches daily	18	28.6	9	14.1
watches frequently	16	25.4	2	3.1
watches occasionally	3	4.8	2	3.1
does not like	4	6.3	6	9.4
did not mention	22	34.9	45	70.3
Total	63	100.0	64	100.0

3.4.4 Television viewing and ideal body size

Across the whole sample, there was no significant association of ideal female BMI with TVE as assessed with Pearson's correlation, r = -0.151, n = 127, p = .09. However, when the data were split by gender, a significant correlation emerged for females, r = - 0.301, n = 63, p = .017, such that women who watched more television desired slimmer bodies. Media variables USMED and SPMED did not correlate with ideal female BMI for the whole sample or by gender. Across the whole sample there was a borderline significant negative association of ideal male BMI with TVE, r = -.171, n = 127, p = .054, and a small significant negative correlation with SPMED, r = -.184, n = 127, p = .038). However, associations were not strong enough and sample sizes not large enough to warrant further regression analyses.

3.4.5 Attractiveness scores of TBS images

Participants were asked to arrange the images of the male and female TBS in order running from left to right from most attractive body size to least attractive body size. In the first year of data collection, participants were only asked to rank attractiveness of the opposite sex in

this manner. However, at the second round of data collection, men also ranked male bodies and women also ranked female bodies for attractiveness. Consequently, there were less data points for men ranking male bodies than there are for women ranking male bodies, and less data points for women ranking female bodies than there are for men ranking female bodies. Additionally, in the first round of data collection, the TBS had only nine images (see Methods 2.4.2 for more details). Because of these insurmountable inconsistencies in the data set, only the data where all participants had ranked both the male and female images using the 10 image TBS has been analysed.

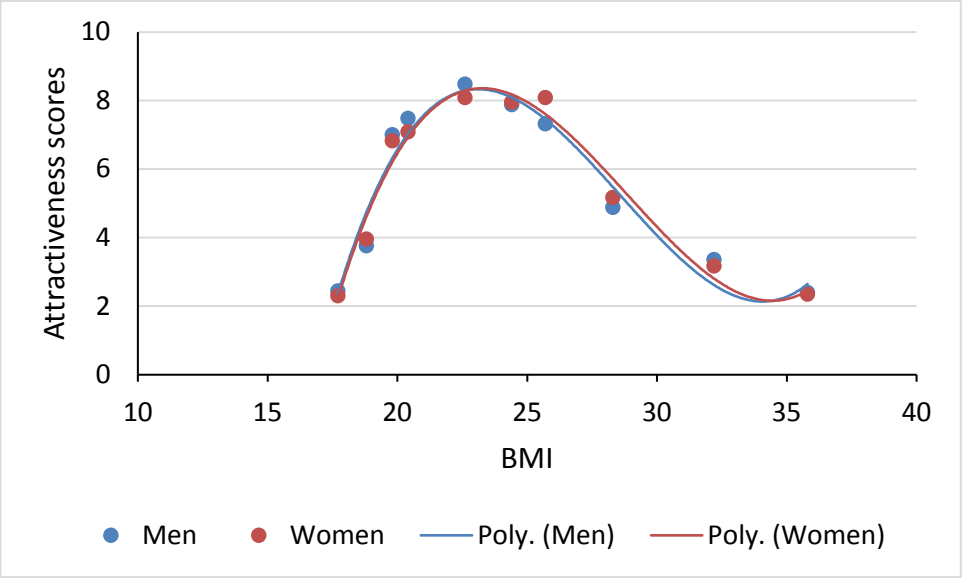


Figure 3.3. Mean attractiveness scores for the ten male TBS images by men (blue dots) and women (red dots). Fit line represents 3rd order polynomial

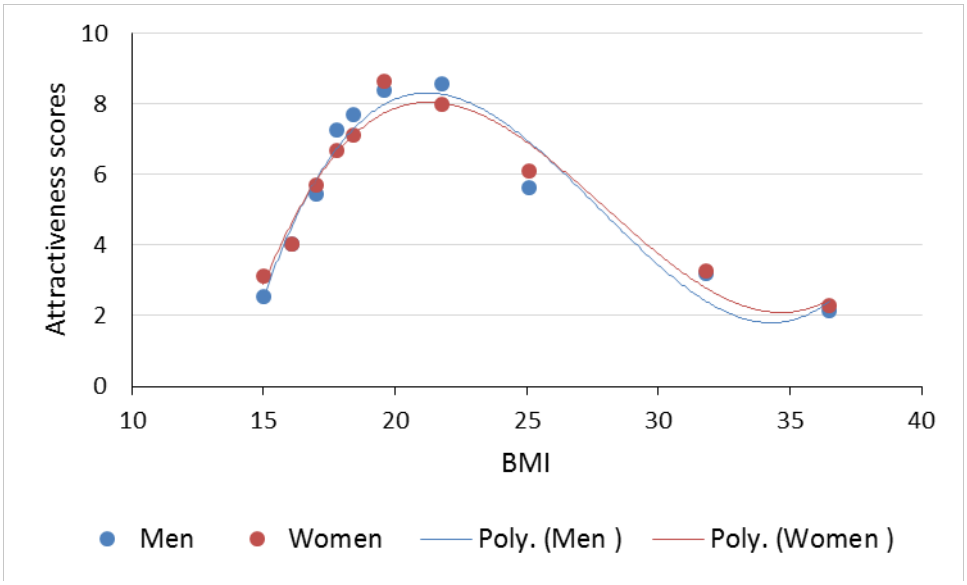


Figure 3.4. Mean attractiveness scores for the ten female TBS images by men (blue dots) and women (red dots). Fit line represents 3rd order polynomial

Firstly, order ranks were converted in to scores in Excel i.e., the image positioned in 1st place was given a score of 10 points, 2nd place was given 9 points and so on. In this manner, each image had a set of scores that equated to its attractiveness value. See Table 3.5 for means and standard deviations of attractiveness ratings for the 10 female and 10 male TBS images by location group. As the numbers in each cell would be small and uneven, the data were not suitable to run two-way ANOVAs with gender and location group as predictor variables, so t-tests were run to compare the means of men and women, and ANOVAs were run to compare location group means. While there may be concerns about treating scores generated from rankings as interval data and not ordinal data, the pattern of results from both non-parametric Mann-Whitney U tests and parametric tests was identical, and so for consistency, results from parametric tests are reported here.

Both previous research (Crossley et al., 2012; Stephen & Perera, 2014; Tovée & Cornelissen, 2001) and evolutionary theory suggest that men and women in the same population have similar perceptions of attractive body size because it is in each sex's interests to know what the opposite sex finds desirable in a mate (Buss, 2003). However, some studies have found differences in men's and women's perceptions of attractive body size (Demarest & Allen, 2000). Therefore gender differences in attractiveness rankings of the male and female TBS images were analysed using a series of independent sample t-tests. Only male TBS image number 7 (BMI 25.7) was rated significantly higher by women than men, $t(46) = -2.443$, $p =$

.018. There were no other significant differences in men's and women's attractiveness ratings for any of the other male or female TBS images, all *p*s > .05.

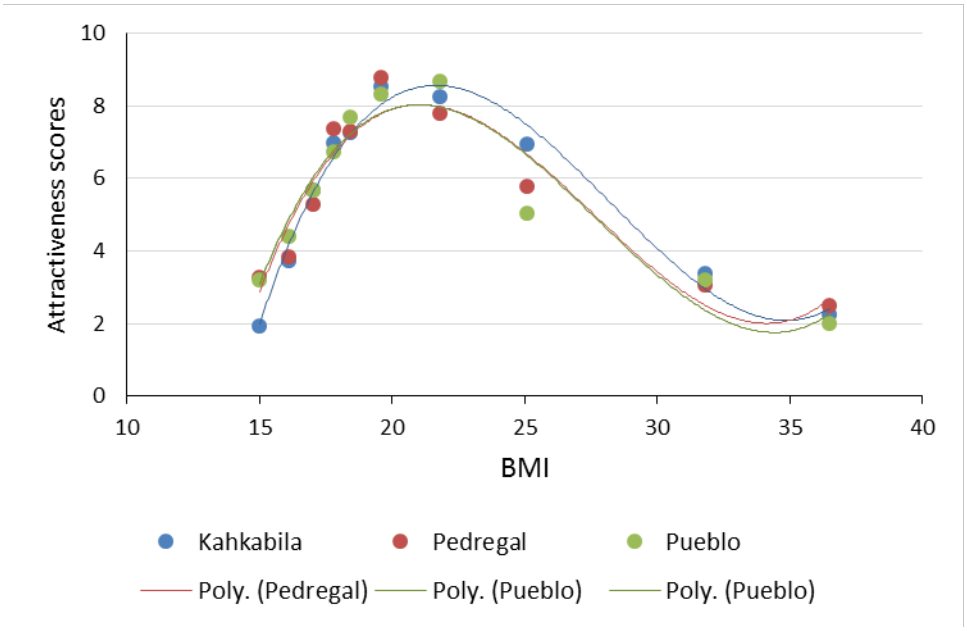


Figure 3.5. Attractiveness scores for the ten female TBS images in Kahkabila (blue circles), Pedregal (red circles) and Pueblo (green circles). Fit line represents 3rd order polynomial

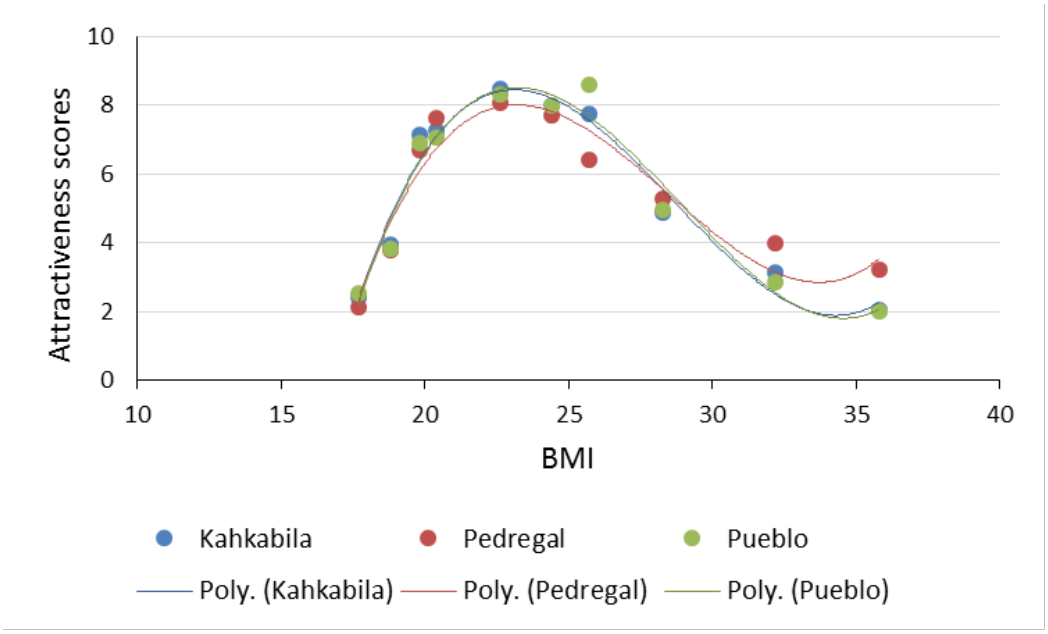


Figure 3.6. Attractiveness scores for the ten male TBS images in Kahkabila (blue circles), Pedregal (red circles) and Pueblo (green circles). Fit line represents 3rd order polynomial

Table 3.5. Means and standard deviations for attractiveness rankings of female and male TBS 10 images by location group.

	Female TBS images			Male TBS images		
	Kahkabila	Pedregal	Pueblo	Kahkabila	Pedregal	Pueblo
Pic 1	1.9 (1.28)	3.3 (2.49)	3.2 (2.12)	2.4 (1.50)	2.1 (2.44)	2.5 (2.01)
Pic 2	3.7 (1.83)	3.9 (2.11)	4.4 (1.71)	3.9 (1.33)	3.8 (2.55)	3.8 (1.64)
Pic 3	5.7 (1.99)	5.3 (2.33)	5.7 (1.89)	7.1 (2.29)	6.7 (2.49)	6.9 (1.56)
Pic 4	7.0 (1.73)	7.4 (1.82)	6.7 (1.63)	7.3 (2.15)	7.6 (1.50)	7.0 (1.47)
Pic 5	7.3 (1.58)	7.3 (1.33)	7.7 (1.45)	8.5 (1.64)	8.1 (2.06)	8.3 (1.70)
Pic 6	8.5 (1.41)	8.8 (1.25)	8.3 (1.89)	8.0 (1.46)	7.7 (1.68)	8.0 (1.53)
Pic 7*	8.3 (1.91)	7.8 (2.15)	8.7 (1.53)	7.7 (1.62)	**6.4 (1.65)**	8.6 (1.43)
Pic 8	6.9 (2.37)	5.8 (2.45)	5.1 (2.22)	4.9 (1.81)	5.3 (2.05)	4.9 (1.87)
Pic 9	3.4 (1.40)	3.1 (1.64)	3.2 (2.15)	3.1 (1.46)	4.0 (2.42)	2.8 (0.96)
Pic 10	2.3 (1.33)	2.5 (1.99)	2.0 (2.16)	2.1 (1.39)	3.2 (2.19)	2.0 (1.25)

***** T-tests found a significant gender difference in attractiveness rankings of Male TBS image number 7 (representing BMI 25.7). ANOVA also showed a significant location difference in the same image, with Pedregal participants ranking it much lower than the other groups who did not differ.

3.4.6 Accuracy of own body size judgments

An accuracy score (AS) was calculated by subtracting perceived BMI from actual BMI, to measure perceptual accuracy of judging own body size. A positive score indicated that the participant underestimated their BMI, and a negative score would indicate an overestimation of actual BMI. An AS of 0 would indicate complete accuracy in own body size judgment. See Table 3.6 for means and standard deviations of accuracy scores for males and females by location group.

Based on previous findings (e.g.,Boothroyd et al., 2016; Swami & Tovée, 2006b), it was predicted that participants in the low TVE Pedregal, would rank heavier bodies more favourably than in high TVE villages, and those in the high TVE villages would rank lower weight bodies more highly than those in the low TVE village. A series of one way ANOVAs looked for location group differences in ratings for any of the TBS images. After adjusting for running multiple comparisons (*p* value of .05 / 20 = .0025), there remained a significant difference in means for male image number 7, $F(2, 85) = 7.57$, $p = .001$, with Pedregal participants rating it significantly less attractive than those in Pueblo and slightly lower than those in Kahkabila (*p*s < .05). There were no other location group differences in attractiveness ratings for the rest of the TBS images (Tukey's post hoc *p*s all > .12).

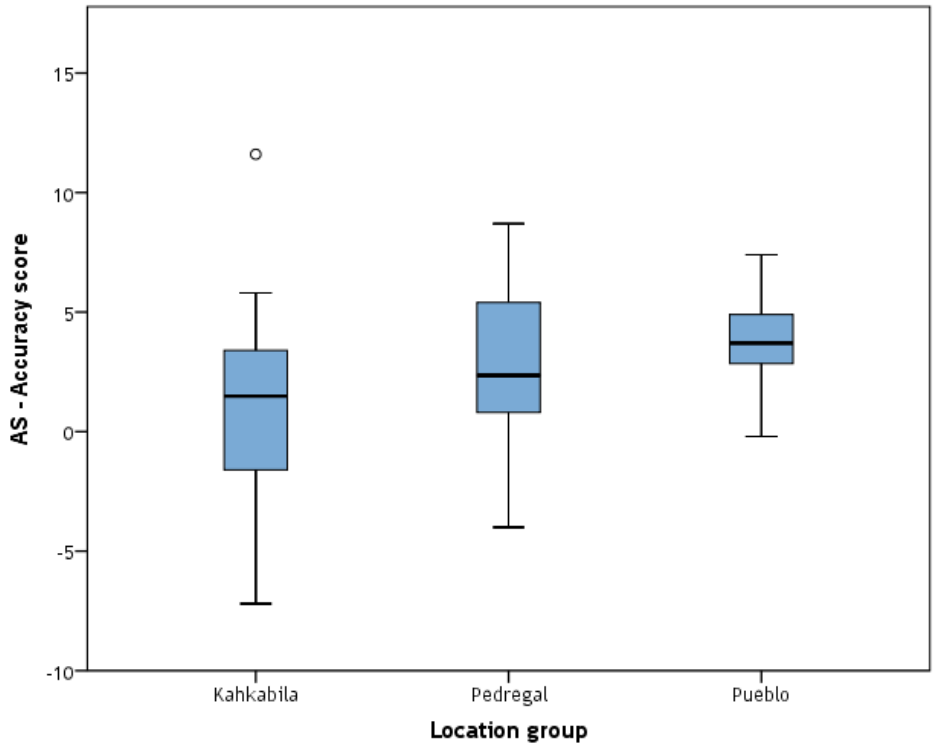


Figure 3.7. Distribution of Accuracy scores (AS) for women by location group. Blue boxes show the interquartile range (IQR). Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the circles

One sample t-tests were carried out separately for men and women to analyse accuracy in each location group. Inspection of boxplots revealed several outliers, but Shapiro-Wilk tests of normality showed that overall the data were generally normally distributed (all *p*s > .049), so they were retained in the analysis. Women in Pedregal significantly underestimated their

own body size, $t(21) = 3.656$, $p = .001$, as did those in Pueblo, $t(19) = 10.273$, $p < .0005$. Accuracy scores for women in Kahkabila and men in all locations did not differ significantly from zero (all *p*s > .24).

Table 3.6. Means and standard deviations for accuracy scores (AS) for men and women by location

	Kahkabila	Pedregal	Pueblo	
Men	0.60 (2.21)	-0.52 (3.25)	0.51 (1.90)	
Women	0.91 (4.32)	2.72 (3.49)	3.81 (1.66)	**

** $p < .01$. Women in Pueblo and Pedregal significantly underestimated their body size

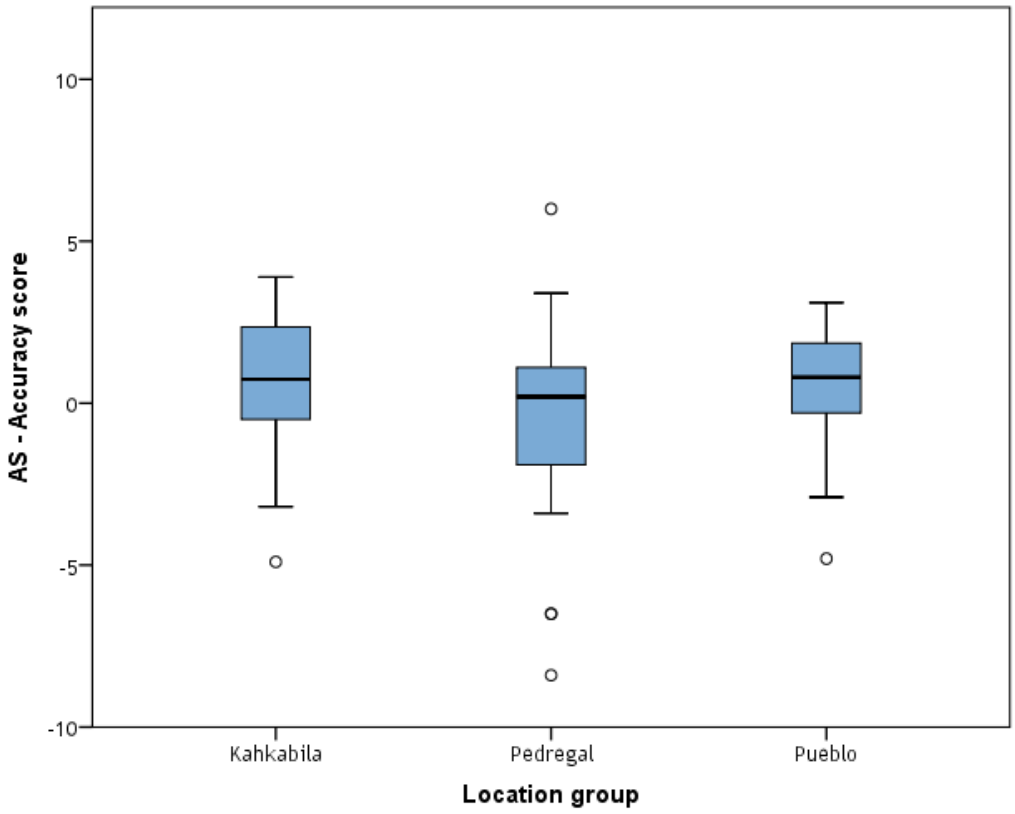


Figure 3.8. Distribution of Accuracy scores (AS) for men by location group. Blue boxes show the interquartile range (IQR). Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the circles

3.4.7 Perceptions of acceptable body size

To assess perceptions of acceptable body size, participants were asked to identify any images that they considered to be too thin or too fat for both their own sex and for the

opposite sex. In this way, a lowest acceptable BMI and a highest acceptable BMI value was calculated for male and female body size. Independent samples t-tests were carried out for all four variables to compare means of scores from the 9 and 10 image versions of the TBS. As there were significant differences in means (*p*s < .05) data of participants tested with the 9 and 10 image versions of the TBS were analysed separately. Means and standard deviations for acceptable body size variables for the 9 and 10 image versions of the TBS are shown in Table 3.7 and Table 3.8 respectively. As the numbers in each cell were too small and uneven for a two-way ANOVA study design, one-way ANOVAs were carried out separately to look for gender and location group differences.

Table 3.7. 9 image TBS means and standard deviations for highest and lowest acceptable male and female BMIs by location

	Kahkabila	Pedregal	Pueblo
Number participants	26	31	21
Lowest acceptable male BMI	20.0 (0.91)	20.2 (1.44)	19.6 (0.56)
Lowest acceptable female BMI	17.5 (0.71)	17.3 (1.07)	17.2 (1.24)
Highest acceptable male BMI	27.6 (1.53)	28.0 (3.60)	27.5 (1.67)
Highest acceptable female BMI	25.3 (3.79)	25.3 (3.77)	24.1 (3.49)

For the 9 image TBS sample, there were no significant gender differences for any of the four variables of acceptable body size (all *p*s > .5). In the 10 image TBS sample, there was a small but significant difference only for lowest acceptable male BMI, $t(47) = -2.132$, $p = .038$, with men being more accepting of a lower weight male body than women. All other p values were > .7. There were no significant differences in acceptable male or female body size by location group in either the 9 image TBS sample or in the 10 image TBS sample (all *p*s > .1).

Table 3.8. 10 image TBS means and standard deviations for highest and lowest acceptable male and female BMIs by location

	Kahkabila	Pedregal	Pueblo
Number participants	15	15	19
Lowest acceptable male BMI*	19.8 (0.89)	19.5 (0.54)	19.4 (0.71)
Lowest acceptable female BMI	16.9 (0.68)	16.7 (1.10)	16.5 (0.70)
Highest acceptable male BMI	28.6 (2.15)	29.1 (2.50)	28.8 (2.34)
Highest acceptable female BMI	26.2 (3.01)	26.4 (2.77)	25.8 (2.86)

* $p < .05$. Gender difference with men being more accepting of a lower male body than women

3.4.8 Least attractive body size

Least attractive body size in the opposite sex was measured to determine if there was less tolerance of overweight bodies among participants from villages with higher exposure to Western body ideals via regular television viewing. In other words, would participants from the village with low exposure to media find an underweight body less attractive than an overweight one? Participants' responses to this item were first computed into a dichotomous variable with the conditions 'non-obese body' and 'obese body'. The obese body category denoted all values over BMI 30. Percentages of obese and non-obese least attractive body size for the opposite sex are shown in Table 3.9. Before proceeding further, to determine if the change in stimuli discussed previously had any impact on responses to this question, a test of two proportions using chi-square test of homogeneity was carried out to see if the data generated by the 9 and 10 image versions of the TBS produced statistically equivalent results. In the sample which employed the 9 image TBS, 70.5% (a proportion of .705) selected an overweight body as the least attractive body size for a member of the opposite sex. In the 10 image sample only 32.7% (a proportion of .32) selected an overweight body as the least attractive. Results showed that the difference in proportions of 0.38 was statistically significant, $p < .0005$.

Table 3.9. Percentages of sample for non-obese and obese body judged as least attractive body size in the opposite sex

	9 image TBS	10 image TBS
Number participants	78	49
Non-obese body (%)	29.5	67.3
Obese body (%)	70.5	32.7

As there was a statistically significant difference between the responses from the 9 and 10 image versions of the TBS, it was included in a binomial logistic regression to ascertain the contributions of location and gender on the likelihood of an obese body being considered least attractive in the opposite sex. There were no outliers as determined by case wise diagnostics and cell counts were sufficient for carrying out the test. The model (seeTable 3.10) was statistically significant, $\chi^2(4) = 20.806$, $p < .0005$. The Hosmer and Lemeshow test also indicated the model was a good fit to the data, $p = .818$ and explained 20.2% of the variance (Nagelkerke R^2), correctly predicting 67.3% of cases. However, the only variable that predicted choosing an obese body as least attractive in the opposite sex was the TBS version used. Participants were 5.68 times less likely to select an obese body as less attractive using the 10 image TBS set. The classification table showed that 69.3% of cases were predicted by the model which includes the predictor variables, as opposed to 55.9% predicted by only by the constant.

These results illustrate the importance of employing measures that contain a sufficiently wide range of options so that participants' responses are not unnecessarily restricted. It also suggests that 'overweight' per se is not unattractive for this population. If that were the case, participants would still have chosen an overweight body as least attractive, regardless of the introduction of an extra thin body. The new image introduced into the female TBS represented a BMI of 15, just over 1 BMI point less than the previously thinnest body of BMI 16.1. As is illustrated in Figure 3-9, both bodies are still extremely underweight by normal standards, but yet the relatively small difference in body size significantly changed participants' perceptions of, and responses to, the images.

Table 3.10. Binomial logistic regression predicting likelihood of selecting an obese body as least attractive based on location, gender, and 9 or 10 body version of TBS used

							95% C.I. for Odds ratio	
	B	S.E.	Wald	df	p	Odds ratio	Lower	Upper
Location			2.835	2	.242			
Location (1)	-.148	.467	.100	1	.752	.863	.345	2.155
Location (2)	.650	.504	1.668	1	.197	1.916	.714	5.142
Gender	-.124	.391	.101	1	.751	.883	.411	1.899
TBS	-1.737	.413	17.706	1	.000	.176	.078	.395
Constant	.845	.426	3.938	1	.047	2.327		

Figure 3.9. Comparison of thinnest body in 9 and 10 image versions of the female TBS. The image on the left has a BMI of 16.1, the image on the right BMI 15.

3.4.9 Media beliefs – SATAQ scores

Group differences in media beliefs

As the SATAQ-3 is worded and conceptualized differently for men and women, relating to the 'muscular ideal' and the 'thin ideal' respectively, analysis of scores was carried out separately for each gender. Cronbach's alpha showed that the internal consistency was

acceptable at 0.89 for males and .90 for females. As shown in Table 3.11 scores were generally highest in Kahkabila and lowest in Pedregal, with Pueblo intermediate. Men's SATAQ scores were significantly different by location, $F(2, 60) = 4.609$, $p = .014$, partial $\eta^2 = .133$.Tukey post hoc test found that Kahkabila men had significantly higher SATAQ scores than Pedregal ($p = .010$) but not than Pueblo ($p = .297$). Pedregal and Pueblo did not significantly differ from each other, $p = .307$. For females, mean SATAQ scores across location groups followed a similar pattern but differences were not statistically significant, $F(2, 56) = 1.614$, $p = .208$.

Television viewing and media beliefs

A series of Pearson's correlations were carried out to identify if television viewing variables were associated with total SATAQ scores. For males there were significant associations with SPMED ($r = .402$, $n = 63$, $p = .001$), and USMED ($r = .330$, $n = 63$, $p = .008$). In a regression analyses these two variables significantly predicted scores, $F(2, 60) = 6.803$, $p = .004$, and explained 16.7% of the variance, adjusted $R^2 = .140$, suggesting that men who watched TV more frequently had higher belief in media's appearance ideals. For females, SATAQ scores were significantly associated only with SPMED ($r = .352$, $n = 59$, $p = .006$), suggesting that women who watched Spanish speaking TV content more frequently had higher belief in media's appearance ideals. No further regression analysis was carried out as there was only one significantly correlated predictor variable.

Table 3.11. Means and standard deviations for total SATAQ scores for males and females by location group

	Kahkabila	Pedregal	Pueblo	
Female	52.7 (12.51)	43.4 (18.47)	51.3 (19.88)	
Male	63.0 (15.19)	47.6 (19.19)	55.1 (14.71)	*

* $p = .014$

Factor analysis male SATAQ subscales

Before analyzing the SATAQ subscales factor analysis was carried out to ascertain if the items loaded onto the original factors and concepts of the measure. In the first round of analysis for the male sample, on inspection of the anti-image matrices, question 20 ('I compare my body to that of people in good shape') was found not to correlate highly with any of the

other variables. As the same item did not load onto any of the factors when carried out with four or five components, it was removed from the analysis of the subscales and the procedure was re-run. The best fit resulted in three components which are named 'information' (MINFO), 'pressure' (MPRESS), 'comparison / internalisation' (MCOMP/INT). See 8.9 Appendix D for the final rotated factor loadings matrix. Cronbach's alpha's for the subscales were all acceptable at .779, .792, and .880 respectively.

Location group comparisons on SATAQ subscales for men

Group differences in men's subscale scores were assessed using a series of ANOVAs. Differences in MINFO failed to reach significance, Welch's *F(*2, 39.178) = 2.849, *p* = .070, but the trend was such that Kahkabila had the highest scores, Pueblo was intermediate and Pedregal had the lowest. Differences for MPRESS were also non-significant but group means followed the same pattern, *F*(2, 60) = 2.837, *p* = .067. There was a significant difference in group means for MCOMP/INTERN, *F*(2, 60) = .3.814, *p* = .028, partial η^2 = .113. Tukey post hoc test showed that Kahkabila scores were significantly higher than Pedregal scores (*p* = .032). Pueblo scores were intermediate but not significantly different from either (*p*s > .05).

Associations between SATAQ subscales, television viewing for men

A series of Pearson's correlations were run to examine the associations between SATAQ subscales and the main study variables. See Table 3.12 for the correlation matrix. The subscale MINFO was significantly and positively correlated with TVE, USMED and SPMED, strongly suggesting that higher quantity and frequency of television viewing is associated with increased belief in media as a source of appearance information. MPRESS was significantly and positively associated with SPMED, USMED and YRS EDU, suggesting that more educated men who watched television more frequently felt more media pressure. MCOMP/INT was significantly and positively correlated with SPMED and USMED, indicating frequent television viewing was associated with greater internalisation of media ideals. Men's ideal BMI was not associated with any of the SATAQ subscales. As the data for all the subscales were non-normal distributions, and transformations did not improve normality sufficiently, no regression analyses were carried out.

Table 3.12. Pearson's correlations between SATAQ subscales, media viewing variables, BAS scores, and years of education (YRS EDU) for men.

	TVE	SPMED	USMED	BAS	YRS EDU
MINFO	**.356****	**.330****	**.318****	-.085	.193
MPRESS	.015	**.306***	**.250***	**-.394****	**.264***
MCOMP/INT	.188	**.343****	**.273***	-.148	.221

* $p < .05$; ** $p < .01$.

Factor analysis female SATAQ subscales

Factor analysis was similarly carried out on female SATAQ scores to confirm that the items loaded onto the same concepts that the questionnaire was designed to measure. Similarly to the males, question 20 ('I compare my body to that of people in good shape') had very low communalities and did not load on to any of the components in a 3, 4, or 5 component structure. Therefore the item was removed from the further analysis of the SATAQ subscales. A forced extraction of 4 components resulted in the best fit of the data. The four subscales are named 'information' (FINFO), 'comparison' (FCOMP), 'pressure / internalisation' (FPRESS/INTERN), and 'athlete internalisation' (FATHLETE). See Appendix D for the rotated factor loadings matrix for females. Cronbach's alphas for the subscales were all acceptable: FINFO .74; FCOMP .76; FPRESS/INTERN; .918; FATHLETE .882.

Group differences for female SATAQ subscales

For FINFO there was a statistically significant difference in the group means, Welch's $F(2, 31.61) = 8.126$, $p = .001$. Games-Howell post hoc tests found that scores for Pedregal were significantly lower than both Kahkabila (-5.079, 95% CI -8.24 to -1.92, $p = .002$) and Pueblo (-4.189, 95% CI -7.55 to -.83, $p = .012$) who did not differ from each other ($p > .05$). There were no significant differences between location groups for FCOMP, $F(2, 57) = 1.087$, $p = .344$, partial $\eta^2 = .037$, FPRESS/INT, $F(2, 57) = 0.618$, $p = .542$, or FATHLETE, Welch's $F(2, 36.92) = 1.062$, $p = .356$. However, the trend in all subscale means suggested that women in high TVE Kahkabila and Pueblo had higher appearance comparison and media internalisation than those in low TVE Pedregal.

Table 3.13. Pearson's correlations between SATAQ subscales, media viewing variables, BAS scores, age, and years of education (YRS EDU) for females

	TVE	SPMED	USMED	BAS	AGE	YRS EDU
FINFO	**.274***	**.393****	**.394****	-.185	-.249[t]	**.347****
FCOMP	.163	**.256***	.050	-.062	.005	-.023
FPRESS/INTERN	.111	**.265***	.177	**-.302***	-.152	.155
FATHLETE	.194	.225	.150	-.135	**-.294***	.216

* $p < .05$; ** $p < .01$; [t] $p < .06$.

Associations between female SATAQ subscales, television viewing

A series of Pearson's correlations were run to identify any significant relationships between the SATAQ subscales, television viewing, and body satisfaction. See Table 3.13 for significant correlations. FINFO was significantly correlated with TVE, SPMED, USMED and YRS EDU, and showed that women who were more educated and watched television more frequently had higher belief in media as a source of appearance information. The positive association between FCOMP and SPMED suggested that women who frequently watch Spanish speaking content (most likely *novelas*) are more likely to make appearance comparisons with media ideals. FINTERN was significantly positively correlated with SPMED, such that women who watched Spanish speaking television more frequently had higher internalisation of media ideals. FATHLETE was significantly negatively correlated with age only, suggesting that younger women were more likely to internalize an athletic ideal. None of the SATAQ subscales were significantly associated with women's ideal BMI.

3.4.10 General body satisfaction

Means and standard deviations for BAS scores of men and women in the three location groups are reported in Table 3.14. Cronbach's alpha of .775 showed an acceptable level of internal consistency. Distribution of scores are shown in the boxplots in Figure 3.10. A 2-way ANOVA found no significant interaction between gender and location ($F(2, 119) = .058$, $p = 944$, partial $\eta^2 = .001$). Furthermore there were no significant main effects for gender ($F(1, 119) = .253$, $p = .616$, partial $\eta^2 = .002$) or for location ($F(2, 119) = 2.826$, $p = .063$, partial $\eta^2 = .045$). However, the trend of scores was in the predicted direction, with men and women in the low TVE village having the highest body satisfaction.

Table 3.14. Means and standard deviations for BAS scores for males and females by location group

	Kahkabila	Pedregal	Pueblo
Female	58.8 (4.64)	61.4 (4.49)	60.4 (5.50)
Male	59.6 (5.07)	61.9 (4.72)	60.4 (3.84)

BAS scores were not correlated with any of the media viewing variables, age, or own BMI. There was a small but significant negative association of BAS scores with total years of education (n = 125, r = -.177, p = .048), such that more educated participants had lower body satisfaction. However, BAS was significantly and negatively correlated with SATAQ subscales FINTERN for women and MPRESS for men, suggesting that belief in media had a negative effect on body satisfaction among these participants.

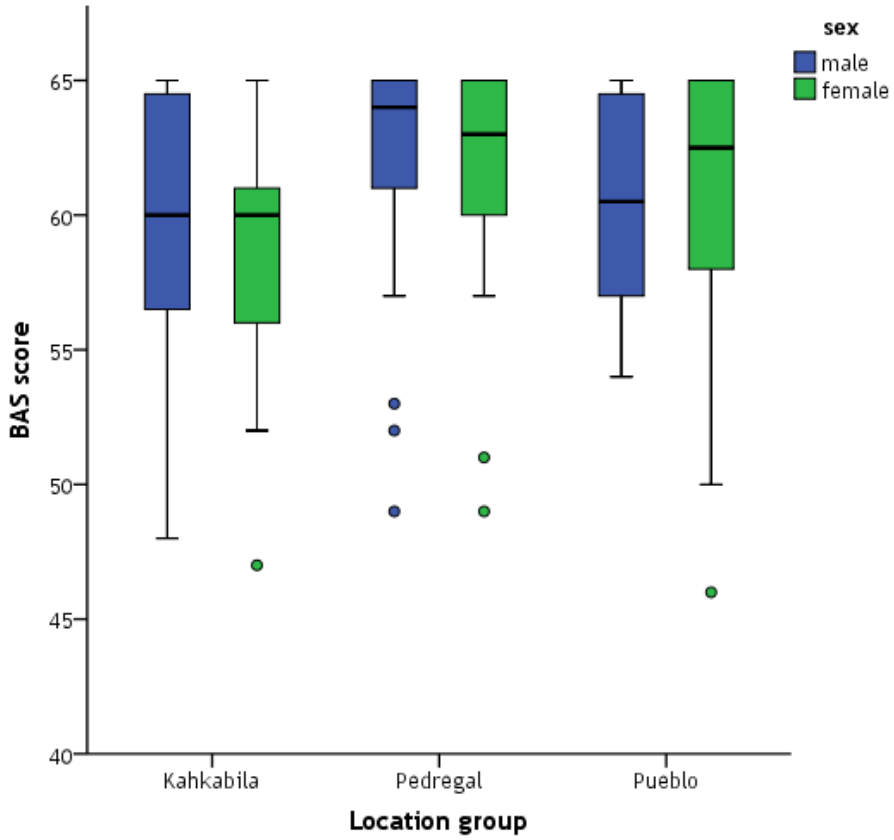


Figure 3.10. Distribution of scores for BAS. Blue and green boxes show the interquartile range (IQR) for males and females respectively by location group. Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the blue and green dots

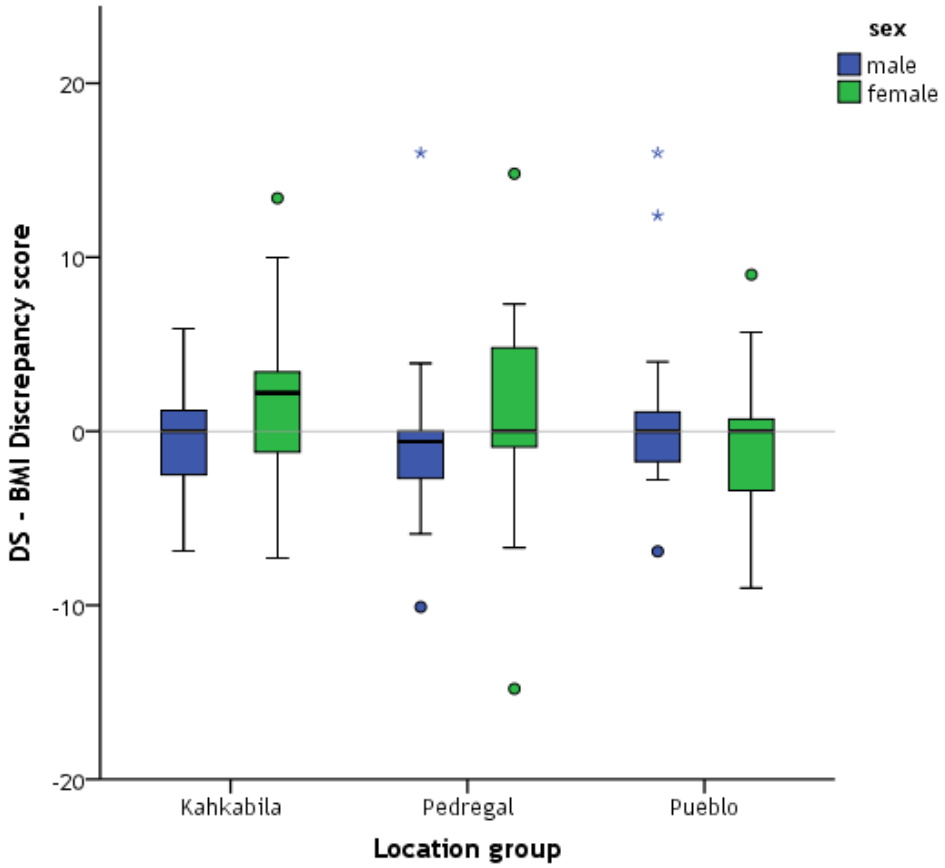


Figure 3.11. Distribution of BMI discrepancy scores (DS). Blue and green boxes show the interquartile range (IQR) for males and females respectively by location group. Medians are represented by the black lines inside the boxes. Outside whiskers show the maximum and minimum scores in the distribution. Outliers (scores more than 3 standard deviations from the IQR) are shown by the blue and green dots. Stars represent extreme outliers.

3.4.11 Body dissatisfaction

Body dissatisfaction was measured in two ways, discrepancy score (DS - the difference between perceived and ideal body size) and weight status (which indicated whether participants were trying to change their body weight).

Discrepancy score (DS)

A BMI discrepancy score (DS) was calculated to reflect the degree to which participants were satisfied with their body size. A score of zero would indicate that they were completely satisfied, a score higher than zero would indicate a desire for a lower BMI than they perceive themselves as having, and a negative score would reflect a desire to have a higher BMI. Of course, it could be said that both directions indicate a degree of body dissatisfaction, whether the person wants to be slimmer or heavier, but the focus here is on identifying dissatisfaction that moves in the hypothesized direction: higher media exposure being

associated with a lower ideal BMI. A 2-way ANOVA was carried out on DS with gender and location group entered as predictor variables. The spread of the data (shown in Figure 3.11) suggested an interaction between location and gender but it was not significant, $F(2, 121) = 1.895$, $p = .155$. There were no main effects for gender ($F(2, 121) = .887$, $p = .348$, partial $\eta^2 = .007$) or location ($F(2, 121) = .228$, $p = .796$, $\eta^2 = .004$).

No significant correlations were found between DS and any of the media variables, including SATAQ and the subscales, for males or for females. As such, DS was not included further in any analysis.

Weight status

Participants were asked if they were trying to lose weight, stay the same weight, or trying to gain weight. See means and standard deviations in Table 3.15. Previous research among a similar population found that women who watched more TV were more likely to be dieting (Boothroyd et al., 2016) so I expected to find a similar pattern in this data, with higher levels of dieting among women and in locations with higher media exposure. Because the data for this variable did not have a normal distribution and transformations were not sufficiently successful, a new dichotomous variable 'dieting' was calculated, that measured whether participants were trying to lose weight or not. Table 15 shows that most of the men who were trying to lose weight were in Pueblo, whereas more women in Kahkabila reported trying to lose weight. Location group differences were analysed separately for males and females using Fisher's Exact Test. There was a statistically significant difference in the proportions of males trying to lose weight in the three location groups, $p = .021$, but no difference for the female sample, $p = .220$.

Table 3.15. Sample sizes and numbers of dieters among male and female participants by location group

		Kahkabila	Pedregal	Pueblo Nuevo
Male	sample size	20	24	20
	number dieting	0	1	5
Female	sample size	21	22	20
	number dieting	9	4	5

A binomial logistic regression was carried out to ascertain the effect of participant's own BMI and media influence as measured by total SATAQ score on the likelihood of dieting. The model was statistically significant, $\chi^2(2) = 34.324$, $p < .0005$. The Hosmer and Lemeshow test indicated the model was a good fit to the data, $p = .118$, explained 39% of the variance (Nagelkerke R^2) and correctly predicted 89.5% of cases. Both own BMI and SATAQ scores were significant predictors in the model (Table 3.16), confirming that both increasing body weight and higher media beliefs were associated with more likelihood of dieting.

Table 3.16. Binomial logistic regression on likelihood of dieting with own BMI and SATAQ scores as predictors

							95% C.I. for Odds ratio	
	B	S.E.	Wald	df	p	Odds ratio	Lower	Upper
BMI	.407	.094	18.899	1	.000	1.503	1.251	1.806
SATAQ	.041	.016	6.131	1	.013	1.041	1.008	1.075
Constant	-113.375	2.672	25.061	1	.000	.000		

3.5 Summary of main findings

- There was a significant village level difference in ideal female BMI, with the samples from Pedregal and Pueblo preferring a slimmer BMI than the Kahkabila sample.
- There were no village differences in ideal male body size.
- Ideal female body size was negatively and significantly associated with television viewing among women
- Women in the Mestizo villages significantly underestimated their body size
- There were no village level differences in acceptable body size but men were more accepting of a slimmer male body than women
- There were no village or gender differences in proportions rating an obese body as the least attractive
- Media belief was stronger in high TVE villages and significantly associated with frequency of TV viewing.

- No large village level differences in body satisfaction
- Body satisfaction was lower among high TVE samples and among men who experienced media pressure and among women who internalised media ideals.
- Likelihood of dieting was significantly predicted by media belief and own BMI.

3.6 Discussion

3.6.1 Ideal body size

The present study aimed to measure the body size ideals and body satisfaction levels of men and women in a rural Nicaraguan population, and to further identify if they were associated with media exposure. The prediction that the ideal female body size of the high TVE groups would be slimmer than the low TVE group was not completely supported: While ideal female body size of the two high TVE villages was at the lower end of the normal weight range (BMI 18.5 – 24.9) as expected, the ideal body size of the low TVE Mestizo village was lower than the mean for high TVE Miskitu village and almost identical to the high TVE Mestizo village.

That the mean ideal female BMIs of the two Mestizo samples were almost identical, in spite of large measured differences in media exposure raises the possibility that the 'traditional' Mestizo ideal female body is already on the slim side, and that the valuing of such a body comes from some cultural or environmental influence. I had observed during my stays in Pedregal that the women who live there are extremely hardworking and often devoutly religious: they raise their many children, take care of their husbands and the home, in addition to working in the fields, and doing church work. Many women do not go outside of their homes without their husband's permission. Women in Pueblo appear to inhabit less defined gender roles and are less restricted in their movements, but nevertheless still have a strong work ethic and a firm belief in God. It is entirely possible that a slim female body within rural Mestizo culture is valued because it represents restraint, modesty, and a 'hard work' ethic. However, more qualitative research in the form of ethnography would be needed before making any claims to that effect.

Another possible factor that may be driving the preference for the slim female ideal body found for the Pedregal sample are the 'traditional' gender roles that appear to prevail in rural Mestizo communities. In cultures where gender roles are highly stereotyped the ideal body shapes of men and women are often more sexually dimorphic: women should be curvy

and hourglass-shaped, men should be muscular and 'v' shaped (Swami, Smith, et al., 2007). Although ideal male body size did not differ significantly between genders or between locations, the Pedregal sample did prefer a somewhat heavier BMI than the other samples, supporting the idea that gender roles may be more 'traditional' in Pedregal than in Pueblo or Kahkabila, but more research into male body shape ideals would be needed before making any claims.

It is also possible that the nature of the stimuli themselves influenced the results for ideal body size. The way in which the shape of the bodies in the TBS images changes as the BMI increases may have played a part in influencing participants' choices: As the BMI of the bodies increased, extra weight has been predominantly distributed around the waist and belly, with less obvious weight increase in other areas of the body. This meant that the bodies from the upper end of the normal range and above (> BMI 21.8) looked increasingly rotund or 'apple' shaped: the lack of an indent at the waistline may have been considered more unattractive than the body size per se, particularly for female bodies. Some cultural groups value a curvy female body shape more highly than a low female body weight (Kelch-Oliver & Ancis, 2011; Schooler, 2008). Perhaps if the increased adiposity that accompanies a higher BMI was distributed around the thighs, buttocks and hips rather than around the waist, people may have selected a body with a higher BMI as optimally attractive. In other words, if the TBS images had been designed to change shape as BMI increases in a manner that reflects the predominant body ideals (and possibly the bodies of real people) of this population, we may have found that people were more accepting of higher body sizes if ideal shape was maintained.

3.6.2 Media influence on body size ideals

As expected, participants in Pedregal watched significantly less hours of TV and with less frequency than the other two location groups who did not differ from each other. There were no gender differences in hours of weekly television viewing (TVE) but men reported watching TV more frequently than women, suggesting that perhaps men watched TV 'little and often' while women watch less frequently but commit to more time each 'visit': watching 2 or 3 hour-long *telenovelas* twice a week would generate a lower frequency score than someone who watched only 20 minutes of news every day. This likelihood was

supported by the verbal reports for novela viewing, with over a third of women watching them daily or frequently but less than a fifth of men doing the same.

As predicted, media exposure was associated with women's ideal body size in the hypothesized direction, such that women who watched more television desired a slimmer body. Similarly, media exposure was associated with a preference for a slimmer male body among men and women. It is noticeable that no associations were found between ideal body size and frequency of viewing US originating / English-speaking content (USMED). This media variable was explicitly designed to measure exposure to 'Western' media and thus the type of appearance-related content that would be associated with a preference for a 'thin ideal' body type. However, perhaps the lack of relationship between a slim body preference and the USMED variable makes sense: most of the 'Western' English language television that participants reported actually watching were shows such as the Discovery Channel and Animal Planet, which contain negligible amounts of appearance-related content. By contrast, *telenovelas* (Latin American soap operas), the Spanish language programmes that people most reported watching, are heavily populated with 'attractive' young women and men (Rivadeneyra, 2011), and indeed this type of content was associated with a preference for a slimmer male body.

3.6.3 Body size judgments

Overall, men were very accurate at judging their own body size using the TBS images. While women in Kahkabila were also very accurate at judging their own body size, in the two Mestizo villages women consistently underestimated their body size, perceiving themselves as considerably slimmer than they were. Men and women across locations varied little in their perceptions of a normal body weight, as illustrated by the lack of differences in means for highest and lowest acceptable BMIs, although overall men were more tolerant of a slimmer male body size than women.

Attractiveness ratings for different body sizes did not differ greatly between the high TVE and low TVE villages, nor by gender. However, there was a trend in which Pedregal appeared to rate the heavier bodies more highly than the other two groups, suggesting that those in low media environments may be less likely to show fat stigma. In Western societies, fat stigmatization is heavily present (Brewis, 2014), continually being reinforced and

perpetuated by the mass media's narrow range of representations of physical attractiveness. As such, overweight bodies may be perceived as more unattractive in locations with more media access. The rationale behind measuring perceptions of least attractive body size in the opposite sex was to assess if an overweight body would be perceived as less desirable. However, after controlling for the TBS set utilized, no significant differences emerged between location groups or by gender.

The fact that participants' perceptions of least attractive body size were radically altered by the addition of an extra thin body illustrates that attitudes towards overweight bodies are not fixed but dependent upon what other bodies may populate the visual diet. In 'harsh ecologies' (Hill et al., 2014), that is, economically developing countries or populations where resources may be limited, a very thin body could potentially be an indicator of limited access to resources, poor health and / or less than optimum fertility (Tovée et al., 2006). In these environments, a heavier body would become a more attractive proposition: certainly within the context this study population, where the average yearly salary is less than 760 U.S dollars, such a mechanism could be moderating local perceptions of overweight and underweight bodies.

3.6.4 Body satisfaction and media influence

Based on previous research (Becker et al., 2002; Boothroyd et al., 2016) it was predicted that body satisfaction would be lower among high TVE villages Kahkabila and Pueblo, and lower in low TVE village Pedregal. However, there were no between group differences and body satisfaction levels generally were high relative to other samples among White and non-White populations (Cotter et al., 2015; Tylka, 2013). However, Body Appreciation Scale (BAS) scores were significantly associated with media pressure (MPRESS) among all men and with media internalisation among all women. Furthermore, high TVE villages Kahkabila and Pueblo had higher overall belief in media (total SATAQ scores) than low TVE village Pedregal. These findings support previous research and strongly suggests that experiencing pressure to conform to, and internalizing, media ideals can have a negative effect on the body image of both women and men (Calado et al., 2011).

The experience of dissatisfaction with body weight was measured in two ways in this study. Firstly, a discrepancy score measured the magnitude of perceived disparity between an

individual's perceived 'real' and their 'ideal' body size. This measure of body dissatisfaction has been used frequently in previous research among both Western and non-Western populations to demonstrate media exposure's negative effects on body image (Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, & Cunningham, 2010). In the present study discrepancy scores did not differ across groups or across individuals regardless of media exposure levels. However, in high TVE Pueblo more men were dieting than in the other two villages, and more women were dieting in high TVE Kahkabila than in the other two villages, although in contrast to previous findings (Boothroyd et al., 2016) these differences were not significant statistically speaking. It is worth noting however, that concurrent with findings from studies among non-White, non-Western samples (Becker et al., 2002) perceived media pressure and actual BMI did significantly predicted the likelihood of dieting. Together, these findings suggest perhaps that for this Nicaraguan sample, the size of their body is not an aspect of their appearance that particularly concerns them, but some other aspect of their weight is giving them concern. Certainly participants in the focus groups in Studies 2 and 4 mentioned Nicaraguan television shows that informed viewers about health and nutrition, and several participants admitted that they would only diet if the doctor told them they had to. In the communities in general, people seemed aware of the health implications of being overweight, even if they were not themselves concerned about it.

3.6.5 Study limitations

A very likely weakness in this study lay with the use of the TBS visual stimuli. Firstly, part of the data set was collected using the earlier nine image TBS, which posed considerable problems when it came to the analysis. However, these were problems that could not have been foreseen at the time of beginning the research. Secondly, the TBS perhaps did not contain an ideally representative range of body sizes for this population and therefore masked participants' 'true' responses. This could explain why differences between groups' body ideals were not more evident.

It is also possible that the lack of difference in ideals across groups resulted from problems of media exposure measurement. It could be that within each village sample, there was more variation in lifetime media exposure than was accounted for, and therefore village affiliation as a measure of media exposure was less than accurate. Individual media

consumption appeared to a better measure of media exposure than village affiliation, significantly predicting ideal body size in the hypothesized direction. It is also worth noting that the television viewing variables were significantly correlated with SATAQ subscales, demonstrating convergent validity of the media exposure measures, which goes some way in confirming that the individual television viewing measures at least were generally adequate. Additionally the TVE variable was employed successfully with a Nicaraguan sample in previous studies (Boothroyd et al., 2016; Jucker et al., 2017).

Finally, as discussed in the introduction, the study design was only correlational and so no causal relationship could be established.

3.6.6 Conclusion

In conclusion, while large differences in body size ideals of groups with and without media exposure were not identified, across participants there was some evidence of media influence on body size ideals in the predicted direction. There was also some evidence of lower body satisfaction and higher weight concern among individuals who inhabited a higher media environment. Furthermore, men and women who felt pressure from media to conform to body ideals were more likely to be less satisfied with their bodies and were more likely to turn to dieting behaviours. Together, findings suggest that even within this relatively recently exposed population, media exposure could be starting to influences perceptions of body size.

Chapter 4. Study 2: Men's ideal female body and media influence

4.1 Introduction

The mass media's positive promotion of an unrealistic and unattainable 'thin ideal' female body has been posited as a contributing factor in the development of poor body image and disordered eating behaviours among women in both Western (Harrison, 2000a; Harrison & Cantor, 1997) and non-Western populations (Becker et al., 2002; Caqueo-Urízar et al., 2011). Many studies have investigated the influence of media exposure on women's body image (Grabe et al., 2008; Tiggemann & Slater, 2004), few have considered how it might shape men's perceptions of attractive female bodies (Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, Cunningham, et al., 2010). Perhaps this is not surprising, as preferences for the opposite sex may not appear to be detrimental to the health of a population in the same way that negative body self-image has been shown to be (Hargraves & Tiggemann, 2003; Stice, Schupak-Neuberg, Shaw, & Stein, 1994). However, men 'buying into' media representations of female attractiveness also has the potential to increase pressure on women to conform to those standards, both directly from the men in their lives, and indirectly by contributing to the maintenance of media ideals. Women are often portrayed in the media in gender stereotyped roles and frequently depicted as sexual objects, particularly in appearance focused genres such as soaps and music videos (Mischner, Van Schie, Wigboldus, Van Baaren, & Engels, 2013; Ward, 2003). These media messages imply that women should use their bodies to attract men and that men judge women on their physical appearance (Murnen, Poinsatte, Huntsman, Goldfarb, & Glaser, 2015). It has been shown that heterosexual men who use more media are more likely to judge partners based on a body ideal (Murnen et al., 2015), and exposure to specifically 'thin ideal' televisual content predicts men's approval of female cosmetic surgery (Harrison, 2003). Furthermore, experimental studies have shown that women's body dissatisfaction decreases when they believe that men find media images of heavier women more attractive, suggesting that men's body preferences have a real potential to mediate the effect of media influence on women's body image (Meltzer & McNulty, 2015).

However, thus far, research examining the impact of media on men's female body preferences in non-White and non-Western settings remains sparse (Ward, 2003). The

International Body Project, which collated data on female body ideals from 26 countries worldwide, found that men who reported higher levels of Western media exposure were more likely to prefer a slender female body (Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, Cunningham, et al., 2010). Unfortunately the study did not control for other possible factors which could be influencing body size ideals, such as resource scarcity (Ember, Ember, Korotayev, & de Munck, 2005), socio-economic status (SES) (Swami, Knight, et al., 2007), hunger (Swami & Tovée, 2006a) and 'general' Westernization (Swami, 2015). However, more recently, it has been successfully demonstrated that television consumption, and not acculturation, SES, or nutritional status, explained the preference for a slimmer female body size within a Nicaraguan population similar to that of the current study (Boothroyd et al., 2016; Jucker et al., 2017).

While body size has been found to be a highly salient predictor of female physical attractiveness among men in many Western populations (Tovée et al., 2002; Tovée et al., 1999), body shape has also been found to play a role in judgments, particularly in non-Western populations (Mo et al., 2014; Singh et al., 2010; Swami, Antonakopoulos, et al., 2006) and non-white ethnic groups (Gray & Frederick, 2012; Swami, Jones, & Furnham, 2009). There is some evidence that exposure to media may not influence men's female body shape ideals in the same way that it seems to for women (Harrison, 2003), however research in this area is thus far extremely limited.

Therefore the present study aimed to investigate media influence on men's perceptions of female body attractiveness among a rural Nicaraguan sample. The study used a mixed methods concurrent design, which no previous study has done in this area of research (for mixed methods studies on women's body image in non-Western populations see Becker et al 2002 and Schooler 2008). Very few studies have employed qualitative methods, which can generate the rich contextual data that is often lacking in quantitative studies, especially those in settings where little is known about the cultural context. Employing both quantitative and qualitative methods enables a deeper investigation of both the 'context' and the 'facts' of the research topic (Evered & Reis, 1981).

4.2 Study 1

The aim of Study 1 was to quantitatively assess the contribution of specifically television exposure in shaping men's ideal female body size and shape, with a view to confirming and broadening existing research findings from both Western and non-Western settings (e.g, Boothroyd et al., 2016). The use of figure modelling software enabled men's ideal female body size and shape to be captured 'in 3D'. To specifically assess the effect of media exposure, while controlling for other possible influencing factors such as SES and acculturation, female body ideals of men in two villages who had very different levels of media access but otherwise inhabited a similar sociocultural environment were compared.

4.3 Method

4.3.1 Participants

A total of 43 men were recruited from two villages, Kahkabila (*N* = 21, mean age 20.7, *S.D* 8.0) and Square Point (*N* = 22, mean age 25.7, *S.D* 9.51), purposively selected based on their very different levels of media access, specifically television. See 2.1 for more information on the study population and location.

4.3.2 Measures

Ideal female body size and shape

Most previous studies have relied on visual scales containing a limited range of silhouettes (Patt, Lane, Finney, Yanek, & Becker, 2002), figural drawings (Gardner, Jappe, & Gardner, 2009) or photographs (Boothroyd et al., 2016; Swami et al., 2008) to ascertain participants' preferred body size and shape. However, it cannot be assumed that they represent the full range of ideal body sizes and shapes, particularly in non-Western populations. In the current study, the use of a 3D figure-modelling software package (Daz Studio 4.6) allowed participants to be presented with a 3-dimensional, photo-realistic figure whose adiposity and shape could be adjusted to create a 'bespoke' ideal female body. See 2.4.3 for details of the method.

Acculturation

Twelve items adapted from the Suinn-Lew Self-Identity Acculturation Scale (Suinn et al 1987, 1992) and the original Hispanic version (Cuellar, Harris & Jasso 1980) measured the

frequency with which participants spoke, thought, and socialized in Spanish and / or English language versus in indigenous languages (Creole and Miskitu) on a five point scale (1 - only Miskitu / Creole; 3 – Miskitu / Creole, and Spanish and / or English equally; 5 – only Spanish and / or English).

Education and income

Participants reported their highest level of education, total number of years spent in education, and any income they had received in the last year in Nicaraguan Cordobás or U.S dollars (see Table 4.1).

Media exposure

Participants reported how many hours of televisual content (including DVDs) they had watched in the previous seven days (TVE). The frequency of viewing U.S originating or English language televisual content (USTV) and films (USFM), and Latin American originating or Spanish language televisual content (SPTV) and films (SPFM) was measured on a five point scale from 0 for 'never' to 4 for 'every day or nearly every day'. Participants were also asked name the type of content or specific shows they enjoyed watching most.

Hunger Status

Participants were asked to indicate how hungry they felt on a scale of 1 (starving) to 10 (bursting), and the time in hours since they had last eaten. No participant reported hunger levels outside of 3-6 range.

Anthropometrics

Participants' height, weight, chest, waist and hips were measured to calculate their body mass index (BMI – to measure weight scaled for height) and waist to hip ratio (WHR – to measure lower body shape).

4.3.3 Procedure

Participants were tested individually in a quiet room with a desk by a male researcher. They were told that their participation was voluntary and that they could stop at any time during the task if they did not want to continue. Participants were assured that we were interested in their personal opinion and that there were no 'right' or 'wrong' answers to any of the questions. Because of considerable variation in participants' levels of literacy, agreement of

consent and all demographic and media information were gathered orally during each session with the researcher entering responses directly into a laptop. Anthropometric measurements were then obtained using a digital weighing scale and tape measure. Participants were weighed and measured without footwear and heavy clothing.

Before beginning the ideal female body task, the researcher opened a 'trial' body in the Daz programme to familiarise participants with how the software works, and to demonstrate the full range of body alteration available with each slider. To keep test conditions uniform across the sample, as familiarity with computer use varies considerably among this population, the researcher operated the sliders following the participant's instructions until he was happy with the body. As in previous studies (Crossley et al., 2012), to eliminate possible anchor effects participants created their ideal body twice, once from an underweight 'starter' body and once from an obese 'starter' body. Order of presentation of the two starter bodies was counterbalanced across participants.

The whole session took about an hour and participants were paid the equivalent of $4 in local currency for their time.

4.4 Data handling and analysis

Upon completion of all data collection, the participant-created bodies were re-opened in the Daz programme. The height of the model was standardized to 163 cm, and bust, under-bust, waist, hips and thigh circumferences were measured in centimetres using the 'Measuremetrics' function in the programme. To measure participants' ideal female body size, the BMI of the 3D figure was calculated in Excel using the following formula: 9.67611 + (0.30826*hip) + (0.1497*waist) - (0.17944*height) + (0.05543*age) - (0.00076154*age squared) (Cornelissen et al 2015). This formula was calculated using data from the Health Survey for England (2008) which annually measures thousands of people, including height, weight, waist and hip circumference, and provides information on age and ethnicity. Ideal female lower and upper body shape were measured by calculating the Waist to Hip ratio (WHR - waist circumference divided by hip circumference), and the Waist to Bust ratio (WBR - waist circumference divided by bust circumference) respectively. As participants created two bodies, ideals were calculated by averaging both sets of measurements.

All data analyses were run in SPSS 22. Using location (i.e., Square Point or Kahkabila) as the grouping variable, a series of independent t-tests were used to identify differences in the means of outcome and predictor variables. Correlated predictor variables were then regressed on to ideal body outcome variables to determine the extent of media's influence in predicting the men's body ideals.

4.5 Results

4.5.1 Between group comparisons of predictor variables

Independent t-tests were used to identify group differences in the main predictor variables. Means and standard deviations are shown in Table 4.1. There were no significant differences found between groups, except for years of education which was significantly higher in Kahkabila than in Square Point, $t(36.99) = 2.249$, $p = .031$. As expected, men in Kahkabila watched significantly more television per week (TVE) than men in Square Point, $t(41) = 3.637$, $p = .001$. Kahkabila men watched both USTV $t(41) = 4.042$, $p < .0005$, and SPTV $t(41) = 3.150$, $p = .003$, more frequently than men in Square Point. However, there was no significant difference between groups in the frequency of either type of film content viewing (USFM and SPFM). In Square Point, men watched USTV less often than SPTV, $t(21) = 2.832$, $p = .01$, but USFM more frequently than SPFM, $t(21) = -3.4$, $p = .003$. There was no significant difference in the frequency of viewing content type for TV or film in the Kahkabila sample. Men in both groups reported watching mainly action or fighting movies, sports, and news. Only men in Kahkabila frequently mentioned watching cartoons, *telenovelas* and music video content.

Table 4.1. Descriptive statistics for demographic and predictor variables for Kahkabila and Square Point samples

	Kahkabila	Square Point	
Valid N	21	22	
% Miskitu	71	0	
% Garifuna	0	68	
% Mixed	29	23	
% Mestizo	0	9	
Age (years)	20.70 (8.0)	25.70 (9.51)	
BMI	21.94 (2.31)	22.59 (2.00)	
Acculturation score	8.62 (1.24)	11.14 (8.70)	
Education (years)	8.48 (2.65)	6.18 (3.39)	*
Income (U.S dollars per year)	238 (661.7)	511.3 (414.4)	
Hunger score	4.81 (0.81)	4.36 (0.84)	
Hours since last meal	3.63 (2.59)	4.62 (5.59)	
TVE	11.08 (6.70)	4.13 (5.80)	**
USTV	2.95 (1.36)	1.36 (1.22)	**
SPTV	3.33 (1.32)	2.05 (1.36)	*
USFM	2.43 (1.33)	2.00 (1.31)	
SPFM	1.90 (1.45)	1.23 (0.87)	

* $p < .05$; ** $p < .01$. TVE = Hours per week television viewing. Frequency of viewing different content types - USTV =U.S originating / English language TV shows; SPTV = Latin American originating /Spanish language TV shows; USFM = U.S / English language films; SPFM = Latin American / Spanish language films.

4.5.2 Ideal female body size and shape

Means and standard deviations for ideal female body variables are shown inTable 4.2. Mean ideal female BMI across the whole sample was 31.74 (*S.D* 4.35), WHR was 0.69 (*S.D* .046), and WBR was 0.85 (*S.D* .067.) Independent samples t-tests showed significant differences between Kahkabila and Square Point for ideal BMI, $t(41) = -3.395$, $p = .002$, ideal WHR, $t(41) = -2.078$, $p = .044$, and ideal WBR, $t(41) = -4.833$, $p < .0005$. Differences in WBR appeared to result purely from a smaller waist circumference, as there was no difference in bust circumference. To further investigate breast preferences, a 'cup size' was calculated using a

Bust to Under-Bust Ratio (BUR –bust circumference divided by under-bust circumference). There was significant difference between groups, $t(41) = 4.511$, $p < .0005$, with men in Kahkabila creating a fuller breast than men in Square Point.

Previous research using the same methodology found that for a U.K sample of men, the ideal female body had a larger bust than hips (Crossley et al., 2012). To ascertain if Nicaraguan men's preferences were moving in a similar direction where media exposure levels were higher, a Bust-to-Hip ratio (BHR – bust circumference divided by hip circumference) was calculated to measure the direction and degree of body fullness: a BHR of 1 would indicate a perfectly symmetrical 'hourglass' figure while a BHR above 1 would denote a proportionately fuller upper body than lower body. There was a significant difference in ideal BHR, with Kahkabila men preferring a proportionately fuller upper body than Square Point men, $t(41) = 3.581$, $p = .001$. Figure 4-1 depicts image composites of the ideal bodies created by men in the Kahkabila and Square Point samples.

Table 4.2. Means and standard deviations of ideal body size and shape variables for Kahkabila and Square Point samples

	Kahkabila	Square Point	
	21	22	
BMI	29.68 (3.26)	33.7 (4.40)	**
WHR	0.67 (0.04)	0.70 (0.05)	*
BUR	1.20 (0.03)	1.15 (0.03)	**
WBR	0.81 (0.05)	0.89 (0.05)	**
BHR	0.84 (0.04)	0.79 (0.04)	**

* $p < 0.05$; ** $p < 0.01$. BMI = Body mass index; WHR = Waist to Hip Ratio; BUR = Bust to Under Bust Ratio; WBR = Waist to Bust Ratio; BHR = Bust to Hip Ratio.

4.5.3 Relationship between ideal body and television viewing

Table 4.3 shows significant correlations between predictor variables and ideal body variables. Acculturation, income, hunger measures and participants' own BMI did not correlate with any of the ideal body variables so were not included in further analyses. Using multiple regressions, TVE and USTV significantly predicted ideal BMI, $F(2, 40) = 4.158$, $p = .017$, $R^2 = .18$, and ideal WBR, $F(2, 40) = 6.76$, $p = .003$, $R^2 = .25$. Simple linear regressions

found that USTV significantly predicted ideal BUR, $F(1, 41) = 5.545$, $p = .023$, $R^2 = .119$, and ideal BHR, $F(1, 41) = 6.346$, $p = .016$, $R^2 = .134$. Ideal WHR was significantly predicted by age and education, $F(2, 40) = 6.250$, $p = .004$. $R^2 = .24$. All effect sizes were small according to Cohen (1988).

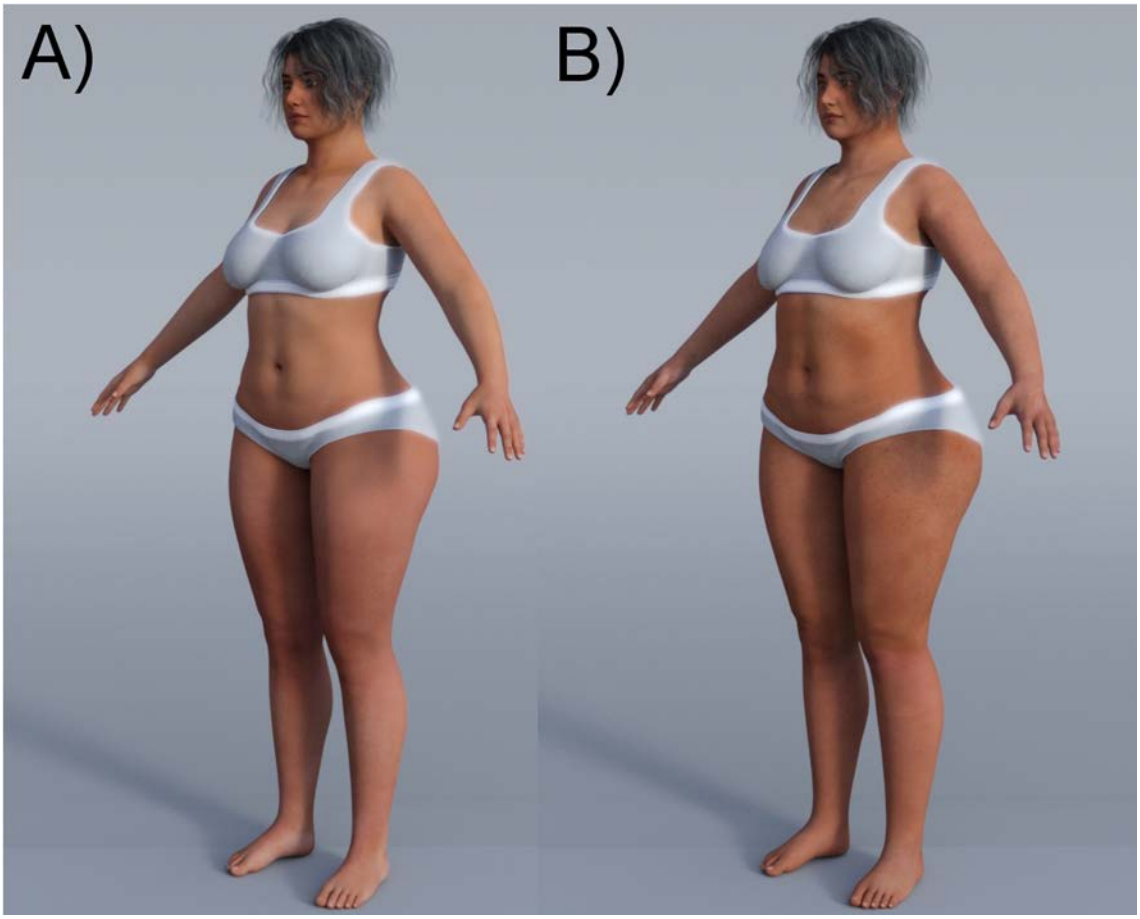


Figure 4.1. Composite ideal female body based on means of the Kahkabila sample (A) and the Square Point sample (B)

Table 4.3. Correlations between predictor and outcome variables for whole sample

	1	2	3	4	5	6	7
1 - BMI		.233	-.263	**-.399****	**-.329***	-.084	-.024
2 - WHR			**-.378***	-.244	-.248	**.454****	**-.364***
3 - BUR				.157	**.345***	-.146	.218
4 - TVE					**.474****	-.191	**.369***
5 - USTV						-.178	.229
6 - Age							**-.450****
7 - Education							

* $p < .05$, ** $p < .01$

4.5.4 Local differences in female body size and shape

It could be argued that the size and shape of the bodies of real women in their community may be influencing the men's preferences rather than media exposure. To discount this possibility, the body size and shape of 30 women from Kahkabila were compared with a sample of 28 women from Square Point and ethnically identical Orinoco. See Table 4.4 for means and standard deviations of all measurements of body shape and size. Independent samples t-tests found a significant difference in mean waist circumference, $t(52.14) = -2.138$, $p = .036$, and mean WHR, $t(59) = -2.855$, $p = .006$. There were no significant differences in means for all other measurements, all ps > .05. However, as there was a significant difference in the mean age of the samples, and women become heavier and less curvaceous with increasing age (Wells, 2007) and number of childbirths, one-way ANCOVAs were carried out to control for the significant age difference of the two samples. There were no significant differences in the women's bust, $F(1, 55) = .109$, $p = .742$, waist, $F(1, 55) = .854$, $p = .359$, or hip circumferences, $F(1, 55) = .007$, $p = .935$. The outcome variable BMI was positively skewed so a log 10 transformation was carried out. There was no significant difference in mean BMI, $F(1, 54) = .030$, $p = .863$, WHR, $F(1, 55) = 2.49$, $p = .12$, or BHR, $F(1, 55) = .003$, $p = .274$. There was a significant difference in means for WBR, $F(1, 55) = 12.55$, $p = .001$, with the sample of women from Kahkabila having a curvier upper body.

Table 4.4. Unadjusted means and standard deviations of local women's BMI, WHR, WBR, and BHR in Kahkabila and Square Point / Orinoco

	Kahkabila	Square Point / Orinoco	
	30	28	
Bust (cm)	93.9 (8.23)	95.7 (14.11)	
Waist (cm)	82.3 (10.86)	89.11 (15.06)	
Hips (cm)	98.5 (8.46)	101.3 (11.72)	
BMI	25.0 (3.90)	26.9 (6.88)	
WHR	0.83 (0.06)	0.87 (0.06)	
WBR	0.87 (0.05)	0.93 (0.04)	**
BHR	0.95 (0.04)	0.94 (0.05)	

** $p < .01$.

4.6 Summary of results

Study 1 aimed to ascertain the ideal female body size and shape for a group of men in rural Nicaragua and to further identify whether higher exposure to televisual media was associated with a slimmer body ideal. While overall, ideal BMI was higher than has been found in comparable studies in Western contexts (Crossley et al., 2012) and in studies among Nicaraguan populations (Boothroyd et al., 2016; Jucker et al., 2017) the men in Kahkabila (high TVE) did create a significantly slimmer female figure than those in Square Point (low TVE). Television exposure (TVE), and specifically Western TV content (USTV), significantly explained the preference for a lower BMI, supporting the prediction that higher levels of Western media exposure will be associated with slimmer female body ideals. With regard to ideal female shape, men in Kahkabila created a significantly larger cup size (BUR) and a proportionately fuller upper body relative to the lower body (BHR) than men in Square Point. Furthermore, these indicators of a preference for a fuller upper body were predicted by specifically USTV viewing.

The combination of a significantly slimmer ideal body and fuller upper body in the Kahkabila sample, together with their prediction by media exposure variables, suggests Western body ideals may be starting to influence the men's perceptions of attractive female body size and shape. However, while ideal WHR differed between groups, seemingly as a result of

Kahkabila men nipping in the waistline to reduce body weight while maintaining the appearance of a curvy lower body, it was predicted not by media variables but by age and education such that younger and more educated men preferred a curvier waistline. In short, while media exposure explained a significant portion of the preference for a slimmer female body and a fuller upper body, it did not explain the men's preferences for a curvy lower body.

4.7 Study 2

The rationale behind Study 2 was to provide necessary context and support to the quantitative findings of Study 1. I was unable to identify any existing published ethnography or research on cultural appearance ideals in Nicaragua, so the need to do some qualitative investigation was essential. Qualitative methods are more open to allowing 'what is there' to emerge and come to the surface of enquiry, rather than applying a hypothesis or assumptions a priori as quantitative approaches necessarily tend to do. Study 2 used focus group discussions to explore Nicaraguan men's perceptions of female attractiveness in greater depth and further investigate their attitudes towards, and use of media, specifically television.

4.8 Method

4.8.1 Participants

A total of 24 men participated in four focus group discussions, two in Kahkabila, one in Square Point and one in the nearby Garifuna community of Orinoco. Mean age of the men in group 1 in Kahkabila was 28.3 years (SD 8.6, range 17 to 40 years old), and in group 2 it was 33.3 years (SD 11.4, range 19 to 45 years old). The mean age of the group in Square Point was 24.4 years (SD 3.0, range 20 to 28 years old) and in Orinoco it was 23.2 years (*SD* 3.7, range 17 to 28 years old). The inclusion of a focus group in another Garifuna community was felt necessary to prevent over use of the same participants: most of the adult male population of Square Point (who number less than 30) had participated in at least one of our previous studies. Each focus group was attended by six men and ran for about an hour.

4.8.2 Procedure

The sessions were either moderated by myself (white middle-aged female) or together with the white male postdoctoral researcher on the project. A small introduction was given to the participants in each focus group, explaining that we were interested in finding out their opinions about female attractiveness and television. The participants were informed that they could leave at any time and they were not obligated to answer any questions they did not want to. While initiated using the key questions, discussion was allowed to flow in whatever direction the participants took it until the conversation naturally subsided at which point the researcher would either redirect the focus back to the key questions or continue to discuss any relevant new topics that arose.

The following key questions were asked in every session:

- What makes an attractive, good looking woman / what's important for a woman to be attractive to you?
- Do you have a preference for women of any particular race or ethnicity / is cultural background or race important?
- When did you start watching TV?
- What do you like to watch on TV?
- Does TV reflect real life / reality?
- Do you see attractive women on TV / what shows or movies?
- Do women and men watch the same things on TV?

All sessions were video recorded with the verbal consent of all the participants, with camera being placed at an unobtrusive distance and so that only the researcher's face was fully visible. This amount of visual information aided considerably in accurate transcription of the discussions without focusing on the participants' identities, and captured additional non-verbal information conveyed by the participants, such as head nods and hand gestures.

4.9 Data analysis

A thematic analysis was used to code, organise and explore the main findings from the data (Braun & Clarke, 2006). Broadly speaking, I took a deductive stance to the analysis because the primary aim of this qualitative study was to ask similar research questions to those in Study 1. However, I was keen not to constrain my analysis too tightly to allow potentially

new insights, as local body ideals and attitudes towards appearance might differ from those of previously studied populations.

To protect participant anonymity, each participant was given a unique code that included information about their location and ethnicity (e.g. the first participant in Square Point was Garifuna so his code is SPG1). The focus group transcripts were first transcribed verbatim, read through several times and then imported into NVivo 11 software to organize and code the data. To maintain context, phrases, sentences and exchanges of dialogue were the coded units (data extracts), not individual words. In the first instance I did an initial coding of participants' responses to all of the key questions. For example, ''*Got a nice shape, like, when I say a nice shape, flat belly, got a little curve*'' was coded under the main theme 'Physical attractiveness'. Within each main theme, I then sorted the data extracts into subthemes to get a sense of which aspects were discussed most often across and within the focus groups: for example, the data extract above was also put under the subtheme 'bootylicious' (references to a full lower body shape). Where a data extract related to more than one subheading, it was placed in both. In this manner I began to work through the transcripts, coding the remaining dialogue, creating new themes and subthemes as I identified participant responses to the questions and new topics that arose organically from discussions. See 8.9 Appendix E for a list of the main themes and subthemes created in NVivo. The eventual themes were those which I interpreted as being most salient to the main research questions and contained the essence of the men's preferences and opinions. The coding and organizing of the data into the themes and subthemes were discussed at several points throughout the process with two other authors, and to seek consensus regarding the final themes.

4.10 Description of findings

The key themes that I identified in the data relating to female attractiveness were: 'Non-physical attributes that make a women attractive'; 'Physical attributes that make a woman attractive'; 'Bootylicious: body shape, movement and sex'; 'Racial and ethnic preferences'; 'Pastime' versus life partner'. The key themes identified in relation to television viewing were: 'Use of television'; 'Favourite TV content'; 'Attractive women on television'; 'TV

influence; 'Television reflecting reality '. Here, summaries of findings are given for the themes which relate directly to the research question.

4.10.1 Non-physical attributes that make a woman attractive

Even though the researcher directly asked the question 'what makes an attractive, good-looking woman', men in all focus groups generally thought first not about physical appearance but other qualities that make a woman an attractive proposition: participants tended to begin by discussing non-physical attributes that a woman should possess, such as being 'clean', 'respectable', 'responsible', 'someone who would take care of my kid' and 'a woman who does not get jealous'.

'I don't go by looks, I go by my feelings. I like women that be clean and be to house (stays at home). That's the type of women. I don't like them go out partying. I like them to take care of the home'. KM1.

'For me I would say what a (is an) *attraction for me would be a feeling, a spiritual feeling towards that person'*. SG3.

4.10.2 Physical attributes that make a woman attractive

Across all focus groups men used the word 'normal' to describe the most attractive body size or weight for a woman, often giving examples of real women in their communities to illustrate what is a 'normal' and thus attractive female body size. The youngest participant in the Orinoco group mentioned Barbie as being the ideal female body type: 'it does go like she not too fat nor too meagre (thin) she just got a normal solid body', with another man adding that a weight of 102 or 103 pounds was a 'normal solid body'. While none of the men stated a particular preference for a heavier or larger female body, in Square Point several men acknowledged that all sizes of women could potentially be attractive to other men:

'Ok you have some people who like big woman, you have people who like normal womans (women), when I say normal woman is not too big, not too small, just normal and you got people who like small woman… my choice would be like how you say, normal woman not too big, not too big, not too small'. SPG1.

Some men in Kahkabila and Orinoco employed the term 'slim' when describing the ideal waist and several others mentioned preferences for a 'flat' or 'smooth' stomach. While these

were not direct references to body weight, they do implicitly suggest a preference for low adiposity around the mid body at least.

The buttocks or 'boonkah' and thighs were constantly mentioned as the most attractive parts of the female body: 'See a nice shaped girl, small waist, good backside, maybe you look on that, that girl look nice… She got a good waist or a good ass…And big legs'. In the Square Point group, there was a lively discussion on women's legs, with the men using hand gestures to indicate the ideal size which should be big enough so that there is no gap between the thighs. One man stated said that if the legs were too big one could not breathe while doing a 'tongue shot, tongue lash' (oral sex). Another man commented that women's legs are softer when they're bigger and 'when it's slim it's very tough…hard'.

In contrast to many men in Western populations (ref) breasts did not seem to be of major importance for the participants. In Kahkabila one man mentioned that he liked 'nice bobbies' (breasts), but did not elaborate on whether they should be big, small, pert or drooping. Another man in the same group almost couldn't believe the researcher's suggestion that breasts might be an attractive feature of a woman's body, and exclaimed, 'the breasts?! Don't help nobody!' One man in the Square Point group liked to see the 'stiff breasts' of women in Jamaican music videos, but in general men referred very rarely to women's breasts when discussing their preferences.

Overall, men tended to define an attractive female body in terms of shape rather than weight. Men in Kahkabila and Orinoco described the ideal female body as having a 'Coca-cola shape' or a 'Barbie shape', both iconic references to Western culture:

'See when you say Barbie it's practically a perfect shape of woman that would attract any man … you use this term like Barbie… just like a perfect woman, practically perfect because no woman is perfect but practically perfect you know. Any man place the eyes on this woman, this woman would be attractive to this guy you know'. OG1.

In the high TV access focus groups, men referred to mainly Black female celebrities of Western media, such as Nicki Minaj, Rihanna and Halle Berry, to illustrate their ideal female body type. Men in Square Point employed the term 'guitar body', an expression that has its roots in Latino culture (Beltran, 2002; Viladrich, Yeh, Bruning, & Weiss, 2009) to describe

their preferred female shape with its slim waist and a ‘full boonkah’ (Creole for large buttocks).

4.10.3 Bootylicious: body shape, movement and sex

A particularly salient theme that emerged from the discussions was the relationship between lower body shape, movement and sex. What I have termed the ‘bootylicious’ body shape (see Parasecoli, 2007 for a discussion on the origins of the term 'bootylicious'), with its slim waist, big thighs - and most crucially - a ‘full boonkah’, was central to the men’s judgments of female physical attractiveness. The bootylicious body shape exaggerates the action of the hips when a woman is walking or dancing. How a woman moves her hips is understood as a visual cue to her potential prowess in the bedroom: a full boonkah amplifies movements originating from the hips, making it easier to ‘judge’ her value as a sexual partner:

‘When you look on that woman’s ass, the way it wining (gyrating the hips in isolation), the way it moving, it’s like oh fok! …she could be nice in bed you know’. OG2.

When asked if in their experience, women who moved well when walking or dancing were also good in bed, the men indicated that there was some element of uncertainty in these judgments but it was still a risk worth taking. As one man in the Orinoco group put it;

‘…sometime these women look good you know, the ass big, but at the end of the day when you reach to bed she doesn’t work the way you think … she move good on the road but inside the bedroom nothing like that …it’s just risk men take, but usually of the time (most of the time) big ass women can handle theirself in the bedroom’ (all the men laugh in complicity) *OG1*.

In summary, for the men in these focus groups women’s attractiveness was primarily conceptualized as ‘bootylicious’ in shape, and dynamic in movement. While in the higher media access locations (Kahkabila and Orinoco) men sometimes suggested a slimmer female ideal with their references to slim waists and icons such as Barbie and Halle Berry, across the groups, men clearly based their perceptions of female attractiveness on a relatively curvaceous lower body with prominent buttocks that enable a woman’s body to display her hip movements.

4.10.4 Use of television

Most men in Square Point reported not watching television at all as young children, and some said they rarely watched television as adults. The youngest participant in Orinoco reported watching television all his life, while the majority of the men in Kahkabila and Orinoco reported first watching television as children or young adults. Television was generally regarded as positively contributing to the lives of local people, informing, educating, and also simply entertaining them:

'…when was no TV, well, Claro, and there's a hurricane out, you not see nothing. But now as you see a hurricane, you can go to your TV and take it where it located'. KM1.

'…I watch news, discovery channel, animal planet and history … sometime things what pass you never know and bring you back a way reflect your mind to something, open your brain to somethings, you know more things'. SPG5.

'…if music come on that I'm interested in and maybe I'm like passing through with the control I just like oh this a good music let me watch this one…' OG1.

4.10.5 Favourite TV content

Local news was also regarded as essential viewing by the majority of participants for its 'action' content. 'Fighting pictures' or 'Van Damme' (local terms for action movies) were also clear viewing favourites, for both their entertainment value and as sources of behavioural learning for men: 'maybe you could learn from watching the [movie], and take it into your brains, and maybe learn it how to fight'. Other favourite TV content included sport, the Discovery Channel, and Animal Planet. Several men in Square Point mentioned that they most liked to watch '*pron*' (Creole for pornography), but lamented the infrequency with which they were able to watch it. *Novelas* were generally regarded as female viewing, although some men admitted they liked to watch them sometimes, especially to learn how to deal with women: 'I like [how] the men talk to the women to convince them'; 'Trying to learn experience'. Some liked to watch *novelas* just to see 'the girls them', 'the beautiful ladies'.

4.10.6 Attractive women on TV

When asked in what type of TV content they might see attractive women, men in all groups primarily mentioned *novelas*. Several men in Orinoco additionally mentioned beauty pageants such as Miss Universe and Miss Nicaragua. In Square Point, Jamaican music videos and pornography were also mentioned for the 'guitar body woman' and the 'pretty woman, blue eyes!'

4.10.7 TV influence

For some, television was perceived as influencing general cultural change in a positive way, for others it was framed as impacting more negatively on traditional lifestyles:

'…first time if a wife and husband live together, they help. Well, that the living they are used to before. I'm going to ground [his plot of land] for plant cassava, I digging a hole, and you there side of me (next to me) planting the cassava. But now, they need to watch that novela. Let's say the novela is coming at 9 o'clock, she don't want to go and stay on there. She going to lose her novela. All them things changed because even if the man went fishing, and they came, [now] not even go down to the dory (dugout canoe) to see what the husbands brings her'. KM1.

Television was also discussed in relation to how it could change or encourage certain behaviours in people. Particularly commented upon in Kahkabila and Orinoco was the perceived negative influence of *novelas* on women. Women who perhaps are 'already thinking to do it' have their thoughts legitimized by the behaviour witnessed in the *novelas* which pushes them to act similarly:

'…woman get addicted to that novela. If she sees style (behaviour) *in that novela, she wanna try it. So that you see one, this woman have two men, I will try that too'.* KM3.

'Yeah they watch it (the novela) *and say, I'm gonna transform up [change my appearance] like them now'.* KM5.

Conversely, *novelas* were generally framed as a positive source of behavioural learning for men, particularly with respect to how to deal with these 'changed' women and for learning how to 'play games' on a partner:

'It's like, this thing could happen? Let me try it you know, and then things start happening like that then … which might (be) good and it might not (be) good'. OG5.

In summary, while some men brought up negative effects of television, generally it was viewed by the men as enjoyable and beneficial to individuals and communities. There seemed to be more discussion about TV's influence on behaviour than on appearance ideals, although men in Kahkabila and Orinoco mentioned attractive female media celebrities several times, and when prompted most men agreed that there were attractive women on television, particularly in *novelas*.

4.11 General discussion

The aim of the current study was to investigate the influence of media on rural Nicaraguan men's perceptions of attractive female body size and shape. In Study 1, men who watched more television, and specifically Western originating content, created significantly slimmer female bodies. Furthermore, and in line with previous findings (Boothroyd et al., 2016; Jucker et al., 2017) only television viewing variables, and not acculturation, education, income or hunger, significantly explained the preference for a lower female BMI.

Evidence from Study 2 further supports findings from Study 1: only men in the higher TV access villages made references to slim Western media celebrities such as Rihanna and Halle Berry when describing their ideal female body. Furthermore, the small but significant shift towards a preference for a curvier upper body and fuller breasts in the Kahkabila sample, and the finding that Western television viewing predicted those preferences, suggests that the men's ideals may be moving towards a 'curvaceously thin' ideal female body that appears to be usurping the thin ideal in Western media more recently (Crossley et al., 2012; Harrison, 2003). Some differences in ideal body shape were also identified: Kahkabila men created significantly fuller upper bodies relative to the lower body, also suggesting movement towards a more Western 'hourglass' ideal shape. Similarly in the focus groups, men in the high TV access villages referenced female Western icons such as Nicki Minaj and Barbie whose bodies are curvaceous in the extreme.

The visual diet mechanism explains a cognitive adaptation in which visual exposure to a prevalent range of stimuli in the local environment results in a preference change (Winkler &

Rhodes, 2005). According to evolutionary theory, perceptions of attractiveness need to be plastic in order that mating strategies can adapt to conditions in the immediate surroundings (Gallup & Frederick, 2010). It follows then that as environments become more saturated with media imagery that positively values a very slim female body the perceptual 'prototype' against which judgments of attractiveness are made will adjust in the same direction (Boothroyd et al., 2012; Cornelissen, Gledhill, Cornelissen, & Tovée, 2016; Grammer, Fink, Moller, & Thornhill, 2003; Robinson & Kirkham, 2014). However, to discount another potential aspect of the men's local visual diet, the real bodies of the women in their communities, the body size and shape of two samples of local women were compared. According to the theory, if women in Square Point were on average heavier than women in Kahkabila, then men in Square Point would also prefer heavier women than men in Kahkabila because that is the female body size that visually dominates daily life and thus represents the 'norm'. Although there was a difference in upper body curviness, there were no significant differences in women's body size (BMI), lower body curviness (WHR) or overall body shape (BHR), strongly suggesting that the pattern of differences in the men's ideals were not driven solely by visual exposure to the bodies of the real women around them.

A number of studies have found that hunger may influence male preferences for female body size and shape (Swami & Tovée, 2006a). The current study found no differences in hunger levels at the two locations and no associations between either measure of hunger and any of the ideal body variables, allowing hunger status to be discounted as a factor in the differences in the two samples' body ideals.

There was one aspect of body shape that was not associated with media exposure: WHR was associated with age and education, such that younger and more educated men made a curvier waist shape. It has been argued that a low WHR is a reliable visual cue to optimal distribution of body fat, and thus an important factor in determining female fertility (Singh et al., 2010). It would follow then that younger men, who are less likely than older men to already have offspring, are more likely to be attracted to women with a curvier lower body: women with this shape are more likely to be young, nulliparous and thus optimally fertile, as WHR increases with age and childbirth (Singh & Randall, 2007).

There is also evidence that for racially Black populations, a smaller waist relative to thigh girth may be a better predictor of underlying health than BMI (Wells, Cole, Bruner, &

Treleaven, 2008), suggesting that for some ethnic groups, such as those in this study, lower body shape may be more important in attractiveness judgements than simply body weight. Previous studies have found that African American women (Overstreet et al., 2010), and Black South African men (Swami et al., 2009) considered full buttocks to be more central to the ideal female body shape than their racially White counterparts. Similarly for the men of non-White ethnic identity in this study, a 'bootylicious' shape was considered an essential component of female attractiveness: even when men in Kahkabila and Orinoco expressed a preference for a slimmer female body size, lower body curvaceousness was not relinquished.

4.11.1 Contribution of ethnicity to body ideals

In light of the evidence just discussed (Wells et al., 2008), it is important to consider the possible contribution of race or ethnicity in driving group differences found in Study 1, as there were differences in the two groups' ethnic profiles (see Table 1). Previous studies have found that attractiveness judgments of female body size did not differ between Black and White observers (Tovée et al., 2006), White and Asian observers in the U.K, and three ethnic groups in urban Malaysia (Swami & Tovée, 2005a). To confirm that ethnicity was not driving differences in ideal female body size using the same methodology as the present study, we compared the means of Daz created ideal female bodies of a sample of Black and White men in the U.K (Thornborrow, unpublished data). See Table 4.5 for all means and standard deviations of all variables. The samples were matched on age, education, own BMI and television viewing. There was no significant difference in the means for ideal BMI, $t(47) = 1.17$, $p = .248$. Furthermore, both groups of men made equally 'hourglass' shaped bodies, $t(47) = -1.01$, $p = .317$. These findings strongly suggest that differences in body ideals of the Nicaraguan samples are unlikely to result from their differing ethnic profiles, particularly as Miskitu and Garifuna ethnic groups may be culturally more similar to each other than those in the previous studies discussed.

However, Black British men created a much curvier body than their White compatriots. This supports the findings from the current study's Nicaraguan sample to suggest that some elements of female attractiveness (i.e. body size) may be influenced by sociocultural factors similarly across ethnic or racial groups, while others (i.e. body shape) are not.

Table 4.5. Means and standard deviations of all descriptive statistics and ideal female body size and shape variables of Black and White UK men

	White U.K	Black U.K	
Number participants	20	29	
Age (years)	20.1 (0.97)	20.1 (1.73)	
Education (years)	14.1 (2.15)	13.9 (2.34)	
TVE	17.6 (8.20)	21.34 (11.23)	
Participant BMI	25.1 (4.07)	24.6 (2.40)	
Ideal BMI	20.7 (2.52)	19.9 (2.37)	
Ideal WHR	0.72 (0.03)	0.67 (0.03)	**
Ideal WBR	0.78 (0.04)	0.72 (0.05)	**
Ideal BHR	0.92 (0.03)	0.93 (0.04)	

** $p <$ .01. TVE = Hours per week television viewing

4.11.2 The bootylicious body in men's judgments of attractiveness

The importance of female body shape in the attractiveness judgments of men from non-White ethnic groups continued to be evident from the qualitative findings of Study 2. In combination with the 'bootylicious' body shape, body movement played a major role in Nicaraguan men's judgments of female physical attractiveness. A bootylicious body was key to how men were able to judge women's sexual promise through her movements when walking or dancing. The men appeared to value a woman's body in terms of what it 'affords' rather than simply judging it based on a superficial visual aesthetic: the moving boonkah of a woman can reveal information about its potential for physical or sexual interaction to those men who are attuned to (see Gibson, 1986 for his theory of affordances). Experimental studies have shown that hip swing is regarded as highly attractive in female dance (McCarty et al., 2017). Furthermore, while lower body shape seems to be a relatively weak cue to attractiveness judgements in static images (Tovée et al., 2002; Tovée et al., 1999), Johnson et al (2007) have argued that body motion emphasizes WHR as a cue to attractiveness.

According to life history theory, individuals focus on strategies that maximise their reproductive fitness in their specific environment. For example, in environments that are 'harsh' or unpredictable, individuals may need to 'speed up' the maturation process to maximise opportunities for successful reproduction (Hill et al., 2014). Based on this theory, I

posit that men in this population are sensitive to physical cues that will increase their chances of reproductive success. When men do not have material resources to offer, which is what women seek, they may need to adopt strategies that enable them to quickly assess their chances of a successful mating, even with a short term partner: a woman's body movement can potentially provide men with immediate visual information about a woman's fertility status (Fink, Hugill, & Lange, 2012). This theoretical approach could help explain why these Nicaraguan men were sexually attracted to women who can 'shake their booty' and why the preference for a bootylicious body shape was not related to, nor diminished by, exposure to Western body ideals via television viewing. However more research would be needed before drawing any firm conclusions.

4.11.3 Study limitations

There are a few limitations of the current study. The findings may not be generalizable to Nicaraguan populations as a whole because of the small and purposively selected samples. The cross-sectional design was only able to examine the relationship between media exposure and men's perceptions of female attractiveness: a longitudinal study design would be needed to identify any causal relationship, that is to say, watching television leads men to prefer slimmer female bodies.

Another possible limitation in this study's design was the way media exposure was measured. While measures of quantity of television and frequency of viewing broad content types sufficiently revealed an association with their perceptions of attractive female bodies, a more nuanced analysis of the kind of content men are watching would improve understanding of what mechanisms or factors are involved. Watching television per se does not equate with exposure to highly appearance-focused content: indeed, men in this study reported watching mostly action films and sports - content which does not generally contain a lot of female focused appearance imagery.

In conclusion, consumption of televisual media, particularly Western TV content, is playing some part shaping rural Nicaraguan men's perceptions of attractive female body size and upper body shape. The preference for a curvy lower body shape appeared not to be related to media exposure in the same way.

Chapter 5. Study 3: Women's body image and media influence

5.1 Introduction

It is already well established that the incidence of body dissatisfaction among women in Western populations has reached endemic levels (Fiske et al., 2014; Tantleff-Dunn, Barnes, & Jessica, 2011). Body dissatisfaction not only contributes to the aetiology of clinically diagnosed eating disorders such as Anorexia Nervosa and Bulimia Nervosa (Striegel-Moore & Bulik, 2007), but many other aspects of physical and psychological health, such as unhealthy dieting, low self-esteem and depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000). Body dissatisfaction can be defined as a negatively experienced body image, which arises from a perceived discrepancy between a person's actual body and their ideal body.

Correlational studies have found that exposure to media imagery is associated with increased body image concerns and disordered eating behaviours among women (Grabe et al., 2008) particularly those individuals considered at high risk of developing an eating disorder (Hausenblas et al., 2013). Exposure to highly appearance-focused content, such as women's fashion magazines and soap operas, is even more likely to be associated with body dissatisfaction and a drive for thinness (Hargreaves & Tiggemann, 2002; Levine & Murnen, 2009). A survey of Spanish adolescents found that dieting, beauty, and music video content viewing were associated with body dissatisfaction in females, while general media exposure was not (Calado et al., 2011). Other correlational studies have found similar variability of media exposure effects on dimensions of body image (Harrison, 2000a; Tiggemann, 2003).

Experimental studies have also produced varied results. In one study, exposure to appearance-focused magazines over a period of two years did not generally increase body dissatisfaction and thin-ideal internalisation, but some increases were found among vulnerable individuals (Stice, Spangler, & Agras, 2001). Other studies have similarly found that exposure to thin ideal media images (Benton & Karazsia, 2015) and objectifying music video content increased body dissatisfaction among women (Tiggemann & Slater, 2004), particularly those with low self-esteem (Mischner et al., 2013). Exposure to appearance-related TV commercials increased drive for thinness in adolescent boys and girls, but increased body dissatisfaction among girls only (Hargraves & Tiggemann, 2003).

Media exposure has also been found to negatively impact on women's body image and eating behaviours in non-Western populations (Becker et al., 2002; Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, Cunningham, et al., 2010), including among Latin American and Caribbean populations (Boothroyd et al., 2016; Caqueo-Urízar et al., 2011; Mellor et al., 2008). In Guatemala in Central America even 5th grade girls were found to be internalizing Western body ideals and experiencing body dissatisfaction (Vander Wal et al., 2008) strongly suggesting that media exposure can have a similar impact across cultures and from a young age.

The current study investigated media influence on Nicaraguan women's body ideals and body image to ascertain if similar effects were occurring in young Nicaraguan women living in communities around the Pearl Lagoon Basin.

5.1.1 Dealing with methodological challenges: research in non-Western settings

As discussed in Chapter 1 section 1.6, it is methodologically challenging for researchers to demonstrate that it is media exposure and not some other unmeasured factor that is driving high population levels of body dissatisfaction. Experimental studies have successfully shown that short periods of high intensity media exposure have a measurable effect on levels of body dissatisfaction (Hausenblas et al., 2013) but they may not represent 'real world' effects (for a discussion see Want, 2014). By carrying out research in locations where media are not pervasive, it may be easier to measure media exposure effects. An additional factor is that changes in body ideals may be easier to identify, particularly among those populations where a heavier female body is traditionally valued within that culture. For example, Ann Becker and colleagues succeeded in clearly demonstrating the negative influence of media on adolescent girls' eating behaviours by taking advantage of the moment that Western television was introduced to the island. Three years after its introduction, girls were rejecting the traditional Fijian 'robust' body ideal, implementing dieting strategies and vomiting behaviour in their quest to achieve the Western thin ideal body (Becker et al., 2002).

The present study similarly took advantage of the opportunity to investigate the effect of media exposure on women's body image in a natural setting, and compared the body image

experiences of groups of women with very different levels of media exposure who otherwise inhabited a comparable ecological and socioeconomic environment.

5.1.2 Ethnic differences in body ideals and body image

Not all cultural and ethnic groups share the same appearance ideals and experience the same level of body image concerns. In many Western populations, the ideal female body has a BMI of about 19-21, the lower end of the normal BMI range of 18.5 - 24.9 (World Health Organization, 2017). In Korea, even controlling for body size differences, women's ideal BMI is considerably lower at around 17.9 (Jung & Forbes, 2007). In Nicaragua however, previous studies have found the ideal female body to have a BMI nearer to the overweight weight category (Boothroyd et al., 2016; Jucker et al., 2017). In contrast to the 'fit / thin White woman' body ideal, Hispanic and Latina women may value a more curvy 'coca-cola' shape body (Schooler, 2008; Viladrich et al., 2009), and Black American women often prefer a body shape with fuller buttocks (Overstreet et al., 2010).

Black women also often have higher body satisfaction than both White women (Cotter et al., 2015; Roberts, Cash, Feingold, & Johnson, 2006) and Asian women (Chin Evans & McConnell, 2003), and lower levels of eating disorders (Wildes, Emery, & Simons, 2001) even though they potentially inhabit the same media environment. There are several possible explanations for these differences. Firstly, people of some ethnic groups may not watch mainstream media content to the same extent as the predominant demographic and therefore incidence of internalisation of Western body ideals and subsequent body dissatisfaction is lower (Schooler, Ward, Merriwether, & Caruthers, 2004). Alternatively, equal exposure to mainstream beauty ideals may not equally affect people of all ethnic groups. Social comparison theory (Festinger, 1954) argues that we make upward social comparisons with others who we consider not too dissimilar from ourselves. As the women presented as 'attractive' in mainstream Western media are predominantly White, women from Black ethnic groups may not identify with these constructions of beauty but look to women of colour in the media or in their social circle as more relevant sources of appearance ideals. In contrast, studies have found that Asian women endorsed Western appearance ideals and had similar levels of body dissatisfaction as White women (Chin Evans & McConnell, 2003). Findings are mixed as to whether Latina women experience similar levels of body image concerns as White women (see Viladrich et al., 2009) but I would argue

that they are more likely than women of Black ethnic groups to regard mainstream standards of beauty as relevant sources for comparison, especially with the increasing visibility of Latina women in mainstream media, for example Jennifer Lopez (Valdivia, 2007). However, media representations of *Latinidad* are often 'whitened' to conform to a Western appearance ideal (i.e., white skin, European facial features and low body weight) so in that respect Latina women are theoretically more at risk of body dissatisfaction resulting from appearance comparisons than White women (Chin Evans & McConnell, 2003; Jung & Forbes, 2007).

In short, the picture remains unclear as to whether Western media imagery plays the same role in the normalization of a thin body ideal and body dissatisfaction among minority ethnic groups as it does among White, Western populations (Roberts et al., 2006). By sampling women from two different ethnic groups who experienced comparable levels of media consumption the present study also considered the contribution of ethnic identity in shaping body ideals and as a potential mediating factor in the experience of body image.

5.1.3 Sociocultural approaches to body image

In this study I employed Stice's (2001) sociocultural model to examine the association between media exposure, body dissatisfaction and eating behaviours. The model, shown in Figure 5-1, is often used as a framework to examine what part the mass media play in the awareness, acceptance and internalisation of the socially constructed 'thin ideal', and whether it can predict behaviours such as dieting or disordered eating (Thompson et al., 2004). The sociocultural model posits that; 1) socially and /or culturally constructed ideals exist; 2) these ideals are transmitted via various routes such as the mass media, peers, and family; 3) whereby they may become internalised (accepted as the 'norm') to the point that the individual measures her / himself in relation to that ideal; 4) leading to satisfaction or (more usually) dissatisfaction, depending on how near or far they consider themselves from the ideal (Tiggemann, 2011).

While theoretical models are useful tools for explaining how media exposure might play a role in the development of body dissatisfaction and potentially eating disorders they cannot explain everything. For example, if the sociocultural model was as straightforward as it at first appears, and media exposure has a kind of 'hypodermic effect' where all individuals

passively and equally absorb media ideals in a vacuum (see Gill, 2012 for a critique on such conceptualizations of the media), then whole populations would have body dissatisfaction which is not the case. Furthermore, there are many other biological, emotional and environmental factors that contribute to the individual experience of body image and subsequent potential health outcomes. Nevertheless, it is clear from the literature that media influence plays a not insignificant role in shaping body ideals and impacting on the body image of people in populations in many parts of the world (Swami, Frederick, Aavik, Alcalay, Allik, Anderson, Andrianto, Arora, Brännström, Cunningham, et al., 2010). So it is a worthy endeavour to continue to investigate the relationship between media exposure and body image among different populations and groups so as to enable the continuing development of suitable strategies for minimising body dissatisfaction and reducing risk factors for eating disorders.

5.1.4 Hypotheses and predictions

Based on the hypothesis that exposure to Western media is associated with a preference for a 'curvy but thin' body ideal (Harrison, 2003), I predicted that;

- Women in high media access locations would have a slimmer ideal body than the low media access location.
- Women in high media access locations would prefer a curvier or fuller upper body shape than those in the low media access location.
- Women in high media access locations would have lower body satisfaction and more body image concerns than women in low media access location.
- Media exposure would predict body dissatisfaction, body shape concerns and disordered eating

Based on existing evidence for ethnic differences in body ideals and body image, I further postulated that;

- There may be differences in the ideal body shape of Creole women and Mestizo women, even with similar levels of media exposure.
- Creole women will have higher general body satisfaction and less body image concerns than Mestizo women.

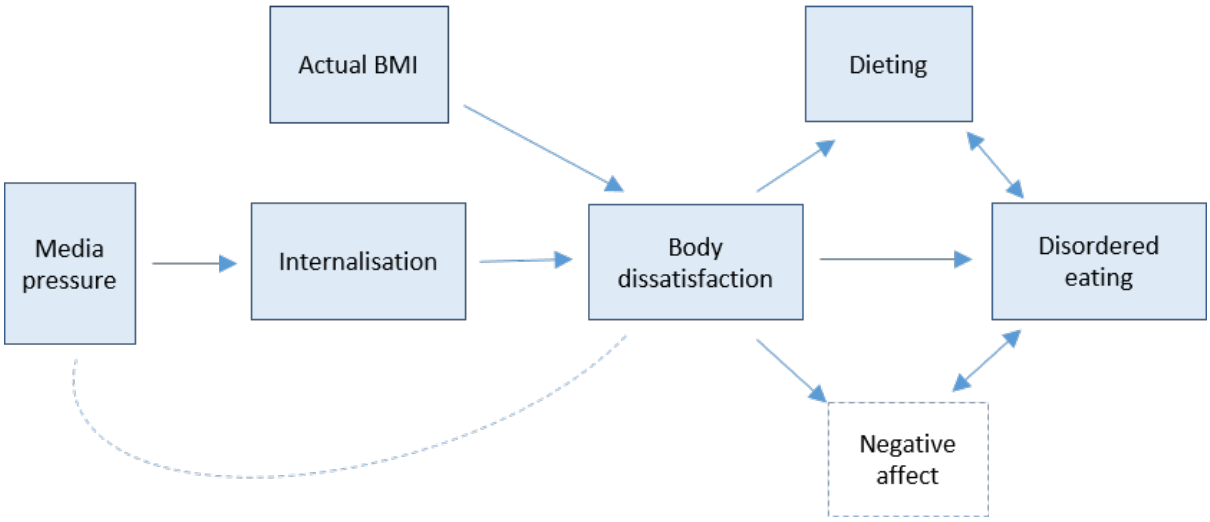


Figure 5.1. Predictors of disordered eating based on Stice's (2001) sociocultural model of eating disorders. Negative affect was not measured in the current study.

5.1.5 Study design

Female participants were recruited from low TVE Mestizo village Pedregal, high TVE Mestizo village Pueblo, and from Lagoon, a larger, predominantly Creole high TVE community. Sampling from these three locations enabled comparisons to be made between two groups of ethnically identical women with very different levels of media exposure (Comparison 1, Mestizo women from Pueblo and Pedregal), and between two groups of women with very similar levels of media access but of different ethnicity (Comparison 2, Mestizo women from Pueblo and Creole women from Lagoon).

5.2 Method

5.2.1 Participants

A total of 62 women (mean age 19.8, *S.D* 5.17; range: 14-39) were recruited by word of mouth from Lagoon (N = 22), Pueblo N = 21) and Pedregal (N = 19). All participants from Lagoon self-identified as Creole and all those from Pueblo and Pedregal self-identified as Mestizo. Participants could choose whether to participate in English or Spanish. All participants from Pueblo and Pedregal completed the task in Spanish, and all those from Lagoon completed it in English (with some use of Creole language terms).

5.2.2 Measures

Ideal body size and shape

Participants created their own 'bespoke' ideal body size and shape in '3D' figure modelling software (Daz Studio version 4.6. from Daz3D.com) in the same manner as the male participants in Study 2 in Chapter 3. See 2.4.3 for more details on the Daz programme and method used.

Perceived current body size

To ascertain perceived current body size, participants selected the image they believed was closest to their own body size from the female set of the Ten Bodies Scale (TBS).

Education and income

Participants reported how many years of schooling they had completed, level of education attained, and total yearly income in U.S dollars or Nicaraguan Cordobás.

Hunger Status

Participants were asked to indicate how hungry they felt on a scale of 1 (starving) to 10 (full to bursting) and when they had last eaten.

Anthropometrics

Participants' height and weight were measured to calculate Body Mass Index (BMI - weight in kilograms divided by height in metres squared), a measure of body size. Bust, waist and hips circumferences were measured to calculate body shape cues. To measure lower body shape, a waist-to-hip ratio (WHR – waist circumference / hips circumference) was calculated. To measure upper body shape, a waist-to-bust ratio (WBR – waist / bust) was calculated. To measure relationship of upper to lower body fullness, a bust-to-hip ratio (BHR – bust / hips) was calculated.

Media exposure

Participants reported how many hours of television they watched in an average week (TVE) and the frequency with which they watched U.S originating / English language television shows (USTV) and films (USFM), and Latin American originating / Spanish language television shows (SPTV) and films (SPFM) on a scale ranging from 0 (never) to 4 (every day or almost

every day). Finally, participants were also specifically asked if they liked to watch *novelas* and music video content, and if so, how often.

Media belief

A modified version of the Sociocultural Attitudes Toward Appearance Questionnaire -3 (Thompson et al., 2004) was administered to assess participants attitudes towards, and internalisation of, media messages relating to physical appearance.

Body satisfaction

The Body Appreciation Scale (Avalos et al., 2005) was administered to establish participants' attitudes towards their bodies in general, without assuming a priori that there will be measurable levels of body dissatisfaction.

Body dissatisfaction

To measure dissatisfaction with body size, a BMI discrepancy score was calculated by subtracting the participant's ideal BMI from their actual BMI, such that a positive score indicated a desire to be slimmer. To measure dissatisfaction with lower body shape, WHR discrepancy score was similarly calculated by subtracting ideal from actual WHR.

Weight status

Participants reported whether they were trying to lose weight, gain weight, or not trying to change their weight.

Body shape concerns

A shortened version of the Body Shape Questionnaire (Cooper, Tayor, et al., 1987) was administered to identify body shape concerns.

Disordered eating behaviours

The Eating Attitudes Test (Garner & Garfinkel, 1979) was employed to assess attitudes towards eating and behaviours around food.

See Methods 2.2 for more detailed information on all psychometric measures and visual stimuli used in this study.

5.2.3 Procedure

Participants were interviewed and tested individually in a quiet room. Participants were informed that their participation was completely voluntary and that they could stop at any time during the task if they did not want to continue. They were also told that we were interested in their personal opinions and that there were no 'right' or 'wrong' answers. Consent was obtained by verbal agreement at the start of the interview. Demographic information was also collected verbally and all data were recorded directly onto a laptop. Anthropometric measurements were then obtained using a digital weighing scale and a tape measure. Participants were weighed and measured without footwear and heavy clothing. They were given the option to measure themselves with guidance if they preferred.

Before beginning the task of creating their ideal body, a 'trial' body was opened in the Daz programme to familiarize participants with how the software works, and to demonstrate the full range of body alteration available with each slider. One of the two 'starter bodies was then opened in the interface, and the experimenter operated the sliders to adjust the figure following the participant's instructions until she was happy with the ideal body created. The order in which the two starter bodies were presented to participants was counterbalanced. Next, participants were asked to select their perceived current body size from the TBS, in the same manner as in Study 1 (see 3.2.3).

Finally, participants responded to the psychometric measures in the following order: BAS, SATAQ-3, BSQ-8c, EAT-26. The participant was given the option of reading the items aloud themselves, or the experimenter reading them aloud. Participants indicated their responses on laminated copies of the measures, and the experimenter entered their verbal responses into the lap top at the same time. This procedure was implemented to ensure full participant understanding of all the items and to aid in task engagement. Where it was clear that a participant did not fully understand an item, I took the time to explain further to ensure that all responses were appropriate. For example, item 5 on the EAT-26 'I cut my food into small pieces' was usually met with a response something like, 'oh yes, of course!' However in this region people rarely use a knife while eating, generally preferring a large spoon, sometimes using a fork instead or their fingers. Replying positively was clearly a way of demonstrating to me that they had 'table manners' and did not relate to the intended meaning of the item (i.e. food avoidance). In such cases I would then ask if they used a knife when eating meals,

to which *all* participants replied 'no'. I would then explain the aim of the item (i.e. to identify if a person was trying to avoid eating the food on their plate while making it appear to others as if they had eaten). Such clarifications took considerable time but they were essential to participant understanding and thus obtaining valid data.

The whole task took about an hour and participants were paid $4 in local currency for their time.

5.3 Data handling and analysis

Upon completion of all data collection, the ideal bodies were re-opened in the Daz programme. The height of the morph was adjusted to participant's own height before measuring bust, waist, and hip circumferences in centimetres. Ideal BMI was calculated using the following formula based on real BMI data from the Health Survey for England (2008): 9.67611 + (0.30826*hip) + (0.1497*waist) - (0.17944*height) + (0.05543*age) - (0.00076154*age squared) (Cornelissen et al., 2009). Ideal lower and upper body shape were measured by calculating the WHR and the WBR respectively. The preference for a proportionately fuller upper or lower body was measured by calculating the BHR. A BHR of higher than 1 would indicate a 'top heavy' shape distribution with a fuller bust, while a BHR of 0.7 would indicate a pear-like shape with fuller hips and buttocks. As participants created two bodies, their body size and shape ideals were calculated by averaging both sets of measurements.

All data analyses were run in SPSS 22. A series of ANOVAS compared location group means for all predictor variables and to confirm significant differences in media exposure levels for Comparison 1 (Media - high TVE Pueblo and Low TVE Pedregal), and no significant differences in media exposure levels for Comparison 2 (ethnic group - Mestizo Pueblo and Creole Lagoon). Where the test was significant, it was followed up with Tukey post hoc tests. Location group means of main outcome variables were also compared using ANOVA, followed by simple contrasts for Comparison 1 and Comparison 2 when the test was significant. All follow up analyses were adjusted for multiple comparisons. Tests for assumptions were carried out and met on all analyses unless otherwise stated. Where data were not normal, an appropriate transformation was applied before rerunning the analysis. To retain analytical consistency, where the patterns of results did not differ those from the

non-transformed data are reported here unless otherwise stated. Where outliers were identified, the analysis was run both with and without them. At no time did the removal of an outlier in any of the analyses change the overall pattern of results, so all outliers were retained as there was no real justification to remove a valid data point. Pearson's correlations and regression analyses were used to examine associations between media exposure, body image and eating behaviours.

5.4 Results

5.4.1 Group comparisons of demographic variables

See Table 2.1 for means and standards deviations for demographic variables by location group. The Pedregal sample was significantly older than both Lagoon and Pueblo samples, who did not differ from each other, $F(2, 59) = 18.532$, $p < .0001$, Games Howell ps < .01. The Lagoon sample were more educated than Pueblo, who were more educated than Pedregal, $F(2, 59) = 35.823$, $p < .0001$, post hoc ps < .01. The ANOVA for income just reached statistical significance, $F(2, 59) = 3.152$, $p = .05$, but post hoc tests found differences between groups to be non-significant. There were no significant differences in group means for either of the two hunger measures.

Table 5.1. Means and standard deviations of demographic variables of whole sample and by location group

	Lagoon	Pueblo	Pedregal	
Number	22	21	19	
Age	16.5 (2.28)	19.1 (3.00)	24.3 (5.17)	**
years education	10.9 (1.81)	8.2 (3.17)	3.1 (3.77)	**
Income last year ($)	84 (260.6)	515 (791.9)	321 (518.9)	*
level of hunger	5.4 (0.90)	4.8 (0.87)	5.0 (0.89)	
hours last meal	2.9 (1.89)	3.2 (1.70)	3.7 (2.00)	

* $p < .05$; ** $p < .01$.

5.4.2 Actual and perceived body size and shape

Table 5.3 shows means and standard deviations for actual and perceived BMI and actual body shape variables for all location groups. A paired sample t-test with variables perceived

BMI and actual BMI showed that on average women perceived themselves as significantly slimmer than they actually measured, $t(61) = 4.327$, $p < .0005$. As actual BMI, actual WHR and actual WBR were significantly correlated with age, and women on average become heavier and less curvaceous with age (Wells, 2007) analysis of group differences was carried out using ANCOVA.

For actual BMI there was homogeneity of regression slopes as assessed by a non-significant interaction term, $F(2, 56) = 1.271$, $p = .289$. The difference between location groups was statistically significant, $F(2, 58) = 7.281$, $p = .002$, partial $\eta 2 = .201$. Bonferroni post hoc tests revealed that participants in Pedregal were significantly slimmer than their compatriots in Pueblo with a mean difference of -5.658 (95% CI, -9.364 to -1.952) BMI, $p = .001$. Lagoon sample means did not differ significantly from the other two location groups.

For actual WHR there was no interaction between age and location, $F(2, 56) = 1.48$, $p = .236$. There was a statistically significant difference between location groups, $F(2, 58) = 10.074$, $p < .0001$, partial $\eta 2 = .258$. Bonferroni post hoc showed a difference of -.064 (95% CI, -.103 to -.024) in adjusted means between Lagoon and Pueblo ($p = .001$), and a difference of -.078 (95% CI, -.128 to -.028) between Lagoon and Pedregal ($p = .001$), showing that the Creole women in Lagoon had much curvier lower bodies than Mestizo women in the other two samples who did not differ from each other.

Similarly for actual WBR there was homogeneity of regression slopes as determined by the non-significant interaction term, $F(2, 56) = .217$, $p = .806$. There was no significant difference in the actual WBR means of the three samples, $F(2, 58) = .1.086$, $p = .344$.

Actual BHR was not correlated with age so a one-way ANOVA was run to look for group differences. Participants in the Lagoon sample had a proportionately fuller lower body than the participants in Pueblo and Pedregal, $F(2, 59) = 14.563$, $p < .0001$, Tukey post hoc $p < .001$. Actual BHR did not differ between the two Mestizo villages.

5.4.3 Group comparisons of measures of media exposure

See Table 5.2 for means and standard deviations of all media viewing and media belief variables. The Pedregal sample reported watching significantly less hours per week of television (TVE) than Pueblo and Lagoon, who did not differ from each other, $F(2,59) =$

11.110, $p < .0005$. This result confirmed there were the required differences in total media exposure for Comparison 1 and the required similarities in media exposure for Comparison 2.

Pedregal also watched music videos less frequently than Lagoon and Pueblo who did not differ from each other, Welch's ANOVA, $F(2,31.25) = 13.842$, $p < .0001$, Games-Howell post hoc $p < .05$. Novela viewing differed significantly between all three groups, with Pueblo watching the most followed by Lagoon with Pedregal watching the least, Welch's ANOVA, $F(2,36.09) = 33.986$, $p < .0001$, Games Howell post hoc ps $< .01$.

Table 5.2. Means and standard deviations for all media viewing and media belief variables by location group

		Comparison 1 Media		Comparison 2 Ethnicity	
		Pedregal (Low TVE)	Pueblo (High TVE)	Lagoon (High TVE)	
Media viewing	TVE	3.1 (6.13)	13.0 (9.79)	16.7 (11.29)	**
	SPTV	1.6 (1.34)	3.7 (0.70)	3.1 (1.15)	**
	USTV	1.1 (1.01)	1.9 (1.39)	3.3 (0.93)	**
	SPFM	1.5 (1.31)	1.7 (0.86)	2.4 (1.18)	**
	USFM	1.5 (1.31)	1.7 (0.89)	2.9 (1.11)	**
	Music video	0.1 (0.31)	0.8 (1.05)	1.5 (1.33)	**
	Novela	0.6 (1.01)	2.8 (0.65)	1.7 (1.27)	**
SATAQ	TOTAL	34.4 (15.54)	56.7 (17.28)	43.7 (15.91)	**
	INFO	9.9 (4.50)	18.3 (2.13)	15.4 (4.01)	**
	PRESSURE	4.5 (3.20)	7.2 (4.88)	5.6 (3.91)	**
	INTERN	7.0 (4.85)	10.7 (5.31)	8.4 (5.37)	

* $p < .05$; ** $p < .01$. TVE = average hours television viewing per week; SPTV = frequency of viewing Latin American / Spanish speaking television content; USTV = frequency of viewing U.S-originating / English language television content; SPFM = frequency of viewing Latin / Spanish speaking films; USFM = frequency of viewing U.S / English language films.

The Pedregal sample also watched Latin American / Spanish language television shows (SPTV) less often than the other two samples, Welch's ANOVA, $F(2,35.42) = 19.238$, $p <$

.0001, and films (SPFM) significantly less often than the Lagoon sample only, $F(2,59) = 4.045$, $p = .023$, post hoc $p < .05$. The Lagoon sample, whose native language is English Creole, watched U.S / English language television shows (USTV), Welch's ANOVA, $F(2,2,38.01) = 24.169$, $p < .0001$, and films (USFM), $F(2,59) = 9.878$, $p < .0001$, post hoc ps < .01, more frequently than both Mestizo groups who did not differ significantly from each other.

5.4.4 Group comparisons of media beliefs

See Table 5.2 for means and standard deviations of SATAQ total scores and subscale scores for location groups. A Cronbach's alpha of 0.91 showed a high level of internal consistency for total scores of the 18 retained items. Responses to the items were found to successfully load onto the four original subscales, except for question 20 ('I compare my body to that of people in good shape') which did not align well with any of them. As there were no differences in group means for this item, $F(2, 59) = 0.825$, $p = .443$, making it unlikely that its removal would affect subscale scores to any meaningful degree, it was removed for the analyses of the subscales but retained for analysis of the total SATAQ score. The ANOVA for total SATAQ scores was significant, $F(2, 59) = 9.464$, $p < .0005$. Planned comparisons showed a significant difference in means for both Comparison 1, with Pueblo scoring on average 22.25 higher than Pedregal, (95% CI 10.39 to 34.10), $p < .0005$, and Comparison 2, where the Pueblo mean was 12.94 higher than the Lagoon mean (95% CI 1.516 to 24.362), $p = .012$.

Total SATAQ scores were significantly and negatively correlated with age, and positively correlated with novela viewing, such that younger women who watched more novelas had higher SATAQ scores. The multiple regression model of age and novela viewing was significant, explaining more than 23% of the variance in SATAQ scores $F(2, 59) = 9.006$, $p < .0005$, $R^2 = .234$. However, only novela viewing contributed significantly to the regression slope.

SATAQ subscale scores

Cronbach's alphas for the SATAQ subscales were all acceptable at higher than 0.8. A series of ANOVAs were conducted on the three subscales of interest: belief in media as a source of information about appearance (INFO), experiencing media pressure to conform to appearance ideals (PRESSURE), and internalisation of media's body ideals (INTERN). INFO means differed significantly between all groups, $F(2, 59) = 27.043$, $p < .0005$. In Comparison

1 scores were significantly higher in Pueblo than in Pedregal, with a mean increase of 8.44 ± 1.131, $p < .0001$. In Comparison 2, the means for Pueblo were also significantly higher than those of Lagoon, with a mean increase of 2.97 ± 0.972, $p = .004$. PRESSURE means also differed significantly across groups, $F(2, 59) = 7.891$, $p = .001$. In Comparison 1, the Pueblo mean was 7.82 ± 2.06, higher than that of Pedregal, $p = .002$. Similarly, in Comparison 2, Pueblo mean was significantly higher than the Lagoon mean, 5.21 ± 2.14, $p = .020$. For INTERN, Pueblo had the highest mean score of 10.67, followed by Lagoon with a score of 8.41, and Pedregal with 7.00, however, differences failed to reach statistical significance, $F(2,59) = 2.552$, $p = .087$.

Table 5.3. Unadjusted means and standard deviations for actual and ideal body size and shape and body dissatisfaction variables by location groups in Comparisons 1 and 2

		Comparison 1 Media		Comparison 2 Ethnicity	
		Pedregal (Low TVE)	Pueblo (High TVE)	Lagoon (High TVE)	
Body size	Actual BMI	23.4 (3.35)	26.8 (4.75)	23.3 (5.21)	**
	Perceived BMI	22.5 (5.16)	24.0 (4.89)	21.7 (4.27)	
	Ideal BMI	20.4 (3.12)	21.8 (2.74)	19.8 (2.46)	
Body shape	Actual WHR	0.86 (0.05)	0.83 (0.05)	0.76 (0.06)	**
	Ideal WHR	0.70 (0.05)	0.67 (0.06)	0.66 (0.04)	*
	Ideal WBR	0.81 (0.05)	0.78 (0.06)	0.75 (0.04)	**
	Ideal BHR	0.87 (0.05)	0.86 (0.03)	0.88 (0.04)	
Body image	DS-BMI	3.01 (4.02)	4.98 (4.35)	3.55 (4.46)	
	DS- WHR	0.15 (0.07)	0.17 (0.06)	0.11 (0.05)	**
	Dieting % (N)	21.7 (5)	43.5 (10)	34.8 (8)	

* $p < .05$; ** $p < .01$.

5.4.5 Ideal body size and shape

Table 5.3 shows the unadjusted means and standard deviations for ideal BMI and ideal body shape variables for the three samples. There were no significant differences in group means for ideal BMI, $F(2, 59) = 2.477$, $p = .093$, so no simple contrasts were carried out. The

ANOVAs for ideal WHR, $F(2, 59) = 4.198$, $p = .020$, and ideal WBR, $F(2, 59) = 6.470$, $p = .003$, were both significant but after adjusting *p* values for multiple comparisons (.05/2, new *p* value = .025) simple contrasts showed that the means of groups in Comparisons 1 and 2 did not differ significantly, *p*s > .025. However, the trend in means for both WHR and WBR showed that in Comparison 1, women in high TVE Pueblo had more curvy body shape ideals than those in low TVE Pedregal, and in Comparison 2, that high TVE Creole women had curvier body shape ideals than high TVE Mestizo women. Ideal BHR did not differ significantly between any of the groups, $F(2, 59) = 1.532$, $p = .225$, so was not followed up with simple contrasts.

Table 5.4. Pearson's correlations between ideal body variables and media viewing variables for the whole sample

	1	2	3	4	5	6	7	8	9
1 BMI		.172	.446**	-.355**	.013	.054	-.050	-.138	-.085
2 WHR			.772**	.481**	-.225	-.208	-.297*	-.108	-.139
3 WBR				-.179	-.283*	-.257*	-.338**	-.276*	-.257*
4 BHR					.053	.034	.021	.243	.160
5 TVE						.577**	.564**	.527**	.558**
6 SPTV							.412**	.371**	.326**
7 USTV								.503**	.515**
8 SPFM									.802**
9 USFM									

* $p < .05$; ** $p < .01$.

Media influence on body ideals

See Table 5.4 for Pearson's correlations between ideal body size and shape variables and media viewing variables. There were no significant associations between ideal BMI and any of the media variables. Ideal WHR was significantly and negatively correlated only with USTV, suggesting that women who watched more Western television were more likely to prefer a curvier lower body. Ideal WBR was significantly correlated with TVE, USTV, SPTV, USFM, and SPFM in the same direction. Ideal BHR was not correlated with any of the media variables.

5.4.6 Body satisfaction

Scores on the BAS scale demonstrated a good level of internal consistency, with a Cronbach's alpha of .84. See Table 5.5 for location group means and standard deviations of scores for all psychometric measures. ANOVA found a significant difference between groups' BAS scores, $F(2, 59) = 3.726$, $p = .030$. Planned comparisons found an almost significant difference in means of the two Mestizo samples in Comparison 1, with high TV Pueblo showing a decrease of -4.05 in BAS scores (95% CI, -8.519 to .064), $p = .054$. No significant difference was found in the means for Lagoon and Pueblo in Comparison 2, $p = .834$. In contrast to findings from previous studies (see Lobera & Ríos, 2011) BAS scores were not associated with participants' actual BMI or perceived BMI.

Media influence on body satisfaction

After correcting for multiple comparisons, BAS scores were not significantly associated with any of the media viewing variables. However, they were highly negatively correlated with PRESSURE and INTERN (ps < .0005). As these two variables were themselves highly inter-correlated, a component score which combined both was calculated (PRESSURE+) and entered into a linear regression. The model was significant, $F(1, 60) = 13.997$, $p < .0005$, $R^2 = .189$.

Table 5.5. Means and standard deviations for BAS, BSQ-8c and EAT scores by location group for Comparison 1 and 2

	Comparison 1 Media		Comparison 2 Ethnicity	
	Pedregal Low TVE	Pueblo High TVE	Lagoon High TVE	
BAS	63.00 (3.28)	58.95 (7.35)	58.59 (5.37)	*
BSQ-8c	12.37 (4.46)	17.14 (8.76)	17.55 (8.45)	
EAT-26	3.74 (3.75)	6.57 (6.96)	5.64 (5.98)	

* $p = .054$.

5.4.7 Body dissatisfaction

Discrepancy scores (DS)

As can be seen in Table 5.3, women in Pueblo were further from their ideal body size than women in Lagoon, who were further from their ideal than women in Pedregal. However ANOVA showed that the differences in DS-BMI were not statistically significant, $F(2, 59) = 1.148$, $p = .324$. There was however, a significant difference between groups for DS-WHR, $F(2, 59) = 5.939$, $p = .004$, so the ANOVA was followed up with simple contrasts. Mestizo women in Comparison 2 were 0.063 ± .019 further from their ideal lower body shape than Creole women (97.5% CI, .019 to .106), $p = .004$.

Media influence and DS

There were no significant correlations between DS-BMI and media viewing or media belief measures. Of the remaining potential predictor variables, only actual BMI was significantly associated with DS-BMI, $r = .767$, $n = 62$, $p < .0005$. DS-WHR was not significantly associated with any of the media viewing or media belief measures. Of the other predictor variables, only actual WHR was significantly associated with DS-WHR, $r = .645$, $n = 62$, $p < .001$.

Dieting

Participants were asked if they were trying to lose weight, stay the same weight, or gain weight. As a measure of dissatisfaction with body size in the hypothesized direction, responses to this item were coded into a dichotomous variable – 'dieting' reflecting whether participants were trying to lose weight or not. See Table 5.3 for percentages and numbers of women dieting in each location group sample. A Chi-Square test showed there was no association between location group and likelihood of dieting, $\chi^2 = 2.94$, $df = 4$, $p = .559$.

Media influence as a predictor of dieting

Based on previous findings (Boothroyd et al., 2016) a binomial logistic regression was carried out to assess the contribution of television viewing (TVE) and actual BMI on likelihood of dieting. Both variables were linearly related to the logit of the independent variable. The model was significant, $\chi 2\ (2) = 32.050$, $p < .0005$, and explained 55.1% of the variance in weight status. The model correctly classified 85.5% of cases. However only actual BMI, and not TVE, significantly contributed to the model.

5.4.8 Body shape concerns.

See Table 5.5 for means and standard deviations of BSQ scores by location group. The BSQ scores demonstrated sufficient internal consistency, determined by a Cronbach's alpha of 0.8. A LOG10 transformation was applied to the data before running ANOVA to compare location group means. Although means scores in Pedregal appeared somewhat lower than the other two samples (see boxplots in Figure 5-2), suggesting less body shape concerns among low TVE women, differences were non-significant, $F(2,59) = 3.069$, $p = .054$, so simple contrasts were not carried out for Comparisons 1 or 2.

Predictors of body shape concerns

A series of Pearson's correlations were run to look for predictors of BSQ scores. The significance level of the *p* value was adjusted to 0.01 (.05/5) to allow for multiple correlations. Only actual BMI and PRESSURE+ remained significantly correlated with the transformed BSQ scores so were entered into a multiple regression. Both variables significantly contributed to the model, $F(2, 59) = 29.515$, $p < .0001$, $R^2 = .50$.

To determine if there was an association of body shape concern with dieting, a dichotomous variable was first created from BSQ-8c scores by using a cut-off point of 19 to identify participants with body shape concerns (Evans & Dolan, 1993). A chi-square test was then conducted. All expected cell counts were higher than five. There was a highly significant association between body shape concern and dieting behaviour, $\chi 2\ (1) = 18.02$, $p < .0005$.

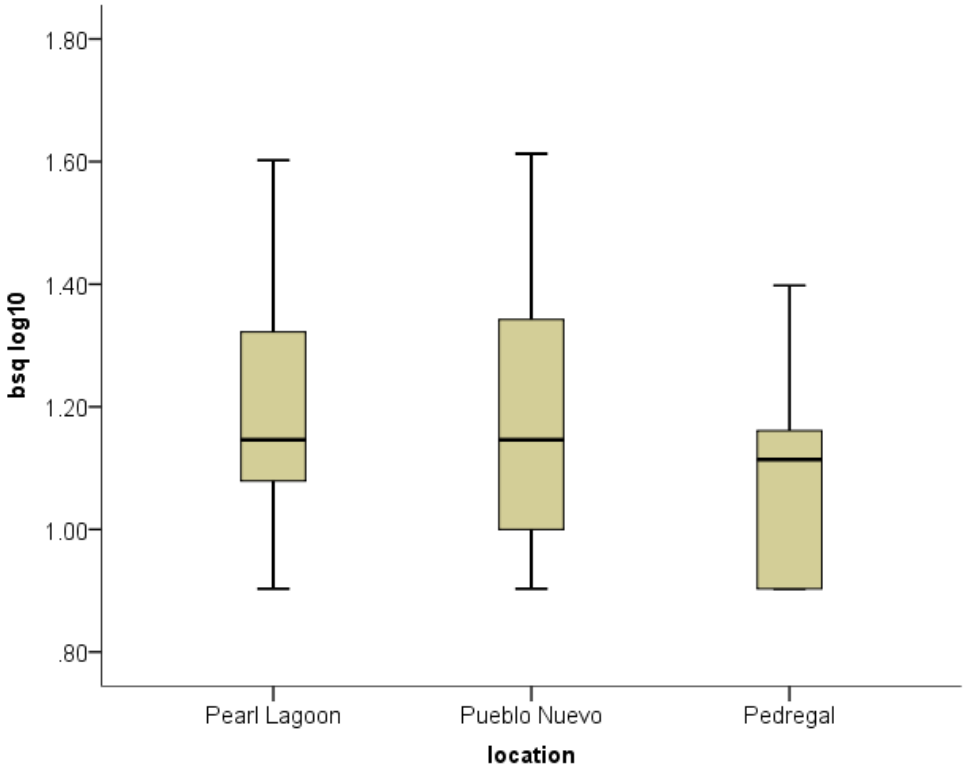


Figure 5.2. Log10 transformed scores for BSQ 8-c by location group. Boxes represent the interquartile range (IQR). Horizontal black lines are the medians, and whiskers indicate maximum and minimum scores in the distributions

5.4.9 Disordered eating behaviours

Cronbach's alpha for EAT-26 scores was acceptable at 0.84. See Table 5.5 for unadjusted means and standard deviations for EAT scores by location group. The non-normal data were transformed using a square root before running ANOVA. There were no significant differences in location group means, $F(2, 59) = 0.756$, $p = .474$. Correlational analyses were used to examine the strength of the associations between EAT scores and potential predictors based on the sociocultural model of disordered eating shown in Figure 5-1(Stice, 2001). Significance level of *p* values was adjusted for multiple comparisons to .0167 (.05/3). Predictor variables actual BMI, PRESSURE+ and BSQ scores were significantly correlated with EAT scores, so a hierarchical regression was carried out. Actual BMI was entered in the first model, followed by PRESSURE+ in the second model, and BSQ scores in the third model. The full model was significant, $F(3, 58) = 11.433$, $p < .0005$, $R^2 = .372$. Change in R^2 of all models was significant.

Ethnic differences in disordered eating

To assess if Creole women and Mestizo women who consumed comparable quantities of media had differing levels of eating concerns, a dichotomous variable was calculated using a cut-off of 15 to represent a high disordered eating behaviour score. A score of 20 is commonly used to detect disordered eating behaviours at the clinical level, but this study was looking for signs of difference in what may be still relatively low levels of disordered eating in this population. Of the 40 Mestizo participants, 6 (15%) had scores higher than 15, and among 22 Creole participants, 2 (9.1%) had similarly high scores. A one-sided Fisher's exact showed no significant association of higher EAT scores with ethnic group, p = .406.

Table 5.6. Associations between EAT scores, actual BMI, PRESSURE+, BSQ scores and BAS scores by ethnic group

	1	2	3	4	5
1 EAT		.517**	.372*	.531**	-.275
2 BMI	.059		.200	.576**	.078
3 PRESSURE+	.383	-.054		.579**	.-.378*
4 BSQ	.637**	.534*	.579**		-.212
5 BAS	-.500*	-.208	-.658**	-.759**	

* p <.05; ** p < .005. Top half of table shows correlations for 40 Mestizo participants, the bottom half shows correlations for 21 Creole participants.

Table 5.6 shows associations between EAT scores and predictor variables in the model separately for each ethnic group. A hierarchical regression model was run for all Mestizo participants. F change of all models was significant (see Table 5.7), with the final model explaining over 40% of the variance in EAT scores, $F(3, 36) = 8.035$, $p < .0001$, $R^2 = .401$. The Creole sample was too small to allow a similar hierarchical regression analysis.

Table 5.7. Hierarchical multiple regressions predicting EAT scores from actual BMI, media pressure (PRESSURE+) and body shape concerns (BSQ) for Mestizo women

	EAT scores		*β*	*t*	*p*
Mestizo females	First model[1]	BMI	.484	3.406	.002
	Second model[2]	BMI	.426	3.064	.004
		PRESSURE+	.289	2.081	.044
	Third model[3]	BMI	.275	1.648	.108
		PRESSURE+	.137	.819	.418
		BSQ log10	.315	1.570	.125

1. R^2 = .23, $F(1, 38)$ = 11.60, p = .002; 2. R^2 = .31, $F(2, 37)$ = 8.48, p = .001; 3. R^2 = .36, $F(3, 36)$ = 6.70, p = .001.

5.5 Summary of key results

- There was no significant difference in the ideal body size of women in the three locations.
- Relative to women in low TVE Pedregal, women in high TVE Pueblo had a curvier ideal body shape.
- High TVE Mestizo women had significantly higher media belief than both low TVE Mestizo women and high TVE Creole women.
- Media exposure was not associated with ideal body size.
- Higher media exposure was associated with a curvier ideal body shape.
- Body satisfaction was lower among women in the high TVE groups than in the low TVE group.
- Higher media belief was associated with lower body satisfaction.
- Among Mestizo women in particular, disordered eating behaviours were predicted by media pressure, women's own BMI, and body shape concerns. Among Creole women disordered eating behaviours were not associated with their own BMI or media belief.

Overall, the trend in results suggests that Mestizo women with high media exposure had higher dissatisfaction with body weight and shape than both Mestizo women with relatively low media exposure and Creole women with high media exposure.

There were also ethnic differences in what predicted disordered eating: among Mestizo women their own BMI, media belief and body shape concerns all predicted disordered eating but among Creole women, body shape concerns alone predicted the same.

Table 5.8. Summary of group differences in media beliefs, body ideals and body dissatisfaction for Comparison 1 and Comparison 2

	Comparison 1 High TVE / low TVE	Comparison 2 Mestizo / Creole
Ideal body size	NO	NO
Ideal body shape	**SOME**	NO
Media beliefs	**YES**	**YES**
Body dissatisfaction	**SOME**	**SOME**

5.6 Discussion

This study investigated the influence of media exposure on young women's body ideals and body image in rural Nicaragua. Using figure modelling software, participants were able to create their ideal bodies in 3D. Existing and validated psychometric measures were employed to measure women's attitudes towards, and internalisation of media ideals, body satisfaction, body shape concerns and disordered eating behaviours.

5.6.1 Media influence on women's body ideals

The prediction that high TVE groups would have a slimmer ideal body than the Low TVE group was not supported. Women in high TVE Pueblo did create the predicted curvier upper body than women in low TVE Pedregal, although the difference just fell short of statistical significance. In contrast to previous studies within a Nicaraguan population (Boothroyd et al., 2016; Jucker et al., 2017), media exposure or belief in media was not associated with women's ideal body size. However preferences for a curvier body shape were predicted by Western media exposure, supporting findings from previous research (Harrison, 2003).

As predicted, the Mestizo women in high TVE Pueblo had much a higher belief in media ideals than those in low TVE Pedregal. Furthermore, and supporting previous research (Chin Evans & McConnell, 2003) racially Black Creole women had significantly lower belief in

media's appearance ideals than Mestizo women, even though statistically they watched identical amounts of television. This suggests that media belief and internalisation are more useful measures of media impact on body image than simply quantity of television viewing. Watching television per se is not necessarily the same as being exposed to specifically appearance-focused visual content: someone watching *novelas* for four hours every day is more likely to be exposed to, and potentially internalize, media messages about appearance ideals than someone who watches four hours of, for example, programmes such as 'Animal Planet' every day. Creole women's lower belief in media could result from simply watching less appearance focused content, or from not being influenced by it to the same degree as Mestizo women. As previously discussed, social comparison theory argues that comparisons will be made with individuals who you consider to be roughly 'comparable', therefore Black Creole women may identify less with women appearing on television, because the vast majority of them are not Black. In the U.S, less than 20% of the people that appear on prime Time TV shows are Black, although that figure roughly reflects the percentage of Black Americans in the population (Tukachinsky, Mastro, & Yarchi, 2015). Around the Pearl Lagoon Basin, however, the percentage of Black people in the population is much higher than the percentage of Black people seen on television, meaning that potentially there is less opportunity provided by television for meaningful appearance comparisons for Black women than for Mestizo women.

5.6.2 Media influence on women's body image

It was predicted that women in high TVE Pueblo would have lower levels of general body satisfaction than the low TVE Pedregal. Indeed, in Comparison 1, women in Pedregal were on average more satisfied with their bodies than those in Pueblo. In Comparison 2, there was no difference in women's body satisfaction in Pueblo and Lagoon. Across the sample lower BAS scores were strongly and significantly predicted by higher media pressure and internalization, supporting the prediction that higher media exposure would be associated with lower levels of body satisfaction. However, in general BAS scores were high relative to both Black and White women in Western samples (Cotter et al., 2015).

Mestizo women in Pueblo were significantly further from their ideal lower body shape than Creole women. It is worth noting here that the women in the Pueblo sample had a significantly higher own BMI and own WHR than those in the Lagoon sample (probably due

to the age difference of the samples), meaning the differences in discrepancy scores resulted not from having slimmer and curvier body ideals, but from having a heavier actual body. Nevertheless, the desire to have a comparable body size and shape to their already slimmer Creole compatriots indicates the beginnings of dissatisfaction with body size and shape, even if it is driven from being slightly overweight, rather than a desire to have an underweight body size. That more women were trying to lose weight in Pueblo than in Lagoon, and twice as many than in Pedregal, further demonstrates the relatively high levels of body dissatisfaction among Mestizo women who watch a lot of television.

5.6.3 Testing the sociocultural model

While there were no big group differences in BSQ scores and EAT scores, correlational and regression analyses showed that body shape concerns and eating behaviours were significantly associated with own BMI and media belief, confirming existing findings (Rousseau, Rusinek, Valls, & Callahan, 2011) and adding support to the validity of the sociocultural model of disordered eating (Stice, 2001).

Predictors of disordered eating in the model differed for the two ethnic groups: Among Creole women only body shape concerns, and not own BMI and media belief, predicted disordered eating. Previous evidence indeed suggests that Black women, especially those with a strong ethnic identity, are less likely to experience dissatisfaction with their weight because they are more accepting of a range of body sizes (Hart et al., 2016). Additionally, a full and curvaceous body shape, which is not dependent purely upon a certain body weight or BMI, is often more central to Black women's ideal body type (Gordon, Castro, Sitnikov, & Holm-Denoma, 2010; Overstreet et al., 2010). Therefore women of racially Black ethnic groups such as the Creole women in this study may be less likely to modify their eating behaviour in service of having a lower body weight. Moreover, Black women may experience less media pressure, and therefore less internalisation, than White women, suggesting ethnic identity can be a protective factor (Cotter et al., 2015) and predict a healthier body image (Schooler et al., 2004). This may be because Black women do not compare themselves to the mainstream 'White' standards of appearance that predominate the television. Even in Latin America appearance-focused content - *novelas* in particular - is populated with lighter skinned, European-looking characters, with very little representation of indigenous or Black minority ethnic groups (Rivadeneyra, 2011). This could explain why neither media exposure

nor media belief predicted disordered eating among the Creole women. Conversely, and according with social comparison theory, Mestizo women could be considered phenotypically closer so were more likely to upwardly compare themselves to women portrayed on Nicaraguan television (particularly women in the *novelas*), but distal enough from those ideals to feel dissatisfaction from the comparison.

5.6.4 Study limitations

There are several limitations to this study. Firstly, due to the relatively time-consuming methodology and challenging field conditions, sample sizes were necessarily small. Secondly, findings from this study are only correlational and so no causal relationships can be inferred. Future studies in which the same participants are retested would help identify if media exposure predicts body ideals and preceded body image concerns.

There is also the need to examine Nicaraguan women's attitudes towards appearance in greater depth; whether their 'appearance schemas' are based on body size and shape, or on other features such as hair texture, skin colour or even body movement - as was found when discussing female attractiveness with Nicaraguan men (see Chapter 4). Therefore, in the following chapter, using qualitative methods, I further investigate women's ideas and beliefs about their appearance and their bodies, and their attitudes towards, and use of television in a series of focus group discussions.

5.6.5 Conclusion

To conclude, women in the Pearl Lagoon region of Nicaragua do experience media influence on their body ideals and body image in similar ways to women in other populations but with some differences, particularly between ethnic groups. Mestizo women, especially those with relatively high television consumption, appeared to have a more negative experience of their body image than Creole women. Creole women seemed to be more 'protected' by their ethnic group identity possibly due to the lack of identification with mainstream appearance ideals that tend to dominate Nicaraguan satellite television, although more research would be needed to confirm this. The findings contribute considerably to the existing body of literature: That the research was carried out in a non-Western, non-White population further adds to the value of these findings. The negative effect of exposure to appearance-related media imagery and messages is a risk factor for body dissatisfaction that can

potentially be eliminated or at least minimised (theoretically at least). Interventions based on increasing media literacy and cognitive dissonance are making some headway in changing people's perceptions of media's fantastical standards of beauty (Halliwell, Jarman, McNamara, Risdon, & Jankowski, 2015). Further work would benefit from implementing longitudinal studies among a variety of cultural settings and ethnic groups.

Chapter 6. Study 4: Women's appearance ideals qualitative study

6.1 Introduction

The aim of this study was to follow up the quantitative study discussed in Chapter 5 and further investigate Nicaraguan women's appearance ideals, body image and media influence using qualitative methods, specifically focus groups. Previous studies using qualitative methods among minority ethnic groups both in Western populations (Schooler, 2008; Webb, Warren-Findlow, Chou, & Adams, 2013) and in non-Western settings (Anderson-Fye, 2004; Becker, 2004; Becker et al., 2002; De Casanova, 2004) have yielded rich and nuanced data and contributed to our understanding of how factors in different cultural contexts shape or impact upon women's body image, and ultimately their physical and psychological well-being. Furthermore, qualitative methods can reveal previously unconsidered or unstudied dimensions of body image. For example, a study that avoided using 'thinness' as a measure of body dissatisfaction, found that among Black Americans, hair was the most salient ideal appearance trait, followed by a toned physique, flat stomach, clear skin and a big butt (Capodilupo, 2015). Understanding the role and influence of ethnic group identity in particular may be better achieved through hearing the voices of women who belong to those groups, rather than approaching the subject with prepared questions or hypotheses that are often 'whitened' or biased assumptions about the experiences of people in minority ethnic groups. Certainly findings from Study 2 which examined Nicaraguan men's female body ideals revealed that a woman's attractiveness was not dependent upon a specific body size. The current study similarly aimed to look beyond body size and shape as measures of Nicaraguan women's appearance ideals and body image and to listen for ethnic differences in their expression.

6.2 Method

6.2.1 Participants

Four focus group sessions were run over the course of a year, two in Lagoon (known hereafter as L1 and L2) and two in Pueblo (P1 and P2). Six women attended each session. Participant age ranges for groups L1 and L2 were 15-18 and 17-42 respectively, and for

groups P1 and P2 were 17-40 and 20-45 respectively. All participants in Lagoon self-identified as Creole and all those in Pueblo as Mestizo.

6.2.2 Procedure

I moderated all of the sessions myself. The Lagoon sessions were conducted in English and Creole and the sessions in Pueblo were conducted in Spanish. Although I speak and understand Spanish to a fairly high level, I employed the aid of a local woman who was fluent in both Spanish and Creole to assist me if necessary in the Pueblo sessions. A short introduction was given to participants at the beginning of each session explaining that we were interested in finding out about Nicaraguan women's opinions on their appearance, body image and television. They were informed that they were free to leave at any point during the session and were not obligated to answer any questions. All discussions were started with a set of key questions but conversation was left to flow in whatever direction until the topic subsided, at which point the discussion would be brought back to the key questions.

The key questions in each session were:

- What aspects of your appearance or body are important for you?
- What is considered the perfect female body in your culture?
- What kind of woman is a man attracted to?
- Are you always happy with your appearance or body?
- Have you ever done something to change your appearance?
- When did you start watching TV?
- What do you like to watch on TV?
- Does TV reflect reality?
- What kind of women do you see on TV?
- What is the use of TV?

All of the sessions were video recorded with the verbal consent of all participants. The camera was placed at some distance behind the group so as not to be too distracting to the participants. Using video as opposed to audio made later transcription easier and more accurate and captured additional non-verbal information such as hand gestures. Each session ran for about an hour.

6.3 Data analysis

Transcripts were transcribed verbatim and then translated from Spanish in to English where necessary. The data were then organized and coded using NVivo 11 software. Each participant was given a unique code containing location, session number and an initial for their name (e.g., Ana in the first Lagoon session would be L1A). The researcher (myself) was coded as TT. I used the same methodological approach to the thematic analysis of the data as described in 4.9. See 8.9 Appendix F for a list of the main headings and subheadings initially created in NVivo. Coding and organizing of the data was discussed with Dr. Lynda Boothroyd (co-supervisor and project lead), and to reach consensus regarding the final themes.

6.4 Summary of findings

The main themes arrived at were: Not all about the body: local women's appearance ideals; local cultural body ideals: shape over size; what women think men like; 'I feel good as I am': women's appearance satisfaction; dieting; social comparison and influence of others; the influence of religion and God on women's body image; television viewing habits; television influence on women's appearance and body ideals; the paradoxical influence of TV on women's behaviour. In the next section, I describe the main themes and illustrate them with a selection of quotations. I then go on to synthesize and discuss the main findings and close with concluding remarks.

6.4.1 Not all about the body: local women's appearance ideals

The first question asked in all the sessions was 'what aspects of your appearance or your body are important to you'. Most women began by talking about the importance of their hair and clothes to their appearance and how they felt about themselves. In L1, one young participant commented that she liked to wear her hair in a curly pony tail because that was how she felt most comfortable. A participant in P1 also discussed first the importance of how her hair looked, however the emphasis was on how she might appear to others rather than how she felt about her hair herself:

'*when I leave the house I have to do my hair right, check everything and see if the hairstyle suits me well or not because if it looks bad I'd rather not leave'.* P1M.

Clothing was frequently discussed and was clearly an important aspect of the women's appearance. Some women wore clothing that allowed them to feel comfortable and thus 'as themselves', while others were more focused on how clothing made their body look:

'[what] I consider important is the way I dress, I always like to dress feeling comfortable and to myself (to suit me)…just feel comfortable'. L2V.

'I like clothes tight … I don't know … show my shape or something, I don't like slack (loose) clothes'. L1Z.

Clothing had the potential to change women's feelings about or experience of their body size. In L2, two women agreed that they didn't like wearing 'slack' clothes not because of how they made their bodies look to others, but because of how it made them feel inside their own body. One women was very large, and the other one was very slim, but both of them experienced similar feelings when they wore loose fitting clothing:

L2D – *'I like to dress in clothes that are very tight, I don't like clothes that fit me slack'*

TT – *'and why do you like tight clothes and not slack clothes?'*

L2D – *'because I don't feel comfortable in slack clothes'*

TT – *'but what do you feel when you're in slack clothes, what do they make you feel like?'*

L2D – *'like I'm too big…I'm too big'*

L2T – (agreeing) *'I use tight clothes because if I use like big clothes I just… it just make me feel like fat...I don't like that feeling'*

Conversely, in P1, a woman in her forties commented that she did not like to wear tight clothing, not because it made her feel uncomfortable in her own self, but because it would make her feel 'socially' uncomfortable by not reflecting her social identity:

'I feel good like this, dressing in long and loose clothing ... I don't like tight fitted clothing, because I have to show what I am... I don't like to pretend or dress like how someone else does… each person and her opinion'. P1J.

6.4.2 Local cultural body ideals: shape over size

When asked to describe the ideal female body in their culture, in general women tended to refer to body shape more than weight. However, there were some differences between ethnic groups. Creole women in the Lagoon focus groups did not mention body weight specifically but used the terms 'thick' and 'solid', suggesting that a body size at the upper end of the normal BMI range, possibly heavier, was culturally valued. In general, the Creole women in Lagoon focused more on the shape of the body when discussing their ideas of an attractive female body. As the women explained:

L2C - *'Like here we would say a coca cola shape, and spaghetti shape … spaghetti waist'*

L2V - *(agreeing) 'What we call switchy'*

L2C - *'Coca cola shape because your waist are small and the hips wide'*

In the Pueblo focus groups women tended to mention slimness first in their descriptions of the ideal female body; '[a body] which is not very fat… but a normal body, slim like that'. P2A. Nevertheless shape was also clearly important to ideas about how women's bodies should look, although the buttocks were mentioned less than in the Lagoon sessions. In Pueblo, breasts featured in discussions a lot more frequently than in Lagoon and women also mentioned the need to have a toned, or gym-worked body;

P1J – *'Slim waist, flat stomach, hips, nice breasts, toned arms and shoulders that's the ideal woman'*

P1M – *'Alsadita… has muscles, toned'*

P1J – *'that's how a good body looks'*

Several Mestizo women in P1 described how '*los morenos*' have a distinctly different physical appearance from themselves. *Moreno* is a widely used Latin American term for people of afro descent: in this study, the term was used to refer to local people of Creole and Garifuna ethnicities.

P1M – '*Morenas, some have nothing up front but have hips … they look more or less ok from here downwards …but from here upwards (indicates the chest) they don't have anything'*

TT – *'So you think there are differences in the body shape of morenas and Mestizo women?'*

P1M - *'Exactly, example most morenas have a good body … they have breasts and hips and a slim body the only thing is their faces are not very pretty, but sometimes they do have'*

P1J – *'Even if they are very black in their colour, their bodies are nearly always elegant'*

P1M – *'I don't know why the moreno race have a big boonkah in women and men, sometimes the men have more than the women … sometimes it happens that when a black man is walking he looks like a woman from behind ... but most morenas have a good body, even if the face is strange the body is good'.*

Most women in the Lagoon groups and several in the Pueblo groups made references to famous singers and media celebrities to illustrate the kind of body they thought was attractive, including Beyonce, Rihanna, Kim Kardashian, Nikki Minaj and Jennifer Lopez.

'Well, she (Jennifer Lopez) has quite a curvy body, nice buttocks, she is not skinny, she has a beautiful body'. P2G.

'Becky G (Latin American singer) *I like see she* (I like how she looks) *in her shape… She not exaggerating because she no put silicone, just her natural beauty and I love it.'* L1H.

6.4.3 What women think men like

In L1, the young women described the type of girls the guys in their community were attracted to: 'some like tit girls because they're strong!' Several girls agreed that guys prefer heavier girls 'girl with skin, not bony', because 'when him want touch, him want feel'. Another girl suggested that guys like the 'big body girl' because they look older and that slim girls like herself look too young and immature. In L2, several women commented that men don't like women to have 'too much breast' or be 'too heavy'. Most women believed that the boonkah (Creole for butt) is key to men's judgments of female attractiveness although they couldn't explain why:

'Well really I don't know neither why the men them like women with big butts but that's really what the men them here like. When the woman, the girls them, that have big butt have on like a tight jeans or something men are just wow, look at that ass going there!' L2V.

However, the women went on to state that in reality men in their community will go with a woman of any size or shape: they recounted how men they knew had left an attractive

partner to go with another women who was not as attractive in their opinion, or had left a slim woman for an overweight woman or vice versa.

'You really cannot say specifically here in Pearl Lagoon what really attract man, if it's the appearance, if it's the way my body looks, if it's the way my face looks, if it's the way I go about myself, if I am a professional or not, you cannot see that. They are just how they are' L2V.

Women in P1 similarly acknowledged that men in their community were attracted to a woman's body but were somewhat perplexed by the inconsistencies in men's behaviour towards women's physical appearance:

'The body of women attracts the men, tall, buxom, so that's how I see men ... sometimes they too look at the character but they also look at the body, they like the body more'. P1S.

'I've heard it sometimes, women say my husband does not like me because I have too much breasts or does not like me because I've got big hips'. P1M.

In P2 some participants spoke despairingly about men's attitudes towards women, while others were more accepting of the perceived macho attitude of the men in their community. As in the other focus groups, there was some ambiguity around whether a woman's looks were important to men or not. While some women agreed that men were attracted to a 'beautiful body', most believed that for men, an attractive woman was someone who was well presented, dressed in the culturally acceptable way, rather than having a particular body type. One woman commented that while men might like to see a woman with an attractive body, if it is 'just for a fuck', then they will go with any woman if she is respectable regardless of her body, adding 'that is how the majority of men are'.

6.4.4 'I feel good as I am': Women's appearance satisfaction

Overall, across the groups women were quite satisfied with their appearance. Creole women in Lagoon seemed to have a sense of self confidence in their appearance which was generated by how they felt about themselves as persons which then determined how they related to their bodies:

'What's most important to me as I said before is the way how I feel about myself and feeling comfortable about my own self, how I am, that's [what] *I feel* [is] *important about my appearance'.* L2V.

In Pueblo, women tended to discuss their appearance satisfaction through the lens of body size or shape to a greater extent than women in Lagoon.

'I feel good as I am, I am slim and I feel super good … I don't want to get skinnier or put on weight'. P2G.

Several women in the Pueblo groups commented that although their body was not perfect they were happy or satisfied with it:

'…I was a little bit slimmer - now I'm a mother, I have a baby - and even though my body has grown a bit I feel satisfied with it'. P1M.

'I feel good with my body, maybe it's not the most beautiful but I feel ok with it… the only thing perhaps that I would like to have had differently is to be a bit taller, and I would like my hair to be curly … these are the two [things] that perhaps sometimes I would like, but my body is good'. P1S.

While most women were happy with their body, one or two participants believed that changing their body size or shape would improve how they felt about themselves: as one young lady in L1 stated:

'Well the onliest thing what I no like is my shape. I want to get skinnier and have a nice body, but well this is just my nature'. L1H.

Another girl in the same group believed she was rather too slim and wanted to gain weight, to 'get a lickle more solid'. However, she still valued her body shape as attractive, quickly adding '… I slim yeh, but I no straight neither!'

There was also evidence that women's attitudes towards and feelings about their appearance could fluctuate on a daily basis, particularly the younger women in Lagoon 1 as this conversation illustrates:

L1S - *'In the morning when I wake up, well sometimes, I doesn't like to see myself and sometimes I will say ooh I look good!'*

L1M - *'Just like sometimes I look in the glass (mirror) and I would say ah, this dry (afro) hair! Or something like that, or oh god, I'm getting fat!'*

L1H - *'Some mornings I would get up and look in the mirror and I would say, I getting meagre* (thin)*! And the next morning, what I eat last night! Why I look so bloat* (bloated) *today?!'*

L1Z - *'What I hate is when I get up and I find big pimples on my face, oh my god I just feel for dead* (feel like dying)!'

Some women were keen to tell about the attitudes to appearance within their community, often speaking on behalf of their community as if all of its members were of the same mind:

'Here in Pearl Lagoon I think everybody is like good with themselves … in other place[s] you have people always … they're not satisfied with something on the body, they want to make surgery on their nose, they want to make surgery on the somewhere of them, put big boobs or something, never satisfied with what they have. But here the womans (women) *in our community they are much satisfied and comfortable with the way they are, the way they look. Some of us are skinny, some of us are not ...'* L2V.

6.4.5 Dieting

While one young participant in L1 admitted to previously dieting because she was concerned with how her body looked, the others in the group insisted that they didn't diet, saying that dieting is for the 'old people'. They saw no need to diet because they stayed slim by being active and thus 'keep sweating plenty'' which they understood as the way the body loses weight. However, when they talked about special occasions such as weddings, or going to the beach at Easter, the girls admitted that it was vital to look good in their outfit or swimsuit and would diet if needed for those occasions. Women in L2 didn't consider dieting as something they would engage in unless the doctor had told them to do so for health reasons:

'I wouldn't eat or go on strict diet I wouldn't feel good to myself, just to do things to please my friend or what someone say about me … but not pleasing my own self.' L2V.

By contrast, most women in the Pueblo groups seemed very familiar with dieting and other techniques to keep their bodies in a certain way. Dieting methods mostly were based on eating less or simply skipping meals:

'My diet is simply not eating an evening meal'. P1Z.

'I don't eat until midday - I don't eat anything for breakfast - at lunchtime I eat my meal and in the evening I don't eat anything, I don't eat much I eat little'. P1J.

'I want to lose some weight, to do a diet to lose a little more because I get tired when I walk… I would like to lose weight in general to be slimmer.' P2E.

'I have two meal times and nothing more… I have breakfast with bread and a cup of coffee at 8am… 11am I have lunch …and at 2 to 3 pm I fast. If I ate three times I'd be fatter.' P2D.

In general, women did not report changing the type of food they ate when dieting, although one participant who had lived for some time in Managua suggested; 'for breakfast a glass of milk, a little something for lunch, and dinner a glass of oats without sugar. Your belly doesn't hang'. The same woman also observed that in Managua it was already very popular to go to the gym and went on to describe the benefits of working out regularly:

'[when I lived in Managua] *I would go to the gym but when you go your body hurts a lot and then you don't look wobbly, the body becomes muscular, and you have different legs so there are things that change and that's a bit like a diet* '. P1M.

Several other women in the Pueblo groups also knew about the dieting and exercising behaviours of women in Managua, because 'people don't want to see themselves fat in the city'.

6.4.6 Social comparison and the influence of others

While mothers were occasionally mentioned as role models and sources of information about appearance, many participants insisted that they did not compare themselves to other women, or pay any attention to what others thought about their appearance:

'I like the way I be, how I shape, everything, I no matter what the people say you know, I just love the way I is, the way I am, I no matter (don't care) what people say about me, that's how I is'. L2K.

'Because the truth to me what matters is the way how I feel, do things what make I feel like (says her name), not make I feel like someone else just to please what people say, what people think about me. I do things to please myself and to make myself happy and when I am happy I know I will live ooh! Long, long, long!' L2V.

However, one young woman in L1 compared herself to her peers when she explained to me why she wanted to lose weight:

'Because, I just …when I see them (indicates towards the other participants) *all of them are skinny and I would want to be like that but I can't* (slaps her thigh in a resigned way). *I'm just big!'* L1H.

In the Pueblo focus groups, women frequently referred to the opinions of others when they spoke about their appearance while at the same time insisting that they didn't care about those opinions. Their comments however, implicitly suggested that they certainly took them into account:

'There are times that I don't care if people think I look ugly or fat or however they see me. But if I feel good in myself that is all. Although I don't pay it any attention I don't like to hear the whispers'. P1M.

One older woman described how her age necessitated changing her attitude towards her appearance: being perceived by others as an attractive woman was no longer socially appropriate:

'When I was young … I didn't dress like this (in loose clothes) because a young person has to maintain their appearance … mostly to look sexy to the men. For this you need to dress up … so that the men will see you as acceptable and the people say that you look good ... but now with my age it's not fitting that I'll go about with tight clothes, sleeves to here, showing everything here, I would be embarrassed to show my body … I feel that now it's not the same as when I was young … my skin is wrinkled more than anything … the skin is sagging, it's not tight anymore and so I would be embarrassed to dress in that way … I don't have to give that example, now I have to be another example because now they don't see me as beautiful'. P1J.

6.4.7 The influence of religion and God on women's body image

Across all the groups most of the women expressed a belief in the sanctity of the body that God had given them. Although women sometimes spoke about changing their bodies in non-permanent ways, such as dieting, changing their hairstyle, wearing make-up or shape-enhancing clothes, none of them endorsed any kind of cosmetic surgery, even though they acknowledged that many women in other places do:

'If God made me like this, this is how I am …if I had a huge backside with a chest out to here I would want to leave me like that because that's how I am … even if I had lots of money to fix up my body I wouldn't do it because like this is how God made me ... I say thanks to God that I'm alive'. P1J.

'Maybe they [have plastic surgery] more for next (other) people to look on them ... they are worried about what I would say about them but we are not, we are thankful to God that he send us this way'. L2V.

'…a woman passes in front of me who has twice the buttocks that I have and I say ah I wish I was like her, am I going to have surgery … but if I have in my mind that God created me and he wanted me like this with my little breasts, he wanted me skinny, wanted me with little buttocks … I'm going to obey because God loved me, like this he made me …I don't need to love myself more than God does, because that is like I want to do more than God.. If God left me like this I have to be like this… thank God in this place where we live religion is very influential'. P1M.

Women in Pueblo emphasized the importance of wearing certain types of clothing to church. Clothing that revealed the body too much was considered inappropriate for entering into God's house, and would result in other people in the community regarding a woman as '*vaga*' (inhabits the street' rather than stays at home) and therefore not respectable. For these Mestizo women, dressing modestly and simply for church and for God was essential. Women in Lagoon also understood church to be a place where women needed to consider their appearance but the emphasis was rather more on 'dressing up', wearing your best clothes for these occasions, rather than dressing very modestly.

6.4.8 Television viewing habits

While all of the participants in Lagoon reported having access to television all their lives, the same was not the case for women in the Pueblo groups: some women had been watching TV for as little as 5 years. Across all groups, the majority of women reported watching some TV every day although several women watched it much less frequently. In Pueblo, not all of the participants had satellite television. Among younger women, spending time on the internet via their smartphones was more popular than watching television. In all focus groups *novelas* were the predominant preferred viewing content. In L1 other favourite content mentioned included variety shows like '*Sabado Gigante'*, cartoons, Beauty pageant reality show '*Nuestra Belleza Latina'*, music channels, African films and Hollywood films. A few of the girls also liked to watch religious programmes with preaching, others thought those kind of shows were awful. In L2 women mostly watched *novelas*, preferring those from Colombia, Mexico and the *Telemundo* TV channel. They also reported watching the Discovery Channel, news, crime shows, music TV and documentaries. In the Pueblo sessions women predominantly reported watching *novelas*, but also mentioned news, pseudo-reality courtroom show '*Caso Cerado'*, cartoons and Mexican Western cowboy films. When asked, a few women said they sometimes watched music channels and health programmes.

6.4.9 Television influence on body ideals and women's appearance

Some participants stated that the women shown on TV 'always got good bodies, never anyone with a bad body', and people with 'fat' bodies were hardly shown. Participants commented that attractive women could be seen in news programmes, reality TV shows, beauty pageants, and most of all in *novelas*. Most women agreed that the range of female body types shown in *novelas* was rather limited. The majority of female characters were 'skinny *modelos*' or played by actresses with a 'pretty body'. They commented that it was rare to see an overweight woman in a *novela*, especially in a leading role.

'In the novela the ladies them they are skinny, always skinny … The star girl (leading actress) *it doesn't see that she's like someone who is fat, always you see someone who is skinny she look good, attractive with blue eyes'.* L2V.

'In the novelas, they are tall, slim, with boonkah, nice faces, yes everything is good, I see that everything looks good'. P1S.

Across all groups women frequently referred to actresses in *novelas* when describing their body ideals:

'You know who? Sofia, in Hasta El Fin Del Mundo, she have a nasty (attractive) *body'*. L1M.

'Like the one in the novela Woman of Steel, tall, good body, and her hair'. P1M.

Television in general was perceived as having both a positive and a negative influence on women's appearance. Younger women in particular viewed TV as a good source of appearance information, discussing how they had learned to apply make-up, do hairstyles and get ideas about what clothes to wear:

'We learn from people, but from the television now because there are many fashion shows whether its shoes, clothes, whatever, but we have always learned like that'. P1M.

'I don't know like for say it but it just like, example, you know watching TV, like see something, you could say well, that person look good…and well, you like this style so you try it for do it yourself'. L1S.

'I did like see that video … Watch out for this, it's a Jamaican video with Busy Signal … these girls had on these high top tennis and these high waist pants… I was like wow, that looks good … and I went over there when they open a parcel (a package of second hand clothes) *where they sell clothes over there and I find this pants look just like it and I had to buy it!* L1Z.

However, several participants also commented that television, particularly the *novelas*, had the potential to make women feel less than happy about their appearance

'They are woman [on TV] *who are like plastic… So then women think they need to look like them'*. P2B.

'Few novela you see with someone that [is] *fat … most novela give you the impression or make you feel like I'm too fat I need to get … dunno, I need to look like her'*. L2V.

Women across the focus groups were aware of cosmetic surgery and frequently made remarks about how women in other places, particularly those they had seen on television, would have botox, and put silicone breast or buttock implants. Generally, cosmetic enhancements were perceived negatively and none of the women regarded cosmetic

surgery as an option for themselves. However, several participants acknowledged that there were women in their country who had surgery and that if more Nicaraguans had better economic resources it would be more prevalent.

6.4.10 The paradoxical influence of TV on women's behaviour

While television was considered valuable for informing and entertaining people, many of the women talked about how television could potentially negatively affect people's behaviour and the way they live their lives, often for the worse as one woman in Pueblo 2 explained:

'I do not watch the news in my house because the news transmits programs that should not be broadcast. For example, if they cut off the head of a man they show it live and direct as how the facts happen. For me you shouldn't show that… children are watching and they are learning ... If a man hits a woman and left her swollen they showed how the fact happened so I don't watch it.' P2B.

One woman in Lagoon predicted that television and the internet were likely to change how women in the region related to their bodies and their appearance:

'Well as for now most women are comfortable with the way they are… but with the tendency of internet and TV shows and everyone want to be in shape and this diet stuff …so maybe that will change a little the way how the young people are, my age woman see the appearance'. L2V.

Female television characters, particularly those in the *novelas,* were frequently seen as sources for behavioural learning. Some women saw them as a bad influence on women's behaviour:

P1H – *'There was a girl we was talking about, like happened to her the same thing… the movies or the novela change her character yeh because like, maybe she have a favourite actress she want to be like so she acting like them'*

TT – *'So it happened to someone you know? Was she nicer after she changed?'*

P1H - (All shake their heads) *'she got worse'.*

The lives of the characters in the *novelas* were generally considered by participants to reflect their own lives. One woman in P2 illustrated how *novelas* can be considered 'multi-purpose'

viewing material; entertaining and informing women, but also supporting them by offering possible solutions to problems in their daily lives:

'Yes, I also watch novelas. In one way it entertains me because I dedicated an hour to watch the programme … let's say that watching novelas you are represented because sometimes there are men who maltreat women and you see that in the novelas too … and you see how to get out of that abuse … perhaps my husband is doing the same to me and I see that the women in the novelas get out of that life…' P2B.

Similarly, in Lagoon 2 another woman recounted how what she had seen in a *novela* directly influenced the actions she took in her own life:

P2C – *'At times when you watch novela you see the relation between two people, at times you could [think] yeh I living that way, and I need to do something to change that, I need do what that person doing'*

T – *'Have you ever done that?'*

P2C – *'Yeh! I leave somebody through that … yeh, because we* [were] *living the same life… so sometimes it helps'.*

Another participant in the same group explained that the way in which women were represented in the *novelas* had the potential to be both beneficial and dangerous to women at the same time. On one hand, the behaviours of the characters were understood as often immoral, cheating on their partners and having affairs: but on the other hand, female characters could be presented as strong, capable women who were in control of their lives, setting an aspirational example to real women:

'Something that's from Doña Barbara is that she give you that impression that woman … she can defend herself she's in control of any situation … if somehow you feel insecure [in] some kind of situation and when you watch that novela is like yep, woman can do a lot and we can take control of most situations like that can present to us'. P2V.

'I like to see Kate del Castillo ... that is, her life in the novelas and she is a very strong woman, affectionate… the truth is I admire her a lot'. P2B.

6.5 Discussion of findings

6.5.1 Appearance ideals of Creole and Mestizo women

Women tended to consider aspects of their appearance other than body size or shape first in discussions, suggesting that body weight may not the most central tenet of any appearance 'schema' among this population, as has been observed in other studies among minority ethnic groups (Capodilupo, 2015; Rubin, Fitts, & Becker, 2003). Clothes and dressing were very important for women's self-image and seemed to determine the women's appearance confidence more than the actual size or shape of their bodies. There appeared to be some differences in Mestizo and Creole perceptions of appropriate clothing: Mestizo women appeared more concerned with modesty and respectability and Creole women focused more on 'feeling good' in their clothes.

As in the men's focus groups discussed in Chapter 4, across groups the cultural ideal female body type was described predominantly in terms of shape rather than weight. However, there were some subtle differences in how Creole and Mestizo women described the ideal female body: in the Lagoon groups, terms such as 'thick', 'solid', 'coca-cola shape', 'spaghetti waist' a 'big butt' and 'not too much breast' were used. Creole women's perception of the ideal body was consistent with what I have previously termed the 'bootylicious' body: that is a fuller lower body relative to upper body with a slim waist. Several Mestizo women also went to some lengths to explain that as *morenas* (afro-descendants) the Black Creole and Garifuna women in their community were distinctly different from Mestizo women because their bodies always had a 'big boonkah' and usually 'nothing up front'. In the Pueblo groups the ideal female body was also described as curvy but somewhat leaner, with toned arms and legs and more emphasis on breasts. The use of the Spanish words *alsadita* (toned) and *cincenita* (slim-waisted), both with the '*ita*' suffix implied an ideal body type that was smaller or slimmer, reflecting findings from previous studies that compared Latina, White and Black women's body ideals in the U.S (Gordon et al., 2010).

Overall, women seemed somewhat uncertain about how important women's physical appearance was to men: while theoretically men liked a curvaceous body type, in practice this did not determine men's attraction to or interactions with women. Mestizo women generally suggested that the respectability of a woman was more important in attracting a man than her actual body size or shape. Creole women genuinely seemed at a loss to

understand what men are attracted to in women, and provided many examples of men's inconsistent behavior around women in their community. This finding is consistent with those from the male qualitative study discussed in Chapter 4 and from previous literature that has shown that men of some ethnic groups do not show the same narrow preference for a slim female body that Caucasian men often do (Webb et al., 2013).

6.5.2 Women's body image

While the women clearly described a cultural definition of the ideal female body, most of them expressed little drive or need to aspire to or achieve it personally. As has been found in other minority ethnic samples (Kelch-Oliver & Ancis, 2011) a vast majority of women reported being satisfied with their appearance and their bodies, and many explicitly stated that they felt good with their body just as it is. Furthermore, participants often spoke on behalf of all women in their village when discussing how they felt about their bodies, suggesting that a 'traditional' culturally shared concept of body image may prevail in this population rather than a 'Western' concept of body image that is fixed firmly within the individual's body (see Becker, 2004). However, few women reported being influenced by friends or family when it came to their appearance or how they felt about their body, although there were occasions during discussions when the same would be implicitly inferred: at church or on the beach for example, women would modify their appearance to 'fit in' with the social context or to minimize the chance of negative social comment.

Discussions around cosmetic enhancements also reflected women's body satisfaction: none of the participants expressed an interest in any kind of surgical body modification to alter their appearance. Dieting and exercise however, were methods of appearance enhancement that were considered reasonable particularly among Mestizo women, most of whom reported sometimes dieting or controlling their food intake in some way or talked about the importance of maintaining or working on the body. For Creole women dieting was generally considered necessary only for 'old people' or for health reasons.

The subtle differences between Mestizo and Creole women's attitude towards dieting in this study are suggestive of findings from previous research which found that Latina women experienced more body dissatisfaction than Black women (Gordon et al., 2010), especially those Black women with a strong ethnic group identity (Cotter et al., 2015). However,

focusing only on size or weight may not fully measure body dissatisfaction among women of non-White ethnic groups where their appearance schema is more likely to incorporate body shape, hair texture, skin tone, and even non-physical elements such as style and attitude (Capodilupo, 2015; Kelch-Oliver & Ancis, 2011). Overall, there was a strong sense of acceptance among women of the unique body that they each possessed, that it was perfectly positioned within their social world and part of their embodied nature. (see Piran, 2015 for Developmental Theory of Embodiment in eating disorders). This sense of embodiment appeared to negate any cognitive 'gap' between what women perceived themselves to be and what they thought they ought to be, and therefore gave women little reason to want to have a different body or appearance.

6.5.3 Media influence

Participants frequently referred to women they had seen on television to illustrate their ideal body types. All of the admired women mentioned were Latinas or women of colour, although it must be noted that the majority (e.g., Jennifer Lopez, Beyoncé) could be considered 'whitened' or Westernized representations of Latina and Black women, displaying straightened hair and relatively lighter skin tones. Although the Mestizo women in this study may not be truly represented by media versions of Latina women (Rubin et al., 2003), the Creole women, similarly to women of other Black ethnic groups, may feel even more disenfranchised by the lack of representation of their ethnic group in the media: models and actors with afro-centric features barely exist on television (Capodilupo, 2015). However, unlike African American women in the U.S (Kelch-Oliver & Ancis, 2011) women in the present study did not comment directly about their ethnic identity relative to the women they saw on television.

Novelas were referred to frequently across discussion groups, both with respect to women's appearance ideals and as sources of behavioural information for dealing with daily life. While participants often remarked upon the narrow range of female body types portrayed in *novelas*, equally, many commented on and appreciated the attractiveness of the main female protagonists. Again, no mention was made of the narrow range of ethnic identities reflected among the characters (see Rivadeneyra, 2011). On the whole, *novelas* were regarded positively by women, providing both ideas on fashion and style and good role models of strong independent women. However, the often paradoxical nature of *novelas*

was not lost on the women. On one hand women frequently identified with the lives of the characters, and felt supported or justified to take action to improve their own lives: on the other hand, participants acknowledged the potentially dangerous influence of *novelas*, especially with regard to relationships, seeming to condone extra marital affairs and encourage sexual promiscuity. Interestingly, the negative aspects of *novela* influence tended to be discussed as impacting upon other women, while participants generally spoke about the perceived positive aspects in relation to their own lives and experiences.

6.5.4 The protective power of a belief in a 'God-given' body

The belief in a 'God given' body appeared to offer a great deal of protection to the women's body image: participants across the groups stated that they were happy with and accepting of the body that God had given them. Many women explicitly expressed their gratitude that they were believers in God as this is what gave them such confidence in themselves and their bodies. Previous studies have found that having a positive relationship with God is associated with less body image concerns, fewer disordered eating symptoms (Akrawi, Bartrop, Potter, & Touyz, 2015), and greater acceptance of 'who you are' particularly among Black ethnic groups (Pope, Corona, & Belgrave, 2014). Similarly to Latina and Black women in the U.S (see Rubin et al 2003), participants showed little interest in altering a body that was created by and given to them by God, which seemed to release them from pressure to conform to any fixed or cultural appearance standard. Furthermore, among Mestizo women at least, there was no perceived conflict between accepting the body God had given them and dieting to change their body size, as this was understood to be maintaining the 'God-given' body, rather than a sign of unhappiness with it.

6.6 Summary and conclusion

Findings suggest that for Nicaraguan women in this region appearance ideals were not perceived in exactly the same way as for women in many Western populations. A curvy body shape was more central to the cultural ideal than a slim body size. Women acknowledged that theoretically there was a culturally defined ideal body but did not seem to feel any need or desire to attain it, possibly because women's appearance schemas did not revolve around a culturally-defined body size or shape but incorporated other elements including clothing and dressing, hair, and individual identity. In general most women reported being satisfied

with their bodies, although there were some subtle ethnic differences: Creole women were more likely to express confidence in their body's individuality and make the assertion that they were not influenced by the opinions or appearance ideals of other women, while Mestizo women were more likely to refer to their body weight and use techniques such as dieting and exercise to alter it. Women commented on television's portrayal of a narrow range of 'attractive' female body types, and acknowledged that this could have a potentially negative effect on local women's attitudes towards their appearance and their behaviours in the future.

There appeared to be a conceptual 'distance' between the cultural ideal body and the women's own body image. I would argue that women's body image in this population is contingent upon two main factors: a loosely defined cultural appearance ideal and a strong belief in God. These factors appear to have a protective effect on women's body image in this population. Because cultural appearance ideals and men's perceptions of female attractiveness remain relatively ambiguous, flexible and not dependent solely upon a woman's physical appearance, women feel less pressure to conform to narrow or prescribed body ideals. The belief in God similarly relieved women of pressure to change their bodies: a 'God-given' body still allowed women to care for it, for example maintaining a healthy weight, but enabled them to feel accepting of their own unique bodies and experience them in an embodied way rather than as objects to be manipulated. With these protective factors in place, potential outcomes due to negative effects of media influence seen in other populations (e.g., high levels of body dissatisfaction, unhealthy dieting, and eating disorders) thus far appear to be minimal in this group of women. While there were incidences of body shape dissatisfaction and dieting behaviours among the women it was not clear that they were the result of televisual influence. However, while it was believed that women in their communities were happy with their appearance and their bodies, several women admitted that this could change over time if increased exposure to media's appearance ideals exerts greater pressure on Nicaraguan women to conform to 'globalize' (read Westernized) standards of beauty.

To conclude, this study explored women's appearance ideals and body image in an ethnically diverse rural Nicaraguan population. Insights gained support evidence from the quantitative study in Chapter 5 and contribute to the wider understanding of body image among minority

ethnic groups and non-Western populations. However, further research is still needed to enable a greater understanding of Nicaraguan women's appearance schemas in order to fully identify what aspects, if any, of their appearance or self-image may cause concern or feelings of dissatisfaction, and which environmental or sociocultural factors, including the media, may shape or influence them. Lastly, evidence that ethnic group identity and religious affiliation appeared to offer protective effects for the women in this study could provide alternative angles from which to approach intervention strategies aimed at increasing body satisfaction and preventing poor body image in the present and other populations.

Chapter 7. Children's perceptions of body size

7.1 Introduction

As discussed previously, much of the research around the development of body dissatisfaction and eating disorders is based on samples of adolescent and young women, typically the demographic in which symptoms of body image concerns or disordered eating behaviours are most likely to emerge (Dakanalis et al., 2014). There is growing evidence however, that the 'roots' of body dissatisfaction and problematic eating behaviours lie well before the onset of adolescence (Dohnt & Tiggemann, 2006b; Evans et al., 2013) perhaps even as early as 3-5 years of age (Tremblay, Lovsin, Zecevic, & Larivière, 2011), more research is still needed, especially among non-White, non-Western populations (Kimber, Couturier, Georgiades, Wahoush, & Jack, 2015). Understanding how children experience body image is crucial to gain a better understanding of the etiology of eating disorders and also to help prevent children from developing poor body image and unhealthy eating behaviours during childhood and later on in their lives (Smolak, 2004). The need to understand the mechanisms that underlie body image disturbances becomes even more pressing with rising population levels of obesity: incidence of body dissatisfaction among children appears to be increasing in line with rising obesity levels (Olvera et al., 2017), even among children as young as 4 years old (Rodgers, Damiano, Wertheim, & Paxton, 2017).

7.1.1 Media influence on children's body ideals and body image

Similarly to adult populations, media exposure has been implicated in the development of children's body image, including the valuing of the 'thin ideal', although findings are more mixed. Children often choose thin or lower weight bodies as their ideal (Montoya, Boursaw, Tigges, & Lobo, 2016; Truby & Paxton, 2002; Veldhuis, te Poel, Pepping, Konijn, & Spekman, 2017), and as they get older, are more likely to desire a thinner body (Dittmar, Halliwell, & Ive, 2006; Dohnt & Tiggemann, 2006a). Furthermore, children as young as 4 years frequently attribute positive characteristics to slim bodies (Worobey & Worobey, 2014). Some studies have identified patterns of associations similar to those found among adolescents and adults (Rodgers et al., 2017), while others have found that exposure to appearance-related media did not impact negatively on young children's body image (Hayes & Tantleff-Dunn, 2010). Among children, exposure to specifically televisual media seems to predict more body

dissatisfaction and disordered eating behaviours than exposure to printed media (Dohnt & Tiggemann, 2006a; Levine & Murnen, 2009; Tiggemann, 2011). This could be because there are different underlying processes involved or simply that children are more likely to watch adult-oriented television content than to read adult-oriented magazines (López-Guimerà et al., 2010). Children are not only exposed to unrealistically slim or lean body ideals via adult televisual content, media imagery and products designed for and aimed at children also frequently depict idealised 'grown up' bodies, for example, cartoon characters (Hayes & Tantleff-Dunn, 2010) and Barbie dolls (Worobey & Worobey, 2014). Indeed, experimental studies have shown that exposure to Barbie's distorted thin body has a negative impact on young girls' body image (Dittmar et al., 2006).

Media exposure has also been shown to influence the kind of body children desire for the future: Among Australian preadolescent girls, television viewing predicted the desire for a slimmer ideal adult body: "Media exposure may have little effect on the type of body a prepubescent girl wants for herself while she still inhabits a child's body, but nevertheless foster the wish for (and intention to work toward) a slim grown-up body'' (Harrison & Hefner, 2006). This would suggest that during childhood, a 'future body' schema is being cognitively constructed ready to be activated and internalised later, most likely around puberty (Hargreaves & Tiggemann, 2002).

7.1.2 Internalisation of media's body ideals

As discussed more fully in Chapter 5, sociocultural theories posit that body dissatisfaction arises when there a cognitive 'gap' between some aspect of an individual's perceived self and their desired self. The individual first internalizes an appearance ideal, that is, cultivates a belief that this is the appearance they should be striving to achieve and that they are to some degree disparate from it. Media exposure has also been shown to predict internalization of media ideals in children as young as 6 years old (Harrison & Hefner, 2006; Murnen, Smolak, Mills, & Good, 2003; Sands & Wardle, 2003), and disordered eating behaviours among 7 to 8 year olds (Evans et al., 2013; Harrison, 2000b). However, other studies have found that TV exposure was associated with dieting and disordered eating behaviours but not to body dissatisfaction, again suggesting that internalization of the thin ideal had not occurred but that a 'thinness schema' was in place as a result of lifetime exposure to adults' food behaviours and dieting practices (Levine, Smolak, & Hayden, 1994;

Smolak & Levine, 2001). Harrison and Hefner (2006) similarly found that internalization did not mediate the relationship between TV exposure, ideal child body and disordered eating, although it did for ideal future (adult) body, similarly suggesting dieting behaviours in children may be practiced with the aim of having a thin ideal body when they grow up. In short, findings are mixed, but the weight of evidence suggests that exposure to media-generated body ideals affects young, probably unintended audiences in similar, but not identical ways than adolescents and adults.

7.1.3 Perception of body size

For internalization of societal or media body ideals to take place in the first place, a child's perceptive and cognitive abilities must be sufficiently developed. To date, it has not been firmly established at what age children are able to evaluate their own body size, or make judgments about its 'worth' in relation to the bodies they they see around them (Smolak, 2004). Some studies report very low correlations between young children's perceived body size and their actual body size (Collins, 1991) and no associations of perceived body size with their weight or height (Musher-Eizenman, Holub, Edwards-Leeper, Persson, & Goldstein, 2003). Furthermore, children often tend to underestimate their body size (Veldhuis et al., 2017), especially girls (Hussin, Mohammad, Al-Hamad, Makboul, & Elshazly, 2011) and overweight children (Cattelino, Bina, Skanjeti, & Calandri, 2015; Tremblay et al., 2011). These findings suggest that children have not yet formed an accurate mental representation of their body, or perhaps are unable to externally identify it. However, some studies have shown that children as young as 7 years old consistently choose an ideal body slightly smaller than their actual body in the same way that young adolescents do, suggesting a similar level of cognitive development in their body image (Evans et al., 2013; Murnen et al., 2003).

7.1.4 Minority ethnic groups and non-Western populations

There is limited research on body image among children from minority ethnic groups. Evidence suggests that they experience body image concerns to a similar degree as White children (Mulasi-Pokhriyal & Smith, 2010; Olvera et al., 2017; Veldhuis et al., 2017) although some studies have found that children of minority ethnic groups tend to have less body dissatisfaction (Kimber et al., 2015). Similarly in non-Western populations negative influence of media exposure has been identified: media internalisation predicted both body

dissatisfaction and unhealthy eating practices among Guatemalan schoolgirls (Vander Wal et al., 2008) and disordered eating behaviours were preceded and predicted by exposure to Western television among Fijian adolescents (Becker et al., 2002).

7.1.5 Other sociocultural factors that shape children's body image

Of course media exposure is not the only factor that may shape or influence children's body image. Children also receive information and learn attitudes from parents, family, peers, from their school and community environments. Parents and immediate family play a central role in children's early life and therefore have a direct influence on a child's body image development (Martin, 2015; Smolak, 2004). Maternal influence in particular can be a strong predictor of both body dissatisfaction (Sands & Wardle, 2003) and dieting type-behaviours in girls and boys (McCabe & Ricciardelli, 2005). These factors are also often linked to media influence indirectly. For example, a mother's messages to her child are often reflections of the media's messages to her (McCabe & Ricciardelli, 2005).

7.1.6 Boy's body image

Until more recently, research around body image has tended to focus on women and girls. However, men and boys are not immune from societal appearance pressures and can feel pressure to be thin or muscular (Slater & Tiggemann, 2014; Smolak, Levine, & Kevin Thompson, 2001). Media exposure is also associated with body dissatisfaction among young boys, although perhaps not to the same extent as among young girls (Tatangelo et al., 2016); boys may be influenced by different media content than girls and in differing ways (Slater & Tiggemann, 2014). Other sociocultural influences such as family and peers may also play a larger part in boys' body image (McCabe et al., 2015). Furthermore, boys may be more likely to aspire to achieve ability or fitness related ideals rather than strictly aesthetic appearance ideals (Tatangelo & Ricciardelli, 2013), although these will often indirectly index certain types of physical appearance (e.g., strong, lean, fit). In summary, while boys are also at risk from feelings of dissatisfaction with their bodies, contributing factors and the developmental processes may differ from those of girls.

7.1.7 The present study

The present study aimed to build on the discussed body of research by investigating the influence of media on children's body size perceptions, body size ideals and body image in a

non-White, non-Western population. Utilising a between-subjects and within-subjects design, the study compared groups of Nicaraguan children in villages with high and low media access, and further examined the effects of television viewing at the level of the individual. Extra measures to measure general appearance satisfaction and identify broader sociocultural influences were introduced at time point 3. The study was longitudinal in design to capture children's body image and body ideals over time, and to ascertain if there were differences in their development due to media exposure. Samples of children were tested in 3 'high' media access villages, Kahkabila, Orinoco and Pueblo, and in 2 'low' media access villages, Square Point and Pedregal. See 2.1 for a full description of the villages. Participants were tested on four occasions about 10-12 months apart during the period from May 2014 to May 2017, henceforth referred to as T1, T2, T3, and T4. Every attempt was made to test the same individuals at each time point, but various unavoidable factors led to considerable attrition by T4. From a total of 170 children tested, 45 were tested at all four time points, a further 65 were tested at two or three time points. A total of 60 children were tested only once, the majority of whom were recruited at T3 and T4 to maintain a consistent sample size of about 40 children in each location group at each time point.

7.1.8 Study predictions

Based on findings from previous research discussed above it was predicted that:

- Children in high media access villages will have slimmer body ideals than children in low media access villages
- There will be no gender difference in children's ideal child body size
- Girls' ideal adult body will be slimmer than boys' adult ideal body.
- Among girls at least, ideal adult body size will be predicted by media exposure
- Body dissatisfaction will be higher in the high media access villages
- Body dissatisfaction will be predicted by media exposure

I also postulated that children in high media access villages would show greater accuracy in body size perception than those in low media access villages as a result of having more body-focused content in their daily visual diet.

7.2 Method

The following measures and procedure were used at data collection at all time points. Additional measures were introduced at T3, and are described in the sections relating to T3 and T4 specifically.

7.2.1 Measures

Body size perceptions and ideals

The Children's Ten Body Scale (CTBS) was utilised to ascertain children's perceptions of body size and their child body size ideals. The adult versions of the TBS were used to measure children's 'future' ideal adult body size. Refer to 2.4.5 for more details about the TBS figural scales.

Body dissatisfaction

Satisfaction with body size was measured by subtracting each child's selected ideal body size from their selected perceived body size. A negative score indicated that the child wanted to be larger, and a positive score indicated that the child wanted a slimmer body.

Television viewing

Children reported whether they had a television in their home, if they watched television at a neighbour's house, or if they did not have access to a television. They were also asked how many hours of television they had watched in the previous seven days. At times, it was necessary to ask in a more detailed way to elicit the information. For example: 'did you watch television yesterday? How did long did you watch for? Do you watch TV like that every day or not every day?'

Education and Socioeconomic Status (SES)

Children were asked if they attended school and if so, how many years of schooling they had completed. To measure socioeconomic status (SES), they were asked if they lived in a leaf house, a lumber house or a cement house, and if they had the following items in their house: a refrigerator or freezer; any 'store-bought' furniture; a television; a radio; a DVD or CD player. To measure means of potential income generation, children were asked if their parents (or guardians) owned a dory (a dug-out canoe), a skiff (larger fibre-glass boat), an outboard motor, or any livestock. By assigning a point for each item owned, a measure of

SES was calculated. An extra point was given where a child reported living in a cement house, and when the parents owned more than 10 animals. Children were also asked what each of their parents did for a living.

Hunger status

Children were asked how hungry they were feeling at that moment. Their responses were coded on a scale of 0 (starving) to 7 (full to bursting). They were also asked how long ago they had their last meal, and to describe what food stuffs they had eaten.

Anthropometrics

To calculate children's BMI (Body Mass Index – kg /m2), weight was measured to the nearest 0.1 kg using a WeightWatchersTM digital scale, and height was measured to the nearest 0.5 cm with a standard tape measure. Children's chest, waist, and hip circumferences were also measured to the nearest 0.5 cm. Measurements were taken without shoes and any heavy clothing (e.g., sweater or jacket).

7.2.2 Procedure

Children were interviewed individually either in an unoccupied classroom or in a quiet room with a low table. Consent was given either by a teacher or by a parent, and children verbally assented to participate. First, children responded to questions that elicited demographic information and television viewing information. Next, the set of CTBS images of the same sex as the child were arranged in a random order in two rows of five on a low table. The child was invited to stand in front of the table in a position where all of the images could be seen clearly. They were then asked to select the image which was nearest to their own current body size and then their 'ideal' child body size. They were then asked to arrange the cards in one line, in order of the body size, starting with the smallest body on the left, up to the largest body on the right. When a child seemed to have difficulty understanding the concept of putting things in order, I showed them a simple pencil drawing of a row of circles that increased in size. The CTBS images were then cleared away, and the adult TBS images of the child's gender were arranged on the table in the same manner. Children were then asked 'when you grow up, when you will be a man / woman, what size body you would like for yourself?'

Each interview with each child took approximately 20 to 30 minutes. All children were given an exercise book, pencil and pencil sharpener as a thank you for their participation regardless of whether they had fully completed the task or not.

7.3 Data analysis

For the analysis, the small numbers of participants from media access-equivalent villages Kahkabila, Orinoco and Marshall Point were collapsed into one sample, named 'Kahkabila'. All data were analysed using SPSS 22. Histograms and scatterplots showed that the data for some variables were not normally distributed. This was expected to some degree, as locations were selected purposely based on certain criteria (i.e. differences in television exposure). When data were not normal, transformations were carried out. The first results section reports sample characteristics and descriptive statistics of predictor variables and outcome variables for each time point, T1, T2, T3, and T4. At T3 and T4, Chi-Square analysis was utilised to investigate children's appearance satisfaction and sociocultural influences. The second results section utilises mixed models to look at the contribution of television exposure and other potential predictors on children's body size perceptions and ideals across time.

7.4 Results part 1

7.4.1 T1 sample

At T1 a total of 83 children (36 boys and 47 girls) were tested in six different communities: Kahkabila, Square Point, Pedregal, Pueblo Nuevo, Orinoco and Marshall Point. Children self-identified as either Creole (56.6% N = 12), Garifuna (13.3%, N = 11), Mestizo (56.6%, N = 47), Miskitu (8.4%, N = 7), or of mixed ethnic group (7.3%, N = 6). Fifty nine percent (N = 49) of children reported their first language as Spanish, 37.3% (N = 3) as Creole, and 3.6% (N = 3) as Miskitu.

See Table 7.1 for descriptive statistics of the demographic and media exposure variables for the whole sample at T1. Mean sample age was 9.8 years (*S.D* 1.76; range 6-13 years) and mean BMI was 17.0 (*S.D* 1.93; range 13.9 – 23.5). On average, children had completed 3.0 years of education (*S.D* 1.48; range 0 – 6) and mean SES score was 5.0 (*S.D* 2.74; range 1 – 11). Mean hunger score was 4.87 (*S.D* 1.04; range 2 – 7) and children had eaten on average

3.7 hours prior to their interview. Eighteen percent (N = 15) of children reported that both their parents did some kind of work that provided a regular source of income, and 39.8% (N = 15) reported that one parent did. The majority of fathers were farmers or did 'bushwork', while most mothers were housewives and washerwomen. Almost half of all children reported not having a television set in their home (49.4%, N = 41), and the remainder reported that they did (50.6% N = 42). However, 83% (N = 69) of the children reported having regular access to a television either in their own home or at a neighbour's house. Average hours of television viewing (TVE) per week was 9.6 (*S.D* 8.46; range 0 – 35).

Body size perception T1

Refer to Table 7.2 for means and standard deviations of all body size variables by location at all time points including T1. Perceived BMI across the sample was 18.5 (*SD* 2.82). Perceptual accuracy of own body size (AS) was calculated by subtracting the BMI of the image selected as perceived body size from the child's actual BMI. The negative direction of the means indicated that on average children judged themselves to be larger than they actually were. To assess perceptual awareness of different sized bodies, children were asked to arrange the CTBS images in order of body size. To measure their ability, a size perception score (SPS) was calculated by summing the number of correctly positioned images in the order task. On average, children correctly placed 6.3 images (*S.D* 1.85) out of the 9. Out of the whole sample, only 6 children (7.2%) succeeded in putting all of the images in the correct order.

Body size ideals and body size dissatisfaction T1

Across the sample, mean ideal child BMI was 19.3 (*S.D* 3.29). Mean adult BMI was 22.3 (*S.D* 5.16). Means and standard deviations for body size ideals are shown in Table 7.2. To ascertain how far from their ideal body size children perceived themselves as being, a discrepancy score (DS) was calculated by subtracting the BMI value of the chosen ideal body size from the BMI of the chosen perceived body size. Mean DS for the whole sample was -0.81 (*S.D* 3.62). The negative direction indicated that in general children desired to have a slightly larger body size than they perceived themselves as having.

Table 7.1. Means and standard deviations for sample descriptives and predictor variables at T1, T2, T3 and T4

	T1	T2	T3	T4
Sample size	83	117	101	102
N girls	47	58	55	52
N boys	36	59	46	50
Age (years)	9.8 (1.76)	9.8 (1.96)	10.7 (2.03)	11.2 (2.08)
Weight (kg)	31.5 (6.66)	31.8 (7.36)	35.7 (9.17)	37.3 (9.48)
Height (cm)	135.1 (9.74)	136.2 (11.51)	140.3 (11.51)	142.7 (11.75)
BMI	17.0 (1.93)	16.9 (1.69)	17.8 (2.47)	18.0 (2.41)
SES score	5.0 (2.74)	4.7 (2.45)	4.7 (2.71)	3.4 (2.04)
Education (years)	3.0 (1.48)	2.5 (1.70)	3.5 (1.77)	3.9 (2.11)
Hunger score	4.9 (1.04)	4.9 (0.86)	4.6 (1.10)	4.5 (1.02)
Last meal (hours)	3.7 (3.95)	3.7 (2.79)	4.3 (3.28)	3.9 (2.79)
TV home (%)	51.8	52.1	51.5	51
TV access (%)	65	95	97	99
TVE (hours per week)	9.6 (8.46)	9.5 (7.19)	9.1 (7.15)	8.6 (6.56)

7.4.2 T2 sample

Children who participated the previous year were retested and new children were recruited to increase the sample size. As numbers of children living in Square Point were not high enough to gather a sufficient sample size and they were not similar enough culturally to the other low media location Pedregal to justify combining them, I did not collect further data there. A total of 117 children were tested (59 boys and 58 girls), 68 (59%) of whom had been tested at T1.Children self-identified as Creole (12% N = 14), Garifuna (1%, N = 1), Mestizo (65%, N = 76), Miskitu

Table 7.2. Means and standard deviations for all outcome variables for Kahkabila, Pedregal, Pueblo and Square Point samples at T1, T2, T3, T4. Due to small sample sizes, participants from similar high TVE villages Marshall Point and Orinoco are included in the Kahkabila sample

		T1	T2	T3	T4
Sample size	Kahkabila	30	41	36	33
	Pedregal	15	38	30	28
	Pueblo	27	38	35	41
	Square Point	11	-	-	-
	Total	83	117	101	102
Actual BMI	Kahkabila	16.5 (1.39)	16.6 (1.38)	17.5 (2.16)	17.7 (1.88)
	Pedregal	16.8 (1.12)	16.8 (1.35)	16.6 (1.53)	17.3 (1.62)
	Pueblo	18.1 (2.26)	17.5 (2.16)	19.2 (2.81)	18.6 (3.04)
	Square Point	16.3 (2.24)	-	-	-
Perceived BMI	Kahkabila	18.8 (2.86)	18.6 (3.18)	18.8 (2.55)	18.4 (2.25)
	Pedregal	17.3 (2.56)	18.0 (2.55)	17.9 (2.65)	19.0 (3.18)
	Pueblo	18.9 (2.65)	19.2 (3.47)	19.4 (3.04)	18.6 (2.94)
	Square Point	19.01 (3.05)	-	-	-
AS	Kahkabila	-2.4 (2.73)	-2.0 (2.84)	-1.4 (2.73)	-.72 (2.72)
	Pedregal	-.46 (3.04)	-1.2 (2.92)	-1.3 (2.80)	-1.6 (3.10)
	Pueblo	-.80 (3.68)	-1.7 (3.43)	-.15 (3.49)	.022 (3.40)
	Square Point	-.64 (3.52)	-	-	-
SPS	Kahkabila	6.5 (1.96)	6.4 (2.22)	7.0 (2.18)	6.9 (2.34)
	Pedregal	6.07 (2.05)	5.6 (2.33)	5.7 (2.32)	7.4 (1.87)
	Pueblo	5.7 (1.35)	6.2 (2.21)	6.9 (2.21)	6.6 (2.58)
	Square Point	6.4 (2.21)	-	-	-
Ideal child BMI	Kahkabila	19.8 (3.51)	18.7 (2.49)	19.2 (2.88)	19.5 (2.66)
	Pedregal	18.8 (3.67)	20.1 (3.56)	19.1 (3.17)	18.9 (2.89)
	Pueblo	18.8 (3.26)	19.5 (3.71)	19.2 (3.15)	18.6 (3.38)
	Square Point	19.01 (3.38)	-	-	-
Ideal adult BMI	Kahkabila	22.4 (4.47)	23.9 (4.20)	21.7 (2.19)	21.7 (2.19)
	Pedregal	19.8 (3.86)	23.5 (4.82)	22.7 (5.32)	22.7 (5.32)
	Pueblo	21.3 (4.01)	23.4 (4.37)	22.1 (3.36)	22.1 (3.36)
	Square Point	22.1 (3.95)	-	-	-
DS	Kahkabila	-.96 (3.61)	-.02 (3.87)	-0.4 (4.38)	-1.1 (3.35)
	Pedregal	-1.5 (4.27)	-2.1 (3.35)	-1.1 (3.67)	0.1 (4.44)
	Pueblo	.10 (3.18)	-0.3 (4.56)	0.2 (4.55)	0.3 (3.91)
	Square Point	.00 (4.10)	-	-	-

BMI – body mass index (kg / m^2). AS = Accuracy Score, actual BMI minus perceived BMI. SPS = Size Perception Score, number of correctly placed images in the body size order task. DS = Discrepancy Score, perceived BMI minus ideal child BMI.

(11%, N = 13), and of mixed ethnicity (11%, N = 13). The majority of children spoke Spanish as a first language (67.7%, N = 86), followed by Creole (26.8%, N = 34) and Miskitu (3.9%, N = 5).

See Table 7.1 for means and standard deviations of the demographic and media exposure variables for the whole sample at T2. Mean sample age was 9.8 years (*S.D* 1.96; range 6 – 14) and mean BMI was 16.9 (*S.D* 1.69; range 13.7 – 21.8). On average, children had completed 2.5 years of education (*S.D* 1.70; range 0 – 6) and mean SES score was 4.7 (*S.D* 2.45; range 0 – 11). Mean hunger score was 4.9 (*S.D* 0.86; range 2 – 7) and children had eaten on average 3.7 hours (*S.D* 2.79) prior to their interview. Fifty one percent (N = 60) of children reported that both their parents did some sort of work to earn money and 49% (N = 57) reported that they had only one parent did. While nearly half of all children reported not having a television set in their home (47.9%, N = 56), 95% of them (N = 111) reported having regular access to a television either at home or at someone else's house. Average hours of television viewing (TVE) per week was 9.5 (*S.D* 7.19; range 0 – 35).

Body size perception T2

Table 7.2 shows means and standard deviations for all body size variables for the T2 sample by location group. Across the whole T2 sample perceived BMI was 18.6 (*S.D* 3.10). Accuracy score (AS) was -1.67 (*S.D* 3.06), indicating a general tendency for children to perceive themselves as larger than they were. The size perception score (SPS) showed that children placed on average 6.1 images (*S.D* 2.26) out of 10 in the correct position in the size order task. Only 11 children (9.4%) succeeded in positioning all images in the correct order.

Body size ideals and body dissatisfaction T2

Mean ideal child BMI was 19.4 (*S.D* 3.31) and ideal adult BMI was 23.6 (*S.D* 4.43). Discrepancy score (DS) was -0.77, the negative direction indicating an overall trend towards wanting a larger than perceived body size.

7.4.3 T3 sample

At T3 every attempt was made to retest the same children as at T2. However, people in the region are fairly transient, often moving considerable distances to look for work or to stay with family. As a consequence just under 75% of children tested at T2 were tested again at T3. Additional children were recruited, and some children who were tested at T1 also participated again. A total of 101 children were tested (46 boys and 55 girls). Children self-identified as Creole (12% N = 12, Garifuna (1%, N = 1), Mestizo (63%, N = 64), Miskitu (12%, N = 12), or of mixed ethnicity (12%, N = 12). The majority of children reported Spanish as

their mother language (64%, N = 65), followed by Creole (31%, N = 31) and Miskitu 5%, N = 5).

See Table 7.1 for means and standard deviations of demographic and predictor variables for the whole sample at T3. Mean age was 10.7 years (*S.D* 2.03; range 6-15) and mean BMI was 17.8 (*S.D* 2.47; range 14.3 – 24.8). On average children had completed 3.5 years of education (*S.D* 1.77; range 0 – 7) and mean SES score was 4.7 (*S.D* 2.71; range 1 – 13). Mean hunger score was 4.6 (*S.D* 1.10; range 2 – 7) and children had eaten on average 4.3 hours (*S.D* 3.28) prior to their interview. Forty children (36.6%) reported that both their parents worked, and 57 (56.4%) reported that they had only one working parent. Four children reported that neither parent did something to earn money, or that they did not know what their parent or parents did (4%). Just over half of all children reported having a television set in their home (51.5%, N = 52). However, only 3% (N = 3) of children reported that they had no regular access to a TV. Average hours of television viewing (TVE) per week was 9.1 (*S.D* 7.15; range 0 – 35).

Body size perception T3

Table 7.2 shows means and standard deviations for all body size variables for the T3 sample by location group. Across the sample perceived BMI was 18.7 (*S.D* 2.79). Accuracy score (AS) was -0.9 (*S.D* 3.06), indicating a general tendency for children to perceive themselves as larger than they were. SPS indicated that children placed an average of 6.6 images in the correct order (*S.D* 2.29). A total of 16 children (15.8%) put all 10 images in the correct order.

Body size ideals and body dissatisfaction T3

Mean ideal child BMI was 19.1 (*S.D* 3.03) and ideal adult BMI was 22.1 (*S.D* 3.73). Discrepancy score (DS) was -0.4 (*S.D* 4.24), the slightly negative direction indicating a trend towards desiring a slightly larger than perceived child body size.

7.4.4 Additional measures introduced at T3

At T3, children's appearance satisfaction and sociocultural influences on appearance were also measured using the Children's Appearance Prompts (CAP). See 2.4.6 for more details on the development and use of the stimuli and see 8.9 Appendix C for all of the images. After the body size questions were completed, the child was invited to sit down for this part of the task. The cards relevant to each question were placed on the table in front of the child to use

as a visual prompt for questions. The prompts for boys' appearance satisfaction are illustrated in Figure 7-1. Boys were told 'This boy is not happy with his appearance – he does not like to see herself in the mirror. This boy is happy with his appearance, he likes to see himself in the mirror. Which boy is more like you?' Girls were asked in the same manner but using the images depicting a girl. Influence of family, friends and media on children's appearance were measured in a similar manner utilizing the three corresponding sets of CAP.

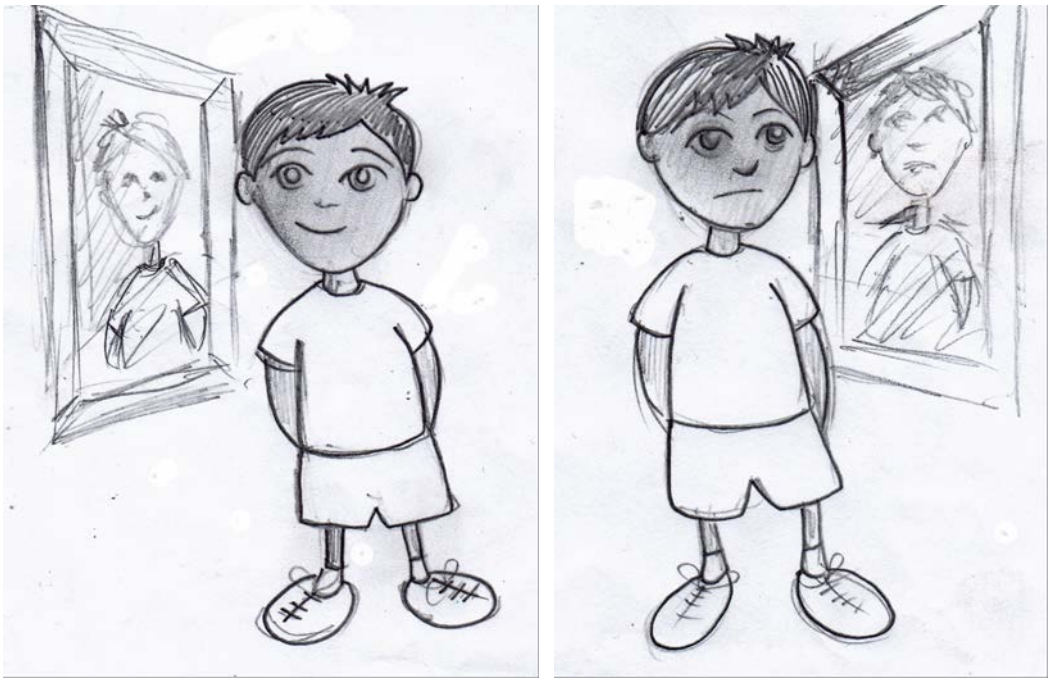


Figure 7.1. Images from the Children's Appearance Prompts (CAP). These two cards were used to measure boys' appearance satisfaction

Appearance satisfaction T3

Within group percentages of children's responses to the appearance satisfaction item using the CAP are shown in Figure 7-2. A higher percentage of children in Kahkabila reported having appearance concern than those in the other two locations. Pedregal had the highest percentage of children who were always happy with their appearance. When a child mentioned being less than always happy with their appearance, they were further asked with what aspect. Body size was mentioned most frequently, with boys usually complaining of being too thin and girls of being too fat. Other reasons for children being unhappy with their appearance included, being 'too black', spots, clothes, height, and feeling 'ugly'.

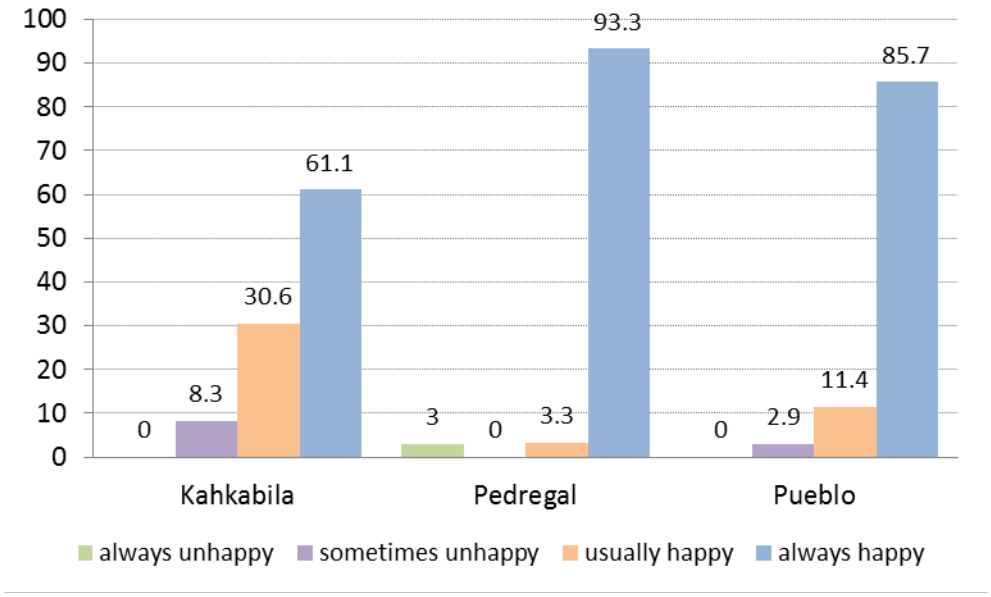


Figure 7.2. Percentages for children's responses to appearance satisfaction question using CAP by location group at T3

Media influence on appearance satisfaction

To measure association of media exposure on children's appearance satisfaction, responses from the CAP task were firstly coded into a dichotomous variable with 'always happy' and 'not always happy' as the two conditions. A dichotomous media access variable was calculated based on overall media access, i.e., those children in high media locations were coded as 'high media access', regardless of whether they watched TV in their own home or at another house, and children in 'low media' locations were coded as low media access unless they had a TV in their own home. A test of two proportions (Pearson Chi-Square) was run with media access (high and low) as the predictor variable. In the high media group, 19 children (26.8%) reported being not always happy with their appearance, whereas in the low media group only 2 (6.7%) reported the same, a statistically significant difference in proportions of 0.201, p = .023.

Sociocultural influences on appearance T3

The three main sources of sociocultural influence, family, peers and media were measured using the Children's Appearance Prompts (CAP) visual stimuli. Children were asked if they aspired to be like: a family member; a friend; and someone they had seen on television. As can be seen in Figure 7.3, more children reported wanting to be like a family member than like a friend or someone on the TV. However, Chi-Square tests found no significant

differences in the proportions of children in each location group wanting to be like a family member, a friend, or someone they had seen on TV (all *p*s > .05). Children who said they would like to be like someone on television were then asked which character or persons they would like to be like and why. The vast majority of boys wanted to be like superheroes, sports stars and the men in 'Van Damme' action movies because of their physical strength and fighting abilities. Among girls, the overwhelming trend was to want to be like Disney female characters such as Cinderella, Rapunzel or Ariel. '*Princesa*' cartoon characters and actresses in novelas were also extremely popular among girls, particularly in the Spanish-speaking communities.

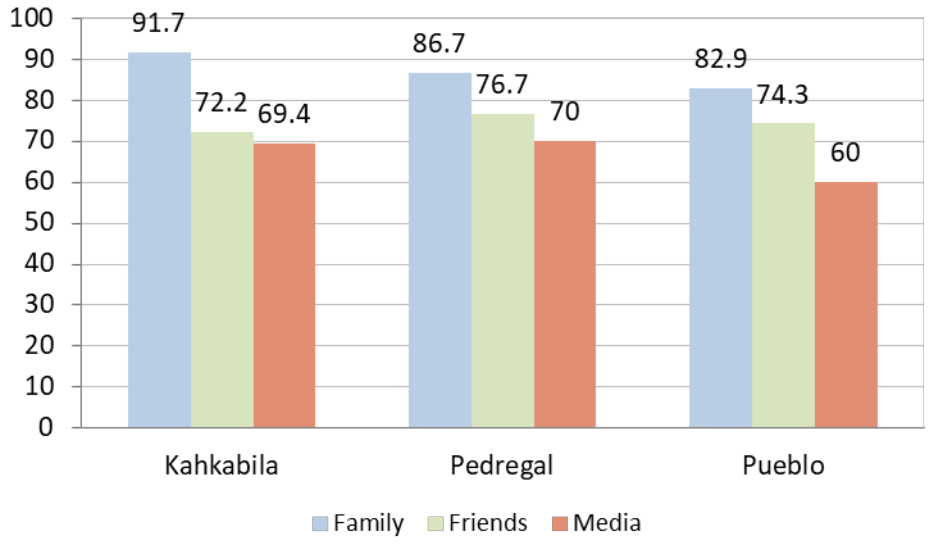


Figure 7.3. Percentages of children at T3 in each location who reported wanting to be like a family member, a friend, and someone on TV

7.4.5 T4 sample

Every effort was made to retest the same children but as at T3, attrition due to migration of families to distant and often unknown locations meant that only 72.5% of participants (N = 75) had been tested at least once in a previous time point, while the remainder of the sample were tested for the first time. At T4 a total of 102 children were tested (50 boys and 52 girls). Children self-identified as Creole (11% N = 11), Garifuna (7%, N = 7), Mestizo (64.7%, N = 66), Miskitu (12.7%, N = 13), or of mixed ethnic group (5%, N = 5). The majority of children reported Spanish as their mother language (68.6%, N = 70), followed by Creole (26.5%, N = 27) and Miskitu (4.9%, N = 5).

See Table 7.1 for means and standard deviations of predictor variables for the T4 sample. Mean age was 11.2 years (*S.D* 2.08; range 7-15) and mean BMI was 17.9 (*S.D* 2.41; range 13.8 – 27.4). On average children had attended 3.4 years of education (*S.D* 2.11; range 0 – 8) and mean SES score was 4.6 (*S.D* 2.26; range 1 – 10). Mean hunger score was 4.5 (*S.D* 1.02; range 2 – 6) and children had eaten on average 3.9 hours prior to their interview (*S.D* 2.79; range 0 - 18). Fifty one children (50%) reported that both their parents worked, and 49 (48%) reported that they had only one working parent. Two children reported that they did not know what their parent or parents did (2%). Just over half of all children reported having a television set in their home (51%, N = 52). However, only one child reported that they had no regular access to a TV at all, either in their own home or at a neighbour. Average hours of television viewing (TVE) per week was 8.6 (*S.D* 6.56; range 0 – 35).

Body size perception T4

Table 7.2 shows means and standard deviations for all body size variables for the T4 sample by location group Across the sample perceived BMI was 18.6 (*S.D* 2.79). Accuracy score (AS) was -0.7 (*S.D* 3.15), indicating that in general children still perceived themselves as larger than they were. SPS was 6.9 (*S.D* 2.33) indicating that children placed an average of just under 7 images in the correct order. A total of 21 children (20.6%) put all 10 images in the correct order.

Body size ideals and body dissatisfaction T4

Mean ideal child BMI was 19.0 (*S.D* 3.03) and ideal adult BMI was 22.5 (*S.D* 3.79). Discrepancy score (DS) was -0.4 (*S.D* 3.90), the slightly negative direction indicating again a trend towards desiring a slightly larger than perceived child body size.

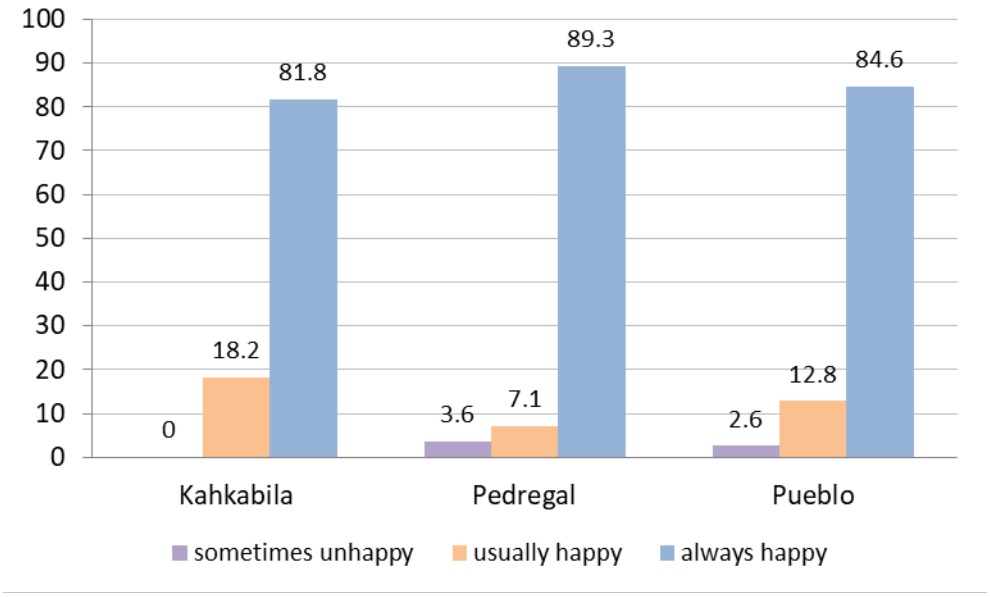


Figure 7.4. Percentage of children's responses at T4 to appearance satisfaction question using CAP by location group

Appearance satisfaction T4

Within group percentages for children's responses to the appearance concern question using CAP are shown in Figure 7-4. Percentages of children within each location who reported being always happy with their appearance were all between 80-90%. While Kahkabila still had the highest percentage of children who reported being less than always happy with their appearance, the difference in percentages between Kahkabila and the other two locations was considerably less than at T3. Children who had reported not always being happy were further asked what aspects of their appearance concerned them. Body size was mentioned the most frequently, usually with boys feeling that they were 'too meagre' (thin). Also mentioned were hair, height, spots, clothes, stomach, and being told they were 'ugly'.

Media influence on appearance satisfaction

In the high media group, 12 children (16.7%) reported being not always happy with their appearance, whereas in the low media group only 3 (10.7%) reported the same. As one cell had an expected count of less than 5, Fisher's exact test was run. However, the difference in proportions of 0.06 was non-significant, p = .548.

Sociocultural influences on appearance T4

Using the Children's appearance prompts (CAP) visual stimuli children were asked if they aspired to be like a family member, a friend, or someone they had seen on television. Percentages of children in each location who responded positively to these questions are shown in Figure 7-5. Overall, more children aspired to be like a family member than someone they had seen on TV or a friend. However, Chi-square tests found that differences in the proportions for each location group were not significant (all *p*s > .5). As at T3, most boys reported wanting be like action characters or superheroes they had seen on TV, and most girls wanted to look like female Disney characters and actresses in novelas.

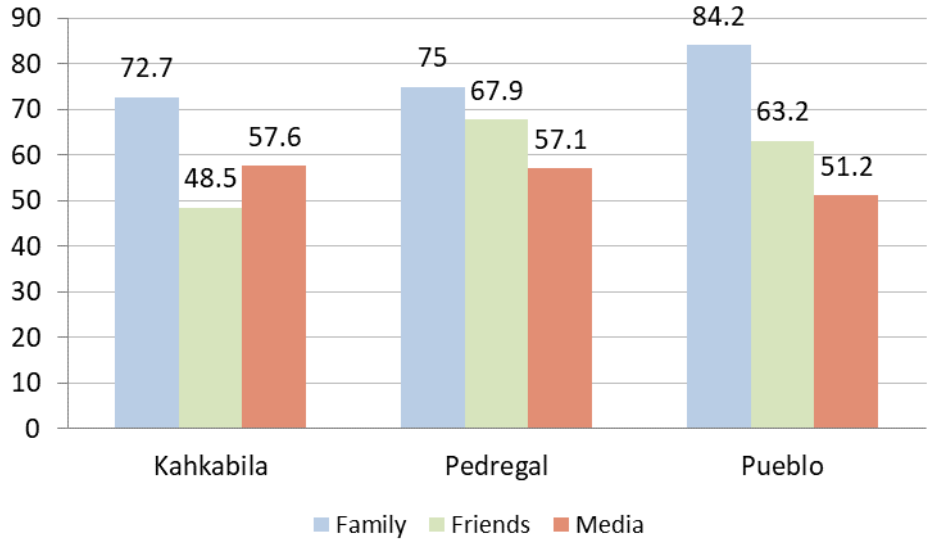


Figure 7.5. Percentages of children at T4 in each location who reported wanting to be like a family member, a friend, and someone on the TV

7.5 Results part 2 – using mixed models

Linear mixed models were run to enable all the data across time points to be utilised in the analysis, increasing the statistical power of the tests. For each outcome variable, two mixed models were run. Inspection of histograms and scatterplots were used to confirm that distributions of residuals for all data was acceptable before running the tests. Where necessary transformations were applied to non-normal data.

Model 1 was run to measure location group differences in the outcome variables. For Model 1, time point (i.e., T1, T2, T3, T4), location (Square Point, Kahkabila, Pueblo and Pedregal) and gender (boys, girls) were entered as fixed factor predictors unless otherwise stated. Age

was entered as a covariate, with child identity as a random factor. Interactions between outcome variables of interest were also entered into the model. Non-significant interactions were removed from the model and the test run again.

Model 2 was run to investigate the contribution of media exposure to children's body size perceptions and body size ideals. For Model 2, TP was entered as a fixed factor and television viewing (TVE) was entered as a covariate. Where an effect of gender had been identified in Model 1, data for boys and girls were analysed separately. Interaction terms were entered in to the model but removed when non-significant.

7.5.1 Perceived own body size (AS)

Accuracy scores (AS) were calculated by subtracting perceived body size from measured body size. As shown in Figure 7-6, the majority of the data points lie below zero, indicating a tendency among younger children especially to overestimate their body size. Absolute scores (ASABS) were calculated in order to assess accuracy of judgments of own body size (AS) regardless of direction (i.e., whether perceived BMI was higher or lower than actual BMI). The slightly skewed ASABS data were transformed with a log 10 (ASABS_log10).

Model 1. There were no significant interactions and no main effect of location (all *p*s > .05). There was a significant overall effect of time point, $F(3, 387) = 2.69$, $p = .046$. Parameter estimates showed that relative to T1, children were significantly more accurate at T2 (-.15, *S.E* .07, $p = .043$), and at T3, (-.19, *S.E* .08, $p = .013$), but not at T4 (.061, *S.E* .08, $p = .426$). There was a significant effect of age, $F(1, 387) = 6.17$, $p = .013$. Parameter estimates showed that for every additional year of age children's error in BMI judgment reduced by -.031 (*S.E* .01). There was also a main effect of gender, $F(1, 387) = 5.79$, $p = .017$: boys were significantly better at judging their own body size than girls, parameter estimate, -.12 (*S.E* .05).

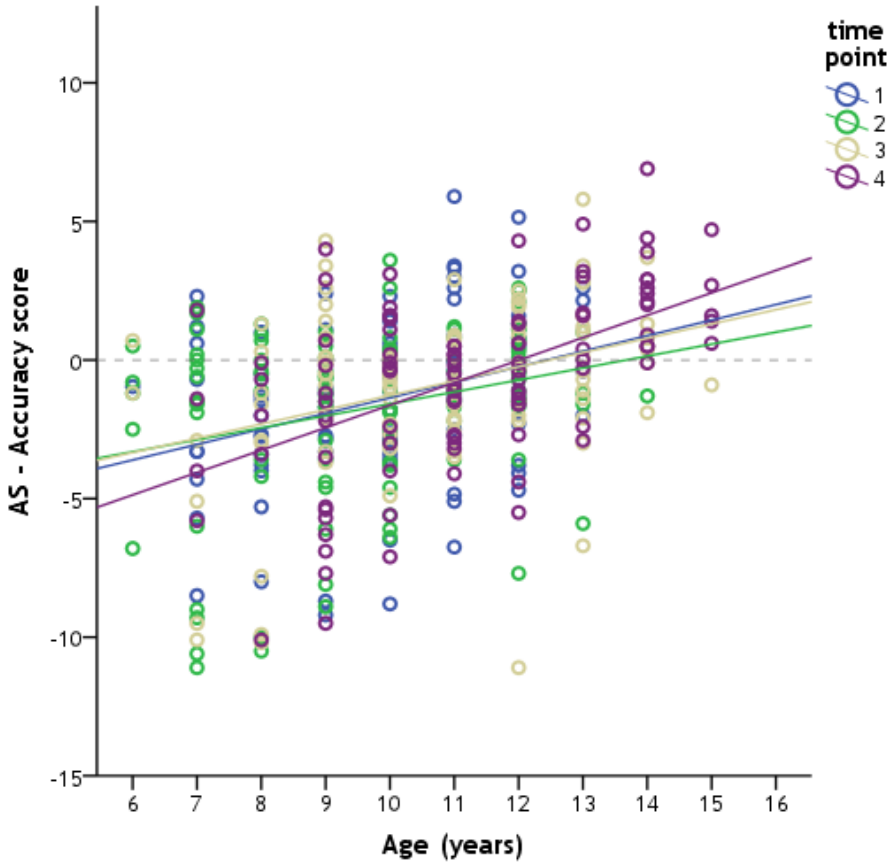


Figure 7.6. Association of children's age with accuracy scores (AS) at all time points. Solid lines denote time point means; Blue = T1, green = T2, beige = T3, purple = T4. Grey dotted line represents zero and total accuracy.

Model 2 was run to ascertain the contribution of television exposure to accuracy of own body size judgments with ASABS_log 10 as the outcome variable. As Model 1 had found significant gender differences the model was run separately for boys and girls. All interaction terms were non-significant (*p*s >.05). For girls, there was a borderline significant effect of TP, $F(3, 204) = 2.57$, $p = .056$. Compared with T1, girls were more accurate at T2 (-.20, *S.E* .09, $p = .042$) and at T3 (-.24, *S.E* .10, $p = .017$) but not at T4 (-.07, *S.E* .10, $p = .488$). Figure 7-7 illustrates the significant effect of TVE on girls' accuracy, $F(1, 204) = 5.29$, $p = .022$, such that for every hour of TV viewing, error in body size judgments decreased (parameter estimate -.011, *S.E*, .005, $p = .022$). For boys, there was no significant effect of TP or TVE (*p*s > .05).

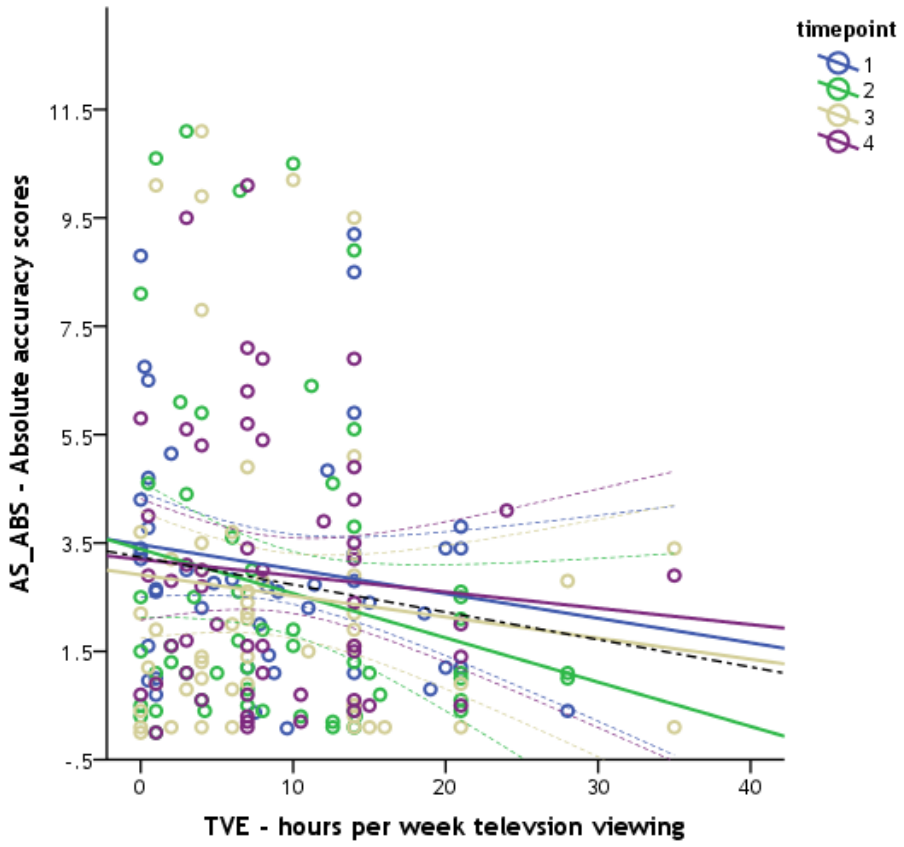


Figure 7.7. Association of girls' absolute accuracy scores (AS_ABS) with television viewing (TVE) at all time points. Solid lines denote time point means, fine dotted lines in the same colour denote 95% confidence intervals for same means. Blue = T1, green = T2, beige = T3, purple = T4. Black dotted line represents total mean of all data.

7.5.2 Body size perception task (SPS)

To assess ability to perceive different body sizes, children were asked to arrange the CTBS images in order of size. Size perception score (SPS) reflected the number of images placed in the correct position in the order task. Means and standard deviations for SPS by location group and time point are shown in Table 7.2.

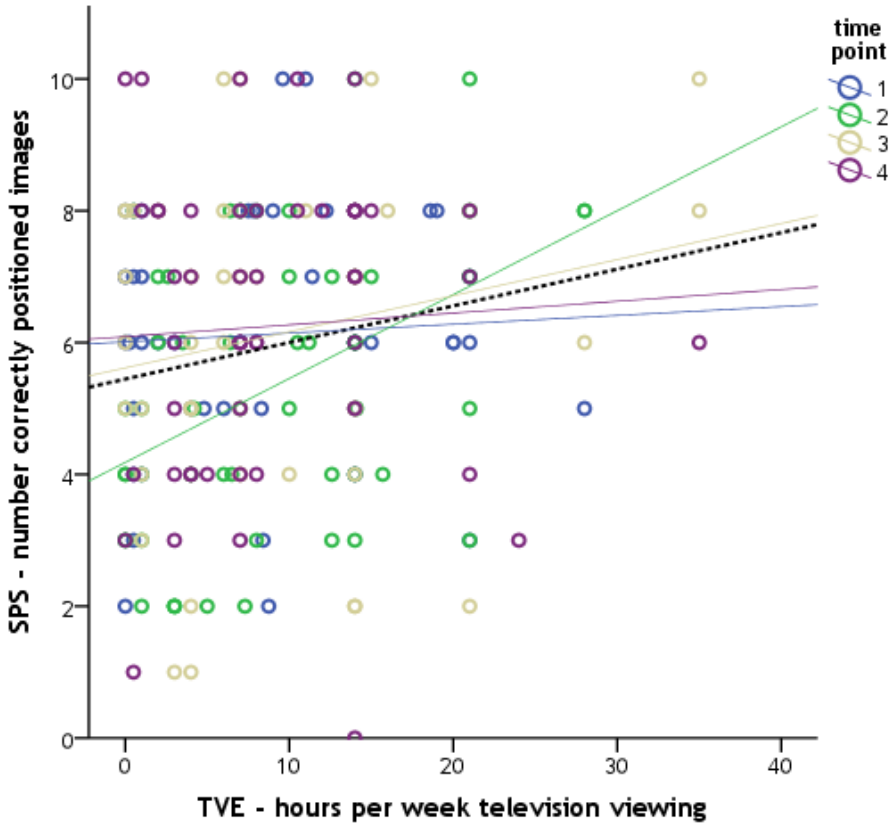


Figure 7.8. Association of girls' body size perception scores (SPS) with television viewing (TVE) at all time points. Solid lines denote time point means; Blue = T1, green = T2, beige = T3, purple = T4. Black dotted line represents total mean.

Model 1 was run with SPS as the outcome variable. There were no significant interactions between any of the predictor variables (*p*s > .05). There was a significant overall effect of location, $F(3, 392) = 2.95$, $p = .033$. Parameter estimates showed that on average, children in Kahkabila correctly placed more images than children in Pueblo (parameter estimate -.11, *S.E* .24) and Pedregal (-.45, *S.E* .26) but differences were not statistically significant (*p*s > .05). While children in Square Point correctly placed on average 1.41 more images than those in Kahkabila, a significant difference (*S.E* .66, $p = .034$), it must be noted that the Square Point sample consisted of just 11 children tested at T1 only and using the nine-image version of the TBS. There was a significant effect of gender, $F(1, 392) = 25.67$, $p < .0005$, with boys on average correctly placing more images than girls (parameter estimate, 1.02, *S.E* .201). Age was also significant in the model, $F(1, 392) = 46.89$, $p < .0005$, such that accuracy increased by 0.36 (*S.E* .05) for every additional year of age.

Model 2 was run separately for girls and boys as an effect of gender had been identified in Model 1. See Figure 7.8 and Figure 7.9 for visual representations of the data and interactions of girls' and boys' accuracy scores with TVE across time points. For girls, there was no interaction between TVE and time point, and no main effect of time point (all *p*s > .05) but there was a significant effect of TVE, $F(1, 207) = 8.45$, $p = .004$, such that one hour of TV viewing increased girls' SPS by .06 (*S.E* .02). However, for boys the interaction between TVE and time point was significant for boys so the effect of TVE on SPS was assessed separately for each time point using simple linear regressions. The contribution of TVE to SPS was only statistically significant at T2, $F(1, 56) = 16.19$, $p < .0005$, $R^2 = .224$, such that more television viewing was associated with higher size perception scores.

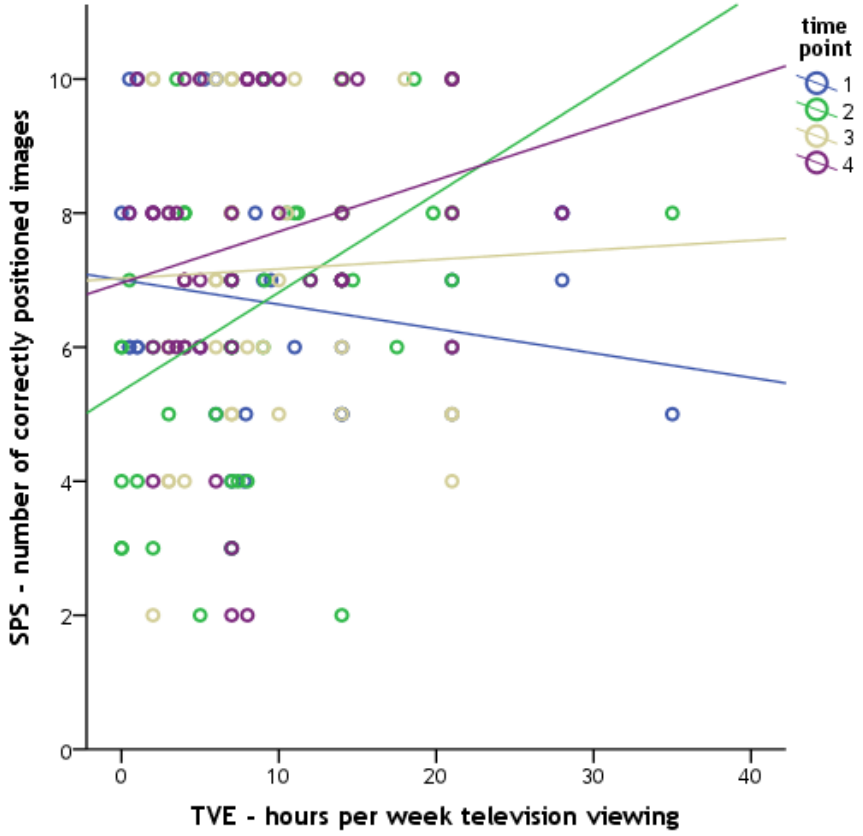


Figure 7.9. Association of boys' body size perception scores (SPS) with television viewing (TVE) at all time points. Solid lines denote time point means; Blue = T1, green = T2, beige = T3, purple = T4. SPS was significantly associated with TVE only at T2.

7.5.3 Ideal child body size

Model 1 was run with ideal child BMI as the outcome variable. There were no significant interactions between predictor variables and no effect of time point or location (all *p*s > .05).

The effect of age was significant, $F(1, 392) = 7.63$, $p = .006$, showing that for every year of increased age children's ideal BMI was reduced by .224 (S.E .08). There was also a significant effect of gender, $F(1, 392) = 4.15$, $p = .042$, such that boys' mean ideal BMI was .642 (*S.E* .31) lower than that of girls.

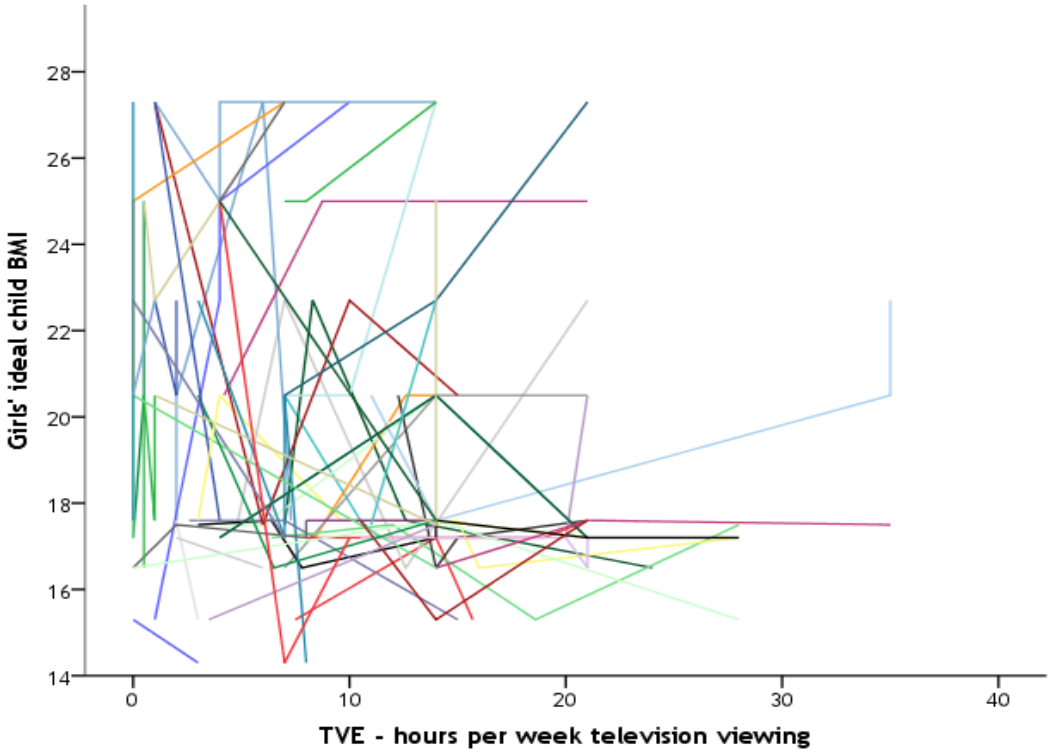


Figure 7.10. Association of girls' ideal child BMI with television viewing (TVE) across all time points. Each coloured line joins responses belonging to the same individual at different time points.

Model 2 was run separately for boys and girls as Model 1 found gender differences in ideal child BMI. There was no interaction between TVE and time point for either gender (all *p*s > .05). For girls, there was a significant effect of TVE, $F(1, 206) = 4.037$, $p = .046$, such that more TV viewing was associated with a slimmer ideal child body evidenced by a parameter estimate of -.06 (*S.E* .03). There was no effect of time point or TVE on boys' ideal child BMI (*p*s > .05). The association between girls' ideal child BMI and TVE at all time points is visually represented in Figure 7.10.

7.5.4 Ideal adult body size

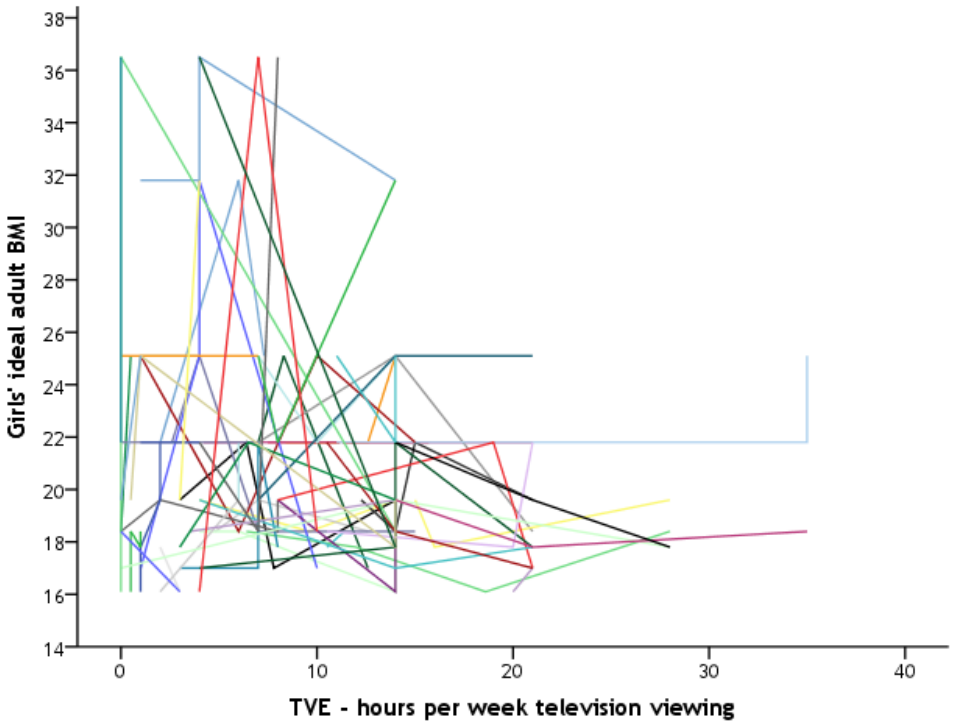
The slightly positively skewed data for ideal adult BMI were transformed with a log10.

Model 1 was run separately by gender following previous evidence that boys have a larger

ideal adult body than girls (ref). There were no significant interactions between any of the predictor variables for either gender (all *p*s > .05). For boys, there was an overall effect of location, $F(3, 181) = 4.17$, $p < .007$, although parameter estimates revealed that only the means for Kahkabila and Pueblo differed significantly (-.024, *S.E* 1.30, $p = .009$) such that children in Kahkabila wanted to have larger adult bodies. Age had a significant effect, $F(1, 384) = 11.12$, $p = .001$, such that for every year of age, boys' ideal BMI decreased by .004 (*S.E* .001).

For girls there was also an overall effect of location, $F(3, 196) = 4.45$, $p = .005$. However, only the difference between means of Kahkabila and Square Point differed significantly, such that girls in Square Point had a larger ideal adult body, evidenced by the parameter estimate of .135 (*S.E* .035). There were significant differences in means by time point, $F(3, 196) = 2.788$, $p = .042$, with girls' adult ideals being significantly slimmer at T4 than at T2 and T1, evidenced by parameter estimates of .048 (*S.E* .018, $p = .008$) and .045 (*S.E* .019, $p = .02$) respectively. Age also had an effect, $F(1, 196) = 5.339$, $p = .022$, such that for every year of age, girls' adult BMI_log 10 decreased by -.007 (*S.E* .003).

Model 2 was run separately for girls and boys. Associations between ideal adult BMI and television viewing (TVE) for boys and girls are illustrated in Figure 7.11 and 7.12 respectively. All interaction terms were non-significant (*p*s > .05). For girls there was a significant effect of TVE, $F(1,199) = 8.59$, $p = .004$, such that for every hour of television viewing girls' ideal adult BMI_log10 decreased by .002 (*S.E* .001). There was no significant effect of time point or TVE for boys (*p*s > .05).



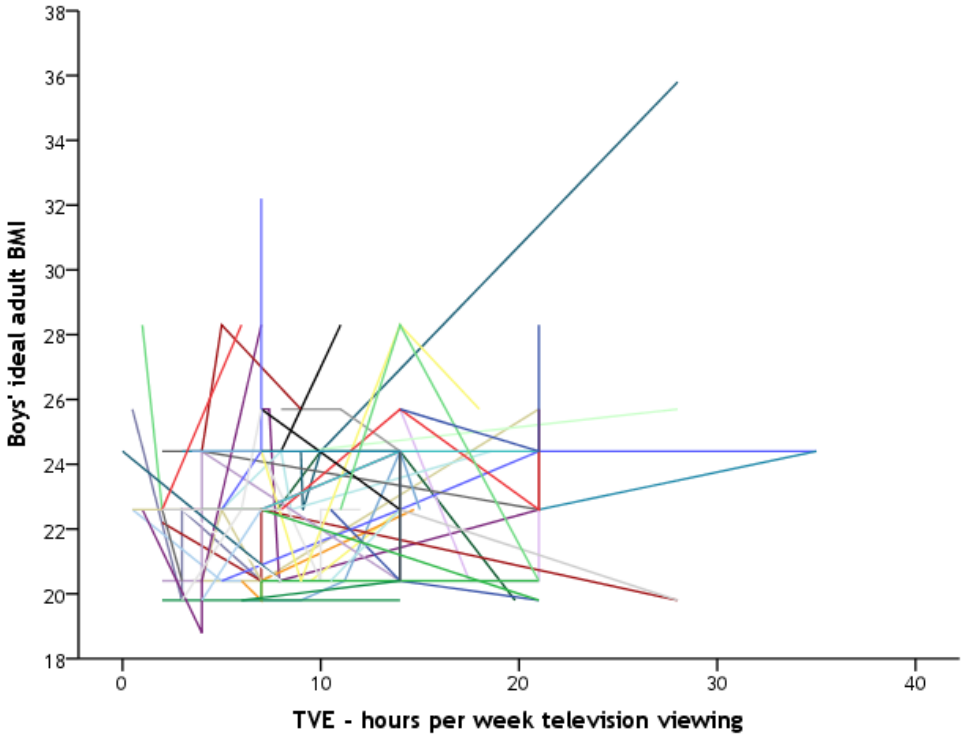


Figure 7.11 and Figure 7.12. Associations of ideal adult BMI with television viewing (TVE) across all time points. Each coloured line joins responses belonging to the same individual at different time points. The top graph shows the data for girls, the lower graph for boys.

7.5.5 Body dissatisfaction

Body dissatisfaction was measured by calculating a discrepancy score (DS), that is the difference between perceived and ideal child BMI. A negative score indicated a desire to have a larger body and a positive score indicated a desire to have a slimmer body than perceived. Mean discrepancy score for all the data was -.575, the negative direction indicating that overall, children wanted to be larger than they perceived themselves as being.

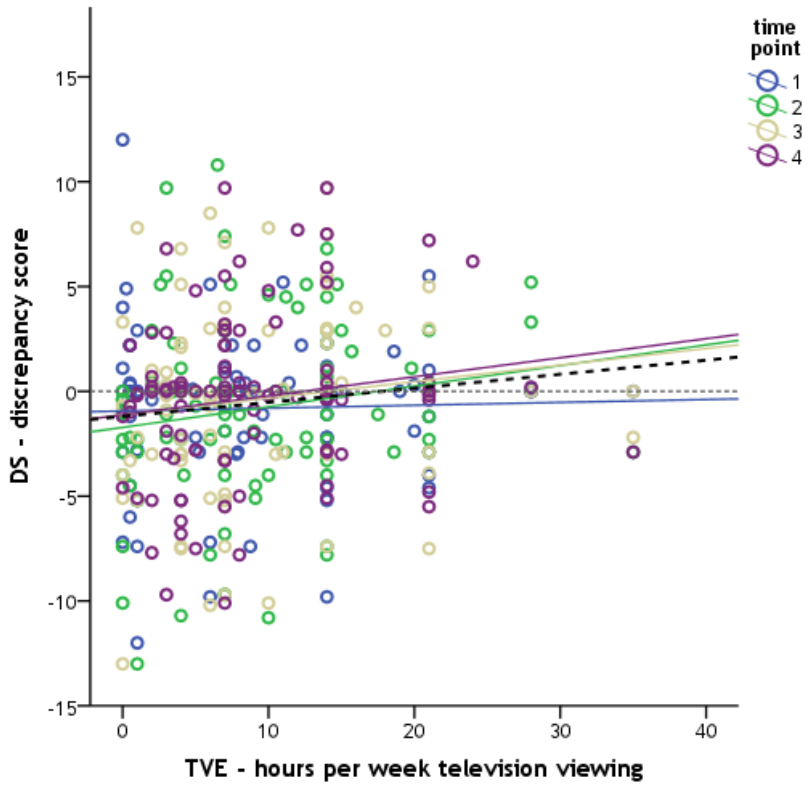


Figure 7.13. Association of discrepancy scores (DS) with television viewing (TVE) for data from all time points. Black dotted line represents total mean. Broken grey line represents zero, i.e., no discrepancy

Model 1 found no significant interactions and no main effects of location, $F(3, 392) = 2.093$, $p = .101$, gender, $F(1, 392) = .111$, $p = .739$, TP, $F(3, 392) = .174$, $p = .914$, or age, $F(1, 392) = .243$, $p = .622$.

Model 2 was run with DS as the outcome variable. There was no significant interaction between TVE and time point and no effect of time point, ($ps > .05$). However, there was a significant effect of TVE, $F(1, 396) = 6.467$, $p = .011$, showed that for every hour of television exposure DS increased by .069 (*S.E* .027), indicating that television exposure reduced

children's desire to have larger bodies. Furthermore, as can be seen in Figure 7.13, children who watched on average more than 20 hours of television per week wanted a slimmer body.

7.6 Summary and discussion of findings

Table 7.3. Summary of predictors of children's body size ideals, body size perception, and body dissatisfaction in mixed models

	Predictor variables				
	Location	Time point	Gender	Age	TVE
AS	no	**yes**	**yes**	**yes**	**girls**
SPS	**yes**	no	**yes**	**yes**	**yes**
Ideal child BMI	no	no	**yes**	**yes**	**girls**
Ideal adult BMI	**yes**	**girls**	**yes**	**yes**	**girls**
DS	no	no	no	no	**yes**

AS = own body size accuracy score calculated by subtracting perceived BMI from actual BMI. SPS = size perception score calculated by the number of correctly positioned images in the body size order task. DS = discrepancy score calculated by subtracting ideal BMI from perceived BMI.

The present study investigated the influence of media exposure, specifically via television viewing, on children's perceptions of body size and their body size ideals. The study design was both between-subjects and within-subjects: group differences in outcome variables were analysed in mixed Model 1, and individual effects of television viewing were examined in mixed Model 2. Table 7.3 summarises the main findings and illustrates that overall, television viewing was implicated to some degree in all of the outcome variables in the hypothesized directions, predicting greater accuracy in body size judgments, and a shift towards the preference for slimmer bodies.

7.6.1 Group differences in body size perception and ideals

It was predicted that children in the high media access villages would have more accurate body size perception than those in low media access villages as a result of generally increased exposure and attendance to body-focused visual content via television viewing. No location group differences were found in children's perception of their own body size. In the body size order task, children in Kahkabila were significantly more accurate than children in

Pueblo, but as both of these villages were high media access this result did not support the prediction. Boys were significantly better than girls at both judging their own body size and putting the bodies in the correct size order.

There were no village level differences in children's ideal child body size. Perhaps surprisingly, boys' ideal body size was on average lower than girls' ideal body size. Conversely, and as predicted, boys' ideal adult body was much larger than girls' ideal adult body. There were also significant differences in ideal adult body size by village for each gender: boys in Kahkabila desired a larger adult body than boys in the other villages, and girls in Kahkabila desired a much slimmer adult body than girls in Square Point. The latter finding mirrors those from previous research that have shown higher media exposure is associated with a slimmer ideal adult body (for example Harrison & Hefner, 2006). The boys' result is perhaps harder to interpret: the preference for a larger body among boys in Kahkabila size could indicate a desire to be 'bigger' in the muscular sense, as has been found in previous studies (McCabe & Ricciardelli, 2005) or perhaps that they simply desire to be more 'grown-up'. Boys in Kahkabila wanted to be much larger than those in Pueblo even though they were in similar media environments. Firstly, this could suggest that other sociocultural influences, such as family or friends, may be shaping these boys' desire for a larger body (see McCabe & Ricciardelli, 2005). Certainly in Kahkabila, many young men showed an interest in body building and used home-made weights to work out (field observation), so boys could be learning and shaping their body ideals as a result of their influence. Another possibility is that children across similarly high media villages were watching different TV content, although responses to the open question asking about their favourite TV programmes suggested that most children had the same cartoon-heavy viewing preferences. However, as parents in these communities usually decide what gets watched on the TV (personal observation) so variation in content exposure may be due to differences in what their parents watch rather than what they reported as their favourite programmes. Cultural differences in attitudes towards bodies and appearance across ethnic groups could also be driving group differences in girls' and boys' ideals, as has been suggested by some of the findings from the adult studies, although this possibility was not investigated in this study.

7.6.2 Predictors of body size perception and body size ideals

While there were few group differences in children's body size perceptions and ideals, significant effects of television viewing were found in the within-subject analyses. Television viewing significantly predicted greater accuracy in own body size judgments among girls and significantly increased girls' accuracy at the body size order task across all time points, and among boys at time point 2. Among girls, ideal child body size and ideal adult body size were both predicted by media exposure in the hypothesized direction, such that more television viewing was associated with preferring a slimmer body size. However, no such relationship was identified for boys. These findings mirror those from previous research (Harrison & Hefner, 2006) and suggest that preadolescent girls in particular are more likely to feel media pressure to aspire to a thin body ideal (Anschutz, Spruijt-Metz, Van Strien, & Engels, 2011).

As predicted, perception of own body size was also associated with age across all individuals, such that older children were significantly more accurate in their judgments. The pattern of results for the body size order task were similar, with older children making less errors than younger children. Age also contributed to children's ideal body size such that as children got older, ideal body size became on average slimmer.

7.6.3 Body size dissatisfaction

The discrepancy between perceived and desired body size was used to quantify the extent to which children were dissatisfied with their body size. While there were no village level or gender differences in discrepancy scores (DS), as predicted, this measure of body dissatisfaction was significantly associated with television viewing in the expected direction. However, it must be noted that in general children wanted to be larger than they perceived themselves as being, so television exposure was associated with both a reduced desire to have a larger than perceived body and a desire for a slimmer body where media exposure was on average more than 20 hours a week. As mentioned earlier, the desire among younger children to have a larger body could result from wanting to 'grow up', perceiving a larger body size as representing an older child or young adult: as children got older, and their bodies naturally got larger, they simply had less desire for a larger body size. Alternatively, as children grow up and their sources for learning cultural values expand beyond immediate family, wider societal or cultural ideas about attractive bodies, including those generated by the mass media, begin to have more influence. Media representations of bodies therefore

become more salient: just as slim bodies are positively valued in the media, larger bodies are seriously undervalued, often heavily stigmatized and associated with negative personality and behavioural traits (Brewis, 2014; Worobey & Worobey, 2014), and children may also pick up on those messages while forming their own body image. Certainly a significant association of television viewing with discrepancy score across the sample would suggest the latter explanation is a more likely explanation.

7.6.4 Appearance satisfaction

Results from the appearance satisfaction question which utilized the Children's Appearance Prompts (CAP) found that children who were regularly exposed to televisual media were more likely to be less than perfectly happy with their appearance than children with relatively low exposure to televisual media. At time point 3 (T3), differences in appearance satisfaction of high media and low media access groups were significant, while at time point 4 (T4) they were not. It is worth noting that by T4, Pedregal had received a permanent supply of electricity and therefore some children might have had better access to television during the preceding 8 months than at previous time points. Indeed, mean hours of television viewing for Pedregal sample increased from just under 5 hours a week at T3 to over 7 hours at T4. At T3 only 6% of children in Pedregal reported being 'not always happy' with their appearance, while at T4 11% reported the same. While these differences are relatively small, they do represent an increase in the hypothesized direction, and suggest that there is an association between more media exposure and increased appearance concerns among these children.

7.6.5 Sociocultural influence on children's appearance ideals

The Children's Appearance Prompts (CAP) were also used to investigate sociocultural influences on children's appearance ideals: family, friends and media. As discussed in the introduction to this chapter, and as the results of this study further confirm, media influence has been significantly implicated in children's body image development. However, parents and close family are the first people a child will learn from and thus crucial in a child's early development (Tatangelo et al., 2016). A child's peers will also play a role in shaping how they perceive and relate to their bodies as they grow up in the wider social environment (Dohnt & Tiggemann, 2006a). While no group differences were found in the percentages of children wanting to be like a family member, a friend, or someone they had seen on television, there

were some clear differences in which sociocultural factors had the greatest influence on children overall. More than three quarters of children said they would like to be like a parent or some other family member. Over 70% of children at T3 and over 48% at T4 said they wanted to be like their friend in some way. Children gave the following aspects in which they wanted to be like their friend (in order of frequency): body size or shape; appearance; clothes; physical ability; personality; face; intelligence; height, age; skin colour. Both girls and boys gave these reasons but boys had a greater tendency to want to be like a friend based on his physical abilities. At both time points, more than half of children said they wanted to be like someone they had seen on television. Overwhelmingly, boys wanted to be like macho, stereotyped masculine male figures that were good at fighting or sport and girls aspired to be like stereotypically feminine female characters for their attractive physical appearance rather than anything else. These findings support previous research that shows girls make appearance comparisons than more than boys (Tatangelo & Ricciardelli, 2015) and therefore are more likely to compare themselves to unrealistic body ideals shown on TV and thus at higher risk of internalizing thinness schemas and further body image concerns (Dohnt & Tiggemann, 2006a).

7.6.6 Study limitations

While the current study has contributed to the understanding of children's body image in non-white non-Western contexts particularly, it has several limitations. Firstly, the study only used visual methods of measurement due to low and variable levels of literacy among this population. While the implementation of the CAP images assessed children's appearance satisfaction at a general level, culturally appropriate psychometric measures would perhaps be better positioned to tap in more specifically to children's body image. Secondly, the CTBS measured only body size, and not body shape. It is clear from both the previous literature and from the adult studies within this thesis that in some cultural contexts shape is more key to the ideal body than size. To my knowledge, there is no published research that has investigated children's shape preferences, suggesting an area of research that needs to be further developed. Furthermore, future research among children would benefit from developing the qualitative aspect of inquiry. This would aid considerably in identifying the most appropriate and relevant quantitative measures for use among this population and other similar populations (e.g., non-White ethnic groups or other Latin

American or Caribbean contexts) and provide a much deeper understanding of the body image within this cultural context.

Lastly, while the use of mixed models enabled the maximum analytical power possible, sample sizes were relatively small, meaning findings may not be generalizable to other populations, even within a wider Nicaraguan context. However, testing children in rural Nicaragua was challenging for many reasons including, but not limited to, small numbers of children in the communities, unfamiliarity of participating in research, ensuring understanding, and participant retention across time.

7.6.7 Conclusion

In conclusion, the present study has shown that media exposure is beginning to play a role in children's perceptions of body size in this rural Nicaraguan sample. Even though the children in this study did not inhabit a heavily-saturated media environment relative to children in the West, television viewing was associated with slimmer body ideals and less body satisfaction, particularly among girls. As this region of Nicaragua continues to undergo significant economic transition, wider global forces including the pervasiveness of Western body ideals via the media could result in greater negative impact on children's body image. The development of suitable interventions that would enhance and maintain a positive body image and teach media literacy would be a very fruitful step towards minimizing the harmful effects of media exposure often seen among children in Westernized populations.

Chapter 8. General discussion

The overarching aim of this thesis was to measure body ideals in a rural Nicaraguan population, and to identify whether media exposure drove a preference for the Western thin-ideal, and was associated with body dissatisfaction and pathological eating behaviours. The study site was an ideal setting for this research due the considerable variation in current and lifespan media exposure between discrete communities. Furthermore there is a particular dearth of literature on body ideals and body image in non-Western, non-White populations, particularly those examining culturally specific constructs of appearance ideals and whether body dissatisfaction is similarly experienced and driven by the same factors as in White, Western populations. There has been an over-riding assumption in the literature that media has a necessarily negative impact on body image: However, it is less clear whether this assumption applies across cultures or whether it is particular to Western culture. In this final chapter, I summarise the main findings from the five studies presented in this thesis, and then go on to consider those findings within the context of the extant literature and theoretical perspectives outlined in the introduction. Finally, I discuss what I consider to be the strengths and weaknesses of the research and conclude by suggesting future directions for research to build on this body of work.

8.1 Summary of empirical findings

The first empirical study, discussed in Chapter 3, measured adults' perceptions of body size and their body size ideals using the TBS figural scale. Media consumption was associated with ideal female body size amongst women only, and with male body size amongst all participants: Those who watched more television, especially Latin American content, preferred figures with lower BMIs. Among men, those in the high media Mestizo village were more likely to be trying to lose weight, while among women, those in the (also) high media Miskitu village were more likely to be trying to lose weight. Across the whole sample, belief in media and own body weight also significantly predicted the likelihood of dieting. For both sexes, belief in media was higher amongst those with high frequency of television viewing, while feeling under pressure from media as regard appearance was associated with lower body appreciation.

A key weakness of this first study however, was the use of 2-dimensional stimuli which increased in BMI in a manner based on the bodies of White adults in the U.K (i.e. around the waist in particular), and perhaps did not reflect the kinds of adiposity Latin American and Caribbean samples may normally see or find attractive: Increased weight concentrated on the hips and lower body in the female stimuli may however have yielded different results. The purpose of my second and third studies therefore, was to consider ideal female body shape, as well as overall body size, using a methodology which made no assumptions about the particular body size or shape participants would prefer. Participants created their own personal 'ideal' using a 3D figure modelling programme. Qualitative methods were also employed to further examine men's perceptions of female attractiveness and women's appearance ideals, beyond simply size and shape, and to investigate their attitudes towards, and use of, television.

Amongst men in Study 2 in Chapter 4, overall body size of their 'ideal woman' was significantly lower in the high-media village than in the low-media village. Television exposure was associated with BMI preference, which mirrors data from these two villages using a different method of assessment (Boothroyd et al., 2016). Participants in the high-media village also had more Western body shape ideals, preferring larger breasts and a smaller lower body relative to upper body. This pattern of preferences was also predicted specifically by frequency of viewing US media. Overall, however, all participants created ideal female bodies which were considerably more curvy and larger bottomed than typical Western ideals, a difference which was reflected also in a sample of Black British versus White British male participants. Younger and more educated men also preferred a slimmer waist in the Nicaraguan sample, although TV exposure was not related to this outcome. During focus group discussions, male participants in the high-media villages generally had a more specific idea about what they considered to be attractive in a woman: Men referenced high profile female personalities from Western media to describe their ideals, predominantly women of colour (e.g. Halle Berry, Rihanna). Barbie, typically presented as a White toy in its associated media, was also referenced frequently among these groups, but rather to illustrate a particular body shape in the same way people used the terms 'guitar body' and 'coca-cola shape', rather than as an ideal or attractive woman. In common among all men

across groups however, regardless of media exposure, was the centrality of women's lower body shape in their preferences, and a strong appreciation of women's bottoms in motion.

In Study 3 discussed in Chapter 5, even though there were significant group differences in media exposure and media beliefs, there were no village level differences in women's ideal body size, which were overall like those of women in Western and non-Western urban populations (Swami, Neto, et al., 2007; Swami & Tovée, 2007). Women in the high-media villages created curvier body shapes than those in the low media village. Mestizo women in the high media village also held much stronger beliefs in media as a source of appearance information and felt greater media pressure than women in both the low media Mestizo village and in the high media Creole village. In contrast to previous studies (Boothroyd et al., 2016; Jucker et al., 2017), ideal body size was predicted neither by measured television viewing nor by belief in media. Shape preferences, however, were predicted by frequency of viewing Western media, such that women who watched more television desired curvier upper bodies. Women in the high-media Mestizo village generally had lower body satisfaction. Furthermore, overall, lower body satisfaction was predicted by media pressure and internalisation. Across the sample and particularly mong Mestizo women, disordered eating behaviours were significantly predicted by media pressure, own BMI and body shape concerns

Findings from the female focus group discussions in Study 4 largely supported quantitative findings from Study 3. When describing the cultural body ideal, women focused more on body shape than body size but again, there were some differences between ethnic groups. Creole participants emphasized the *boonka*h or buttocks, and breasts were perceived as not so important to the ideal body. Mestizo women however tended to value a slimmer, more toned body and were more likely to mention breasts. Most Mestizo participants had at some time controlled their food intake, and talked about reducing portions or avoiding eating at certain times, while most of the Creole women mentioned dieting as desirable only on medical advice and were typically very accepting of their own body size.

Across the groups, women considered most actresses and female TV personalities to have 'pretty bodies'. They also acknowledged that media imagery could present a risk to body satisfaction in female audiences, although some believed that within their own community

women were so far fairly unaffected. For the vast majority of participants, a belief that their bodies were 'God-given' appeared to offer considerable protection from potential negative media pressure to conform to a defined appearance standard, and women explicitly gave thanks for their religiosity and saw it as a beneficial thing with regard to their body image.

The final empirical study, presented in Chapter 7, focused on body size perception and body size ideals of children. As predicted, children generally became more accurate in judging their own body size as they got older. Amongst girls, watching more television also predicted greater accuracy. There were no village level differences in body size ideals, but boys wanted to be larger than girls, and girls who watched more television wanted to be slimmer both as a child and as an adult (i.e. future self). Greater media exposure also significantly reduced the desire to want a larger ideal body among all children. Furthermore, children with high media access were much more likely to be unhappy with their appearance than those with low media access. While more than half of all children wanted to be like someone they had seen on television, over 70% of children expressed a desire to be like a family member or a friend. Boys mainly identified with their friends and TV action characters because of their strength or physical abilities. Girls on the other hand mostly aspired to be like their friends or '*Princesa*' characters on TV largely because of their attractive appearance.

In short, across all studies, there was evidence that media exposure and media influence may be driving changes in the body ideals and body image of adults and children in this rural Nicaraguan population, whether it be for overall body size, for certain aspects of body shape, or attitudes towards dieting.

8.2 One size does not fit all: explaining differences in ideal body size

Evolutionary theory of mate selection argues that in order to maintain mate value, an individual should have a clear idea of what the opposite sex desires and then attempt to fulfil those requirements (Buss, 2003). As in previous studies (Crossley et al., 2012), men and women in Study 1 did indeed generally value the same body size as attractive. Men's ideal female body size in Study 2 however was considerably larger than women's ideal body size in Study 3. It is possible that because appearance ideals in this population are not based predominantly on body size, there is no culturally determined ideal female BMI. Body size

might not be a cornerstone in constructions of female attractiveness in all ethnic groups (see Capodilupo, 2015): Indeed, in Study 2, men's attractiveness judgments did not revolve solely around a woman's body weight. Furthermore, women in the focus group discussions in Study 4 felt somewhat unclear about what men were attracted to in a woman, suggesting it would be unlikely that those women would be aspiring to achieve a similar specific and male-determined body size.

In addition to gender differences, there were also several inconsistencies in body size ideals across studies: Contrary to expectations, in Study 1 mean ideal body size of all groups, regardless of media exposure, were within a normal weight range (BMI 18.5 – 25) and similar to Western samples (Mo et al., 2014) but much slimmer than those found in similar Nicaraguan samples (Boothroyd et al., 2016; Jucker et al., 2017). In Study 2, however, men's ideal female BMI was considerably higher than that of a U.K sample using the same 3D Daz methodology (Crossley et al., 2012), and still somewhat higher than those found in a previous study using participants from the same villages (Boothroyd et al., 2016; Jucker et al., 2017). These inconsistencies in findings could be a result of the different methods of measurement used. The use of the 2-dimensional TBS images in Study 1 limited participants' responses to a very narrow range of possible ideal body sizes. Furthermore, participants were only able to choose one image (thus one body size) as the most attractive, and only 'score' one image highly in the image ranking task, meaning they were not able to express a wider range of preferences if they had them. The Daz 3D methodology gave male participants in Study 2 considerable freedom to create their ideal female body. With this method, the men were able to 'supersize' their ideal (Marković & Bulut, 2017), exaggerating the most desired features, and not be concerned whether it was a physical possibility or not: a body with a BMI of 30 is unlikely to have a WHR of 0.7, the average combination that the men in this study desired.

Another potential influencing factor on participants' expressed preferences was the presence of the researcher. Whereas in most of my studies I personally tested all participants, those in Study 2 were tested by a white male colleague. It is quite possible that the gender and social status of the tester had an influence on the way men responded. It is also worth noting here that some men in this study commented that they liked women of all sizes, and thus found it quite challenging to create one 'ideal' female body. Future research

could benefit from using the think aloud method (Ericsson & Simon, 1980), whereby participants are encouraged to vocalise their thought processes during their participation in study tasks. This could also aid in revealing potential demand characteristics.

8.3 Ethnic differences in body ideals

A particular theme that emerged across the thesis was the difference in body ideals between Mestizo participants and those of Creole, Garifuna or Miskitu ethnicity. While we note that there can be significant admixture between groups in this area, individuals tend to strongly identify with one ethnicity in particular and this from our observations drives their attitudes more broadly. Generally speaking, Mestizo participants were more likely to endorse a slim female body ideal and report dieting behaviours. Differences between Mestizo participants and those from the other ethnic groups persisted regardless of media exposure levels. This pattern of findings is also consistent with other research in this region (Boothroyd et al, submitted to Nature: Human Behaviour) and with observations that UK women of White European descent have slimmer body ideals than UK women of Black African descent (Thornborrow, unpublished data). There is evidence that individuals of African descent tend to have a higher BMI but a relatively slimmer waist girth than individuals of European descent. Furthermore, women of Hispanic background tend to have thicker waists relative to their hip girths (Wells et al., 2008). These ethnic group differences in actual body shape could help to explain why Mestizo participants tended towards a more Western body ideal and experience more body weight dissatisfaction than their compatriots from ancestrally African ethnic groups, although more research would be needed before drawing any firm conclusions.

Another potentially influencing factor on body ideals in this population are cultural constructions of gender, which appeared to be particularly evident in the Mestizo communities. Certainly, trends in body size ideals among men and women in Pedregal reflected sexually dimorphic constructions of male and female, with women being slender and men being larger. During the women's focus groups in the Mestizo community of Pueblo in Study 4, discussions around men's attitudes to women suggested the presence of stereotypical gender roles, with Mestizo men being seen as 'macho', and 'unpredictable', and women being mostly concerned with maintaining social respectability. My unsuccessful

attempts to conduct more focus groups in the low media access community of Pedregal attest to the control that men have in these communities: women were required to beg the man's permission before being allowed to participate in any activity outside of the home, something that most women were not willing to do for this strange '*gringa*'. Undoubtedly further investigation is warranted to fully understand the role of gender identities in shaping both women's attitudes to their bodies and their appearance ideals among this population.

8.4 Evolutionary explanations for 'bootylicious' body shape ideals

For the Nicaraguan men in Study 2 body shape played a central role in their attractiveness judgments of the opposite sex, as has been found in other non-Western populations (Mo et al., 2014; Singh et al., 2010) and even in some Western populations (Swami, Neto, et al., 2007). Similarly, and in line with findings from previous studies among women of non-White ethnic groups (Kelch-Oliver & Ancis, 2011; Schooler, 2008), Nicaraguan women also valued a curvy body shape more than simply a low body weight. It has been argued that any preference for a curvy lower body (i.e., a low WHR) is simply acting as a proxy for a particular total body fat preference (i.e., BMI): Cornelissen and colleagues (2009) found that after controlling for the portion of WHR that is explained by overall fatness, 'residual' curvaceousness (i.e., individual differences in body shape) did not predict attractiveness judgments. However as the authors rightly pointed out, their statistical model was based on patterns of fat deposition for White women in the U.K, and so their argument may not translate to other groups (e.g., non-White ethnic groups) where patterns of fat deposition with weight increase may be different. Certainly findings from the studies in this thesis and from previous research among non-White ethnic groups (see Marlowe et al 2005 for a discussion on why fuller buttocks may be more attractive to Hadza men than a slim curvy waist) suggest this to be the case.

In evolutionary terms it makes sense that the 'bootylicious' body, with its combination of slim waist and big *boonkah*, would be attractive to men: This body shape connotes a relatively high BMI but with low visceral fat. In 'harsh' ecological conditions, where resources may be scarce or hard to acquire, carrying extra energy stored as fat would potentially increase a woman's mate value, making her more attractive to the opposite sex. Therefore men will be more sensitive to physical cues that reflected a woman's fat distribution (Hill et

al., 2014). Nicaragua is a nation undergoing economic development, and the Caribbean coast could further be considered a 'harsh' environment, where many people have a low nutritional and / or economic profile (Jucker et al., 2017). Fat positioned below the waist affects health less than fat deposited around the abdomen and the trait to store fat in certain way is 22-60% heritable (Schleinitz, Böttcher, Blüher, & Kovacs, 2014) so avoiding 'visceral fat-storers' will increase an individual's chances of finding a healthy mate with whom to reproduce. Furthermore, among ethnic groups with a racially Black background, women tend to have more fat on their hips and buttocks (Wells et al., 2008). Consequently, attending to lower body shape is a way for men to maximise their chances of reproductive success and for women to catch the attention of those men. While Nicaraguan men and women might desire a stable relationship with an investing partner, they may have to look for shorter term mating opportunities: men because they do not have the material resources that women seek in a long term partner, and women, because there is this dearth of men with sufficient material wealth it may pay off for them to acquire resources opportunistically, 'little and often'. This would explain the confusion women in the discussion groups felt as to what men looked for in a woman. In the male focus groups, men talked about how women are mainly concerned with a man's 'vanity' (branded items such as clothing, jewellery or shoes) because it signals that a man has considerable economic resources, probably due to working on cruise ships, abroad, or even in Managua. As the majority of men in this region do not earn such a salary, and thus do not have much in the way of material wealth, they may have to adopt shorter term mating strategies in the meantime. As such, visual cues to a woman's sexual availability and physical fitness remain key in men's judgments of attractiveness rather than any 'aesthetic' or 'static' appearance ideal: Even where media ideals are beginning to have an influence on some aspects of female physical attractiveness (i.e., body weight and breast size preferences) a bootylicious body shape is not relinquished.

8.5 Media influence and body image

Overall, individual media consumption was more predictive of media influence on body ideals than village. Furthermore, psychometric measures of media belief and pressure were generally more predictive of body satisfaction than actual television consumption. Women, especially Mestizo women, generally watched *novelas* more than any other content type,

and men typically watched news, action movies and sport, clearly illustrating a gender stereotypical viewing pattern of women watching more appearance-related content, and men watching more action-related content. Interestingly, men in Kahkabila, who preferred a slimmer female body size and fuller breasts, did report watching *novelas* regularly. While data gathered qualitatively helped to fill out the picture of local television viewing habits, future studies would benefit from a more in-depth analysis to ascertain exactly what appearance standards people are viewing and perhaps more importantly, identifying with or aspiring to.

Pressure from media exposure was more likely to influence women's concern with their body *shape* rather than any concern with body weight. In the West, dieting may be understood as a principal indicator of body dissatisfaction, but among these women it did not appear to share the same negative connotation: even if the women admitted to dieting, they reported being happy and satisfied with their bodies. Studies in comparable populations, where young women of non-White ethnic groups often have to negotiate overlapping cultural identities, have identified similarly paradoxical experiences of body image and outcomes (De Casanova, 2004; Dijkstra et al., 2015). For example, in a study examining Ecuadorian women's beauty ideals, De Casanova (2004) noted that although they espoused both the 'White' and the 'Latina' ideals propagated by media culture, the young women saw them as ''inapplicable'' sources for comparison when considering their own appearance. Certainly for the women in this study (whose ethnic group identities may already be relatively distal even within a national context), a cognitive dissonance from culturally external sources of appearance ideals (i.e., Western and even mainstream 'Latin' constructions) seemed to offer considerable protection to their body image. However, it is worth noting that all possible expressions of appearance dissatisfaction have not been measured, or indeed considered, in this study: Similarly to De Casanova's (2004) Ecuadorian participants, women's conceptions of what was key to their own attractiveness and self-image did not centre on body size and shape, but incorporated dressing, style, and valuing the uniqueness of their 'God-given' bodies.

A further factor which could potentially change outcomes of media influences on body image, both within this Nicaraguan population and beyond, is the slow but steady rise in Western media of the appearance of the 'bootylicious' body type: Mainstream celebrities

such as Kim Kardashian and Nikki Minaj are effectively popularizing the *boonkah* and selling it as the new body ideal for the next generation of young women. For many women, including those in the present study, the bootylicious body shape, with its higher distribution of body fat on the hips and thighs, is a more natural and achievable body 'ideal', engendering the possibility that women will feel less pressure to aspire to an unrealistic, unhealthy, and mostly unattainable 'thin ideal' body.

8.6 Contextualizing Nicaraguan children's body image

Evidence from the adult studies in this thesis suggests that while general body dissatisfaction levels are currently low relative to Western populations, individuals who are at high risk (i.e., Mestizos, those with low body appreciation, or with weight concerns) seemed to be similarly affected by media exposure. We can expect this effect to continue and possibly increase among the children in this rural Nicaraguan population, especially as their lifetime media exposure is likely to be higher than that of the adults tested in these studies. Already roughly half of children wanted to be like someone on TV, although like Guatemalan schoolchildren (Vander Wal et al., 2008) they were even more likely to want to be like an adult family member. However, this does not necessarily preclude them from being affected by media's appearance standards: as has been found in previous cross-cultural studies, adults are often transmitters of media messages to children (McCabe et al., 2015), consciously or not.

Even though relatively speaking the children in the current research did not inhabit a highly saturated media environment, greater media exposure was significantly associated with desiring a slimmer body, especially among girls, as has been previously found (Dohnt & Tiggemann, 2006a). Perhaps not so surprising, as girls reported watching mostly appearance-related TV content, preferring programmes such as '*Princesa*'-type cartoons featuring stereotypically gendered representations of femaleness. Viewing these type of cartoons further endorses attractiveness as a key quality for girls to attain (Klein & Shiffman, 2006).

Girls in this study also aspired to be like a friend or adult family member predominantly because of the perceived attractiveness of some aspect of their physical appearance. Culturally reinforced, highly dimorphic and stereotyped constructions of gender also have the potential to exert pressure on girls to look a certain way. There was evidence of this across the adult studies: In Study 1 female ideal body size among Mestizos was slim even

when media exposure levels were very low, suggesting that the 'traditional' Mestizo gendered female body already had a low weight. This is further evidenced by findings from Study 4 where, for Mestizo women in particular, a slim female body connoted restraint (evidenced by reports of controlling food intake and dieting), modesty (evidenced by concerns with respectability and dressing), and subservience (to God, to men in the community).

Boys also appeared to experience some influence of media exposure on their body image as did the adult men from their communities in Study 1. As predicted, boys generally wanted to be bigger than girls, and as TV consumption increased, boys became more dissatisfied with their body size. However, similarly to an Australian sample of young adolescent boys (Slater & Tiggemann, 2014), general television viewing did not predict this desire. This could suggest that other sociocultural influences were predominantly driving boy's ideas about what they thought their bodies should look like. Certainly the great majority of boys reported wanting to be like an adult male family member because of their physical abilities (e.g., sporting ability) or qualities (e.g., strong), rather than purely their appearance. However, when television exposure was broken down into content type among the Australian sample, soap operas and reality TV were significantly associated with boys wanting to be both slimmer *and* more muscular (Slater & Tiggemann, 2014) suggesting potentially double the amount of media pressure to conform to male appearance standards that are based on leanness and size at the same time.

8.7 Strengths and weaknesses of the research

Overall, the present research succeeded in examining media influence on body ideals among men, women and children of non-White ethnic groups in a non-Western, geographically challenging location. The use of a wide range of measures and methods, specially developed and modified for this population, gave the best chance of identifying hypothesized relationships between media exposure and body ideals. The use of mainly visual stimuli meant that in spite of the considerably varied literacy levels among this population, all participants could engage with the tasks as equally as was possible.

However, there were several weaknesses with the study materials used. Firstly, as mentioned in Chapter 3, the TBS images themselves perhaps limited participants' ability to

truly express their body size ideals in the first study. By employing a less constraining methodology in Studies 2 and 3, a clearer picture of men's and women's body ideals began to emerge, although as discussed earlier, perhaps the freedom to 'create' an ideal body resulted in some men appearing to prefer a female body type that does not exist in reality. Nevertheless, the 'supersizing' of certain features of their ideal bodies, such as the highly curvaceous waist, and the large bottom, gave a clear indication as to what areas of a woman's body are the most attractive to these men.

Secondly, while considerable thought and preparation went in to implementing existing psychometric measures, future studies would benefit from further refinement or adjustment of measures employed, including developing new, culturally specific instruments to measure aspects of appearance and body image other than body size or shape. Assumptions of what we were measuring (i.e., body size and shape ideals, and body size dissatisfaction) led the choice of measures: this is clearly usual in psychological research and is called hypothesis testing. Once we arrived in the field, however, that it became apparent that established approaches were not completely congruent with the needs of this population. While the introduction of qualitative methods aided in revealing a fuller picture of this population's appearance ideals and their body images, starting the research with such methods would have perhaps facilitated a more suitable selection of measures for the quantitative studies that were not so body-size focused.

While sample sizes were determined by those used in previous studies among a non-Western population (e.g., Tovée et al., 2006), they may have been insufficiently large to determine a significant effect for group differences in body ideals across most of the studies. The sample sizes were restricted by available time and resources to collect data in a challenging field setting. A larger sample size may have identified a significant effect of village, although other evidence from the current research tends to suggest that hypothesized differences in the body size ideals were not found because of factors other than participant numbers, i.e., media consumption at the level of the individual is what drives ideals, and traditional body ideals of some ethnic groups may already be slim regardless of media exposure.

Working in this population was practically challenging. Firstly, I myself as a researcher was probably about as strange to participants as I could be: an '*extranjera*', a foreign, middle-aged White woman whose native language was neither Creole, Miskitu nor Spanish. Furthermore, people were not at all accustomed to being asked to think about bodies, or give their opinion on their bodies. All of the research was carried out 'face to face', so I was aware of the potential 'disruption' in the data due to my presence: Spending considerable periods of time in the field, familiarising myself with the local people and their ways of doing things hopefully helped to 'smooth the ripples'. However, it is never possible to completely remove the researcher from the site of inquiry in this type of research, and indeed, all research is to some degree subjective.

8.8 Future directions

Follow up longitudinal studies are now needed to ascertain a causal relationship: that is to say that media exposure preceded any preference for slim bodies or body image concerns. Longitudinal studies are few and far between, but their contribution to our understanding of the developmental aspects of body image is significant (see Levine & Murnen, 2009 for a review).

The measures of media exposure used in these studies would benefit from being further refined to enable a more targeted appraisal of the influence of different types of media content. This would initially require a content analysis of Nicaraguans' most viewed television shows and channels to determine what kinds of appearance related imagery people are being exposed to. Further investigation into peoples' understandings of, and attitudes towards these predominant content types would help to understand what potential risks exposure to them might pose to individuals and groups in this population.

At the beginning of this research, relatively few individuals had their own smartphone or tablet. Television was the only readily available form of visual media. However, in the last few years the use of the internet and social media among this population appears to be growing exponentially: many young Nicaraguans are now spending more time on social networks than on watching television (personal comments). As such, future studies investigating media influence need to take these new trends into account.

Another appearance feature that may need to be considered in judgments of attractiveness is skin colour. Certainly within this ethnically diverse population, darker skin, and the individuals who had it, appeared to be viewed more negatively than lighter skin, and those who had it. Many Creole women told me that skin bleaching was quite common, and afro hair was referred to as 'dry' or 'hard' hair. Among Creole and Garifuna people 'Brown-skinned' or 'clear-skinned' individuals appeared to be referred to with more reverence and perceived as more attractive than those with very dark skin. Among Mestizo people also, dark skin and people with dark skin were often referred to negatively, and considered as less attractive than 'Spaniard' girls. The preference for lighter skin maybe linked to the amount and the type content of television watched: The preponderance of actors of European descent in mainstream Nicaraguan TV content such as *novelas* may be 'valencing' paler skin as more attractive. However, these few field observations were at the time incidental to the main focus of the studies in this thesis: targeted research would help clarify how media representations of Whiteness are located within the context of local and cultural perceptions of skin colour and ethnic identity. Furthermore, is skin colour a key component of any appearance schema, or linked to appearance dissatisfaction, among the non-White ethnic groups in this region?

Study 1 looked briefly at men's ideal body size and their general body satisfaction levels, however male body image is still a relatively understudied topic in non-Western settings at least. There is a growing body of research suggesting that men in the West are becoming more dissatisfied with their bodies, likely due to increasing media pressure to 'buy into' the lean, muscular body ideal. Again, field observations suggest that some young Nicaraguan men are also beginning to take an interest in developing muscles and sculpting their bodies. Further research would benefit from identifying if this interest in developing a muscular body is influenced by their media consumption or local cultural constructions of 'maleness'.

Finally, and perhaps of most urgency, is to continue the work of understanding how sociocultural influences, particularly the media, impact upon children's experience of their bodies and attitudes towards their appearance in general. In the West, it has become a matter for public policy to actively intervene among children and young people with the aim of minimising the endemic levels of body discontent seen within the adult population (Yager, Diedrichs, Ricciardelli, & Halliwell, 2013). Dissonance-based and body positivity programmes

run in schools appear to be going some way to reducing negative effects on body image, among at-risk groups at least (Halliwell et al., 2016). While evidence from the current research does suggest that so far, among this rural Nicaraguan population, body dissatisfaction is not a 'normative discontent', there are signs of negative affect, particularly among individuals who consume more media and certain ethnic groups. A next step would be to develop similar school-based 'prevention' interventions for Nicaraguan children that would build on body positivity and increase resilience to media pressure to conform to narrow and idealised appearance standards.

8.9 Concluding remark

To conclude then, the research within this thesis took advantage of the 'natural' and considerable variation in media access within a rural Nicaraguan setting, with the aim of establishing local perceptions of attractive bodies and whether television consumption was associated with a preference for slimmer bodies. Across the studies, and similarly to previous research, there was evidence of this relationship. However, other facets of appearance such as body shape, and non-appearance related qualities, such as style, appeared to be equally important in people's understandings of attractiveness. Furthermore, although there was evidence of media exposure decreasing general body satisfaction, in general these Nicaraguans were happy with their body size. Together, these findings demonstrate how important it is for researchers to continue to investigate what environmental and sociocultural factors shape perceptions of attractiveness and experiences of body image cross culturally, and finally, gives hope that when it comes to body ideals, perhaps 'one (thin) size does not fit all'.

Appendix A. Modified psychometric measures used in Studies 1 and 3

1. Body Appreciation Scale females (Spanish)

A CONTINUACIÓN LEERÁ ALGUNAS FRASES SOBRE PENSAMIENTOS ACERCA DE SU CUERPO. LEE CADA UNA DE ELLAS Y ESCOGE LA RESPUESTA CON LA QUE MEJOR LE IDENTIFICA EN CUANTO A LO QUE PIENSA RESPECTO A CADA FRASE. NO HAY RESPUESTAS "BUENAS" NI "MALAS".

	NUNCA	RARA VEZ	A VECES	A MENUDO	SIEMPRE
1. RESPETO MI CUERPO					
2. ME SIENTO BIEN CON MI CUERPO					
3. EN GENERAL ESTOY SATISFECHA CON MI CUERPO					
4. A PESAR DE LOS DEFECTOS, ACEPTO MI CUERPO TAL COMO ES					
5. SIENTO QUE MI CUERPO TIENE AL MENOS ALGUNAS CUALIDADES BUENAS					
6. TENGO UNA ACTITUD POSITIVA HACIA MI CUERPO					
7. ESTOY ATENTA A LAS NECESIDADES DE MI CUERPO					
8. MI AUTOESTÍMA NO ESTA AFFECTADO POR LA FORMA DE MI CUERPO O DE MI PESO					
9. NO PIERDO MUCHO TIEMPO EN PREOCUPARME POR LA FORMA DE MI CUERPO POR MI PESO					
10. MIS SENTIMIENTOS HACIA MI CUERPO SON POSITIVOS EN SU MAYOR PARTE					
11. TENGO HÁBITOS SANOS PARA CUIDAR MI CUERPO					
12. NO DEJO QUE IMÁGENES IRREALES DE MUJERES DELGADAS QUE APARECEN EN LA TELEVISIÓN AFECTEN A LA ACTITUD HACIA MI CUERPO					
13. AUN CON SUS DEFECTOS, ME GUSTA MI CUERPO					

Body Appreciation Scale males (Spanish)

A CONTINUACIÓN LEERÁ ALGUNAS FRASES SOBRE PENSAMIENTOS ACERCA DE SU CUERPO. LEE CADA UNA DE ELLAS Y ESCOGE LA RESPUESTA CON LA QUE MEJOR LE IDENTIFICA EN CUANTO A LO QUE PIENSA RESPECTO A CADA FRASE. NO HAY RESPUESTAS "BUENAS" NI "MALAS".

	NUNCA	RARA VEZ	A VECES	A MENUDO	SIEMPRE
1. RESPETO MI CUERPO					
2. ME SIENTO BIEN CON MI CUERPO					
3. EN GENERAL, ESTOY SATISFECHO CON MI CUERPO					
4. A PESAR DE LOS DEFECTOS, ACEPTO MI CUERPO TAL COMO ES					
5. SIENTO QUE MI CUERPO TIENE AL MENOS ALGUNAS CUALIDADES BUENAS					
6. TENGO UNA ACTITUD POSITIVA HACIA MI CUERPO					
7. ESTOY ATENTO A LAS NECESIDADES DE MI CUERPO					
8. MI AUTOESTÍMA NO ESTA AFFECTADO POR LA FORMA DE MI CUERPO O DE MI PESO					
9. NO PIERDO MUCHO TIEMPO EN PREOCUPARME POR LA FORMA DE MI CUERPO POR MI PESO					
10. MIS SENTIMIENTOS HACIA MI CUERPO SON POSITIVOS EN SU MAYOR PARTE					
11. TENGO HÁBITOS SANOS PARA CUIDAR MI CUERPO					
12. NO DEJO QUE IMÁGENES IRREALES DE HOMBRES MUSCULOSOS QUE APARECEN EN LA TELEVISIÓN AFECTEN A LA ACTITUD HACIA MI CUERPO					
13. AUN CON SUS DEFECTOS, ME GUSTA MI CUERPO					

Body Appreciation Scale females (English)

BELOW THERE ARE SOME STATEMENTS THAT RELATE TO YOUR THOUGHTS ABOUT YOUR BODY. READ EACH STATEMENT IN TURN AND CHOOSE THE ANSWER THAT BEST REPRESENTS WHAT YOU THINK ABOUT EACH STATEMENT BY PLACING A CROSS IN ONE BOX. THERE ARE NO 'RIGHT' OR 'WRONG' ANSWERS.

	NEVER	RARELY	SOME TIMES	USUALLY	ALWAYS
1. I RESPECT MY BODY					
2. I FEEL GOOD ABOUT MY BODY					
3. ON THE WHOLE, I AM SATISFIED WITH MY BODY					
4. DESPITE ITS FLAWS, I ACCEPT MY BODY FOR WHAT IT IS					
5. I FEEL THAT MY BODY HAS AT LEAST SOME GOOD QUALITIES					
6. I TAKE A POSITIVE ATTITUDE TOWARD MY BODY					
7. I AM ATTENTIVE TO MY BODY'S NEEDS					
8. MY SELF-ESTEEM IS NOT AFFECTED BY MY BODY SHAPE OR WEIGHT					
9. I DO NOT FOCUS A LOT OF ENERGY BEING CONCERNED WITH MY BODY SHAPE OR WEIGHT					
10. MY FEELINGS TOWARD MY BODY ARE POSITIVE, FOR THE MOST PART					
11. I ENGAGE IN HEALTHY BEHAVIOURS TO TAKE CARE OF MY BODY					
12. I DO NOT ALLOW UNREALISTICALLY THIN IMAGES OF WOMEN ON TELEVISION TO AFFECT MY ATTITUDE TOWARD MY OWN BODY					
13. DESPITE ITS IMPERFECTIONS, I STILL LIKE MY BODY					

2. Body Appreciation Scale males (English)

BELOW THERE ARE SOME STATEMENTS THAT RELATE TO YOUR THOUGHTS ABOUT YOUR BODY. READ EACH STATEMENT IN TURN AND CHOOSE THE ANSWER THAT BEST REPRESENTS WHAT YOU THINK ABOUT EACH STATEMENT BY PLACING A CROSS IN ONE BOX. THERE ARE NO 'RIGHT' OR 'WRONG' ANSWERS.

	NEVER	RARELY	SOME TIMES	USUALLY	ALWAYS
1. I RESPECT MY BODY					
2. I FEEL GOOD ABOUT MY BODY					
3. MOST OF THE TIME, I AM SATISFIED WITH MY BODY					
4. EVEN IF IT IS NOT PERFECT, I ACCEPT MY BODY FOR WHAT IT IS					
5. I FEEL THAT MY BODY HAS AT LEAST SOME GOOD QUALITIES					
6. I TAKE A POSITIVE ATTITUDE TOWARD MY BODY					
7. I LISTEN TO MY BODY'S NEEDS					
8. MY SELF-ESTEEM IS NOT AFFECTED BY MY BODY SHAPE OR WEIGHT					
9. I DO NOT FOCUS A LOT OF ENERGY BEING CONCERNED WITH MY BODY SHAPE OR WEIGHT					
10. MY FEELINGS TOWARD MY BODY ARE POSITIVE, FOR THE MOST PART					
11. I MAKE HEALTHY BEHAVIOURS TO TAKE CARE OF MY BODY					
12. I DO NOT ALLOW IMAGES OF VERY MUSCULAR MEN ON THE TELEVISION TO AFFECT MY ATTITUDE TOWARD MY OWN BODY					
13. EVEN IF IT IS NOT PERFECT, I STILL LIKE MY BODY					

Sociocultural attitudes Towards Appearance Questionnaire (SATAQ-3) females (English)

PLEASE READ EACH OF THE FOLLOWING ITEMS CAREFULLY AND TICK THE BOX THAT BEST REFLECTS YOUR AGREEMENT WITH THE STATEMENT.

		AGREE STRONGLY	AGREE SLIGHTLY	NEITHER AGREE NOR DISAGREE	DISAGREE SLIGHTLY	DISAGREE STRONGLY
1.	TV PROGRAMS ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE.''					
2.	I FEEL PRESSURE FROM THE TV TO LOSE WEIGHT (GET MORE MEAGRE)					
4	I COMPARE MY BODY TO THE BODIES OF TV AND MOVIE STARS (ACTORS IN THE PICTURES).					
5	TV COMMERCIALS (EXTRAS) ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE''.					
8	I COMPARE MY APPEARANCE TO THE APPEARANCE OF TV AND MOVIE STARS.					
10	I FEEL PRESSURE FROM TV TO BE THIN (MEAGRE).					
11	I WANT MY BODY TO LOOK LIKE THE PEOPLE WHO ARE IN THE MOVIES (PICTURES).					
14	I FEEL PRESSURE FROM THE TV TO HAVE A PERFECT BODY.					
15	I WISH I LOOKED LIKE THE GIRLS IN THE MUSIC VIDEOS.					
18	I FEEL PRESSURE FROM THE TV TO DIET.					
20	I COMPARE MY BODY TO THAT OF PEOPLE IN ''GOOD SHAPE.''					
22	I FEEL PRESSURE FROM THE TV TO EXERCISE.					
23	I WISH I LOOKED AS ATHLETIC AS SPORTS STARS.					
24	I COMPARE MY BODY TO THAT OF PEOPLE WHO ARE ATHLETIC.					
25	MOVIES (PICTURES) ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE.''					
26	I FEEL PRESSURE FROM THE TV TO CHANGE MY APPEARANCE.					
29	FAMOUS PEOPLE ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE.''					
30	I TRY TO LOOK LIKE SPORTS ATHLETES.					

3. *Sociocultural attitudes Towards Appearance Questionnaire (SATAQ-3) females (Spanish)*

POR FAVOR, LEA CADA UNO DE LOS SIGUIENTES ARTÍCULOS CUIDADOSAMENTE Y MARQUE LA CASILLA QUE MEJOR REFLEJE SU ACUERDO CON LA DECLARACIÓN.

		MUY DE ACUERDO	ALGO DE ACUERDO	NI DE ACUERDO NI EN	ALGO DE DESACUERDO	MUY EN DESACUERDO
1	**LOS PROGRAMAS DE TV SON UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVA."**					
2	**HE SENTIDO PRESIÓN DE LA TV PARA PERDER PESO.**					
4	**COMPARO MI CUERPO CON LOS CUERPOS DE LA GENTE QUE APARECE EN TELEVISIÓN.**					
5	**LOS ANUNCIOS TELEVISIVOS SON UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVA."**					
8	**COMPARO MI APARIENCIA CON LA APARIENCIA DE LAS ESTRELLAS DE TELEVISIÓN O DEL CINE (LAS PELÍCULAS).**					
10	**HE SENTIDO PRESIÓN DE LA TELEVISIÓN PARA ESTAR DELGADA.**					
11	**ME GUSTARÍA QUE MI CUERPO SE PARECIERA AL CUERPO DE LA GENTE QUE SALE EN LAS PELÍCULAS.**					
14	**HE SENTIDO PRESIÓN DE LA TELEVISIÓN PARA TENER UN CUERPO PERFECTO.**					
15	**DESEARÍA PARECERME A LAS MODELOS DE LOS VÍDEOS MUSICALES.**					
18	**HE SENTIDO PRESIÓN DE LA TELEVISIÓN PARA PONERME A DIETA.**					
20	**COMPARO MI CUERPO CON EL DE LA GENTE QUE ESTÁ EN "BUENA FORMA."**					
22	**HE SENTIDO PRESIÓN DE LA TV PARA HACER EJERCICIO.**					
23	**DESEO PARECER TAN ATLÉTICA COMO LAS ESTRELLAS DEL DEPORTE.**					
24	**COMPARO MI CUERPO CON EL CUERPO DE LA GENTE QUE ES ATLÉTICA.**					
25	**LAS PELÍCULAS SON UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVA."**					
26	**HE SENTIDO PRESIÓN DE LA TV PARA CAMBIAR MI APARIENCIA.**					

		MUY DE ACUERDO	ALGO DE ACUERDO	NI DE ACUERDO NI EN	ALGO DE DESACUERDO	MUY EN DESACUERDO
29	**LA GENTE FAMOSA ES UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVA."**					
30	**INTENTO PARECERME A LAS ATLETAS DEPORTIVAS.**					

4. Sociocultural attitudes Towards Appearance Questionnaire (SATAQ-3) males (English)

PLEASE READ EACH OF THE FOLLOWING ITEMS CAREFULLY AND TICK THE BOX THAT BEST REFLECTS YOUR AGREEMENT WITH THE STATEMENT.

		AGREE STRONGLY	AGREE SLIGHTLY	NEITHER AGREE NOR DISAGREE	DISAGREE SLIGHTLY	DISAGREE STRONGLY
1.	TV PROGRAMS ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE.''					
2.	I FEEL PRESSURE FROM THE TV TO GAIN MUSCLE.					
4	I COMPARE MY BODY TO THE BODIES OF TV AND MOVIE STARS (ACTORS IN THE PICTURES).					
5	TV COMMERCIALS (EXTRAS) ARE GOOD WAY TO LEARN ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE''.					
8	I COMPARE MY APPEARANCE TO THE APPEARANCE OF TV AND MOVIE STARS (ACTORS IN THE PICTURES).					
10	I FEEL PRESSURE FROM THE TV TO BE MUSCULAR.					
11	I WANT MY BODY TO LOOK LIKE THE PEOPLE WHO ARE IN THE MOVIES (PICTURES).					
14	I FEEL PRESSURE FROM THE TV TO HAVE A PERFECT BODY.					
15	I WISH I LOOKED LIKE THE MALE MODELS IN MUSIC VIDEOS.					
18	I FEEL PRESSURE FROM THE TV TO DIET.					
20	I COMPARE MY BODY TO THAT OF PEOPLE IN ''GOOD SHAPE.''					
22	I FEEL PRESSURE FROM THE TV TO EXERCISE.					
23	I WISH I LOOKED AS ATHLETIC AS SPORTS STARS.					
24	I COMPARE MY BODY TO THAT OF PEOPLE WHO ARE ATHLETIC.					
25	MOVIES ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE.''					
26	I FEEL PRESSURE FROM THE TV TO CHANGE MY APPEARANCE.					

		AGREE STRONGLY	AGREE SLIGHTLY	NEITHER AGREE NOR DISAGREE	DISAGREE SLIGHTLY	DISAGREE STRONGLY
29	FAMOUS PEOPLE ARE AN IMPORTANT SOURCE OF INFORMATION ABOUT FASHION (STYLE) AND ''BEING ATTRACTIVE.''					
30	I TRY TO LOOK LIKE SPORTS ATHLETES.					

5. *Socio-cultural attitudes Towards Appearance Questionnaire (SATAQ-3) males (Spanish)*

POR FAVOR, LEA CADA UNO DE LOS SIGUIENTES ARTÍCULOS CUIDADOSAMENTE Y MARQUE LA CASILLA QUE MEJOR REFLEJE SU ACUERDO CON LA DECLARACIÓN.

		MUY DE ACUERDO	**ALGO DE ACUERDO**	**NI DE ACUERDO NI EN DESACUERDO**	**ALGO DE DESACUERDO**	**MUY EN DESACUERDO**
1.	**LOS PROGRAMAS DE TV SON UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVO."**					
2.	**HE SENTIDO PRESIÓN DE LA TV PARA GANAR MÚSCULO**					
4.	**COMPARO MI CUERPO CON LOS CUERPOS DE LA GENTE QUE APARECE EN TELEVISIÓN.**					
5.	**LOS ANUNCIOS TELEVISIVOS SON UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVO."**					
8.	**COMPARO MI APARIENCIA CON LA APARIENCIA DE LAS ESTRELLAS DE TELEVISIÓN O DEL CINE (LOS ACTORES EN LAS PELÍCULAS).**					
10.	**HE SENTIDO PRESIÓN DE LA TELEVISIÓN PARA ESTAR MUSCULOSO.**					
11.	**ME GUSTARÍA QUE MI CUERPO SE PARECIERA AL CUERPO DE LA GENTE QUE SALE EN LAS PELÍCULAS.**					
14.	**HE SENTIDO PRESIÓN DE LA TELEVISIÓN PARA TENER UN CUERPO PERFECTO.**					
15.	**DESEARÍA PARECERME A LAS MODELOS MASCULINOS DE LOS VÍDEOS MUSICALES.**					
18.	**HE SENTIDO PRESIÓN DE LA TELEVISIÓN PARA PONERME A DIETA.**					

		MUY DE ACUERDO	ALGO DE ACUERDO	NI DE ACUERDO NI EN DESACUERDO	ALGO DE DESACUERDO	MUY EN DESACUERDO
20.	**COMPARO MI CUERPO CON EL DE LA GENTE QUE ESTÁ EN "BUENA FORMA."**					
22.	**HE SENTIDO PRESIÓN DE LA TV PARA HACER EJERCICIO.**					
23.	**DESEO PARECER TAN ATLÉTICO COMO LAS ESTRELLAS DEL DEPORTE.**					
24.	**COMPARO MI CUERPO CON EL CUERPO DE LA GENTE QUE ES ATLÉTICA.**					
25.	**LAS PELÍCULAS SON UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVO."**					
26.	**HE SENTIDO PRESIÓN DE LA TV PARA CAMBIAR MI APARIENCIA.**					
29.	**LA GENTE FAMOSA ES UNA FUENTE IMPORTANTE DE INFORMACIÓN SOBRE LA MODA (ESTILO) Y EL "SER ATRACTIVA."**					
30.	**INTENTO PARECERME A LAS ATLETAS DEPORTIVAS.**					

6. BSQ 8-C Spanish

NOS GUSTARÍA SABER CÓMO SE HA SENTIDO SOBRE SU ASPECTO DURANTE LAS ÚLTIMAS CUATRO SEMANAS. POR FAVOR, LEA CADA PREGUNTA Y MARQUE LA CASILLA CORRESPONDIENTE A LA DERECHA. POR FAVOR CONTESTE TODAS LAS PREGUNTAS.

EN LOS ÚLTIMOS CUATRO SEMANAS:

	NUNCA	RARA VEZ	ALGUNA VEZ	A MENUDO	MUY A MENUDO	SIEMPRE
4. ¿HA TENIDO MIEDO DE ENGORDAR?						
6. SENTIRLE LLENA (DESPUÉS DE UNA GRAN COMIDA), ¿LE HA HECHO SENTIR GORDA?						
13. PENSAR EN SU FIGURA, ¿HA INTERFERIDO EN SU CAPACIDAD DE CONCENTRACIÓN (POR EJEMPLO, CUANDO MIRA LA TV, LEE O MANTIENE UNA CONVERSACIÓN)?						
16. ¿LE HA IMAGINADO CORTANDO PARTES GRUESAS DE TU CUERPO?						
19. ¿LE HA SENTIDO MUY GORDA O REDONDEADA?						
23. ¿HA PENSADO QUE LA FIGURA QUE TIENE ES DEBIDO A SU FALTA DE AUTOCONTROL?						
29. VERLE REFLEJADA EN UN ESPEJO O EN UN ESCAPARATE, ¿LE HA HECHO SENTIR MAL POR SU FIGURA?						
33. ¿LE HA FIJADO MÁS EN SU FIGURA ESTANDO EN COMPAÑÍA DE OTRAS PERSONAS?						

7. Body Shape Questionnaire (BSQ-8c) English

WE WOULD LIKE TO KNOW HOW YOU HAVE BEEN FEELING ABOUT YOUR APPEARANCE OVER THE PAST FOUR WEEKS. PLEASE READ EACH QUESTION AND PUT A TICK IN THE RELEVANT BOX TO THE RIGHT. PLEASE ANSWER ALL THE QUESTIONS.

OVER THE PAST *FOUR WEEKS*:

	NEVER	RARELY	SOMETIMES	OFTEN	VERY OFTEN	ALWAYS
4. HAVE YOU BEEN AFRAID THAT YOU MIGHT BECOME FAT (OR FATTER)?						
6. HAS FEELING FULL (FOR EXAMPLE, AFTER EATING A LARGE MEAL) MADE YOU FEEL FAT?						
13. HAS THINKING ABOUT YOUR SHAPE INTERFERED WITH YOUR ABILITY TO CONCENTRATE (E.G WHILE WATCHING TELEVISION, LISTENING TO CONVERSATIONS)?						
16. HAVE YOU IMAGINED CUTTING OFF FLESHY AREAS OF YOUR BODY?						
19. HAVE YOU FELT VERY LARGE AND ROUNDED?						
23. HAVE YOU THOUGHT THAT YOU ARE THE SHAPE YOU ARE BECAUSE YOU LACK SELF-CONTROL?						
29. HAS SEEING YOUR REFLECTION (FOR EXAMPLE, IN A SHOP WINDOW OR MIRROR) MADE YOU FEEL BAD ABOUT YOUR SHAPE?						
33. HAVE YOU BEEN VERY SELF-CONSCIOUS ABOUT YOUR SHAPE WHEN IN THE COMPANY OF OTHER PEOPLE?						

8. Eating Attitudes Test (EAT-26) English

PLEASE FILL OUT THE BELOW FORM AS ACCURATELY, HONESTLY AND COMPLETELY AS POSSIBLE. THERE ARE NO RIGHT OR WRONG ANSWERS. ALL OF YOUR RESPONSES ARE CONFIDENTIAL.

		ALWAYS	USUALLY	OFTEN	SOME TIMES	RARELY	NEVER
1	I AM TERRIFIED ABOUT BEING OVERWEIGHT.						
2	I AVOID EATING WHEN I AM HUNGRY.						
3	I FIND MYSELF PREOCCUPIED WITH FOOD.						
4	I HAVE GONE ON EATING BINGES WHERE I FEEL THAT I MAY NOT BE ABLE TO STOP.						
5	I CUT MY FOOD INTO SMALL PIECES.						
6	I AM AWARE OF THE CALORIE CONTENT OF FOODS THAT I EAT.						
7	I TRY NOT TO EAT FOOD WITH A HIGH STARCH CONTENT (FOR EXAMPLE - BREAD, RICE, POTATOES)						
8	I FEEL THAT OTHER PEOPLE WOULD PREFER IT IF I ATE MORE						
9	I VOMIT AFTER I HAVE EATEN.						
10	I FEEL VERY GUILTY AFTER EATING.						
11	I THINK ABOUT BEING THINNER ALL THE TIME.						
12	I THINK ABOUT BURNING UP CALORIES WHEN I EXERCISE.						
13	OTHER PEOPLE SAY I AM TOO THIN.						
14	I AM VERY WORRIED WITH THE THOUGHT OF HAVING FAT ON MY BODY.						
15	I TAKE LONGER THAN OTHERS TO EAT MY MEALS.						
16	I DO NOT EAT FOODS WITH SUGAR IN THEM.						
17	I EAT DIET FOODS.						
18	I FEEL THAT FOOD CONTROLS MY LIFE.						
19	I DISPLAY SELF-CONTROL AROUND FOOD						

		ALWAYS	USUALLY	OFTEN	SOME TIMES	RARELY	NEVER
20	I FEEL THAT OTHER PEOPLE PRESSURE ME TO EAT.						
21	I GIVE TOO MUCH TIME AND THOUGH TO FOOD.						
22	I FEEL UNCOMFORTABLE AFTER EATING SWEETS.						
23	I ENGAGE IN DIETING BEHAVIOUR.						
24	I LIKE MY STOMACH TO BE EMPTY.						
25	I WANT TO VOMIT AFTER MEALS.						
26	I ENJOY TRYING NEW RICH FOODS						

9. Eating Attitudes Test (EAT-26) Spanish

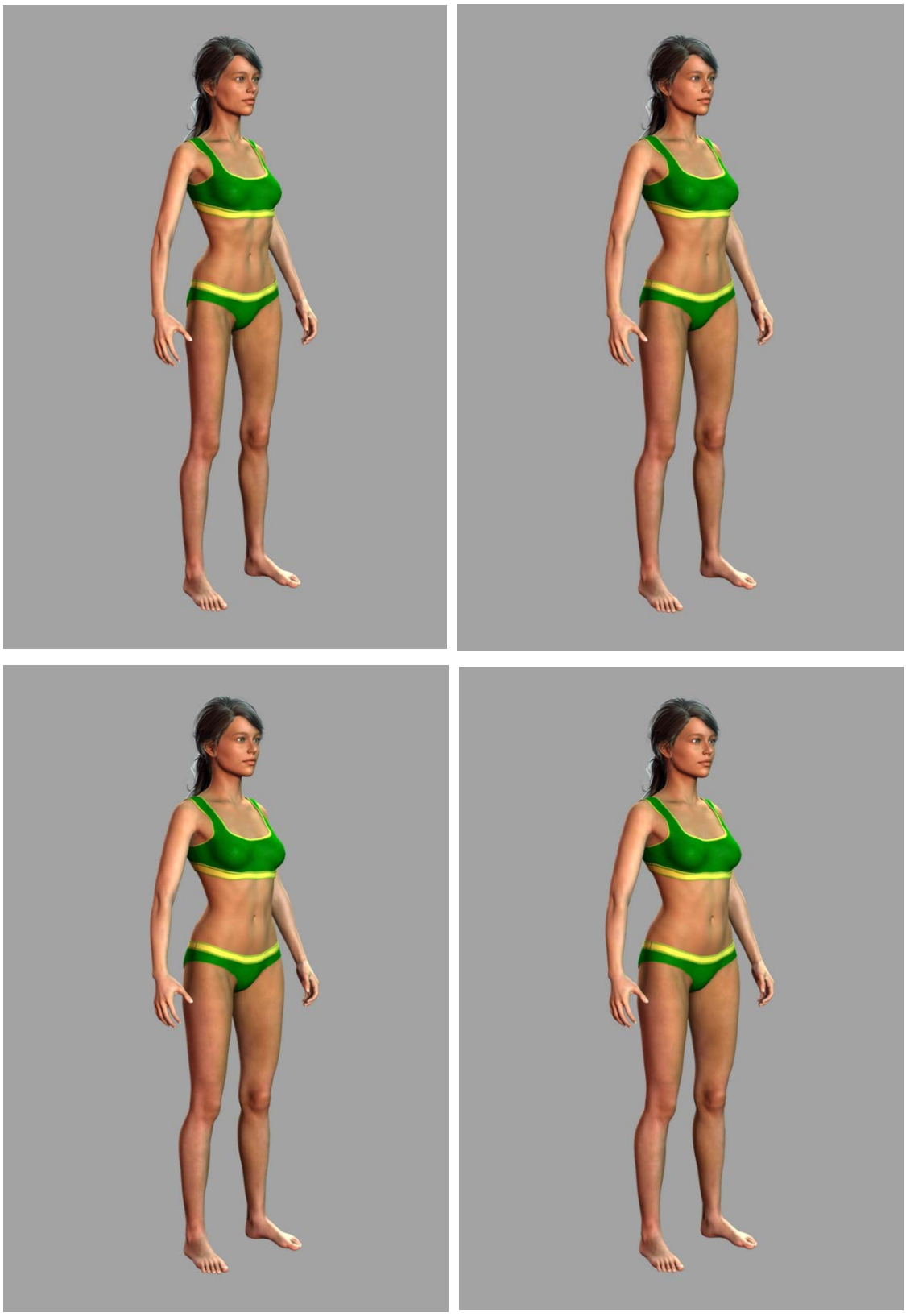
POR FAVOR COMPLETE EL SIGUIENTE CUESTIONARIO CON LA MAYOR PRECISIÓN Y HONESTIDAD POSIBLE. NO EXISTEN RESPUESTAS CORRECTAS NI EQUIVOCADAS. TODAS SUS RESPUESTAS SON DE CARÁCTER CONFIDENCIAL.

		SIEMPRE	**GENERAL-MENTE**	**FRECUEN-TEMENTE**	**A VECES**	**CASI NUNCA**	**NUNCA**
1	**ME DA PÁNICO TENER SOBREPESO.**						
2	**EVITO COMER CUANDO TENGO HAMBRE.**						
3	**ME PREOCUPA LA COMIDA.**						
4	**HE EXPERIMENTADO ATRACONES DE COMIDA EN LOS CUALES SIENTO QUE NO PODRÉ PARAR.**						
5	**CORTO MI COMIDA EN PEQUEÑOS PEDAZOS.**						
6	**SOY CONSCIENTE DE LA CANTIDAD DE CALORÍAS QUE TIENEN LOS ALIMENTOS QUE COMO.**						
7	**EVITO PARTICULARMENTE ALIMENTOS CON ALTO CONTENIDO EN CARBOHIDRATOS (COMO PAN, ARROZ, PAPA, ETC.).**						
8	**SIENTO QUE LOS DEMÁS PREFERIRÍAN QUE YO COMIERA MÁS.**						

		SIEMPRE	GENERAL-MENTE	FRECUEN-TEMENTE	A VECES	CASI NUNCA	NUNCA
9	**VOMITO DESPUÉS DE COMER.**						
10	**ME SIENTO EXTREMADAMENTE CULPABLE DESPUÉS DE COMER.**						
11	**ME PREOCUPA EL DESEO DE SER MÁS DELGADO.**						
12	**PIENSO EN QUEMAR CALORÍAS CUANDO HAGO EJERCICIO.**						
13	**LOS DEMÁS PIENSAN QUE ESTOY MUY DELGADO.**						
14	**ME PREOCUPA EL HECHO DE PENSAR QUE TENGO GRASA EN MI CUERPO**						
15	**ME TOMA MÁS TIEMPO QUE LOS DEMÁS TERMINAR MIS COMIDAS**						
16	**EVITO ALIMENTOS QUE CONTIENEN AZÚCAR.**						
17	**CONSUMO ALIMENTOS DE DIETA.**						
18	**SIENTO QUE LA COMIDA CONTROLA MI VIDA.**						
20	**DEMUESTRO AUTOCONTROL ALREDEDOR DE LA COMIDA.**						
21	**SIENTO QUE LOS DEMÁS ME PRESIONAN PARA QUE COMA.**						
22	**INVIERTO MUCHO TIEMPO Y PENSAMIENTOS EN LA COMIDA.**						
23	**ME SIENTO INCÓMODO DESPUÉS DE COMER DULCES.**						
24	**ME INVOLUCRO EN COMPORTAMIENTOS DE DIETA.**						
25	**ME GUSTA QUE MI ESTÓMAGO ESTÉ VACÍO.**						
26	**SIENTO EL IMPULSO DE VOMITAR DESPUÉS DE LAS COMIDAS.**						

Appendix B. TBS figural scales

Female images for Ten Bodies Scale (TBS - BMI range 15 - 36.8)







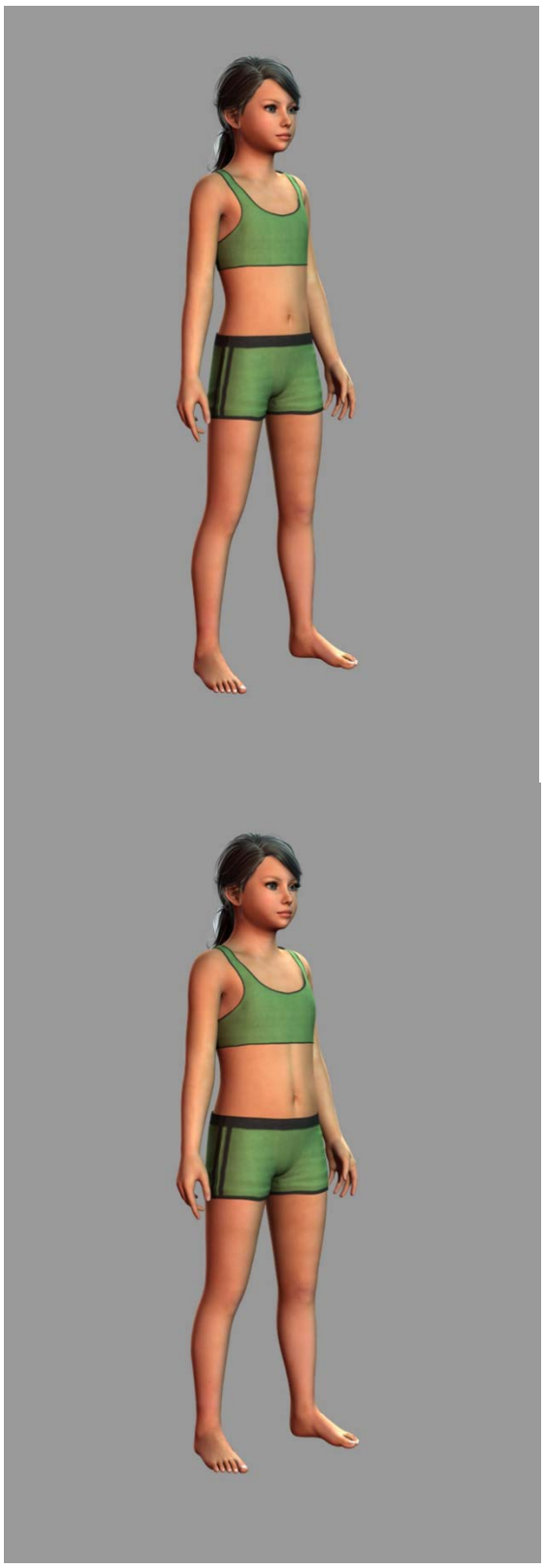
Male images for Ten Bodies Scale (TBS - BMI range 17.7 - 35.8)

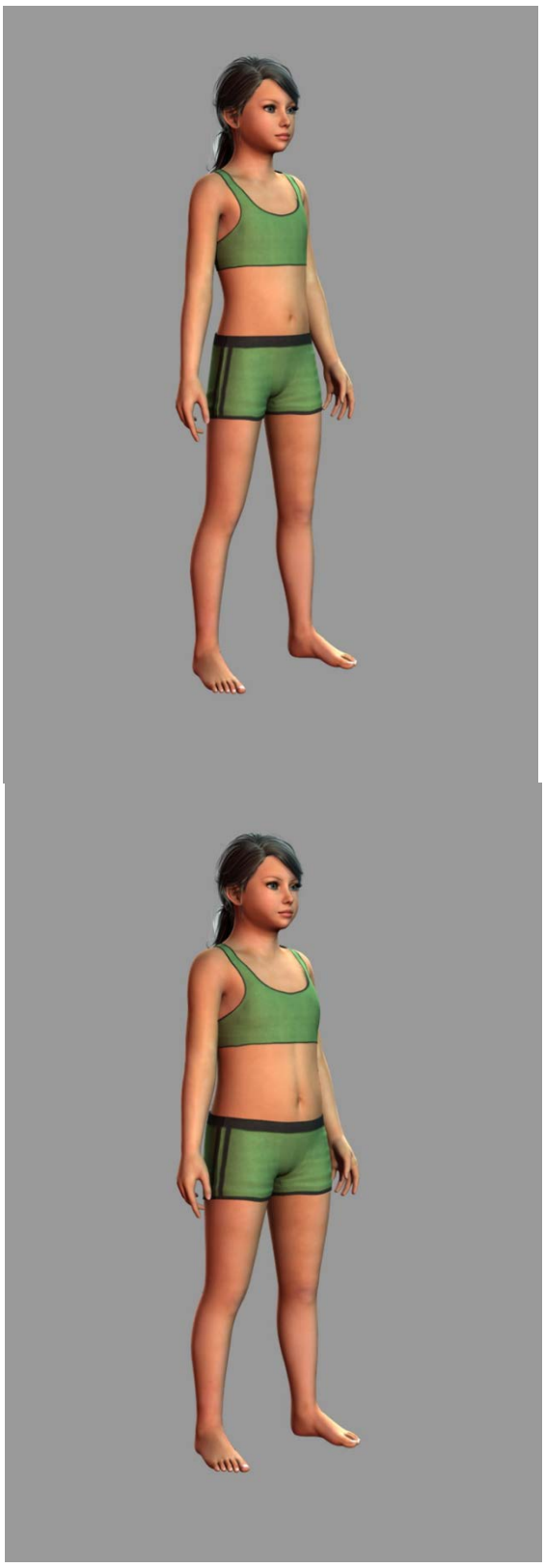




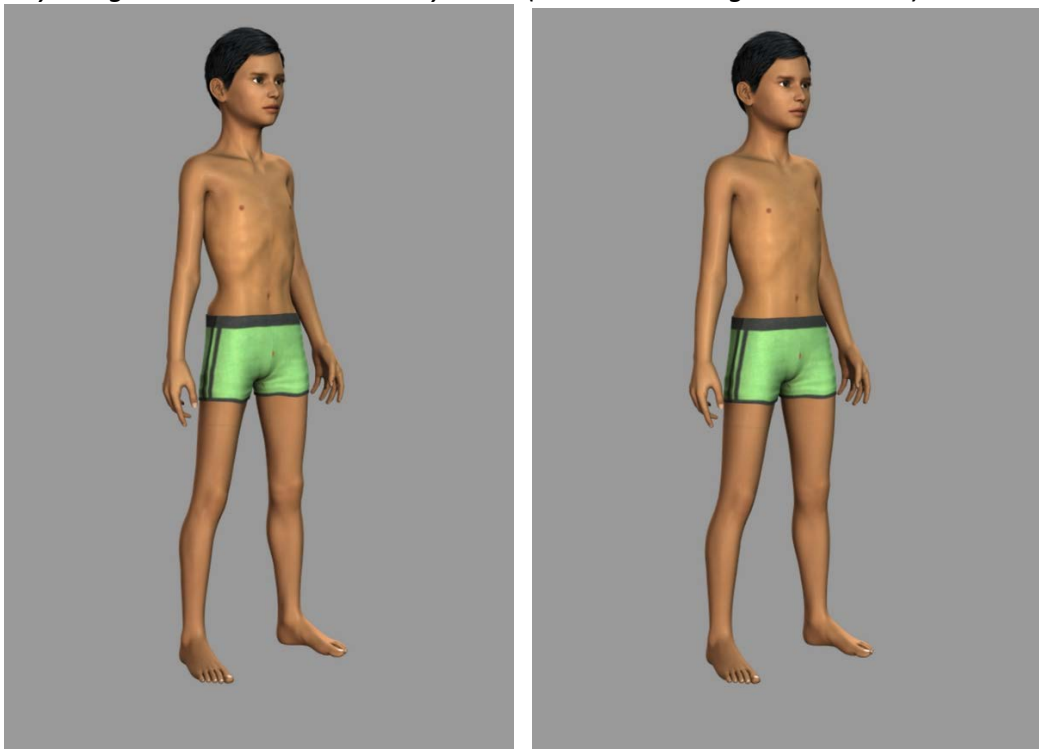


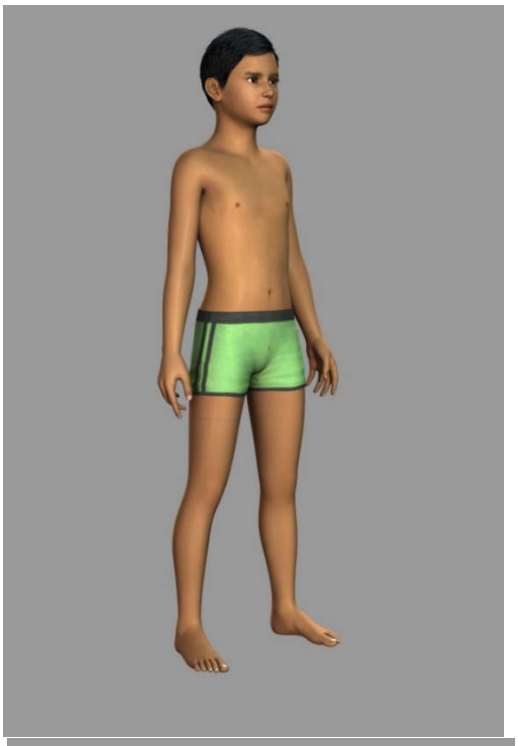

Girl images for Child Ten Bodies Scale (CTBS - BMI range 14.3 – 27.3)

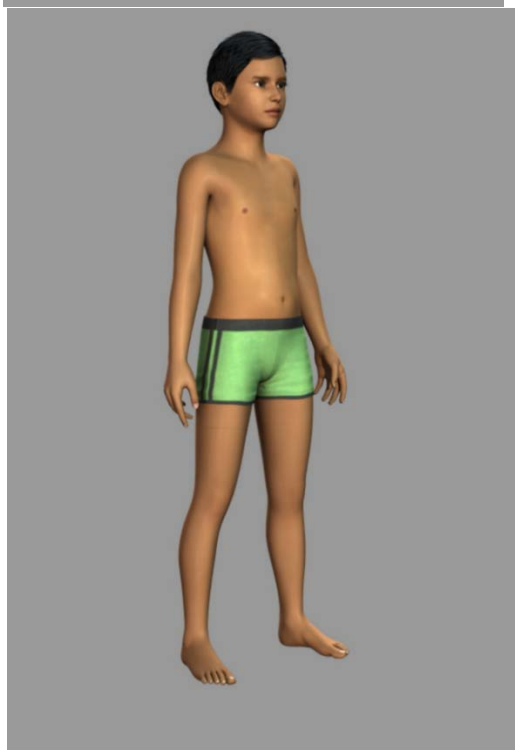


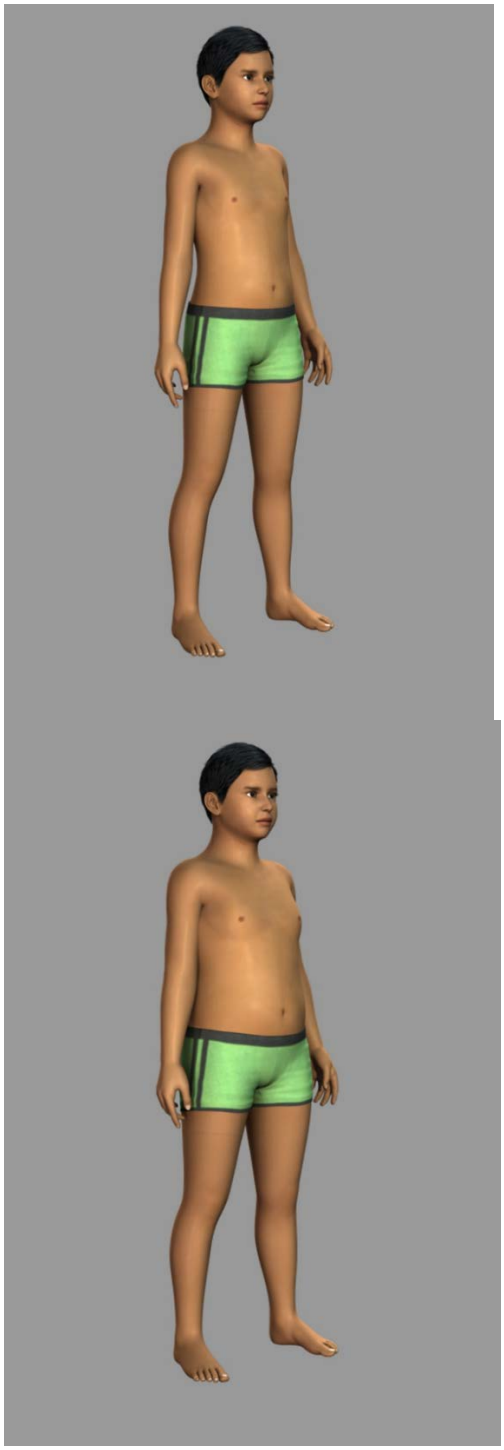


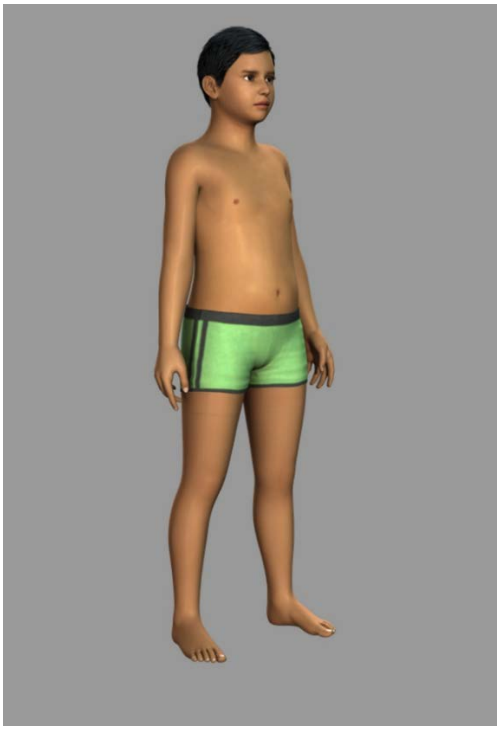
Boy images in Children's Ten Body Scale (CTBS - BMI range 14.4 – 27.7)





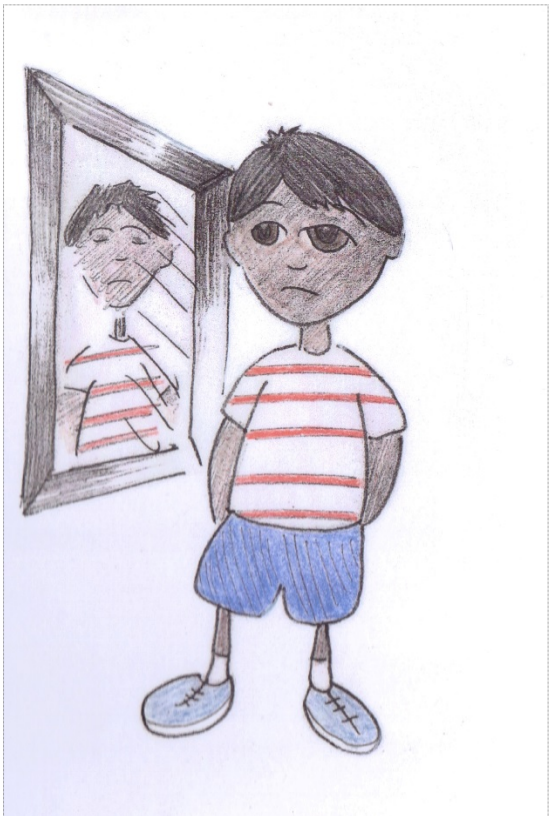






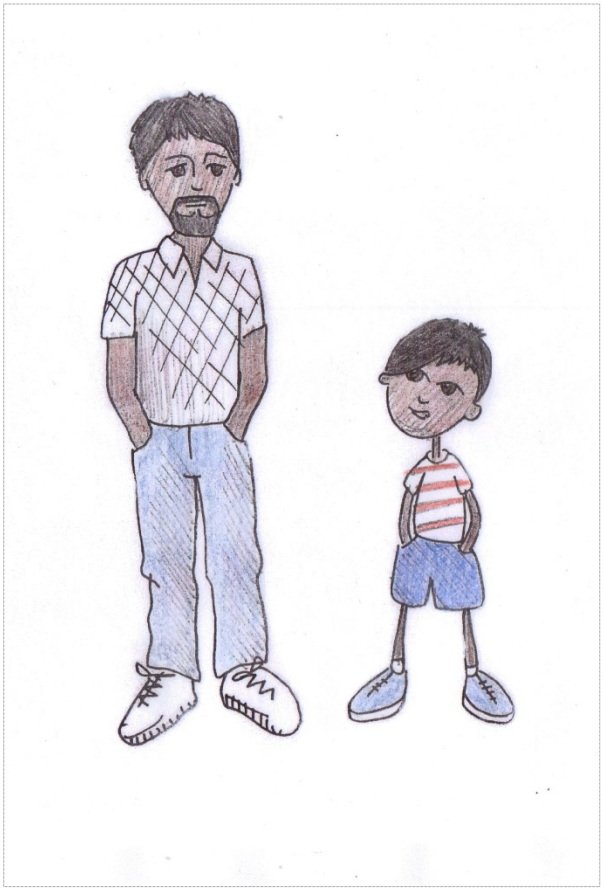
Appendix C. Children's Appearance Prompts (CAP)

Appearance satisfaction, girls and boys

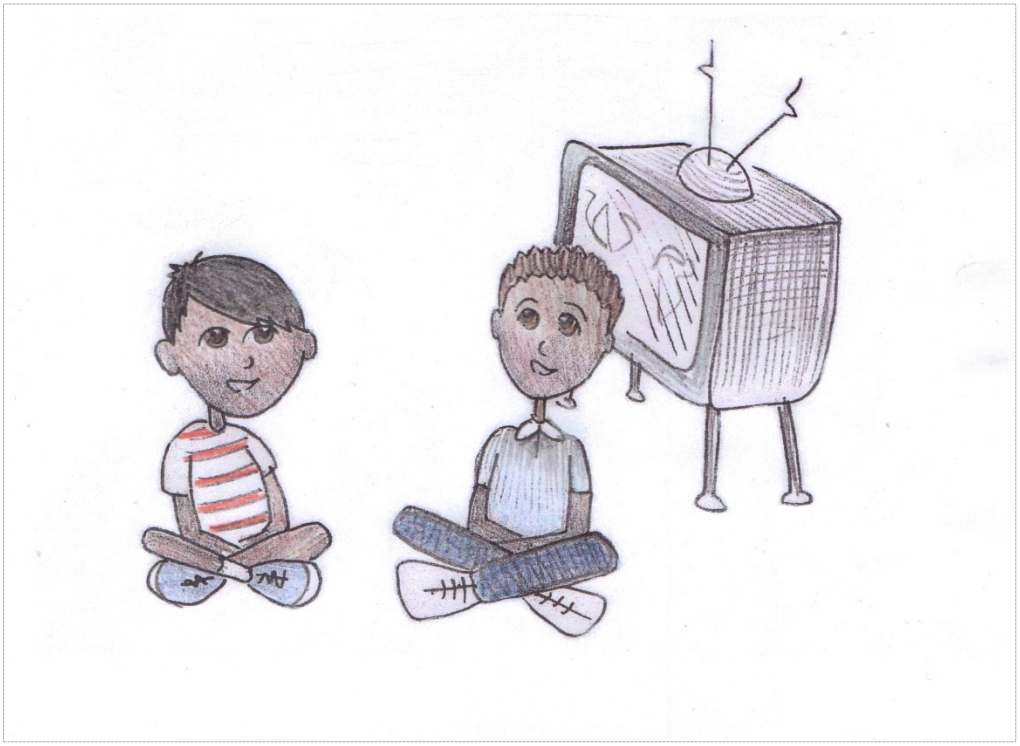


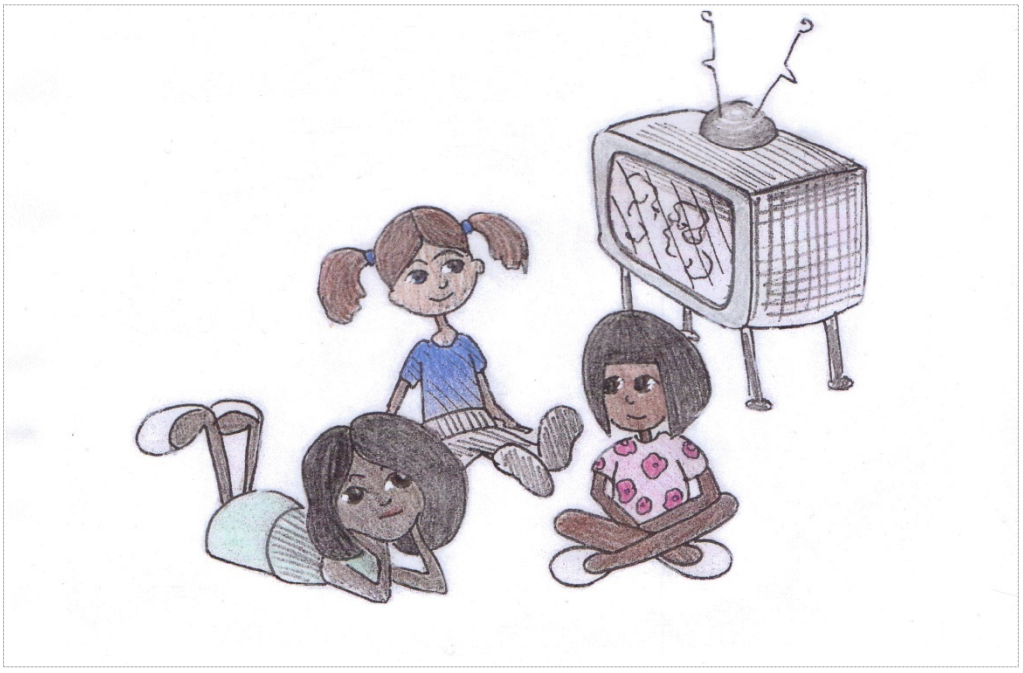
Friend influence, boys and girls

Family influence, boys and girls



Television influence, boys and girls





Appendix D. Factor analyses on SATAQ-3

Table 12. Factor loadings of SATAQ items with Varimax rotation for Study 1 males

Concept	Items	Rotated component coefficients			
		1	2	3	C
MCOMP/INTERN	q30 I try to look like sports stars	**.813**	.052	.208	.774
	q23 I would like to be athletic as sports stars	**.801**	.216	.111	.604
	q24 I compare my body to athletes	**.787**	.211	.174	.623
	q4 I compare my body to people on TV	**.784**	.046	.073	.764
	q11 I would like my body to look like people in movies	**.590**	.411	.164	.356
	q14 I feel pressure from TV to have a perfect body	**.564**	.488	-.045	.650
	q15 I would like to look like male models in the music videos	**.547**	.363	.076	.544
	q8 I compare my appearance to TV and movie stars	**.505**	.227	.223	.558
MPRESS	q26 I feel pressure from TV to change my appearance	.140	**.799**	.116	.437
	q18 I pressure from TV to diet	.027	**.750**	.009	.563
	q2 I feel pressure from TV to gain muscle	.267	**.711**	.164	.368
	q10 I pressure from TV to be muscular	.472	**.652**	.049	.700
	q22 I feel pressure from TV to exercise	.180	**.473**	.334	.695
MINFO	q5 TV adverts are an important source info	.024	.048	**.872**	.519
	q1 TV programmes are an important source of info	.084	.156	**.862**	.671
	q25 Movies are an important source of info	.198	.207	**.661**	.503
	q29 Famous people are an important source of info	.420	-.074	**.567**	.707

C = commonalities

Table 14. Factor loadings of SATAQ items with Varimax rotation for Study 1 females

concept	Items	Rotated component coefficients				
		1	2	3	4	C
FPRESS/ INTERN	q10 I feel pressure from TV to be thin	**.857**	-.015	.116	.348	.762
	q22 I feel pressure from TV to exercise	**.839**	.108	.080	-.018	.555
	q26 I feel pressure from TV to change appearance	**.826**	.216	.094	.125	.765
	q18 I feel pressure from TV to diet	**.822**	.002	-.001	.191	.768
	q14 I feel pressure from TV to have a perfect body	**.756**	.065	.063	.529	.725
	q2 I feel pressure from TV to lose weight	**.699**	.210	.145	.031	.869
	q15 I want to look like models in music videos	**.649**	.327	.259	.199	.525
	q11 I want my body to look like people in movies	**.463**	.011	.325	.452	.860
FATHLETE	q23 I would like to be athletic as sports stars	.192	**.882**	.128	.115	.635
	q30 I try to look like sports stars	.091	**.837**	.241	.068	.712
	q24 I compare my body to athletes	.131	**.836**	.012	.166	.722
FINFO	q5 TV adverts are an important source of info	.052	.034	**.862**	.145	.844
	q1 TV programmes are important source of info	.169	-.027	**.854**	.062	.744
	q29 Famous people are important source of info	.033	.388	**.616**	.079	.506
	q25 Movies are an important source of info	.191	.362	**.581**	-.032	.753
FCOMP	q4 I compare my body to people on TV	.133	.108	.082	**.854**	.537
	q8 I compare my appearance to TV / movie stars	.333	.300	.068	**.721**	.771

C = communalities

Appendix E. Qualitative data from men's focus group discussions in Study 2

Table 8.1. Initial coding categories and subcategories created in NVivo 11 from the 4 men's focus group discussions in Study 2. Main themes are in bold.

Name	Description	Sources	References
Attractive female	Perceptions of ideal female bodies across focus groups	4	488
clothing	importance of clothing in appearance of women	3	19
ethnic or racial preferences	comments regarding preferences or differences in attractiveness of ethnic or racial groups	4	74
Black women	references to the attractiveness or characteristics of Black women that are not specifically Nicaraguan Creole or Garifuna	3	8
Garifuna	comments relating to the attractiveness or characteristics of Garifuna women	2	5
Kriol or Creole	comments about attractiveness or characteristics of Creole women	2	4
Mestizo or Spanish	comments about attractiveness of Spanish women and other characteristics	2	4
Miskitu	comments about Miskitu women's appearance or other characteristics	2	4
White women	comments on attractiveness or characteristics of White (non-Nicaraguan) women	2	7
hair and makeup	comments about hair and (or) makeup with regard to female appearance	2	10
Miskitu women	opinions on Miskitu women and their looks and behaviours	2	5
Non-physical aspects of female attractiveness	mentions of factors other than physical appearance as important in judgments of female attractiveness	4	26
Pastime vs life partner	references and mentions of the difference in importance of appearance in 'pastime' and serious relationships	4	15
physical arousal	female body appearance and movement relating to male physical arousal	2	5

Name	Description	Sources	References
physical attractiveness	physical features of female attractiveness	4	289
Barbie	references to Barbie shape	2	10
bootylicious	references to a curvy lower body as most attractive and desirable	4	30
bust	mentions of bust or chest size in female attractiveness	4	7
genital area	mentions of female genitals	2	14
movement	mentions movement of the body, walking, dancing etc. in judging female attractiveness	3	27
size or weight	references to importance of body size or weight in female attractiveness	4	93
heavy or big weight and size comments	comments or attitudes of ideal females as being, big, not too big, normal, large, any size	4	12
normal size comments	comments that mention how the person prefers or values 'normal' as most attractive	4	21
slimmer or smaller	comments that remark on women ideally being slimmer, smaller, or losing weight	3	19
references to sexual attraction	comments on attractiveness being related to the sex act	3	38
unattractive physical features	opinions on what is not attractive in the physical appearance of women	3	6
Exercise	mentions of exercise, gyms, losing weight to change the body	1	5
non-verbal information	non-verbal information such as facial expressions, hand gestures, body movements	1	4
Researcher questions	lists all the questions that participants were asked during the focus groups	4	142
changes in society or culture	questions relating to ideas and opinions about changes occurring in the culture or society	2	7
men's own bodies		3	16
men's thoughts on women's ideals	questions relating to men's opinions about what women do / think / feel	4	9

Name	Description	Sources	References
Pornography	mentions of pornography use and benefits	1	3
questions to do with female attractiveness		4	53
social interaction between men	to do with how men talk to each other about women or appearance or sex	3	4
TV in general	questions relating to television use	3	27
Societal changes	comments about changing society / Westernization / Modernisation	2	3
Television	opinions and comments on television	4	312
action TV	comments and opinions about action and fighting films on TV	3	8
age of watching TV	memories about watching TV for the first time	2	14
attractive women on TV	comments about what kind of women appear on TV	3	18
Black pictures		1	4
change from TV	comments about how TV has changed aspects of life or people	3	26
favourites	what people mentioned as enjoying to watch on TV	3	17
negative TV	negative comments about television in general and its content	3	7
news	mentions of the news	4	11
novelas	comments and opinions on novelas	3	28
Positive TV	positive comments and opinions about TV	3	16
reality TV	opinions as to whether TV reflects reality	1	4
TV influence on behaviour	comments about TV changing or influencing behaviour of people or their lives	2	17
use of television	different ways people use tv	3	20

Appendix F. Qualitative data from women's focus group discussions in Study 4

Table 8.2. Initial coding categories and sub categories created in NVivo 11 from the 4 female focus group discussions in Study 4

Name	Description	Sources	References
Body self-image	Women's views about their own appearance / body	4	40
social context or comparison	Women's views about their bodies in relation to other people or society	4	33
Body size and shape	Descriptive content relating to attractive / desired body size and shape	4	53
cultural differences in appearance		3	13
ideal bodies		4	20
Change appearance - non surgery	Changing the appearance non-permanent, but not including dieting (e.g., make up, hairstyling)	3	31
Clothes	Any comments related to clothing or dressing	4	74
non-clothing appearance chat		2	5
peer influence on clothes and makeup	Evidence of influence of other women on clothing / makeup (e.g., friends, community)	4	29
Cosmetic surgery	Any mention to do with permanent surgical alteration of the body	4	22
Cultural influence appearance	Comments that relate to wider influence of culture on appearance	3	24
other cultures and appearance	Comments about other cultures with regard to appearance	3	10
Dieting and food	comments revolving around dieting and food intake	4	44
Facial appearance chat		1	16
Family influence appearance	Relating to family influence on appearance /body image	3	14
Family talk	Mentions of family not directly related to research questions	3	21

Name	Description	Sources	References
Friends influence or relations		3	5
friend influence appearance	Relating to peer influence on appearance /body image	2	2
God belief or religion mentions	comments relating to God-given bodies, religion, belief	4	24
Hair talk		3	28
Magazines		1	2
Men - women relations	relationships between men and women in the community	4	68
Men's female body preferences	What woman think men are attracted to in a woman's body	4	48
Questions appearance		4	96
Key appearance questions		4	19
Questions miscellaneous		3	15
Questions TV	all of my questions that relate to television viewing and opinions	4	71
Self-esteem		1	1
Skin colour	any comments about skin colour or ethnicity	2	9
TV habits	when and what women like to watch on television	4	92
attractive media women	discussions around television and attractive women	4	24
dislikes about TV		3	8
internet use	any comments relating to internet usage	4	31
social media mentions		1	4
music preferences		2	19
novela mentions	anything to do with novelas	4	70
reality TV	television as reflecting reality, and the women's lives	2	11

Name	Description	Sources	References
type of women on TV		3	20
use of TV	what people use TV for	3	13
TV influence on appearance	Evidence of television influence on women's appearance / cultural perceptions of television influence	4	27
TV influence on behaviour	comments relating to television influencing behaviour	3	10
Women's preferences for men	what women prefer in a man	2	42

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