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Body image in adolescence: the influence of social comparison processes

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Body Image in Adolescence: The Influence of Social Comparison Processes

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Summary

Although social comparison to idealised images has been shown to have a potential negative impact on body image and subjective well-being in adolescence, a comprehensive understanding of comparison processes and their outcomes is lacking. Two studies were conducted for this thesis to explore the role of social comparison to idealised images in adolescence. For the first study, 20 interviews were conducted with 12-14 year old boys and girls and data analysed using a grounded theory approach. The focus of the study was on eliciting comparison processes used in adolescents' everyday lives with an emphasis on who adolescents compare themselves to (comparison target) and what criteria they compare on (comparison dimension). Adolescents showed an awareness of societal standards and expectations in the context of appearance and mentioned different comparison processes, targets and dimensions. The Social Comparison Scale for Adolescents (SCASA) was developed based on the interviews from the first study and previous findings in the literature. The second study validated the new scale and tested a hypothetical model using structural equation modelling with 275 boys and 278 girls (mean age = 14.80 years). Participants completed a self-report questionnaire measuring dispositional variables and a range of social comparison appraisals and outcomes. Validation of the new measure using confirmatory factor analysis and multigroup comparison found factorial validity and support for gender invariance. The main results of the structural equation modelling indicated that some enhancement appraisals predicted more beneficial outcomes. In turn, the dispositional variables "agreeableness" and "personal growth goals" predicted the selection of more beneficial social comparison appraisals. It is concluded that although health promotion and prevention approaches might benefit from a focus on health-protective comparisons, cultural values need to be understood in greater depth and, in particular, growth goals should be fostered.

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Chapter 1: GENERAL INTRODUCTION

Introduction

Sociocultural influences have been shown to play an important role in the development of body image disturbances and negative well-being. In adolescence, the media has been identified as a significant influence through the depiction and promotion of unrealistic appearance standards. In terms of appearance messages and images, actresses and fashion models have become increasingly thinner (Silverstein, Perdue, Peterson & Kelly, 1986; Spitzer, Henderson & Zivian, 1999). Similarly, male advertisement models and action toys have become more muscular over time, paralleling the trend of Barbie dolls becoming slimmer (Leit, Pope & Gray, 2001; Pope, Olivardia, Gruber & Borowiecki, 1999). The male body is increasingly portrayed as muscular and trim and it has been suggested that the focus on male bodies has shifted from a functional, instrumental perspective to an objectified or decorative one (Farquhar & Wasylikiw, 2007; Morrison, Morrison & Hopkins, 2003). The emphasis on appearance and physique for girls and boys has been described as particularly problematic during adolescence, an intense period of socialisation and identity development which goes hand-in-hand with physical changes (Arnett, 1995, Grogan, 2008). Thus, the impact of idealised images and appearance messages might be greater during adolescence. Idealised images may be damaging because in addition to presenting a narrowly defined standard as attractive, they potentially offer harmful messages such as defining self-worth in term of one's appearance and the promise of transforming oneself through dieting or exercising (Levine, Smolak & Schermer, 1996). In particular the link portrayed in the media between appearance and happiness and success is problematic (Dittmar, 2008; Engeln-Maddox, 2006; Thompson & Tantleff, 1992). It has been noted though that although idealised appearance images and messages are ever present, levels of body dissatisfaction and disordered eating vary and few individuals develop clinical symptoms (e.g., Dittmar & Howard, 2004; Polivy & Herman,

2004). Thus, it is important to develop an insight into what makes individuals more resistant to the impact of idealised images and appearance messages, in particular as research has neglected potentially health-protective factors (Littleton & Ollendick, 2003). In addition, although there is now a large body of research focusing on women and to some extent girls, there is a lack of research including men and boys (Blond, 2008).

Earlier research in the area of sociocultural influences was hampered by a lack of an underlying theoretical framework, but in more recent years social comparison theory, originally formulated by Festinger (1954), has been used to explore how idealised images and appearance messages might influence body image, subjective well-being and behaviour. Social comparison has been identified as an important factor related to body image concerns and a particular focus has developed on how social comparison to idealised images in the media might lead to negative body image related outcomes (e.g., Cattarin, Thompson, Thomas & Williams, 2000; Bell, Lawson & Dittmar, 2007; Farquhar & Waylkiw, 2007; Groesz, Levine & Murnen, 2002; Morrison, Kalin & Morrison, 2004). More recently research has started to focus on the role of peers (e.g., Jones, 2001; Jones & Crawford, 2006).

There is however, a lack of reliable and validated measures to assess situational comparisons. Hand-in-hand with the measurement issue, there is still a dearth of research measuring various comparison appraisals and related outcomes. This might account for sometimes contradictory or inconsistent results. For example, Durkin and Paxton (2002) exposed adolescent girls to idealised images and assessed state body satisfaction, depression, anxiety and anger. Although body dissatisfaction and mood were significantly lowered after exposure, effects were weak. The authors noted that although about half the sample had a decrease in body image satisfaction, the other half either showed no change or improved state body image ratings. A better understanding of the individual differences in the selection of

comparison appraisals and their influence in turn on comparison outcomes is of great relevance to health promotion and prevention, as a review of health promotion programmes suggested that outcomes have been mixed, especially in terms of long-term changes (Levine & Harrison, 2004; Stice & Shaw, 2004). Recommendations such as evading media images have been criticised as impractical as idealised images and appearance messages are impossible to avoid in day-to-day life and as adolescents are particularly interested to learn about the social world (Holmstrom, 2004; Strahan, Wilson, Cressmann & Buote, 2006).

Aim of the Present Research and Structure of the Thesis

Thus, the overall aim of the research was to explore social comparison processes in response to idealised images with a focus on identifying potentially health-protective comparisons. Specific questions to be addressed in the context of exposure to idealised images and appearance messages in adolescents were: Are different social comparison appraisals present in the idealised image comparison context? Are there individual and situational differences that impact on the choice and expression of the comparison process?

The remainder of this chapter critically reviews the relevant literature in the area of social comparison theory and comparison to idealised images. This is followed by Chapter 2, which reports results of a grounded theory interview study whose aim was to explore social comparison appraisals used by adolescents in their everyday lives. The findings from the qualitative study informed the development of the Social Comparison Appraisal Scale for Adolescents (SCASA), whose validation using Confirmatory Factor Analysis (CFA) is reported in Chapter 3. Multigroup comparison was also performed to test for the equivalence of the new measure for boys and girls. Chapter 4 reports the testing of a comprehensive model using structural equation modelling. Specific hypotheses were also formulated. The model assessed the effects of social comparison appraisals on outcomes

such as state body image, affect and behavioural intentions and how in turn social comparison appraisals are influenced by dispositional characteristics such as personality traits, self-esteem, trait body image and life goals. The final chapter summarises the main findings, discusses limitations and draws some overarching conclusions.

Chapter 2, 3 and 4 are standalone studies. Chapter 2 has been published in a peer reviewed journal and elements of Chapter 3 have been combined with Chapter 4 and a paper submitted to a peer reviewed journal. The paper reference is given at the foot of the relevant title page.

Scope of the Review

The review consists of two main parts: An overview of the general features of social comparison theory followed by a section on specific findings in the area of social comparison and body image. The first part focuses on social comparison theory, setting the scene by introducing the historical background and subsequent developments in research focus. Then the constructs of social comparison, their measurement, consequences of comparisons and potentially relevant individual difference characteristics are presented. The second part of the review deals with the research literature in the context of comparisons to idealised images. The structure of the second part mirrors the first part. Finally, conclusions from the review are presented and the need for further research outlined.

Social Comparison theory

Historical Background

Comparing with other people is an important source of knowledge about oneself and the world (Buunk & Gibbons, 2007). The general concept of social comparison has long been recognised as important for human adaptation (Gilbert, Price & Allan, 1995). Festinger (1954) was the first to propose a systematic theory and coin the term. Festinger suggested that to function effectively, individuals need to

know their own capacities and limitations in contrast to others and best serve this need for self-evaluation by measuring their abilities and opinions against objective standards where available, or by comparing themselves to others. The individual is seen as a rational decision maker, although Festinger (1954) noted that individuals might not be entirely unbiased in certain situations. The theory also included the proposition that individuals preferred to compare themselves with similar others – this is also sometimes referred to as the “similarity hypothesis” – and others who are perceived to be superior. Social comparison theory has undergone numerous transitions and various theoretical strands have emerged. Indeed, it is now a complex area of research, encompassing many different paradigms, approaches and applications (Buunk & Gibbons, 1997, 2007; Buunk & Mussweiler, 2001).

Expansion and Developments of Social Comparison Theory

Social comparison has progressed from a theory to a field of research with a broadening of issues (Buunk & Gibbons, 2007). The notion of what constitutes social comparison itself has also widened. Wood (1996) defined social comparison as “the process of thinking about information about one or more people in relation to the self” (pp. 520/521). Thus, social information is acquired, thought about and reacted to. This is in contrast to Festinger’s suggestion that individuals are only interested in objectively evaluating their opinions and abilities in comparison to others. A review by Buunk and Mussweiler (2001) concluded that developments from the original formulation of the theory include efforts to integrate social comparison processes and social cognition, biological/ biopsychological perspectives, individual differences and social contexts. For example, work in the area on social cognition and social comparison focuses on how self-knowledge is activated during the social comparison process and influences judgement and evaluation of the self (e.g., Mussweiler & Strack, 2000). Another area of interest is the use of cognitive distortions in the form of, for example, unrealistic optimism (e.g., Weinstein, Marcus & Moser,

2005) and the creation of prototypes (e.g., Gibbons & Gerrard, 1997) to generate favourable comparisons. Research in the area of the biological perspective centres upon the link between social comparison processes and physiological responses (e.g., Mendes, Blascovich, Major & Seery, 2001) and evolutionary perspectives (e.g., Gilbert et al., 1995). Another area that has received increasing recognition is how individual differences influence the selection and extent of comparison appraisals. Individual difference variables that have been recognised as important include self-esteem, neuroticism and social comparison orientation (e.g., Aspinwall & Taylor, 1993; Buunk, Ybema, Gibbons & Ipenburg, 2001).

More recent research has explored the association between social comparison and self-determination theory (Neighbors & Knee, 2003). Another important development was the recognition that comparison processes do not take place in a vacuum, but are influenced by the social context in which they take place (e.g., Gordijn & Stapel, 2006; Kimmelmeier & Oyserman, 2001a). Work in this area explores how group membership and social identity influence social comparison processes. In addition to a theoretical expansion, social comparison theory has been used to study a wide range of issues such as social comparison at work and within organisations (e.g., Heslin, 2003; Michinov, 2005), close relationships (e.g., Buunk & Ybema, 2003), economic behaviour (e.g., Novemsky & Schweitzer, 2004), media influence on body image (e.g., Jones, 2001), health care (e.g., Kulik & Mahler, 2000) and health behaviours (e.g., Gerrard, Gibbons, Lane & Stock, 2005; Lechner, Bolman and Van Dijke, 2006).

The above examples show that social comparison works on different levels. The phenomenon of social comparison has been explored as a process in response to stimuli (e.g., Klein, Blier & Janze, 2001), as a personality trait (e.g., Buunk & Gibbons, 2007; Buunk, Zurriaga, Peiró, Nauta & Gosálvez, 2005) and as an underlying motive which influences perceptions of the self-concept (e.g., Klein & Cerully, 2007; Leary, 2007; Sedikides & Strube, 1997). There has been in particular an

interest in the area of self-enhancement and its relationship to the self (e.g., Sedikides & Gregg, 2008). This research focuses on enhancement as a way to maintain self-worth when threatened on a self-relevant domain. Particular interest is focused on the potential of enhancement to be maladaptive or adaptive.

There is no possibility to do justice in this review to all the developments and contributions from different research areas. Thus the main focus of the following sections will be to provide a general overview of social comparison theory and its elements with a focus on aiming to identify concepts and approaches which are relevant to comparisons to idealised images and their potential impact on body image and body image related outcomes.

Social Comparison Appraisal Constructs

Different types of comparison appraisals have been discussed in the literature. Only self-evaluation was originally proposed by Festinger. Self-enhancement and self-improvement were initially described by Thornton and Arrowood (1966) and Hawkmler (1966) and elaborated on in further research. It should be noted that there is a debate about the importance of the three concepts and what they actually mean as there is some overlap and various definitions exist (Leventhal, Hudson & Robitaille, 1997). There is some difficulty interpreting the literature as some research perceives comparisons as overarchingly evaluative with improvement and enhancement appraisals as types of evaluative appraisals (e.g., Kwan, Love, Ryff & Essex, 2003). It has also been suggested that self-improvement might not be a distinct social comparison appraisal, but rather a variant of self-enhancement appraisals (Suls, Martin & Wheeler, 2002). Others have pointed out that evaluative appraisals always have to take place before improvement/ enhancement comparisons as the standing of the comparison target has to be established first (Gibbons & Buunk, 1999).

Self-Evaluation

Evaluation appraisals establish one's standing on a personal characteristic or dimension in relation to another person. Research in the area of the self suggests that self-evaluation aims at maintaining and increasing the accuracy of the self-concept (Baumeister, 1998). As establishing one's standing in relation to another individual is the key aspect of evaluative comparisons, the main focus in the area of evaluative comparison research is the comparison other or comparison target with which individuals compare themselves. Thus, the following focuses on target selection. However, it should be noted that some of the issues introduced here are also relevant for improvement and enhancement comparisons.

Festinger (1954) suggested originally that individuals would prefer a similar other to compare to, although he was ambiguous about how this similarity would be defined (Stapel & Blanton, 2007). Goethals and Darley (1977) developed Festinger's original similarity proposition by suggesting that a similar individual would share some other domains related to the dimension under comparison. For example, a swimmer assessing his or her endurance might select a comparison other who has had a similar training regime. However, further research suggested that surrounding dimensions do not need to be relevant to the dimension under comparison. Comparison others might also be chosen because similarity is perceived on a self-relevant dimension (Miller, 1982). A possible explanation is that this allows the individual to better understand their standing on the dimension under evaluation (Wheeler, Koestner & Driver, 1982). For example, a study by Miller (1982) found that women who were expected to compare themselves on a test performance about logical reasoning chose to compare themselves to others who were similar in attractiveness. Miller, Turnbull & McFarland (1988) proposed that the choice of a related versus a self-relevant surrounding dimension served two distinct aims: individuals comparing with others who are similar on dimensions related to the dimension under comparison are interested in their standing in general, whereas

individuals choosing to compare to another who is similar on a self-defining dimension are interested in their standing relative to others with whom they identify.

Other relevant research in the area of similarity is Mussweiler's work (2003a) on comparison processes in social judgement. He suggested that perceiving another individual as similar leads to assimilation, in particular in positive domains. This means, to use an example given by Mussweiler (2003b) that individuals evaluating their level of charm relative to Gwyneth Paltrow's will judge themselves to have a high level of charm. Thus, this processes leads to increased self-evaluation. Preceding this evaluation, similarities between oneself and the comparison other will have been established. It has been suggested that individuals have a tendency to look for similarities in order to establish common ground (Gentner & Markman, 1994). In line with this notion, individuals will look for salient features such as category membership (e.g., social group, similar experiences) (Buunk, Zurriaga, Gonzalez, Terol & Lopez Roig, 2006; Musseiler, 2003b, Smith & Arnelsson, 2000). However, Mussweiler (2003b) noted that the similarity perception can be prompted by easily accessible and potentially superficial information. There are also suggestions that individuals might tend to use routine targets for typical social comparisons in order to conserve cognitive resources. These targets tend to be significant others such as friends and peers. Falling back on a given target repeatedly increases subsequent use and points to a more automatic quality of some social comparisons (Mussweiler & Ruter, 2003).

Another focus of work on similarity centres on the familiarity with the dimension under evaluation. Research suggested that comparison with dissimilar others can be highly informative when not much is known by the comparer about the dimension in question (Wheeler et al., 1969). However, as soon as the dimension becomes more familiar, or in other words the individual is able to determine their standing within that dimension, the range of relevant comparison targets becomes narrower

and focuses on similar others (Wheeler et al., 1982). Importantly, it has been found that comparisons with others who are perceived to be similar on surrounding dimensions (related to or unrelated to the dimension under comparison) have a greater impact than comparison with others who are dissimilar on surrounding dimensions (Gastorf & Suls, 1978). However, it has been argued that further insight into how surrounding dimensions are chosen is needed (Wood, 1989).

Self-Improvement

Self-improvement appraisals have been described as an individual's attempt to learn how to improve or to be inspired to improve a particular skill or attribute. This implicitly suggests that the skill or attribute is in some way self-relevant. These comparisons are upward as the other is perceived as inspiring. Festinger (1954) predicted that individuals who compare themselves to others on abilities have a "unidirectional drive upward". This hypothesis was based on the emphasis in Western culture on achievement and improvement. It has been suggested that upward comparisons can be potentially adaptive (Collins, 1996). For example, research has found that smokers who compared with others who were successful at quitting were more likely to stop smoking themselves (Gerrard et al., 2005). Individuals will assimilate and emphasise closeness with the inspiring comparison other. However, improvement comparisons can be described as negative if the individual is inspired to emulate unhealthy or undesirable behaviour.

Research in the area of health behaviours suggests that individuals might use "prototypes". These offer comparison targets and are cognitively constructed based on previous experience and social information (Gibbons & Gerrard, 1997). In terms of health behaviour, some images or prototypes might be more favourable than others. Unhealthy behaviour might be adopted in order to reflect some characteristics thought to be valued by others. For example, smoking might be taken up by adolescents in the belief that others will judge them to have desired qualities (Leventhal & Cleary, 1980). It has been suggested that the relationship between an image/prototype and the

behaviour is nonrecursive (Gerrard, Gibbons, Benthin & Hessling, 1996). In other words, an individual with a favourable image of a smoker is more likely to smoke and when starting to smoke, the image tends to become more desirable with time. In addition, individuals will focus on similarities between themselves and the comparison other to reinforce closeness.

Self-Enhancement

The notion of self-enhancement is based on the recognition that individuals are not unbiased, but that they are aiming to maintain favourable views about themselves (Wood, 1989; Wood, Taylor & Lichtman, 1985). In addition, it has been proposed that enhancement comparisons might be a form of emotion-focused coping, alleviating negative emotions that stress or threats might produce (Buunk & Gibbons, 1997; Dobb & Yardley, 2006). In a similar vein, Sedikides and Gregg (2008), depicting enhancement as a process driven by motives, distinguished between enhancement as a way to self-advance (increasing the positive experience of the self) or to self protect (decreasing the negative experience of the self). It has been proposed that self-enhancement processes are mainly invoked in self-relevant domains (Crocker, 2002). Leary (2007) suggested that the drive for enhancement is partly related to the individual's need for social approval and acceptance. A wealth of self-enhancement strategies has been described in the literature, showing that individuals process, remember and judge information and present themselves in a manner that will reflect positively on themselves. This includes processes such as distorted recall and processing of information, describing themselves better than the average person, using biased attributional responses and managing self-presentation (e.g., Ditto & Lopez, 1993; Dunning & Cohen, 1992; Feingold, 1992; Ginis & Leary, 2004; McCrae & Hirt, 2001). Targets for typical, i.e. recurring self-enhancing comparisons tend to be those sufficiently distant from the self but still close enough so that information about them is known to the individual

(Buunk, Collins, Taylor, Van Yperen & Dakof, 1990, Wheeler & Myake, 1992).

Thornton and Arrowood (1966) and Hakmiller (1966) introduced the notion of self-enhancement through downward comparison. For example, Hawkmiller (1966) found that individuals were more likely to choose a comparison other who is worse off on the dimension under comparison. Wills (1981) reviewed and integrated various findings in relation to downward comparison and concluded that downward comparisons boost subjective well-being. The notion of downward comparison as a process to protect well-being was supported by Taylor, Wood & Lichtman (1983) who found that most of the female cancer patients in their study had engaged in downward comparisons with other cancer victims. The participants described others that were worse off than themselves and even constructed a comparison other if they did not know one personally. Other studies in the area of populations facing health threats have shown that individuals with serious health-related problems such as smoking (Gerrard et al., 2005) preferred having other members in their group who had more serious problems. However, research suggests that this preference diminishes as the threat diminishes (Gibbons et al., 2002). Comparing oneself to another who is worse off might not always be a suitable strategy. It might lead to negative outcomes if the individual feels that they might “end up” in the same situation or in other words the comparison other represents a future self (Buunk et al., 2005; Tennen, McKee & Affleck, 2000).

Comparing on a different dimension is an example of downward comparisons where the focus is shifted from the initial dimension under comparison to a dimension on which one feels superior. Wood et al. (1983) found that individuals focused on a dimension other than the one on which their self-esteem had been threatened in order to emerge as superior. In other words, individuals counteracted a threat to the self by drawing on perceived advantages in another domain to restore overall self-worth. Similarly, Schulz and Decker (1985) observed that

injured individuals perceived their well-being as favourable by focusing on other comparison dimensions than their injury (e.g., intelligence). It has been suggested that this comparison process is similar to processes described in the theory of self-affirmation (Steele, 1988). Steele (1988) noted that individuals do not need to counter a specific threat but may restore their overall self-worth by affirming an unrelated central aspect of themselves which may be unrelated to the domain they felt disadvantaged on.

Another way to enhance described in the literature focuses on the self-relevance of the dimension under comparison. Festinger (1954) suggested that individuals are more likely to focus on comparisons on dimensions that are highly self-relevant. Self-relevant domains play an important role in an individual's self-perception and behaviour: individuals will strive for competence in a self-relevant domain, describe themselves in terms of the domain and engage in tasks related to the domain (Tesser, 1999). In line with these suggestions it has been shown that an inferior performance on a domain high in self-relevance compared to low self-relevance is perceived as a greater threat to self-worth (Major, Testa & Bylsma, 1991). Thus the relevance of a dimension might be re-appraised or devalued to avoid negative consequences (Alicke, LoSchiavo, Zerbst & Zhang, 1997; Tesser, 1999).

Finally, some research has shown that a focus on emphasising dissimilarities so as to discount the other as comparison target leads to enhancement. Individuals might exaggerate the distance between themselves and the comparison other in order to reduce the comparison other's significance and importance as comparison target. Specifically it has been suggested that this type of enhancement might be used when an individual believes that improvement in performance is unlikely to occur (Ommundsen, 2001) or in contrast, when an individual aims to stop a particular behaviour (such as smoking) (Gerrard et al., 2005). Beach and Tesser (2000) hold that the performance of another who is close to us (in terms of personal

closeness or similarity) can have a great impact whereas others with whom one has little association have little or no effect. Alicke et al. (1997) introduced the so-called “genius effect”. Individuals exaggerate the comparison other’s superiority and thus remove their relevance as comparison target. In a similar vein, Musseiler (2003b) noted that emphasising dissimilarities may lead to contrast. Although he suggested that a focus on dissimilarities is likely to be activated in times of threat, he noted that not enough is known yet to predict whether individuals will concentrate on similarities or dissimilarities.

Measurement of Social Comparison

Measurement of social comparison and potential constraints are rarely discussed in the literature. Wood (1996) discussed the benefits and drawbacks of the methods used and most of the information presented in this section draws on her work. She described three broad approaches used to assess social comparison: the selection approach, the reaction approach and the narration approach. The *selection approach* focuses on information individuals seek out for comparison. Typically, comparison conditions are manipulated and individuals are provided with a choice of comparison target. In this type of approach social comparison is a dependent variable. Examples are rank order, affiliation and looking studies. In rank order studies individuals take a mock test and are told how well they did in relation to others. Individuals can then choose whose score they would like to see (someone who did better, worse or similar) (e.g., Wheeler et al., 1982). This type of method only provides very limited information. In affiliation studies, individuals awaiting an unpleasant experience (such as major surgery) are paired with a range of others. This can involve others who have either already undergone the experience, will do so later or will not have the experience at all (e.g., Kulik, Mahler & Moore, 1996). Looking procedures allow individuals access to information about others (e.g., in written form). Individuals may be informed if the comparison other(s) are similar, better or worse off than themselves on a particular dimension (e.g., Smith & Insko, 1985) or asked to complete

a task after having accessed information about a comparison other. Their performance is then assessed (e.g., Gordijn & Stapel, 2006). Another approach is the test selection measure (Wood, 2000). Individuals receive a list of tests from which they chose one for themselves and one for another participant. Individuals thus have the option to avoid comparisons (by choosing a different test for themselves and another participant) or engage in comparison later on (by choosing the same test). In addition, individuals are able to select the comparison dimension by deciding which test to take.

In the *reaction approach*, social comparison is the independent variable. Reaction methods include laboratory presentation studies, correlational studies of comparison consequences and comparative ratings. In laboratory studies individuals receive information about others or are asked to imagine a comparison other (hypothetical-scenario studies) and reactions to this information are measured (e.g., Kemmelmeier & Oyserman, 2001a; Stanton, Danoff-Burg, Cameron, Snider & Kirk, 1999). In correlational or regression research an aspect of individuals' environments, for example, income is correlated with specific outcomes (such as feelings of satisfaction or ratings of health) (e.g., Yngwe, Fritzell, Lundberg, Diderichsen & Burstöm, 2003). Finally, comparative rating methods ask individuals to rate their standing relative to others on some attribute or to estimate the percentage of individuals who they think would respond the same way (e.g., Cheng, Fung & Chan, 2007; Klein et al., 2001). The inference in these types of studies is that individuals have compared themselves to the information presented and reacted to it.

The *narration approach* relies on individual's self-reported comparisons. Examples are global self-reported comparisons such as frequency of comparison (e.g., Buunk et al., 2006), self-recorded diaries of everyday occurring comparisons (e.g., Wheeler & Myake, 1992) and free responses (for instance, during interviews; e.g., Franz, Meyer, Reber & Gallhofer, 2000). Questionnaires have been developed to measure social comparison appraisals (e.g., Gibbons & Buunk,

1999; Helgeson & Michelson, 1995; Kwan et al., 2003). For example, Gibbons and Buunk (1999) developed the Iowa-Netherlands Comparison Orientation Measure (INCOM) which measures trait-like evaluative comparisons focusing on abilities and opinions. Items were generated by social comparison researchers and tested with a range of samples. Enhancement comparisons were not included as the authors felt that these types of comparisons were more situational. Improvement comparisons were also not addressed explicitly as the researchers argued that individuals needed to evaluate to improve. Items were formulated as statements such as "I always pay a lot of attention to how I do things compared with how others do things" (Gibbons & Buunk, 1999). Helgeson and Mickelson (1995) developed a scale based on feedback from students about why they compared themselves, sought information about or chose to interact with others. Participants were instructed to think about someone better, worse and similar to themselves when writing down why they compared themselves. The responses were factor analysed and the final scale included six factors: evaluation, improvement, enhancement, common bond, self-destruction and altruism. Kwan et al. (2003) developed a self-enhancement measure, focusing on the perception of being better off than others.

General Limitations of Measures

One of the concerns with the traditional selection and to some extent the reaction approach (in particular the correlational approach) is that it cannot be concluded with certainty that social comparison has taken place (Arrowood, 1986). This also applies to the newer test selection measure as individuals are told that the research is concerned with impression formation (Wood, 2000). However, Wood (1996) argued that if researchers can rule out any other explanations, then social comparison has taken place. In addition, effects are not typically measured in the selection approach. The narration approach may be hampered by a lack of awareness, social desirability, and selectivity, recall and aggregation problems. Questions dealing with motives ("Why

do you compare yourself"), and frequency and effects of comparisons might not produce trustworthy results, especially for global self-reported comparisons. Wood and Wilson (2003) suggested that global self-reported comparisons should result in fewer reported comparisons as individuals might find it difficult to recall average comparisons across multiple experiences, in particular if they are not made aware of the different types of comparisons. In addition, frequency of comparison does not indicate potential impact and significance (Wood & Wilson, 2003).

The narration approach might be particularly useful when eliciting concrete information instead of retrospection and amalgamation of information (Wood, 1996; Wood & Wilson, 2003). However, Gibbons & Buunk (1999) concluded that social desirability did not seem to be a problem for self-report comparisons as there were low correlations between the INCOM and social desirability scales. Results also indicated that individuals were happy to rate their typical comparison tendency (as shown by the mean response rates). Free response is less likely to be troubled by some of these problems as long as individuals are not asked directly if they compare themselves to others. Wood (1996) argued that spontaneous references to comparisons are more likely to involve the processing of social information and comparison to this information.

In contrast to the narrative approach, problems with lack of awareness and social desirability should generally not be a problem for reaction and selection methods as individuals are not asked directly if they have compared themselves. Presentation studies could be more of a problem as individuals might be reluctant to admit that they have been affected by the comparison (Wood, 1996). There is also the question of how far comparisons elicited for any of the approaches reflect everyday or naturally occurring comparison. Depending on the method, constraints in various forms might be imposed by the researcher. These include assumptions that individuals would compare themselves (for instance, in rank-order studies individuals are required

to select a comparison other) and restriction of comparison choices (selection and reaction approach). For example, researchers might provide a restricted range of comparison others, comparison dimensions and information about the comparison other. This might not reflect typical or representative comparisons that individuals make in their everyday lives. In addition, most of these approaches tend to use comparison others that are strangers to participating individuals. As mentioned earlier, individuals might prefer to compare to a similar other, depending on the context of the comparison. Equally, individuals might take other dimensions into account which are not explicitly mentioned by the researcher (e.g., appearance of comparison other). Reactions to self-relevant comparisons are more likely to have a stronger impact. In terms of restrictions, correlational and free response methods are the least restrained (Wood, 1996).

Wood (1996) provided recommendations for research in the area of social comparison. If individuals are asked directly about social comparisons, they should be informed that social comparison is a “normal” process individuals engage in to minimise social desirability. Social comparisons should be assessed as soon as they have occurred to reduce problems with recall. Questions should be focused and clear. Another recommendation focused on the constraints imposed. Researchers need to reflect on the reasons why constraints are imposed (for instance, in terms of comparison targets) and what effect this might have on the research outcomes. Wood (1996) argued that less constraint methods may reveal more realistic, everyday comparisons and contribute to a deeper understanding of social comparison theory. However, Wood pointed out that the constraining comparison targets or dimensions might be a valuable approach to explore specific hypotheses and recommended that a mixture of less and more constraint methods in a research programme might be particularly productive. Finally, definitional assumptions about social comparison need to be made clear.

Situational Context and Consequences of Social Comparison

Festinger (1954) characterised the individual as an independent agent and assigned the social environment a rather passive role. This view has been reflected in traditional social comparison research. However, other strands of research have evolved, which emphasise the active role of the environment (Wood, 1989). The environment might impose comparisons on individuals as comparison information is encountered, individuals might select specific comparisons to others in their daily lives or even construct a comparison other (Mussweiler & Ruter, 2003; Wood & Van der Zee, 1997). This comparison information could come from close others such as peers, friends and colleagues or strangers and the media (Heinberg & Thompson, 1992; Mussweiler & Ruter, 2003; Wood, 1996). Comparisons are influenced by situational context as it can provide an influential framework for comparisons. Leventhal et al. (1997) emphasised the importance of considering individual and situational factors and the interaction of the two, which influence the outcome of the comparison process. They suggested that social comparison responses can have different consequences at different times or in other words, different functions in different situations. The term “situational influence” is used loosely in this context, referring to short and long-term situational influences or changes. Thus specific situations might prompt comparisons through providing comparison targets (Kulik & Mahler, 2000). Additionally, specific situational contexts such as a cooperative social climate versus non-cooperative climate at work (Buunk et al., 2005) or life changing events such as an illness or community relocation in later life (e.g., Kwan et al., 2003) might influence comparison appraisals and outcomes.

The focus in early research in the area of social comparison was on the selection of comparison others and not so much on comparison outcomes (Alicke, 2000). Schachter's (1957) work introduced the link between cognitions and affect. Later research by Schachter and colleagues (e.g., Schachter & Singer, 1962) showed that cognitive antecedents lead to affective outcomes, influenced by situational

context. Social comparison processes played a role through the introduction of a comparison other who either acted angrily or euphorically while waiting for further tests. Participants seemed to compare their own feelings with those displayed by the other person and showed similar mood states. The interaction of cognition and emotions is also termed the appraisal approach (Forgas, 2008). It is now recognised that comparison thought processes might lead to affective and/or behavioural outcomes (Buunk et al., 2005; Wood, 1996). Lockwood and Pinkus (2008) discussed the impact of social comparison on motivation and subsequent behaviour. They suggested that behaviour changes take place when alternative selves are activated (improvement comparisons) and individuals feel that they have the means to achieve a new behaviour/self. However, research on behavioural or performance outcomes in the context of social comparison is sparse (Lockwood & Pinkus, 2008; Klein & Cooper, 2008).

It has been suggested that comparisons can be adaptive in certain circumstances. Evaluation appraisals supply knowledge of one's standing in relation to others and provide information about relative standing in the social environment. This allows for better planning and reactions. Improvement is important for personal growth and the development of skills and enhancement is adaptive as it protects the self (self-worth and self-esteem) and furthers coping (Sedikides & Strube, 1997). Smith (2000) discussed emotional reactions to social comparisons based on upward (someone better off) or downward (someone worse off) comparisons. He suggested that upward comparisons resulted in optimism and inspiration if the new or improved skills or attributes seemed attainable. However, if this is not the case, an upward comparison may result in depression or shame. Downward comparisons with a focus on one's superiority might lead to the experience of pride in oneself. However, if one fears that one might experience the same situation (e.g., illness), downward comparisons could lead to fear and worry. This suggests a complex relationship

between what one compares on (comparison dimension) and the comparison target (better, worse or similar).

In keeping with the similarity hypotheses, individuals tend to use evaluative comparisons to similar others (if they have the opportunity to choose their comparison target) to assess their standing. This might be for purposes of finding out how one does in relation to others in the same situation or to reduce feelings of being different. A study looking at social comparison as a predictor of nutrient intake and physical activity for adolescents across four different countries found that adolescents who compared to peers and who were higher in evaluative social comparison orientation (a trait-like tendency), were more likely to choose a healthy diet and engage in physical exercise (Luszczynska, Gibbons, Piko & Tekozel, 2004). Evaluative comparisons by long-stay schizophrenic inpatients with other patients increased satisfaction on two life domains (health and family), possibly because it confirmed that others had the same experience and thus reduced a feeling of deviance. Short-stay patients were more likely to evaluate themselves against “normal and healthy” individuals but also to experience increased satisfaction, presumably because they felt that their condition would change for the better soon (Franz et al., 2000).

Studies with patients suggested that evaluative and improvement comparisons with other patients could be informative, inspiring, provide hope and reduce negative affect (e.g., Bennenbroek, Buunk, van der Zee & Grol, 2002; Kulik et al., 1996; Taylor & Lobel, 1989; Van den Borne, Pruyn & van Dam de Mey, 1986). For example, Kulik et al. (1996) found that patients undergoing major surgery who shared a room with someone who had already undergone the surgery were less likely to be anxious before surgery and had shorter post-operative stays. They suggested that this might be related to a reduction of anxiety by seeing the other recovering well and sharing information about the procedure and the experience. Gerrard et al., (2005) found that heavy smokers comparing with an individual in a smoking cessation group, who was doing well, were more likely to quit smoking

themselves. Indeed, it has been suggested that engaging in improvement appraisals might be a coping strategy focused on problem-solving (Gibbons & Gerrard, 1997; Taylor & Lobel, 1989; Wills, 1997). However, if individuals feel that they may decline in health, this produces negative affect. Improvement comparisons are only perceived as positive if the comparer deems that the aimed-for improvement is attainable (e.g., in terms of time and capabilities) and the other is not perceived as a competitor. This is supported by research by Lockwood & Kunda (1997) who conducted a series of studies focusing on achievement. Participants were presented with information about another whose achievement was outstanding in their field. Improvement comparisons took place if success seemed achievable and participants rated themselves positively (e.g., bright). If success seemed unachievable, participants were more likely to rate themselves negatively (e.g., incompetent). Blanton, Buunk, Gibbons and Kuyper (1999) found that students who compared themselves to more successful comparison others were more likely to show improved academic achievements during the course of a school year.

Research by Buunk and colleagues (2005) underlined the importance of the situational context. They conducted a study looking at social comparison in the workplace and found that individuals engaging in improvement comparisons (upward) only experienced positive affect if they perceived the workplace to have a cooperative climate. Presumably the cooperative climate allowed the individual to perceive a better performing colleague as an inspiration and not a threat. In line with the suggestion that improvement comparison appraisals are only perceived as positive if the new skill or improved performance seems attainable, Michinov (study 1, 2005) found that individuals who compared upward and perceived a higher level of control over the comparison dimension were more satisfied with their job and less likely to feel stressed.

There has been a particular focus on enhancement comparisons and outcomes as research suggests that enhancement comparisons

may be adaptive or maladaptive (e.g., Crocker & Park, 2004; Tennen et al., 2000; Taylor, Lerner, Sherman, Sage & McDowell, 2003; Taylor & Sherman, 2008). A review by Tennen et al. (2000) concluded that there was considerable evidence that perceiving oneself more favourably than others was linked to positive outcomes. Enhancement comparisons have also been linked to better adjustment in normal populations (Kleinke & Miller, 1998) and populations under threat (Bonanno, Rennie & Dekel, 2005). In the short-term, mood improvements have been shown in experimental studies when individuals were able to engage in downward comparison (e.g., Gibbons & Gerrard, 1997) and in long-term studies mental adjustment was found to be better for individuals who enhanced to deal with stressful life events (e.g., Bonanno, Field, Kovacevic and Kaltman, 2002; Kwan et al., 2003). Perceiving one's physical self as better than others (regardless of physical symptoms) is associated with higher perceived health ratings, particularly in older adults (Cheng et al., 2007). Taylor & Sherman (2008) in a review of the literature proposed that self-enhancement appraisals not only reduced stress but also supported goal pursuits by facilitating performance and increasing individuals' overall perception of self-worth. However, in keeping with Smith's (2000) predictions, research looking at outcomes of downward comparisons to less fortunate others suggests that positive outcomes are only perceived if the comparisons make one feel superior and negative outcomes if one feels that the comparison other presents a future self (e.g., Buunk et al., 2005; Lockwood, 2002; Taylor & Lobel, 1989).

Dispositional Characteristics and Social Comparisons

Interest in individual differences and how they might impact on social comparison selection has become more prominent in recent years as it has been suggested that the type of comparisons individuals make depend on personality and that some individuals are more likely to compare themselves than others (Baumeister, Tice & Hutton, 1989; Buunk & Gibbons, 2007; Diener & Fujita, 1997). However, there is a

lack of research including measures of dispositional difference variables (Buunk & Gibbons, 2007).

Gendered Perceptions

Gender may play a role in the frequency and perception of social comparisons. For example, Helgeson and Mickelson (study 1, 1995), using a self-report comparison scale, found that females engaged significantly more frequently in all types of social comparison appraisals than males. The same was found by Gibbons and Buunk (1999) measuring social comparison orientation. The dimension under comparison might also influence comparison processes as there might be differences in the relevance of a particular dimension for males and females. Helgeson and Mickelson (Study 2, 1995) found gender differences for comparison processes depending on the dimension under comparison. Differences might also occur in the way females and males react to social comparison information. Research in the area of downward comparisons suggested that women might empathise with a worse-off similar comparison other and thus not be able to avoid negative implications - such as perceiving that the comparison other who failed academically presented a possible future self. In contrast, men were more likely to overestimate their uniqueness and describe a comparison other as different, thus distancing themselves from failure (Kemmelmeyer & Oyserman, 2001b). This might be linked to findings in the literature in the area of gender differences which suggests that females are more dependent on outward feedback than males. Men have been found to be more likely to define themselves as unique and agentic, whereas women tend to perceive themselves as connected to and interdependent on others (Markus & Kitayama, 1991). Additionally women have been found to be more likely to empathise with and be responsive to feedback from others (Cross & Madson, 1997).

Self-Esteem

There has been a particular focus on the relationship between self-esteem and social comparison in the literature. In a review of social

comparison research into personal characteristics Wheeler (2000) tentatively concluded that individuals with high self-esteem and self-worth are more likely to use social comparison in ways that are self-enhancing. For example, Dibb and Yardley (2006) found that individuals high in self-esteem were more likely to interpret downward social comparison information (operationalised as describing oneself better off than others) as positive. However, Wheeler (2000) also pointed out that research in this area seemed somewhat inconsistent, a point also made by Tennen et al. (2000). A possible explanation for different findings might lie in the way enhancement comparisons are measured. Some research proposed that individuals with high self-esteem were more likely to self-advance, that is emphasising positive elements of the self (comparing on a different dimension), whereas those with low self-esteem were more likely to self-protect through reducing closeness (Tice, 1991; Wood, 1996; Wood, Giordano-Beech & Ducharme, 1999).

Personality Traits

There is very little research in the area of personality traits such as the Big Five (conscientiousness, extroversion, intellect/openness, agreeableness, emotional instability or introversion) and social comparison. Existing studies focus on the link between social comparison orientation and personality traits. The tendency to make or not make social comparisons has been put forward as a trait-like tendency based on findings suggesting that some individuals are generally less likely to compare themselves to others (Diener & Fujita, 1997; Hemphill & Lehman, 1991). Research found that high and low comparers (social comparison orientation) differed in the way that they interpreted comparison information (Buunk & Breninninkmeijer, 2001; Buunk et al., 2001). Work by Buunk and colleagues (e.g., Buunk & Gibbons, 2007; Gibbons & Buunk, 1999) looking at the relationship between personality traits and social comparison orientations suggested a “typical comparer”. Generally speaking, greater interest in social comparison has been found in individuals who have personality

characteristics linked to heightened uncertainty such as a high chronic activation of the self (high private and public self-consciousness) and a strong interest/empathy in others (prosocial orientation). Evidence has linked neuroticism and introversion to social comparison and to more negative comparison outcomes (Gilbert & Allan, 1994; Van der Zee, Buunk & Sanderman, 1998). The typical comparer has been described as less likely to be open and creative or autonomous and more likely to have low self-esteem compared to the low comparer (Buunk & Gibbons, 2007).

Life Goals

The pursuit of goals (motivation and type of goal) has been linked more recently with social comparison (e.g., Bailis & Seagall, 2004; Karoly et al., 2005; Neighbors & Knee, 2003) using self-determination theory as a framework (Deci & Ryan, 2000). Neighbors and Knee (2003) suggested that these two theories conceptually overlap as both focus on the impact of perceived performance and environmental feedback on the experience of the self. Of particular interest in the context of social comparison and body image might be life goals (Sheldon, Ryan, Deci & Kasser, 2004; Sheldon & Kasser, 2008). Life goals are distinctive from personality traits in that they focus on individuals' dispositional aspirations. In contrast, traits are consistent patterns of thinking, feeling and behaving (Emmons, 1989).

Kasser and Ryan (1996) distinguished intrinsic and extrinsic goals or aspirations. Intrinsic goals include personal growth, affiliation, community contributions and physical health. Intrinsic goals are performed out of interest and enjoyment. These types of goals satisfy innate psychological needs such as relatedness, competence and autonomy (Deci & Ryan, 2000). Extrinsic goals reflect an interest in external rewards and praise from others as a sign of self-worth. Extrinsic goals include aspirations to achieve wealth, fame and an appealing image. Extrinsic goal pursuits have been linked to psychological distress and unhealthy behaviours and intrinsic goal pursuits to health and well-being (Sheldon et al., 2004; Williams, Cox,

Hedberg & Deci, 2000). Sheldon et al. (2004) proposed that the pursuit and achievement of extrinsic goals involves engaging in frequent social comparison to determine one's standing.

Self-determination theory also distinguishes between types of behavioural regulation. These range from controlled (extrinsically motivated) to autonomous (intrinsically motivated). Extrinsic motivation is represented by four regulatory styles which fall along a continuum. The four regulatory styles are external regulation, introjected regulation, identified regulation and integrated regulation. These regulations differ in the degree to which they are self-determined, with integrated regulation representing the more self-determined of the external regulations. Controlled behaviours are performed when individuals feel pressure from outside to engage in a particular behaviour and thus their motivation is extrinsic. In contrast, behaviour that is performed out of choice and enjoyment is intrinsically motivated (Deci & Ryan, 2000). Bailis and Segall (2004) showed that individuals with more autonomous reasons for engaging in exercise behaviour reported fewer negative consequences when comparing themselves to others. Participants high in autonomous versus controlling reasons were less likely to compare themselves to others, less likely to feel worse after a comparison and less likely to indicate that they compared themselves to others to maintain self-esteem.

Main Issues in the Area of Social Comparison Research

There is a large body of research in the area of social comparison theory with sometimes contradictory findings. What potentially complicates the interpretation of findings is that comparisons are sometimes described and measured as processes (situational responses) and sometimes as trait-like tendencies (Colvin & Griffo, 2008). Part of the debate about what constitutes beneficial and detrimental comparisons is connected to how each comparison appraisal is defined and measured (Leary, 2007; Sedikides & Gregg, 2008). It is unlikely that trait or process comparisons have comprehensively positive or negative outcomes at all times. Instead,

there should be a range of outcomes, influenced by the domain under comparison and its self-relevance, situational context and personal characteristics (Kwan, John, Robins & Kuang, 2008; Leventhal et al., 1997; Paulhus, 1998). Further research and clarification is needed in this area of social comparison and definitional assumptions need to be made explicit (Wood, 1996).

Social Comparison Appraisals, Body Image and Subjective Well-Being

Body Image and Related Constructs

Body image has been defined as a core feature of eating disorders (Cash and Deagle, 1997; Thompson, 1996) and is included in the diagnostic criteria for anorexia nervosa and bulimia nervosa outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000). Numerous research studies have shown that negative body image experiences are not only associated with problematic eating and exercise behaviours and attitudes, but also that body image disturbances are precursors to health risk behaviours such as disordered eating and excessive exercising (e.g., McCabe & Ricciardelli, 2004; Neumark-Sztainer, Paxton, Hannan, Haines & Story, 2006; Thompson, Coover, Richards, Johnson & Cattarin, 1995; Wertheim, Koerner & Paxton, 2001).

There is a debate about the different dimensions of body image, but two main components are generally accepted: a perceptual and an attitudinal component. Perceptual body image refers to the accuracy of an individual's perception of their body size (Slade, 1994). The attitudinal component encompasses affective and self-evaluative and cognitive and behavioural aspects (Cash and Deagle, 1997; Thompson, 1996). Cash (2005) suggested that cognitive and behavioural aspects include evaluative body image and body image investment. Evaluative body image is expressed as satisfaction or dissatisfaction with one's appearance. The assessment is based on the individual's perceived difference to an internalised ideal.

In contrast, body image investment refers to the importance individuals place on their appearance (Cash, 2005). Investment comprises two dimensions. The first is motivational salience, which refers to the importance individuals place on appearance and how they manage their appearance. The second dimension is self-evaluative salience, which is distinct from evaluative body image. This dimension relates to the importance of appearance for self-worth (Cash, Melnyk, & Hrabosky, 2004). Research has shown that women highly invested in body image are more likely to report less appearance satisfaction after viewing a thin image compared to those low in investment. However, only those high in self-evaluative salience (appearance as part of self-definition) reported greater body image dissatisfaction after exposure (Ip & Jarry, 2008). Individuals highly invested in body image believe that physical appearance is a self-defining feature (Jakatdar, Cash & Engle, 2006) and as such external events activate appearance-related schemata, which trigger emotions and thoughts connected to body image (Cash, 2002). Perceiving appearance as part of the self-concept or related to self-worth might result in dysfunctional outcomes (Cash, 2005). Unhappiness in the cognitive-behavioural area is expressed through over-evaluation of appearance and excessive management of appearance (Cash, Melnyk, et al. 2004). It should be noted that managing one's appearance through strategies such as clothing is not in itself negative if it reflects a desire to care for one's appearance (Cash, Jakatdar & Williams, 2004). A range of other body image-related concepts can be found in the literature such as internalisation of an ideal (muscularity or thinness), perceived pressure to conform to a standard of appearance and drive for thinness or muscularity (Cafri, Yamamiya, Brannick & Thompson, 2005; Thompson & Stice, 2001; Tiggemann, 2006; Litt & Dodge, 2008). These concepts have been criticised for their narrow focus on sociocultural influences such as media, peers and family only. They are closely related and often lack clarity (Cash, 2005). Cash (2005) argued that although a focus on

these factors is important, a wider understanding of what makes individuals resilient is needed.

Measurement Issues

Research in the area of social comparison theory has suggested that a number of comparison appraisals might be activated in different situations depending on the context and the individual (Wood, 1989). Studies in the area of body image and idealised images tend to be quantitative in nature. However, a qualitative approach might be beneficial to understand the complex nature of adolescents' everyday experiences and provide a more detailed understanding of how individuals actively select, interpret and integrate appearance messages and idealised images in their everyday life (Milkie, 1999; Snyder & Cantor, 1998). Providing adolescents with the opportunity for free response might provide information about comparison targets and comparison attributes (Bers & Rodin, 1984). Qualitative research has found that adolescents talk about comparing themselves or indirectly indicate that they have engaged in comparisons by talking about their reactions to idealised images. However, no detailed picture has emerged about the range of social comparison appraisals present (e.g., Grogan & Richards, 2002; Hargreaves & Tiggemann, 2006; Milkie, 1999; Wertheim, Paxton, Schutz & Muir, 1997). For example, Milkie (1999) interviewed 60 girls and found that most girls felt that media images were unrealistic and artificial. However, the girls perceived that others, especially boys, would evaluate their appearance based on a societal standard. There are some suggestions that a number of girls try to resist media messages about appearance by focusing on the unrealistic nature of the idealised standards (McCabe, Ricciardelli & Ridge, 2006). Muir, Wertheim & Paxton (1999) asked girls to write down in their own words what triggered their first diet. Nearly 17% of the sample indicated that evaluative comparison to self, models and peers was the primary reason for their first diet. Boys have been found to be more likely to talk about appearance in the context of sport and

fitness and some link shape to confidence and happiness (Grogan & Richards, 2002; Hargreaves & Tiggemann, 2006).

In terms of quantitative research there is a lack of validated measures in the body image literature covering the range of appraisals suggested by the social comparison literature. Additionally, there is generally a focus on evaluative comparisons, often without clearly acknowledging what has been measured. Social comparison has been included in studies as a trait or dispositional tendency, i.e. consistent patterns of thinking, feeling and behaving or as situational responses. Measures assessing trait evaluative social comparison focus on either general or specific comparisons. An example of a more general measure focusing on body size and thinness is the Physical Appearance Comparison Scale (Thompson, Heinberg & Tantleff, 1991). The scale measures overall tendency to compare in social situations. There are adapted versions of this scale (e.g., the Appearance Comparison Scale, see Stormer & Thompson, 1996). Another example is the internalisation subscale of the Sociocultural Attitudes Towards Appearance Scale-3 (Thompson, van den Berg, Roehrig, Guarda & Heinberg, 2004). Some items in the scale refer to evaluative appraisals but some might tap into improvement appraisals or idealisation (e.g., "I would like my body to look like the models who appear in magazines"). The Tendency for Appearance Comparison: Specific Attributes (Tiggeman & McGill, 2004) and the Body Comparison Scale (Fisher, Dunn & Thompson, 2002) are examples of measures focusing on the frequency of comparisons to specific body parts such as stomach, thighs and hips. A measure by Schutz, Paxton and Wertheim (2002) combines questions about frequency of general and appearance comparison and targets for social comparison.

Of particular interest in the context of the present research are measures and studies that assess situational comparison tendencies. Stimuli used in experimental studies to prompt comparisons are, for example, photographs, videos or vignettes (e.g., Furman & Thompson, 2002; Hargreaves & Tiggemann, 2004; Humphreys & Paxton, 2004).

There is a tendency to infer the impact of comparisons through outcome measures such as affect, state body image and self-esteem (e.g., Bell et al., 2007; Clay, Vignole & Dittmar, 2005; Humphreys & Paxton, 2004).

Information about state comparison processes is collected less frequently. Tiggemann and colleagues measured state comparison through questions about comparison and thoughts about the comparison target (Tiggemann & McGill, 2004; Tiggemann & Slater, 2003; Hargreaves & Tiggemann, 2004). For example, in a study with adolescents (Hargreaves & Tiggemann, 2004), questions included asked participants how much they thought about the attractiveness of the person (an actor in a television commercial), compared their appearance to the actor and wanted to be like them. Response options ranged from *not at all* to *very much*. In this study, only responses to the comparison question were used as an indicator of state comparison. A very recent approach is to assess naturally occurring comparisons through use of a social comparison diary. Participants can note down frequency, nature and effects of comparisons as well as the comparison target. For example, a study by Leahey & Crowther (2008) asked females to record naturally occurring comparisons throughout the day, including with whom they compared themselves and how they compared to the other (i.e. better or worse).

General Limitations of Social Comparison Measures

The existing trait and state approaches to measurement have several limitations. First, assuming that comparison processes have taken place without defining and measuring a range of comparison appraisals limits interpretation and insight. Conceptual clarity is of great importance (Wood, 1996). Second, even when measuring comparison, there is a tendency to focus on evaluative appraisals only. In addition, the assessment of a range of affective, cognitive and behavioural outcomes has been neglected (Halliwell & Dittmar, 2005). It is important to include a range of social comparison appraisals, as an insight into beneficial and detrimental comparison processes and their

related outcomes might inform health promotion and education efforts and improve theoretical understanding.

Situational Context and Consequences of Social Comparison to Idealised Images

Situational context plays an important role in social comparison. The environment might impose comparisons on the individual in the form of specific situations or comparison targets which prompt comparisons (such as peers or, media images), but the individual might also chose specific comparison targets (Jones, 2004; Furman & Thompson, 2002; Haimovitz, Lansky and O'Reilly, 1993; Tiggeman, 2000). For example, research in the context of environmental prompts suggests that perceptions of body satisfaction can be significantly influenced by situational factors that might prompt appearance concerns (such as trying on a swimsuit) (Haimovitz et al., 1993; Tiggeman, 2000). Both studies concluded that body image has a stable and dynamic component which should be considered in the research design.

Comparisons in the Context of Media

Several reviews exist in the literature on the effect of media in body image concerns (Blond, 2008; Grabe, Ward & Hyde, 2008; Groesz et al., 2002; Holmstrom, 2004). These reviews covered a range of ages. Results suggested that effect sizes are small to moderate. However, findings generally indicated that individuals experience negative outcomes after exposure to idealised images. For example, Groesz et al., (2002), reviewing experimental studies with females, reported a mean effect size of $d = -.31$. In contrast, Holmstrom (2004) found a smaller effect ($d = -.08$). Holmstrom's review included findings from experimental and correlational studies. Grabe et al. (2008) also included correlational and experimental studies with females in their review. They found a small/moderate effect on female's body dissatisfaction after exposure ($d = -.28$) and a small/moderate effect on women's eating behaviour (in terms of unhealthy eating practices) ($d = -.30$). Blond (2008) reviewed experimental studies with males and

found an overall effect size of $d = .42$, which indicated that exposure was related to body dissatisfaction. Factors identified as moderating the impact of idealised messages on body image for females were a history of eating disorders, internalisation of the thin ideal or pre-existing high levels of body dissatisfaction (Groesz et al., 2002; Grabe et al., 2008). Similarly, moderating factors for males were internalisation of a muscular ideal, body and muscle dissatisfaction, and lack of an exercise routine, although this was not found in all studies (Blond, 2008). Differences between adolescents and adults were noted in two of the reviews. Grabe et al. (2008) found that the relationship between media exposure and unhealthy eating behaviours was less strong for female adolescents. However, internalisation in adolescents (10 - 18 years) compared to adults had a stronger effect on the impact of media exposure. Groesz et al. (2002) found that the negative effect of media exposure on body image was stronger for females less than 19 years of age.

All authors concluded that there was an effect of media on body image and body image related outcomes. Grabe et al. (2008) found that effect size was larger in correlational studies and proposed that short-term exposure might not reflect the full impact of naturalistic exposure in everyday life. However, Groesz et al. (2002) concluded that effect size for experimental studies was greatest with only a few exposures. All reviews noted that effects of exposure were not universal and pointed towards the importance of identifying health-protective factors. Groesz et al. (2002) suggested that exploring differences in the processing of idealised images through the use of social comparison theory might be a fruitful approach. Indeed, Holmstrom (2004) argued that the low average effect size found in her review of the literature might be explained by downward comparisons. She argued that females are constantly exposed to idealised images and thus develop strategies to deal with these images. There is not as much information available on males and "findings in the male population are sparse and conflicting" (Blond, 2008, p.248).

Studies looking at long-term exposure have indicated that there are certain factors that might make individuals more vulnerable to media messages. Stice, Spangler & Agras (2001) provided a group of girls with a subscription to a fashion magazine for 15 months to assess the impact of long-term exposure. They did not find any main effects on thin-internalisation, body dissatisfaction, dieting or negative affect. However, their findings supported the proposition that some adolescents are more vulnerable than others. These vulnerable adolescents were characterised by initial higher levels of body dissatisfaction, higher perceived pressure to be thin and deficits in social support. Van den Berg, Neumark-Sztainer, Hannan & Haines (2007) followed a sample of boys and girls over five years and found that reading articles about dieting and weight loss increased unhealthy weight-control behaviours in girls but not boys. However, reading dieting articles at time 1 did not predict self-esteem, depression or body image satisfaction at time 2.

In keeping with the literature reviews, there is a large body of studies showing that situational exposure to idealised images (not explicitly measuring social comparison appraisals) leads to a range of negative outcomes for girls and boys (e.g., Bell et al., 2007; Clay et al., 2005; Farquhar & Wasylikiw, 2007; Harrison, 2001; McVey, Tweed & Blackmore, 2005; Morrison et al, 2004; Ricciardelli & McCabe, 2003). For example, Clay et al. (2005) found that 11 to 16 years old girls exposed to models had significantly lower body satisfaction and global self-esteem ratings. Changes in self-esteem were accounted for by changes in body satisfaction. Boys exposed to idealised images showed lower social, performance and appearance self-esteem and higher levels of depression (Farquhar & Wasylikiw, 2007)

The Relevance of Peers

Peers and in particular closer friends play an important role during adolescence and have an important influence on shaping social norms (Bukowski, Hoza & Boivin, 1993). Friends provide an important social backdrop for body image development and perception (Jones, 2004).

Friendship groups have been shown to share similar amounts of concern with regard to appearance and a certain level of appearance talk is normative for adolescents (Hutchinson & Rapee, 2007; Paxton, Schutz, Wertheim & Muir, 1999; Wertheim, Paxton, Schutz & Muir, 1997). Information relevant to appearance concerns is thought about and interpreted through conversations with friends (Jones, 2004). It has been suggested that this type of conversation might be harmful as it reinforces existing appearance norms and values but also that it can be supportive and aid group affiliation (Jones & Crawford, 2006; Coleman & Hendry, 1999; Nichter, 2000; Paxton et al., 1999). Friendship groups that are more concerned with appearance and have more appearance-related conversations appear to have higher levels of body dissatisfaction than those that do not (Jones, Vigfusdottir & Lee, 2004). Equally, friends' support can be a protective factor against the uptake or continuation of weight-loss behaviours (Wertheim et al., 1997). Peer acceptance is a major concern during adolescence. Adolescents perceiving that peer acceptance would be increased by conforming to an appearance ideal are more likely to experience body dissatisfaction (Striegel-Moore & Cachelin, 1999). In a similar vein, a study with adolescent girls showed that appearance and weight teasing from peers predicted physical appearance comparisons (Shroff & Thompson, 2006). Perceived peer pressure and relative attractiveness of peers have been shown to be significant predictors of social physique anxiety (evaluation of physique in the context of impression management) (Mack, Strong, Kowalski & Crocker, 2007). Those who perceived their friends as more attractive experienced greater levels of social physique anxiety. The authors suggested that this might be due to increased evaluative comparisons (Mack et al., 2007).

Peers have been shown to be more frequent comparison targets than idealised images and also to be more relevant (e.g., Heinberg & Thompson, 1992; Jones, 2001; Presnell, Bearman & Stice, 2004). Evaluative physical peer social comparisons have been found to be increased in older male and female adolescents (10th grade compared

to 7th grade) and overweight girls compared themselves more with female peers than underweight and normal girls. No difference for comparison by weight was found for boys (Jones & Crawford, 2006). Peers typically are likely to represent a wider range of shapes and weights than media personalities and images. In addition, more is known about peers and close relationships with peers have been shown to be important (Jones, 2001).

A study with adult females found that comparing to female peers increased body dissatisfaction, but not negative affect (Krones, Stices, Batres & Orjada, 2005). Leahey & Crowther (2008) found that body satisfied women who compared upward with peers showed more positive affect and appearance esteem than when they compared to media targets. This suggests that these women felt that they were equal to their peers. In contrast, although body dissatisfied women also showed more appearance esteem, they also had increased dieting thoughts. This suggests improvement thoughts. When making downward comparisons (I look better) with peers, individuals showed less positive affect.

Previous Research Measuring Social Comparison Appraisals

Self-evaluation. Hargreaves & Tiggemann (2004) conducted a study with both boys and girls. They found that boys and girls high on appearance investment were more likely to engage in evaluative comparisons after exposure to television commercials presenting thin images of women for girls and muscular images of men for boys. The appearance investment variable was calculated using the average of appearance schematicity and a trait social comparison measure as they were highly correlated. State comparison was assessed by asking how much participants compared themselves to the actor. Girls were more likely than boys to engage in situational comparison and the impact of the comparison was stronger for girls than boys. Girls showed significantly more state body dissatisfaction and negative mood than boys after comparison. However, there were also significant differences for girls and boys who viewed these idealised images

compared with girls and boys in the control group. Boys and girls in the control group showed lower negative mood.

Humphreys and Paxton (2004) exposed adolescent boys to photos of muscular and athletic males. The tendency to compare themselves to others was included as a potential predictor of the impact of exposure to the idealised image. In keeping with previous research, high internalisation of the muscular ideal predicted more negative responses in the experimental group (reduced state body image and increased depression). The dispositional tendency for comparison together with self-esteem, internalisation, body dissatisfaction and self-concept clarity predicted post-exposure anxiety but not depression. Overall, they concluded that boys were less likely to experience negative outcomes compared to girls.

Durkin and Paxton (2002) exposed adolescent girls to thin advertising images. Evaluative social comparison was measured as a dispositional tendency. Internalisation of the thin ideal, appearance comparisons and stable body dissatisfaction predicted a decrease in state body satisfaction and increase in state depression for older girls (mean age = 15.5 years). Martin and Gentry (1997) used advertising stimuli and instruction sets to prompt evaluation in a sample of females. They found an age effect: perception of body image satisfaction was only lower for the younger girls (6th grade), not for the older age group (8th grade). Perceptions of physical attractiveness were lowered for both groups. Appearance self-esteem was unchanged.

Survey studies have found that perceived pressure from media through evaluative comparisons is related to negative outcomes such as lower body image satisfaction, unhealthy behaviours and psychological problems (e.g., Durkin, Paxton & Sorbello, 2007; Halliwell & Harvey, 2006; Jones, 2001; Morrison et al., 2004; Muris, Meesters, van de Blom & Mayers, 2005; Smolak & Stein, 2006). Correlational results showed that girls and boys more likely to compare themselves to models and celebrities (assessed as frequency of comparison) were more likely to be dissatisfied with their bodies

(Jones, 2001). Muris et al. (2005) found that higher engagement in efforts to change body shape was associated with higher levels of body comparison (assessed as comparison frequency of different body parts to peers) for girls and boys and with lower levels of body satisfaction for girls. In addition, evaluative comparisons to peers, media and models have been shown to trigger first dieting in adolescent girls (Muir et al., 1999). Perceived pressure from the media has been linked to body change strategies and eating problems for boys and girls. Morrison et al. (2004) showed that evaluative comparisons to idealised images predicted low appearance self-esteem and unhealthy behavioural practices related to muscularity for boys and to weight for girls. Body satisfaction was also lower for girls. Evaluative comparisons (measured as comparison frequency) and internalisation of the thin ideal have been shown to mediate the relationship between sociocultural influences and body dissatisfaction for girls (Durkin et al., 2007). In addition, comparisons predicted internalisation. Body dissatisfaction in turn predicted disordered eating (such as restriction, bingeing and overeating) and psychological functioning (self-esteem, depression and perfectionism) (Keery, van den Berg & Thompson, 2004). Botta (2003) assessed the impact of time spent reading magazines on body image and eating disturbances in boys and girls. She found that social comparison (measured as frequency and aspiration to look like model) moderated the relationship between magazine reading and body image and eating disturbances. For girls, this related to reading fashion magazines and for boys to reading sports magazines.

A longitudinal study with adolescents revealed that prospective changes in body dissatisfaction for girls were predicted by appearance evaluative comparisons and body mass, although the contribution of social comparison was small. Girls who had more appearance conversations with friends at time 1 were more likely to engage in evaluative comparisons one year later. Changes in body dissatisfaction for boys over time were only predicted by internalisation of the muscular ideal. Evaluative social comparison was assessed by

frequency of comparison on physical attributes, reflecting importance of weight for girls and muscularity for boys (Jones, 2004).

Self-improvement and self-enhancement. There is less research available in the area of explicitly measured improvement and enhancement comparisons. However, researchers finding positive or neutral effects after exposure suggested that improvement comparisons might have taken place (although this could also indicate enhancement comparisons). There are several studies indicating beneficial (e.g., Joshi et al., 2004; Myers & Biocca, 1992) or neutral outcomes for women (Halliwell & Dittmar, 2005). Individuals who are inspired by the idealised image and feel that they can achieve similar results should engage in improvement comparisons (Joshi, Herman & Polivy, 2004; Lockwood & Kunda, 1997). Similarly, Holstrom (2004) supported this view based on findings from a meta-analysis with females. The analysis documented that girls and women spending more time viewing media were more likely to feel positive in terms of body image-related outcomes. Individuals might seek out idealised images and fantasise about achieving this ideal self (Ferguson, 1983; Hermes, 1995). However, in keeping with social comparison theory, long-term outcomes might be negative if individuals realise that they might not be able to achieve this ideal. Also, a strong investment in appearance for the purpose of maintaining self-worth is detrimental. Research with anorexic patients suggests that these patterns of thinking and behaviour are ultimately damaging and support/perpetuate the illness (Thomsen, McCoy & Williams, 2001).

Halliwell and Dittmar (2005) manipulated the comparison process through instructions prompting improvement comparisons before viewing advertising images. No difference in levels of body-focused anxiety after exposure to either thin models or no models (control condition) were found. Joshi et al. (2004) reported that female restrained eaters had higher social self-esteem and self-image after exposure to thin models compared to the control group. A recent study by Halliwell, Dittmar & Osborne (2007) found that men showed less

image induced body dissatisfaction if they were already exercising to increase muscularity.

There are some findings for girls and boys suggesting that comparison appraisals other than evaluative ones might take place. Durkin and Paxton (2002) exposed adolescent girls to thin advertising images. Evaluative social comparison was measured as a dispositional tendency. Internalisation and appearance comparison predicted *decreased* negative affect for younger adolescents (mean age = 12.9 years). Outcomes for older girls (mean age = 15.5 years) were negative with a decrease in body dissatisfaction and an increase in state depression. In addition, about 50% of all participants showed either *no change or an increase* in body satisfaction after exposure. Similarly, Humphreys and Paxton (2004) exposed adolescent boys to photos of muscular and athletic males. The tendency to compare themselves to others was included as a potential predictor of the impact of exposure to the idealised image. Nearly 80% of participants showed *no change or improved* ratings on liking of their own body shape after exposure.

There is one experimental study which explicitly manipulated improvement and enhancement comparisons with adolescent girls (Martin & Gentry, 1997). Results indicated that self-perceptions of physical attractiveness were higher after improvement comparisons to advertisement stimuli. No effect on body image perceptions was found. Enhancement through downwards comparison led to higher ratings of physical attractiveness but perceptions of self-esteem were unchanged for most girls. Higher perceptions of self-esteem were experienced by the youngest girls (4th graders). Martin & Gentry (1997) suggested that the youngest girls might have perceived themselves to be even skinnier than the models and thus experienced increased self-esteem.

Studies with adults have indicated that enhancement comparisons, and in particular comparing on a different dimension might be beneficial (Engeln-Maddox, 2005; Lew, Mann, Myers, Taylor & Bower, 2007; Park, 2007). For example, Park (2007) showed that male and female adults, who were high in appearance-based rejection sensitivity (a

dispositional characteristic), experienced less negative outcomes (in terms of state self-esteem and mood) if they thought of a self-selected strength, after having experienced an appearance threat. This was particularly related to feelings of belongingness (rejection sensitivity). Lew et al. (2007) conducted research with a sample of at-risk females with raised levels of body image dissatisfaction. Participants were asked to compare themselves to fashion models and write about an alternative comparison dimension on which they felt superior to create a positive experience of the self (repeating this four times over three weeks). At follow-up mood ratings were more positive compared to ratings collected immediately after comparison. Additionally, participants in the intervention group indicated significantly less desire to lose weight compared to the control groups. The authors concluded that this type of comparison might be effective as it allows the individual to focus on a valued aspect of the self. Lew et al. (2007) noted that self-selected dimensions on which women felt superior included: the quality of their relationships (with friends, partners and family); their intellectual and academic abilities; possession of more positive personality traits (such as having a sense of humour and being a caring person); specific abilities (e.g., in sport or music) and community involvement such as volunteer services; more positive experience of health (in particular mental health); and finally moral and religious values.

Another example of a different dimension individuals could compare on is clothing. As mentioned earlier, clothing can be grouped under body investment (Cash, 2002). Research with adults indicated that individuals with lower body satisfaction prefer greater body coverage and use clothing as a means of concealing some aspects of the body (Chattaraman & Rudd, 2006; Rudd & Lennon, 2000). However, clothing may also improve body satisfaction, provide assurance and influence mood (Kwon & Shim, 1999; Rudd & Lennon, 2000; Sontag & Lee, 2004). During adolescence, clothing is closely linked to peer acceptance and denotes group membership (Paxton et al., 1999).

Wilson and MacGillivray (1998) suggested that as clothing can be easily altered it might be a “low risk strategy” to manage appearance worries. Clothing might engender a sense of agency and control. Research by Jones (2001) found that female adolescents’ comparisons on clothing/style were not related to body dissatisfaction, whereas male adolescents’ comparisons were. As long as clothing management is relatively independent of self-worth, it should not be dysfunctional (Cash, Jakatdar, et al., 2004).

Dispositional Characteristics and Social Comparison

Some individuals may be more vulnerable than others regarding the impact of idealised images and a better understanding of dispositional characteristics is warranted (Stice et al., 2001). Dispositional characteristics that have been linked to body image include personality traits, self-esteem and body image. Another characteristic of interest in the context of social comparison processes might be life goals. In addition to developing an identity adolescents need to establish long-term goals and to this end regulate affect and behaviour (Steinberg, 2005).

Gendered Perceptions

In line with research generally in the area of social comparison, findings in the context of idealised images suggest that girls are more likely to engage in comparisons than boys (Hargreaves & Tiggeman, 2004; Humphreys & Paxton, 2004). There are also differences in the dimension males and females focus on. Adolescents are challenged to develop a sense of identity and cope with physical changes. These physical changes differ for boys and girls, with boys developing a more muscular physique and girls increasing body fat. Accordingly, research suggests that body image tends to be a gendered concept which is reflected in a focus on muscularity for boys and weight for girls (Jones, 2004; Jones & Crawford, 2006; Muris et al., 2005; Ricciardelli & McCabe, 2004; Smolak & Stein, 2006). Boys tend to be less likely to engage in weight loss behaviour than girls and are less likely to

internalise appearance standards (Knauss, Paxton & Alsaker, 2007; McVey et al., 2005). Girls have been shown to talk more about and engage more in dieting and weight loss than boys (Vincent & McCabe, 2000). Complementarily, boys are more likely to engage in muscle building strategies than dieting and more likely to have “muscle-building” conversations than girls (Jones & Crawford, 2006; McCabe & Ricciardelli, 2003a). Boys with a drive for muscularity are more likely to want to gain weight and muscle (McCreary & Sasse, 2000). Jones and Crawford (2006) found that overweight boys were more likely to discuss muscle building strategies with their friends compared to underweight boys. In addition, this study showed that older boys (10th grade) felt that peer acceptance would be increased if they were more muscular and overweight girls perceived that peer acceptance was linked to weight. However, some research has suggested that weight might be an issue for a sub sample of boys, particularly those that are overweight and younger (Halliwell & Harvey, 2006; Jones & Crawford, 2005; Presnell et al., 2004).

Personality Traits

Differences in personality may be linked to health-promoting or health-damaging behaviours in adolescence. For example, lower levels of conscientiousness have been linked to unhealthy behaviours such as smoking, unhealthy eating habits, lack of exercise, unprotected sex and dangerous driving in young adults (Bogg & Roberts, 2004). Personality traits have not been explicitly linked to social comparison appraisals in the context of idealised images and appearance messages and there is a general paucity of research including a range of personality traits in the context of body image. Kvalem, von Soest, Roald & Skolleborg (2006) argued that the inclusion of personality traits in research could provide a better understanding of appearance concerns and body perceptions as traits represent consistent patterns which should influence situational reactions and perceptions. Kvalem et al. (2006) conducted a survey study with adult females, assessing personality (Big Five) as a predictor of body image perceptions. Results indicated

that neuroticism was linked to negative appearance evaluation and extroversion and intellect/openness to positive appearance evaluations in women (Kvalem et al., 2006). Lower ratings of self-objectification (perceiving one's value based on appearance) have been associated with high agreeableness and intellect/ openness scores in women (Miner-Rubino, Twenge & Fredrickson, 2002). A study with young men showed that higher scores of neuroticism and perfectionism predicted drive for thinness. Research with eating disorder diagnosed women indicated that two personality profiles might exist which relate to eating disorder subtypes. The undercontrolled/ emotionally dysregulated profile was characterised by high scores on neuroticism and low scores on conscientiousness and agreeableness. The overcontrolled/ constricted profile was characterised by high scores on neuroticism and conscientiousness and low scores on intellect/openness (Claes et al., 2006). Taken together these findings suggest that differences in personality traits might be relevant in the context of social comparison appraisals.

Body Image and Self-Esteem

Body image and self-esteem have been shown to be associated. Cohane and Pope (2001) concluded in a review of the literature that generally low body image satisfaction was associated with low self-esteem in boys. Low perception of self-esteem has also been linked to negative body image in females and males (Frost & McKelvie, 2004). Low levels of self-esteem have been linked to increased comparison tendencies (Durkin et al., 2007). However, research by Bell et al. (2007) noted that self-esteem did not moderate the relationship between exposure to music videos depicting thin models and body dissatisfaction for adolescent girls.

Body dissatisfaction is a precursor for eating disturbances in girls and boys (Keel, Klump, Leon & Fulkerson, 1998; Neumark-Sztainer et al., 2006; Stice & Hoffman, 2004). Girls are more likely to have lower levels of body satisfaction compared to boys (Eisenberg, Neumark-Sztainer & Paxton, 2006; Jones & Crawford, 2006). Eisenberg et al.

(2006) showed that body satisfaction changed over time in a sample of adolescents. Body satisfaction declined more around the transition from early adolescence to later adolescence for both boys and girls than around the transition from late adolescence to young adulthood. In addition, young adult females showed an improvement in body satisfaction. Research supports the notion that individuals with low levels of trait body satisfaction are more likely to react negatively to idealised images (Blond, 2008; Groesz et al., 2002).

Life Goals

During adolescence, individuals need to construct goals and identify steps on how to achieve them (Nurmi, 1987). It has been argued that “goals are key to understanding [adolescent] behaviour and well-being” (Massey, Gebhardt & Garnefski, 2008, p.422). Goal importance is related to age and priorities change during the transition from childhood to adulthood (Massey et al., 2008). Peers play an important role in shaping goal importance (Cohen & Cohen, 2001). A dysfunctional investment in appearance might be reflected in an emphasis on extrinsic life goals and specifically a focus on image goals. Extrinsic life goals are based on external reward expectations. Research has shown that adolescents invested in goals such as wealth, fame and popularity are more likely to experience poorer well-being and engage in risky health behaviours (e.g., Cohen & Cohen, 2001; Schmuck, 2001; Stein, Roeser & Markus, 1998). Research in the area of body image suggested that if appearance (and in particular body shape) is a self-relevant domain, it is perceived to determine social success (Dittmar, 2008; Stormer & Thomson, 1996; Striegel-Moore, Silberstein & Rodin, 1986). Females might expect that emulating an appearance ideal would bring them closer to benefits associated with appearance such as social, psychological and practical rewards (Engeln-Maddox, 2006). Similarly, recent research has suggested that men have become aware of the importance of a muscular appearance and the rewards attached to it (Boroughs, Cafri & Thompson, 2005). Dittmar (2007, 2008) discussed the link between consumer culture, identity and the perfect

body. Appearance is seen as malleable and media images transmit the message that beauty can be achieved by everyone. Dittmar suggested that individuals seeking to establish an identity or who are uncertain about their self and endorse material and physical ideals (extrinsic goals) are more likely to experience negative well-being.

A concept related to body image and life goals is self-presentation. This refers to individuals' attempts to manage how they are perceived by others. It has been suggested that social information can activate goals and identity images which in turn guide self-presentation (Schlenker, 2003). This indicated that idealised images could prompt a focus on external goals such as appearance, fame and wealth. Individuals high in self-presentational concerns are more likely to focus on how they are evaluated by others and concerned about social approval (Ginis & Leary, 2004). Self-presentational processes have been associated with health-damaging behaviours such as physical inactivity, dieting and disordered eating (Ginis & Leary, 2004). One of the expressions of self-presentational concerns is social physique anxiety (degree of anxiety experienced as a result of perceived evaluation of one's physique), which has been linked to increased monitoring of self-presentation (Ginis & Leary, 2004). Physical self-perception of body attractiveness has been found to predict social physique anxiety in adolescent girls in a longitudinal study (Crocker, Sabiston, Kowalski, McDonough & Kowalski, 2006). This might indicate the relevance of social comparison theory as physical self-perceptions should be shaped by comparison with others. Finally, higher autonomy scores (intrinsic motivation) have been linked to the use of fewer self-presentational strategies (Lewis & Neighbors, 2005). Research in adults found that self-reported reasons for exercise such as to improve appearance (extrinsic goal) was linked to higher ratings of social physique anxiety, whereas health reasons (intrinsic goals) were linked to lower ratings of social anxiety physique (Crawford & Eklund, 1994; Eklund & Crawford, 1994). This suggests that individuals concerned

with self-presentation are more likely to be extrinsically motivated and reliant on external rewards such as wealth, image and fame.

Health Promotion and Body Image

Several reviews exist in the area of eating disorders prevention (e.g., Austin, 2000; Levine & Piran, 2004; Levine & Smolak, 2007; Littleton & Ollendick, 2003; Stice & Shaw, 2004; Stice Shaw & Marti, 2007). The two reviews by Stice and colleagues (Stice & Shaw, 2004; Stice et al., 2007) come to similar conclusions: targeted interventions (versus universal interventions) to reduce risk factors and increase protective factors were more effective than providing psycho-educational content only; programmes with elements of body acceptance and dissonance-induction produced larger effects; a focus on established risk factors such as idealised media images and building resilience to these pressures at the individual level were most fruitful. In contrast, although Levine & Smolak (2007) supported the importance of targeting at-risk groups, they also pointed towards the importance of universal and multi-systemic approaches which focus not only on the individual but also challenge prevailing norms in a particular environment (e.g., schools) at different levels. This is supported by others (e.g., Littleton & Ollendick, 2003). In addition, they suggested that psycho-educational content aimed at raising consciousness and critical thinking (including mass media) might be a useful approach. This approach has some similarities to the cognitive dissonance programme developed by Stice and colleagues (Stice, Marti, Spoor, Presnell & Shaw, 2008), which asks female participants to critique the thin ideal in verbal, written and behavioural exercises. In the context of critical thinking, media literacy as a vehicle to counteract the impact of idealised images is seen as an important part of health promotion and education (Levine & Smolak, 2001). Media literacy can be described as an awareness of media use and critical analysis of content and intentions (Irving and Berel, 2001).

Health promotion efforts in the area of body image and idealised images focusing on teaching critical thinking to adults have shown promise (e.g., Durkin, Paxton & Wertheim, 2005; Posavac, Posavac &

Weigel, 2001, Yamamiya, Cash, Melnyk, Posavac & Posavac, 2005). A prevention study using essentially two enhancement messages separately and combined with female college students by Posavac et al. (2001) has prevented negative affect. The messages emphasised the artificial nature of media images (artificial beauty condition) and the diversity of actual women's shapes and weight (genetic reality). These findings were replicated by Yamamiya et al. (2005) and Sperry, Thompson, Roehrig and Vandello (2005). Sperry et al. (2005) also found reduced state body dissatisfaction. Irving and Berel (2001) conducted a media literacy intervention study with young college women who identified highly with fashion models. The authors compared an externally oriented and internally oriented media literacy intervention, neither of which had an effect on body image ratings. The externally oriented intervention focused on critical thinking and challenging unhealthy messages through social action. The internally oriented component focused on challenging negative body-related cognitions. This included challenging cognitive distortions (the unreal ideal). They predicted that media literacy programmes focusing on cognitions might address personal attitudes and thus internalisation, whereas a sociocultural approach might raise awareness and scepticism. Both interventions reduced participants' perceptions of realism and similarity of idealised images. In addition, the external condition reduced desirability of an idealised image. However, there were no differences in body image measures between the intervention and no-intervention group. Irving and Berel (2001) concluded that critical analysis may result in greater awareness and scepticism (cognition), but produce little change in personal attitudes and behaviours (emotion).

Programmes including a critical approach to media messages focusing on adolescents have shown promise (e.g., Stanford & McCabe, 2005; Stice et al., 2008; Wade, Davidson & O'Dea, 2003; Wilksch, Tiggeman & Wade, 2006). Wade and colleagues (2003, 2006) noted an improvement on some but not all post-intervention scores for

girls and boys. Stice et al. (2008), using a dissonance approach found a decrease in thin ideal internalisation, body dissatisfaction, negative affect, eating disorder symptoms and psychosocial impairment at 3-year follow-up for older adolescent girls with established body dissatisfaction. A programme by Stanford and McCabe (2005) with adolescent boys showed an increase in satisfaction with muscles, decreased negative affect and increased self-esteem at 3-month follow-up.

Some of the materials used in teaching media literacy could be seen as types of enhancement appraisals (e.g., discounting the comparison other). There are indications in the body image literature that in particular comparing on a different dimension might be beneficial (e.g., Engeln-Maddox, 2005; Lew et al., 2007). A study by Durkin et al. (2005) tested prevention messages used generally in the area of eating disorders and body dissatisfaction with a group of adolescent girls. Two of these messages reflected enhancement thoughts: one argued that “media images are not real” as models spend hours on their appearance and have professional help, as well as images being changed through computer processing. The other message suggested that girls should focus on positive aspects of the self instead of appearance. The first message is similar to discounting enhancements and the second to comparing on a different dimension. Both messages were rated positively and a significant number of girls indicated that they had a reduced intention to diet. Message perception was related to risk factors such as body dissatisfaction and internalisation, suggesting that girls more at risk rated the messages as more relevant. However, girls with lower self-esteem reported that they found the messages less believable. These findings support the notion that social comparison appraisals, and in particular enhancement appraisals might be relevant in the area of health promotion. However, some research has pointed to the possibility that cognitively challenging idealised images might increase the focus on physical appearance and thus lead to negative outcomes (Botta, 1999, 2003). Items assessing critical

processing in Botta's work focused on questioning idealised images (e.g., "When watching television I question why the characters need to have such perfect bodies").

Generally speaking, there is a variability of programme effects in the short-and long-term (Littleton & Ollendick, 2003; Stice et al., 2007). A range of programmes might be needed, some tailored to particular needs of individuals and some including a more universal approach (Levine & Smolak, 2007; Littleton & Ollendick, 2003). Further research is needed at the individual level with a focus on establishing characteristics that make individuals more resilient and cognitive processes that might mediate change. In addition, a better understanding of the benefits of all encompassing environmental approaches is needed (Littleton & Ollendick, 2003).

Conclusion

The review of the literature in the area of social comparison theory has provided the theoretical backdrop for the section on body image and social comparison appraisals. It has pointed to general measurement issues and the debate about beneficial and detrimental comparisons. In particular, it has highlighted the importance of conceptual clarity in social comparison research and the consideration of context and personal characteristics. The sections on body image and social comparison appraisals have mirrored some of the complexities such as definitional and measurement issues. They have also highlighted gaps in the research literature. Overall, findings from existing research in the body image literature suggest that there is a need to develop a better understanding of individual differences in the selection of comparison appraisals and connected outcomes. In particular enhancement comparisons might be of interest in terms of health promotion as findings have suggested that they might have a health-protective function. Fostering and including health protective factors in prevention and promotion programmes might be effective, even more so than addressing risk factors (Shroff & Thompson, 2006).

In conclusion, based on the review of the literature there is a need to: assess the naturally occurring range of social comparison appraisals in the daily lived experience of adolescents; develop and validate a comprehensive social comparison measure to assess the impact of situational stimuli; and finally test theoretical propositions based on the existing literature to identify potentially health-protective comparisons and the influence of dispositional characteristics to inform health promotion and education programmes. These issues were addressed by the present research.

Chapter 2: SOCIAL COMPARISON AND BODY IMAGE IN ADOLESCENCE: A GROUNDED THEORY APPROACH

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Abstract

This study explored the use of social comparison appraisals in adolescents' lives with particular reference to enhancement appraisals which can be used to counter threats to the self. Social comparison theory has been increasingly used in quantitative research to understand the processes through which societal messages about appearance influence adolescents' body image. Little is known about the comparison processes used in their daily lives – to whom individuals compare (the target), on what individuals compare (the attribute), and how they compare (comparison appraisal). Based on the analysis of twenty in-depth grounded theory interviews with 12 to 14 year old boys and girls, we suggest that comparison processes are used for the purpose of identity development (core category). Given the opportunity, adolescents spontaneously describe a variety of targets, comparison attributes, and comparison appraisals. Peers play an important part in making sense of media images and messages and provide comparison targets themselves. Adolescents are aware of societal standards and pressures and use a range of enhancement appraisals. The positive impact of these might depend on individual characteristics. Findings suggest that enhancement appraisals might have a protective function and should be considered in designing health promotion and prevention programmes.

Keywords: Social comparison theory, grounded theory, body image, adolescence

Introduction

Could social comparison theory better inform health promotion and prevention efforts in the area of adolescents' body image perceptions? In recent years social comparison theory has been increasingly used as a framework to elucidate how media and peer messages might influence individuals' perceptions of their bodies (Botta, 2003; Cattarin et al., 2000; Jones, 2001; Halliwell & Dittmar, 2005; Tiggemann & Slater, 2003) and elements have been incorporated into pilot prevention programmes (Posavac et al., 2001; Wilksch et al., 2006; Yamamiya et al., 2005). Festinger (1954) introduced social comparison theory and suggested that individuals process social information by comparing themselves to establish similarities and differences. This information might be sought for a purpose or one might be confronted with it (Wood, 1989). Depending on the context of the comparison, different comparison appraisals might be employed to deflect threats, learn from others or evaluate one's standing.

A better understanding of the use of comparisons to counter threats might be particularly relevant for prevention of threats to well-being and for health promotion programmes. Asking adolescents not to compare is unlikely to be successful (Strahan et al., 2006). During adolescence, a challenging phase of maturation, social comparison provides a means of gathering information about the social world. Adolescents need to develop a sense of personal and social identity and adjust to bodily changes (Kroger, 1996). The present study aimed to address the following questions to gain a better understanding of adolescents' experiences from their own perspective: Which social comparison appraisals are used by adolescents in their everyday lives – with a particular reference to comparison appraisals in times of threat/uncertainty? What do adolescents compare on? Whom do adolescents compare to?

Social Comparison Theory

Research in the area of social comparison theory has shown that different comparison appraisals might be used depending on the context of the comparison (Wood, 1989). Social comparison theory encompasses three types of appraisals: self-evaluation, self-improvement and self-enhancement. Self-evaluation comparisons are used to gather information about one's own standing in relation to others in terms of attributes, skills and social expectations (e.g., How do my muscles compare to my peers). Self-improvement comparisons are employed to learn how to improve a particular characteristic or for problem-solving (e.g., How could I learn from her to be more attractive) (Wood, 1989). In times of threat or uncertainty self-enhancement comparisons protect self-esteem and self-worth and allow the individual to maintain positive views about the self (Thornton & Arrowood, 1966; Wood et al. 1999; Wood, Giordano-Beech, Taylor, Michela & Gaus, 1994). Self-enhancement mechanisms identified in the research literature encompass discounting information as not relevant to the self and describing the other as inferior or less advantaged on a particular attribute one feels superior on (e.g., He might be muscular but he has no sense of humour) (Wood, 1989; Martin & Gentry, 1997).

A comparison target perceived as similar or relevant (for example in terms of age, sex or achievements) might have a greater impact on the outcome of the comparison than a dissimilar target (Lockwood & Kunda, 1997; Miller et al., 1988). Additionally, individuals might naturally choose a different attribute on which to compare than that presented by the researcher(s), and tend to selectively take into account various surrounding dimensions that are relevant to them (Wheeler et al., 1982; Wood, 1996).

Social Comparison and Prevention

Research in the area of body image has mainly focused on evaluative comparisons, as evaluation is a central dimension of body image (Cash & Deagle, 1997; Stice & Bearman, 2001). Treatments for eating

disorders and body image dissatisfaction focus on challenging self-evaluations concerned with body shape and weight (Bornholt et al., 2005). A body of work has established that evaluative comparisons are linked to negative outcomes (Durkin & Paxton, 2002; Morrison et al., 2004; Schutz et al., 2002; Tiggemann & Slater, 2003). For example, Durkin and Paxton (2002) established that evaluative comparisons to idealised female images significantly predicted negative affect in adolescent females. However, not all individuals reacted negatively to media images and messages and of particular interest in terms of prevention is an understanding of why some individuals are not affected (Polivy & Herman, 2004).

Less work has gone into identifying the role of other aspects of comparisons. Some enhancement comparison processes might be protective and as such have implications for health promotion. Stice and Shaw (2004) concluded in a meta-analysis that a focus on established risk factors such as idealised media images and building resilience to these pressures at the individual level might be most fruitful. Programmes that included cognitive interventions to alter maladaptive attitudes produced the most promising effects.

Social Comparison, Media, Peers and Body Image Perception

A review of the body image research literature suggests that there is limited knowledge of the use of the three different comparison appraisals in everyday lives. Research drawing on quantitative data analysis suggests that a high tendency towards evaluative comparisons with attractive targets is contributing to the internalisation of a “thin” ideal (Morrison et al., 2004; Schutz et al., 2002), and mediates the effects of media on body dissatisfaction (Van den Berg, Thompson, Obremski-Brandon & Coover, 2000). Findings suggest that body image dissatisfaction is an increasingly relevant issue for boys with the focus more likely to be on muscularity rather than weight (Humphreys & Paxton, 2004; McCabe, Ricciardelli & Finmore, 2002; Thompson & Stice, 2001). Peers have been shown to be relevant comparison targets and important in making sense of media messages

received (Jones, 2001; Milkie, 1999; Paxton et al., 1999). Experimental evidence, manipulating mainly evaluative comparison appraisals, has shown that effects of social comparison processes may vary across different ages and for different comparison processes (Durkin & Paxton, 2002; Halliwell & Dittmar, 2005; Hargreaves & Tiggemann, 2004; Humphreys & Paxton, 2004; Martin & Gentry, 1997; Presnell et al., 2004). For example, positive effects have been found for self-enhancement and self-improvement comparisons (Martin & Gentry, 1997). However, it has been suggested that improvement comparisons could lead to detrimental effects in the long term as these comparisons are based on a focus upon idealised images (Clay et al., 2005).

Importance and relevance attached to appearance or internalisation of an idealised shape is particularly counterproductive. Research found that negative effects of idealised images on boys and girls are strongest for those with low levels of body satisfaction and high internalisation of sociocultural standards (Groesz et al., 2002; Humphreys & Paxton, 2004; Morrison et al., 2004). These findings suggest that a better understanding of social comparison processes is crucial for understanding the effects of media images on body dissatisfaction (Groesz et al., 2002).

Although a considerable body of work on body image in the last few years has focused on social comparison theory and its potential to illuminate the influence of media and peers on body image perception, very little qualitative work has been conducted. Not enough is yet known about the underlying process of how the individual interprets and makes sense of idealised media images in his/her everyday life. Thus, the aims of the present study were to describe the nature of social comparison processes mentioned spontaneously by boys and girls - with a particular focus upon enhancement comparisons.

Method

The most critical requirement of the present study was to capture participants' own perceptions of and reactions to comparison targets.

The method selected as most appropriate was a grounded theory approach based on Strauss and Corbin's (1994; 1998) and Dey's work (1999). Grounded theory focuses on social processes and social context (Morse, 1994), and is thus especially useful for the study of media. Although Glaser and Strauss (1967) initially developed the approach to generate theory it has been modified to accommodate the elaboration and modification of existing theories (Strauss & Corbin, 1998).

Two schools were approached to collect data from 12 to 14 year old children. The sample was a convenience sample, in that interested participants were identified by teachers. A hierarchical consent procedure was used after institutional ethical approval had been granted. Headteachers approval was sought before parents/guardians and then the adolescents themselves were approached. All received information outlining the nature and purpose of the study. The study topic was introduced as experiences with media with an emphasis on appearance. Adolescents were given the opportunity to discuss their potential participation with their parents/guardians before deciding to join the study.

Parents/guardians and participants were assured of confidentiality. All interviews were taped and additional notes made. The researcher transcribed the interviews, using guidelines adapted from Poland (1995). In the quotes included, dots with brackets indicate excluded irrelevant text, while dots without brackets note a pause in the narrative. Twenty participants volunteered for the study (eleven females and nine males). Data were collected via one-to-one semi-structured interviews, lasting approximately 45 minutes each. The interviews took place in a private room in the school setting. Rapport was established through setting a positive tone, seeking information in depth, reflecting on what has been said, and closing the interview on a positive note (Charmaz, 1995).

Questions focused on specific themes such as: types of media consumed (interest in particular sections of magazines, favourite

programmes on television) and who with; and messages received about physical and personal attributes. Questions were open-ended and used to guide the interviews in keeping with the grounded theory approach. New questions were included based on issues emerging in interviews and data analysis. Examples of questions include: What do you like about teen magazines? How do you think magazines influence the way you would like to look? Would you talk with your friends about how people in magazines and on television look? Direct questions about comparisons were only asked towards the end of the interview as research has shown that direct questions might invoke social desirability concerns (Wood, 1996).

We analysed data based on the grounded theory approach as described by Strauss and Corbin (1998) and Dey (1999). NVivo, a computer-aided analytic software package provided facilities to track searching and coding, sort and re-code, and write memos. Collection and interpretation are cyclical, starting with line-by-line coding, which provide the basis for a more in-depth analysis and further data collection, increasing the depth of interpretation. The process is iterative and focuses on the participants' perceptions. The interviews were read line by line, asking sensitising (e.g. What is happening here?) and theoretical questions (e.g. How does what this participant is saying connect to what has been said elsewhere?). Coding focused on incidents that demonstrated evidence of comparison appraisals in the data, and the targets and attributes under comparison. Theoretical sampling, i.e. extending the sample in ways guided by the emerging theory, was not possible due to the nature of participant recruitment. This was managed by comparing incidents and events in terms of how these give density and variation to the concepts to which they relate (Strauss & Corbin, 1998). Saturation was achieved for the sample in terms of sufficient details identified (Cresswell, 1998).

Results

The aim of this study was to explore social comparisons to idealised media images and messages with a focus on enhancement comparisons by adolescents. If a core category was drawn from the data, the results suggest that social comparison processes are used to inform *identity development* (core category). Social information is used to define the self and establish norms and boundaries. Such processes are consistent with the notion that adolescence is a time of transition, when adolescents have to develop the self and shape an identity - defining boundaries and differentiating themselves from others (Kroger, 1996). In this context, body image is an important aspect of self-representation (Jones, 2001). A series of factors were identified as influencing the process of comparison, namely the context in which the comparison occurs, sex and social support networks. Peers played an important role in making sense of the social information received and also as comparison targets.

Social Comparison and Peers

Participants generally indicated that weight and shape did not matter in a close friendship context.

I'm not really bothered about it, it does not matter. Some of my friends are a lot thinner than me but some are bigger, so ... (Girl, age 13)

They also expected friends to have very similar attitudes to themselves and to be reassuring.

I'm like yeah, I'm not good-looking, I'm fat, but like in school all my friends are like you look really nice. (Girl, age 12)

Nichter and Vukovic (1994) coined the term 'fat talk' to describe self-disparaging body talk amongst close peers. This solicits reassurance and promotes group affiliation, but also emphasises the value of thinness. Girls who do not engage in fat talk might be seen as perceiving themselves as superior or flawless (Nichter, 2000).

Others outside the friendship group might be criticised and teased for their appearance and clothing (Jones, Newman & Bautista, 2005).

Sometimes, but not really 'cause it's nasty, 'cause they could be talking about us, so. We just say if they look really bad, we just tell them. Cause it's better to know than walking around and looking stupid all day. (Girl, age 14)

Boys mentioned that girls were always concerned about appearance.

It's like a girl thing. It's like ... oh she is wearing some tight jeans she looks awful. (Boy, age 13)

Friends are important reference targets given the need to fit in with one's peer group and be accepted. This also means that more information is available about the other who is familiar and well known (Jones, 2001). When asked, nearly all participants suggested that physique was not an important attribute, but that central friendship dimensions such as humour, personality and trustworthiness were important. This strategy might be used to shift the emphasis from physical shape and size.

It's personality that's important, like you can trust your friends and have a laugh together. (Girl, age 13)

Not really, 'cause some of my friends they are like really funny, they are like really nice people. I would not look at them for looks really, 'cause there is people that I know that are like pretty, yeah, and they are just really big headed, so I just go for their personality, 'cause I like really funny people. (Girl, age 14)

Other examples of enhancing might be the following comments, which emphasize skills and comparing on a different attribute (clothes).

I don't think it is important to be tall and strong. Some tall people can do stuff that small people can't, but small people can do stuff tall people can't. (Boy, age 12)

Hm ... if I just feel like down, I just feel like ugly or whatever, I just compare myself to like people that look good, yeah. But I wouldn't never like say 'oh I look so much better than someone else', 'cause I never really do,... 'cause I'm normally not really bothered. But I really like to dress not like everyone else. I really kind of like have my own style, that's what everyone else says, but 'cause I don't like, I don't like being the same. I like being a bit different, so, I'm just not really bothered. (Girl, age 13)

In addition, as described in the literature appearance in terms of clothing and general style was perceived as a representation of the self denoting group belonging and indicating ways of behaving (Nichter, 2000):

The way you dress is like part of your personality, 'cause if people dress up all posh, people think they might be a bit snobby and if they dress all punk, they might be scared of them. Whatever you wear comes into it, 'cause you want to know what people think if you hang around with someone. ... Like we [close friends] are all like wearing pink and people know we belong together. (Girl, age 13)

A strong focus on evaluative weight and height comparisons with friends was only found in some individuals. These respondents had difficulties in school either making friends and/or being generally accepted. They indicated that they would like to be taller and a different shape and perhaps they felt that this might make a difference to their acceptance by others:

I would like to be muscly, but... I tried to do some exercises, like rugby and skateboarding, just trying to keep up. But it is just hard.... I do it 'cause I don't want to get picked on (...). And I would like to be tall, my friends are quite tall and I am short. (Boy, age 13)

My weight...I would like to be thinner, but that is not always possible. And I love to be really tall. [Interviewer: What difference do you think that would make?] It would make a difference, because I get teased quite a lot in school. I'm changing school anyway because of that. 'Cause I just get picked on for being me. (Girl, age 12)

These comments are consistent with research which suggests that teasing is common in schools and that negative effects are more likely to be experienced by vulnerable boys and girls (Jones & Crawford, 2006; Jones et al., 2004).

Social Comparison and the Media

The media played an important role in all participants' lives as entertainment and to share with friends. Specific targets for comparison were chosen because they were perceived either as 'similar' (for example in age, or faced with similar situations and decisions as the participant) or 'inspiring' in terms of having some characteristic the participant might want to develop or acquire. Participants mentioned talking about media personalities in school. Girls were more likely to talk about what media personalities wore and how they looked and boys were more likely to mention sport performances. Both discussed television programmes.

We say things like, they look stupid, but if they want to wear it that's really their choice. (Girl, age 14)

As found in previous research for girls, teen magazines and soap operas were of particular importance for learning about how other people cope with problems/challenges (Milkie, 1999). Items were discussed with friends in ways that could be described as opportunities to learn about how others deal with problems and challenges:

I like the problem pages in magazines; they are interesting and sometimes helpful like if you can relate to someone's problem. They can give you good advice. (Girl, age 13)

Teen magazines provide suggestions in terms of clothes, make-up and general appearance and all girls indicated that they liked to have a look at these sections. These can be seen as examples of an improvement motive. Although it is arguable that these are reinforcing the norms of what girls/women should be like, most of the girls participating seemed to have a clear idea of what they liked and what they thought appropriate. Girls made comments about the inappropriateness of the fashion and style suggestions, which were seen as unrealistic for the 'average girl'.

I read the fashion tips, but they are just really stupid. It's like no one would wear that. I think it's 'cause they are like a lot older than teenagers and they think different things. Some of the things are good though and if I like it, I just go and buy it (...). There are also some decent hair tips, 'cause I love doing hair.
(Girl, age 14)

Comparisons in terms of self-improvement can be inspiring if the other is not perceived to be a competitor (Brickman & Bulman, 1977). Boys seemed to focus more on the development of physical skills and girls more on personal development in terms of socially accepted behaviour and skills. Most of the boys were interested in skateboarding and football and they sought out information about how they could develop their skills. For example, one of the boys played football himself and liked and identified with a football player:

I like Ferdinand, 'cause he is a centre back and I am a centre back and I think he is really good (...). I watch all the matches to see how he does. (Boy, age 12)

Eh ...I would like to be fit and strong. Hm, I would like to do a lot of crazy stuff, like skateboarding and bikes and stuff like that
(Boy, age 13)

Research has shown that boys are less likely to talk about their bodies and body image perceptions as this is seen as socially

unacceptable and only concerns girls (Hargreaves & Tiggemann, 2006; Ricciardelli, McCabe & Ridge, 2006). Specifically, it was noted that boys place more importance on functionality than appearance which suggests that talking about sports may provide the framework to discuss personal physical attributes. Boys felt comfortable talking about their body in terms of attributes such as height, speed and strength associated with being successful at sports (Hargreaves & Tiggemann, 2006).

Boys were more reticent to admit that they compared to media images on physical attributes, but mentioned media personalities who were perceived as strong and attractive to the opposite sex (e.g. Mel Gibson, James Bond) when asked if there was someone they would like to be like.

I would like to be like Aragorn [Lord of the Rings]. He is like brave and the leader (...) and strong. [Interviewer: Do you want to be strong?] I suppose everyone, like most people want to be strong when they grow up, so I would not mind to be strong.
(Boy, age 12)

Boys and girls were aware of the importance attached to the ideal body and appearance. This was particularly mentioned in relation to advertisements:

It's a good way to sell products, 'cause when you see someone like dead ugly, you just change channel. But when you see someone who is pretty or famous or whatever, you want to see what they are advertising. It's just you wanna see it. [Would that work for you?] No, but one of my friends just bought a lipstick 'cause she saw one of the famous people wearing it and I thought it was a bit stupid really. (Girl, age 13)

In accordance with previous research (Milkie, 1999) participants indicated that the influence of advertisement was low for themselves and greater for others.

Incidents of enhancement/discounting were found particularly in relation to physique and appearance for all boys and girls. The data indicated that participants discounted weight- and shape-related comparisons by suggesting that different expectations applied to different individuals. These expectations were related to the similarity of the 'other'. Models and stars were described as dissimilar to oneself and thus the standards relevant to them were seen as inappropriate:

Models and stars are different. People expect different things, like different standards apply if you want to be famous. You behave differently. (Girl, age 13)

In contrast to friends and peers, models and stars were expected to have a certain appearance as this was seen as part of their role:

If you are maybe an actress it does matter. If you are a model it definitely does. And if you are a pop star it's quite important, although not as important as if you are like a model. (Girl, age 12)

Some of the older participants also pointed out that media personalities and models had help and were paid to look different.

I think these people are paid to look different. It is part of what they are. It's all show anyway. In real life they look nothing like it. (Boy, age 13)

Yeah, like people look good on TV and it's just 'cause all the stars got these make-up artists. (Girl, age 14)

Another example of enhancing when faced with media personalities might be the following comment, where the emphasis on appearance is shifted to personality.

I go for people with more personality, 'cause I think it's wrong to judge people by their looks. Some people might be like really pretty or handsome, but they might have the worst personality or something like that. (Girl, age 13)

Most girls talking about media personalities and models showed some ambivalence. On the one hand gossip about and pictures of media personalities were seen as interesting and fun and models in magazines provided examples of current fashion, on the other hand girls had to negotiate and deal with the societal expectations that these transmit.

Yeah, I do [think about dieting] sometimes. I wouldn't really, but ... I would like to be a bit slimmer, but if you are like this size, then that's it. I'm not going to diet or nothing because people think I'm fat or something like that. 'Cause it's just, 'cause you feel like big when you're just normal against like a little skinny model or something like that, so. No I would not really change much. (Girl, age 13)

Although in general girls felt that weight and shape should not be important, girls in particular acknowledged that in certain situations it might be difficult to avoid comparisons. This was especially true if they generally felt unsure about themselves:

'Cause they [people in the media] are always thin and have perfect skin and stuff. They should really have people of different sizes. (...) 'Cause it makes me feel self-conscious, 'cause I see all these pretty people. It would be better to have a range of people. I don't think there is a point in trying to lose weight, really, but it might make me more confident. (...) It's sometimes I feel a bit rotten and that's when it pops up. (Girl, age 13)

The girls who mentioned these feelings were asked if they would go on a diet. Most said that they would not as illustrated by this quote:

I'm not going to diet, because people think like I am fat or something like that ... I think that diets are really stupid. I think they just waste your time and they just waste your money. (Girl, age 14)

Nichter (2000) found that girls were less likely to describe themselves as dieters or say that they were aiming to go on a diet in

interviews than previous survey data suggests. Instead, she found that a large proportion of girls were 'watching' what they ate. This meant that girls felt more in control as they could decide when and where to watch their weight. Importantly, strategies included eating healthier and eating less junk food.

Discussion

As with previous research, the findings of the present study indicate that social comparison theory contributes to our understanding of adolescents' body image perceptions. It highlights that a better understanding of enhancement appraisals should be used to guide health promotion efforts on an individual's body image. The experiences elicited from participants emphasise the complexities involved in assessing influences and understanding the mechanisms through which they work. Given the opportunity, participants spontaneously recounted different social comparison appraisals, targets and attributes. Consistent with the literature, social comparisons are activated by situational cues (such as magazine reading) and associated with uncertainty (Buunk, 1994; Gibbons & Buunk, 1999; Wills & Suls, 1991; Wood, Taylor & Lichtman, 1985).

Of particular interest in health promotion terms might be enhancement comparisons. Numerous experimental studies have shown that body dissatisfaction was increased by viewing or reading appearance-focused material or being exposed to peer messages about thinness (Groesz et al., 2002; Hargreaves & Tiggemann, 2004; Stice & Shaw, 2004; Tiggemann & Slater, 2003). In this context, perhaps one of the most important findings of the present study is that participants, when confronted with images that could be perceived as threatening, spontaneously mentioned constructive comparisons like enhancement, such as discounting the information by distancing themselves from the target or attribute (e.g. models and stars are different; it is others that worry about shape) and comparing on a different attribute (e.g. personal characteristics). In the present study,

particular interest was focused on comparisons related to physical attributes. However, data suggest that a combination of personal and appearance-related characteristics were important for most participants. The choice of attribute depended on the similarity and relevance of the comparison other, and the context and purpose of the comparison. Seeking to compare on attributes other than shape and size is an example of enhancement comparison (Wood et al., 1994; Wood, 1996).

Research suggests that individuals might use constructive processes to counter threatening comparisons (Goethals & Klein, 2000; Tesser, 2003; Wood, 1989). In accordance with previous research, the present study suggests that evaluative comparisons are more likely to produce negative effects (Engeln-Maddox, 2005; Martin & Gentry, 1997), whereas improvement comparisons could produce positive or negative effects. Improvement comparisons are more likely to have positive outcomes if the individual believes that they might attain the ideal and the other is not perceived as a competitor (Evans, 2003).

Participants' comments indicated an awareness of societal expectations and standards, but also a critical stance. It is impossible for adolescents to avoid comparisons altogether and it is suggested that enhancement comparisons might be protective when negotiating social expectations. Research in the area of prevention with adults, explicitly or implicitly using enhancement messages focusing on the unrealistic standard of ideal images, has shown promise (Posavac et al., 2001; Stice, Mazotti, Weibl & Agras, 2000; Thompson & Stice, 2001; Yamamiya et al., 2005). Recent studies focusing on adolescents have shown that when encouraged to challenge sociocultural norms, negative effects diminish (Stice, Shaw, Burton & Wade, 2006; Wade et al., 2003; Wilksch et al., 2006). For example, Wilksch and colleagues (2006) introduced a media literacy programme to adolescent boys and girls, which encouraged critical thinking. Pre- and post-intervention scores showed improvements for boys and girls on some of the subscales. Nonetheless, some research suggests that cognitively

challenging idealised images may not have protective effects, but through an increase in cognitive processing focus attention on physical appearance (Botta, 2003; Milkie, 1999). It has to be noted that enhancement comparisons have been operationalised in different ways in different studies. Engeln-Maddox (2005) noted that 'counter-arguments' or enhancement thoughts listed by college women reflected different types of enhancement comparisons. She found evidence that positive outcomes were associated with counter-arguing, although not significantly. She proposed that enhancement appraisals differ and suggested that in particular a focus on attributes in which one perceives oneself as superior might be protective.

The mass media were found to be pivotal in adolescents' lives as something to be enjoyed, shared and talked about with peers. Friends and peers played a significant role in making sense of and negotiating the messages and images received. The mass media expound physical norms and expectations of attractiveness, which adolescents need to negotiate (Becker & Hamburg, 1996). During adolescence peers become increasingly more important, not only in terms of the support and companionship they can provide, but also in terms of creating, understanding and sharing opinions (Coleman & Hendry, 1999; Hendry, Schucksmith, Love & Glendinning, 1993). Friends and media served as comparison targets for participants. Jones (2001) suggests that friends and peers are more salient comparison targets for central attributes of close friendships than media celebrities and images, which is consistent with the present study. Physical comparisons were only mentioned by a few individuals. A possible explanation for this could be that the talk in the interviews focused on 'close friends'. Wertheim and colleagues (1997) in a study using semi-structured interviews with girls also noted no peer pressure spontaneously reported during the interviews. Close friends, especially for girls, can provide a protective and supportive environment (Coleman & Hendry, 1999). Participants mentioned that negative remarks might be directed at other groups but that friends are very

supportive when their own physical appearance was discussed. This might reinforce one's own group affiliation and provide reassurance although it might reinforce physical standards (Jones & Crawford, 2006; Nichter, 2000).

It is not possible from this study to suggest how often protective comparisons are made, or how they interact with evaluative shape comparisons, and what long-term effects they have. Feedback from girls suggests that negative evaluative comparisons were made in particular when mood or perception of confidence was low. Sim and Zeman (2006) suggest that a normative level of body dissatisfaction exists. They found that body dissatisfaction alone was not sufficient to prompt disordered eating, but a decreased emotional awareness (ability to recognise and voice feelings) and deficiencies in coping. In agreement with previous research (Bornholt et al., 2005; Halliwell & Harvey, 2006; Jones et al., 2005; Jones & Crawford, 2006; McCabe, Ricciardelli & Salmon, 2006), participants who seemed to have difficulties with peer acceptance and/or a greater focus on physical attributes as salient, mentioned negative experiences when comparing themselves.

Boys were more reticent to talk about physical comparisons. This is consistent with previous qualitative research, which suggests that boys are more likely to deny physical comparisons and describe body image as a 'feminine or gay issue' (Hargreaves & Tiggemann, 2006) and only discuss muscularity in the context of sports (Ricciardelli et al., 2006). The present study used a mixed group to explore the use of social comparison appraisals in everyday life. The existence of sex differences was a recurrent theme. However, further research, is needed in order to definitively characterise such sex differences.

There are other limitations to the present study. Being conducted with a small homogenous sample to explore the use of social comparison in adolescents' own words limits the generalisability of the findings. Wood (1996) points out that asking participants to self-report social comparisons might lead to inaccurate reporting due to a lack of

awareness, social desirability/self-deception, and problems in recall and selectivity. Efforts were made to address social desirability by creating rapport with participants and asking direct questions about comparison towards the end of the interview. Some participants when asked directly if they compared themselves were either reticent about admitting comparisons or stated that they were unaware of making comparisons. Nonetheless, participants spontaneously voiced numerous comparisons throughout the previous phase of the interviews. Giving participants the opportunity for free response makes it more likely that naturally selected targets and comparison attributes were disclosed (Bers & Rhodin, 1984). A study addressing social desirability bias found a small but significant correlation between social desirability scores and measures of disordered eating (Tilgner, Wertheim & Paxton, 2004). It was not possible from the present study to determine if the responses varied for adolescents with differing levels of body dissatisfaction. Future research is needed to examine possible differences in the type and frequency of social comparison appraisals used.

This study has important theoretical and preventive implications in the area of body dissatisfaction. The theoretical implication of the study is to demonstrate that different enhancement comparisons are used by adolescents such as discounting and comparing on a different dimension in the context of body image and media and peer messages. We suggest that further research, including measures of personal characteristics, is needed with adolescents to establish the effect of enhancement comparisons. Extending knowledge in the area of how comparisons are used by different individuals could provide insight into how interventions could be sensitive to individual variations. The present study suggests that comparisons with peers and media are closely interwoven, which might need to be taken into account in efforts to prevent behaviours that have a negative impact on health. It has been argued that even if individuals challenge the idealised image, they are often convinced that others 'buy' into these norms and that they will

be judged by these standards (Milkie, 1999; Strahan et al., 2006). Changes in society are less likely to occur. Comparisons are unavoidable and might play an important part in negotiating societal norms for adolescents. Prevention efforts which teach individuals to challenge these images and unrealistic standards within their social context might be particularly important. An example of how this might apply to practice is an eating disorders prevention programme by Stice et al., (2006) where girls engaged in verbal, written and behavioural exercises in which they critiqued the thin ideal. It is vital to focus on the facilitation of naturally occurring enhancement appraisals which might have a protective function. In particular, the ability of comparing on a different attribute one feels superior on and distancing oneself from the comparison other might be useful strategies when faced with idealised media images.

Chapter 3: DEVELOPMENT AND VALIDATION OF THE
SOCIAL COMPARISON APPRAISAL SCALE FOR
ADOLESCENTS

Abstract

The current study developed and validated a new measurement instrument, the 24-item Social Comparison Appraisal Scale for Adolescents (SCASA), which provides an assessment of social comparison appraisals in relation to physically attractive images for adolescents. It assesses the three social comparison appraisals proposed by Festinger (1954) with a particular focus on enhancement appraisals. Enhancement appraisals might be relevant in the area of body dissatisfaction and prevention. A total of 553 adolescents (mean age 14.80 years) participated in the study. Confirmatory factor analysis was performed to test the factor structure. The equivalence of the measure for girls and boys was tested using multigroup comparison. The study demonstrated factorial validity, with overall good support for gender invariance. The SCASA taps into constructs of importance and meaning and is potentially useful in examining how social comparison appraisals may lead to adverse and salutary outcomes.

Keywords: social comparison, measure, idealised images, adolescence

Introduction

Aim

Comparisons with idealised media images and processing of social messages about physical appearance have been identified as contributing to the development of body image dissatisfaction and related unhealthy behaviours such as binge eating, dieting and intensive exercise (Morrison et al. 2004, Shroff & Thompson, 2006; Smolak & Stein, 2006). This might be of particular relevance during adolescence, a time when physical changes go hand-in hand with the challenge of identity development (Kroger, 1996). Although the link between comparisons to media images and negative body image related outcomes has been established, there is a paucity of measures to assess cognitive appraisals suggested by the social comparison literature. The aim of the present study was to produce and validate such a measure.

Social Comparison Theory in a Body Image Related Context

One of the frameworks used to explore how idealised image and appearance message processing might influence body image related outcomes is social comparison theory. The theory evolved out of work by Festinger (1954). He suggested that individuals have an innate tendency to compare themselves to others to assess similarities and differences. Social comparison theory encompasses three types of self appraisals: self-evaluation, self-improvement and self-enhancement (Wood, 1989). Self-evaluation refers to the individual's need to determine their standing in relation to others on a comparison attribute (what one compares on) such as attitudes or personal characteristics. Evaluative appraisals are also a core concept of body image (Cash, 2002). Evidence has indicated that evaluative comparisons in the context of idealised images result in negative outcomes (Durkin et al., 2007; Hargreaves & Tiggeman, 2004). Research has also shown that body image is a gendered

construct with boys tending to focus on muscularity and girls on weight comparisons (Hargreaves & Tiggeman, 2006).

Self-improvement appraisals refer to an individual's attempt to learn new skills or improve existing attributes. This is often driven by identification with the comparison other and linked to inspiration (Wood, 1996). Research suggests that these comparisons might have positive outcomes if the individual believes that she/he will be able to achieve the skill and the other is not perceived as a competitor (Lockwood & Kunda, 1997). However, in the area of body image, improvement appraisals have been associated with a focus on and investment in appearance and as such can be described as negative (Halliwell & Dittmar, 2005).

Self-enhancement appraisals protect or enhance self-esteem and maintain positive views about the self in times of uncertainty or threat (Buunk & Gibbons, 2007; Wood et al., 1999). Tesser (1999) suggested that individuals might self-enhance by discounting the information or re-appraising the relevance of the comparison dimension to oneself. Discounting appraisals create a distance from the comparison other who is perceived to be outperforming oneself. Re-appraising focuses on reducing the relevance of the attribute under comparison to one's self-definition and thus reducing the threat (Tesser, 1999). A further way of self-enhancing is to compare on a different dimension on which one feels advantaged. This allows the individual to establish a positive experience of the self (Baumeister & Jones, 1978; Wood, 2000). The choice of comparison dimension might be unrelated to the domain one failed on as the aim is to restore overall self-worth (Wood, 2000). Clothing comparisons might be a specific example of comparing on a different dimension. Clothing and style allow individuals to manage the way they look and are thus part of body image perceptions (Cash, 2002). Research suggests that clothing may influence body satisfaction perceptions and mood (Rudd & Lennon, 2000; Sontag & Lee, 2004). As clothing is more easily altered than physique, this might be a strategy to deal

with appearance uncertainties (Wilson & Mac Gillivray, 1998). Enhancement comparisons, and in particular comparing on a different dimension, have shown promise in recent research as they might protect individuals' self-esteem and reduce negative body image related outcomes (Engeln-Maddox, 2005; Lew et al., 2007; Park, 2007).

Measurement Issues

There is no scale to our knowledge that allows researchers to assess the full range of social comparison appraisals documented in the social comparison research literature. Although social comparison encompasses three types of appraisals, measures in the area of body image research tend to concentrate on evaluative appraisals. Existing measures focus on social comparison as a trait-like/dispositional tendency or as a situational response.

Examples of existing measures of trait social comparison used in the literature can be divided into relatively general and specific measures. Examples of more general measures focusing on body size and thinness are the Physical Appearance Comparison Scale developed by Thompson, Heinberg and Tantleff (1991) and adapted/modified versions such as the Appearance Comparison Scale (Stormer & Thompson, 1996). These focus on a global tendency for comparisons with others in social situations. Another example is the internalisation subscale of the Sociocultural Attitudes Towards Appearance Scale-3 (Thompson et al., 2004). Items refer to evaluative appraisals but some might tap into improvement appraisals or idealisation (e.g. "I would like my body to look like the models who appear in magazines"). The Tendency for Appearance Comparison: Specific Attributes (Tiggeman & McGill, 2004) and the Body Comparison Scale (Fisher et al., 2002) are examples of measures focusing on the frequency of comparisons to specific body parts such as stomach, thighs and hips.

Social comparison appraisals in specific contexts or in response to experimental stimuli, such a photograph or vignette, are generally not

measured and their impact inferred through comparison outcome measures such as affect, state body image and self-esteem (e.g., Bell et al., 2007; Clay et al., 2005; Hargreaves & Tiggeman, 2004; Humphreys & Paxton, 2004). In this instance, social comparison appraisal is the mechanism or mediator accounting for the relationship between media and body image related outcomes. However, only a limited understanding of the mechanism of change in outcome measures is possible if social comparison appraisals are not themselves measured. Mediation analysis can be a useful tool to help identify critical components for interventions (Shroff & Thompson, 2006). Another approach used less frequently is to elicit information about comparison processing. This is generally formulated in terms of thoughts about and degree of comparisons in response to a situational stimulus. An example is the study by Tiggeman and McGill (2004) where state appearance comparison was assessed by thoughts about appearance, extent of overall comparison and extent of comparison of specific body parts when receiving a stimulus.

Studies using trait evaluative social comparison measures have suggested that those consistently comparing tend to have a poorer body image (e.g., Jones, 2004). The trait variable of evaluative social comparison has also shown to be related to actual comparison in response to stimuli in female adults (Tiggeman & McGill, 2004). Research looking at comparisons in specific contexts has supported the negative role of evaluative appraisals (e.g. Hargreaves & Tiggeman, 2004).

A limitation of both trait-like and situational measures is that they focus on evaluative social comparison appraisals, mostly excluding improvement and enhancement appraisals. However, qualitative research with adolescents suggests that a range of social comparison appraisals are used in the everyday life of adolescents (Kraye, Ingledew & Iphofen, 2008). Enhancement appraisals might be particularly relevant in the area of health promotion and

prevention. Research by Park (2007) has shown that women focusing on a dimension they feel superior on (self-selected) after having received an appearance threat, are less likely to report negative affect or lower state self-esteem. Prevention programmes for adolescents promoting enhancement comparisons have shown promise (e.g., Stice et al., 2006). While a focus on self-evaluative appraisals is useful in testing the influence of idealised images on body image and body image related outcomes, it does not allow for identification of potentially health-protecting social comparison appraisals. Not all adolescents are equally influenced by idealised images and messages about appearance, and an empirical measure is needed to assess how different comparison appraisals operate and potentially might make individuals less susceptible (Polivy & Herman, 2004).

Thus the purpose of the current study was to verify the factorial validity and reliability of a scale developed to measure different situational social comparison appraisals for boys and girls. In contrast to trait measures, state measures are more appropriate to capture immediate effects of media exposure (Cash, 2002) and to assess intra-individual variation in different contexts (Melnyk, Cash & Janda, 2004). A social comparison scale measuring a range of comparison appraisals would allow for comparative studies, might contribute to a greater understanding of the impact of media images on body image and body image related outcomes, and could inform prevention efforts. Scale items were constructed based on previous qualitative research (Kraye et al., 2008), and underpinned by social comparison theory. Confirmatory factor analysis was used to reduce the number of items in the scales and confirm the factor structure for adolescents, including multigroup analysis comparing females and males.

Method

Participants

A total of 553 participants (278 girls, 275 boys) from ten secondary schools of a rural area in the United Kingdom were recruited (mean age was 14.8, $SD = 0.39$). Participants were asked to record height and weight from which Body Mass Index (BMI; kg/m^2) was calculated. A number of respondents indicated that they did not know their weight or/and height or left the spaces blank. Thus BMI could be calculated for 77% of boys and 60% of girls. BMI averaged 20.4 ($SD = 3.80$) for girls and 20.8 ($SD = 3.32$) for boys.

Procedure

Institutional ethical approval was gained for the study and informed consent for participation was sought in a hierarchical manner from head teachers, parents/guardians and participants. Participants completed questionnaires in a one hour classroom session in the presence of the principal researcher and teachers. A draft questionnaire was piloted with twenty adolescents before the main study to assure understanding and relevance of questions. Wording was adjusted according to feedback.

Measure

Social Comparison Appraisal Scale for Adolescents (SCASA)

The development of the six subscales was based on previous qualitative research and existing literature (Kraye et al., 2008; Tesser, 1999; Wood, 1989, 1996). Item phrasing was based on wording used by participants in the previous qualitative study where appropriate. The original scale generated comprised 35 items intended to represent six factors. The six factors corresponded to the comparison appraisals outlined in social comparison theory: self-evaluation (six items), self-improvement (six items) and four self-enhancement comparison appraisals (comparing on a different dimension, six items; comparing on a different dimension focusing on

clothing, five items; discounting the relevance of the media, six items; and reducing relevance, six items). Four subscales for self-enhancement appraisals were included to assess this domain more fully as the ability to generate self-enhancement comparisons might be protective. Only five clothing items could be generated based on the qualitative work and pilot feedback. Vignettes were used to initiate thoughts about physically attractive comparison targets. A short introduction to the scale acknowledged that comparison to others in terms of appearance was a normal occurrence to reduce social desirability bias (Wood, 1996). Participants were then asked to picture a self-selected comparison target and provide some written information about the selected comparison other. This assured that the target was relevant and meaningful (Wood, 1996). They then answered the SCASA items with reference to the image they had generated.

The stem for all scale items was "What I think about is...". Participants rated their responses on a five-point Likert-type scale ranging from 1 (*not at all true for me*) to 5 (*very true for me*). Equivalent items were phrased in terms of muscularity for boys and weight for girls (e.g., "How much I weigh compared to her" and "How much muscle I have compared to him") as body image is to a large extent a gendered construct (Smolak & Stein, 2006). Research has found that weight comparisons are particularly relevant for girls and muscularity comparisons for boys in the context of body image perceptions (e.g., Hargreaves & Tiggeman, 2006; Jones & Crawford, 2006).

Analysis

The data were analysed in two steps. Initially, the measurement was tested and refined using confirmatory factor analysis (CFA). Then, the invariance or equality of the final model was tested for boys and girls using multigroup analysis. Parameter estimation was based on the Maximum Likelihood method, using the covariance matrix. Before conducting the main analysis, data were prepared through missing

data analysis using the Expectation Maximization method in SPSS 14.0.

Confirmatory Factor Analysis

CFA was performed in AMOS 6.0 with the aim of confirming a six-factor structure and reducing the number of items to four per subscale. CFA was chosen because a-priori hypotheses about the factor structure of the SCASA existed. The analysis strategy was sequential, based on recommendations by Jöreskog (1993). First, each subscale was estimated in a single factor model to identify poorly fitting items. Then two constructs were paired (all possible pairs) with each other to identify ambiguous items. Based on the information from these single and two-factor models, one item was deleted from each scale. This cycle was repeated to arrive at four items per subscale. Finally, the model was estimated for all constructs jointly.

Standardised residuals and factor loadings were scrutinised to identify unsuitable items for separate construct estimation. Negative and positive standardised residuals (SRs) with values over 2.58 are considered to be large (Jöreskog & Sorböm, 1988). Positive SRs over 2.58 indicate that the items involved are more positively associated than the model would suggest, whereas negative SRs over - 2.58 indicate that the model's parameters overestimate the relationship between two indicators (Jöreskog, 1993). Factor loadings were assessed for significance and size. Finally, modification indices (MIs) were inspected for cross-loadings for the paired constructs to identify ambiguous loading items. In addition to statistical criteria, item selection was based on theoretical considerations and degree of redundancy to ensure that modifications were substantively meaningful (MacCallum & Austin, 2000).

In order to scale the latent variables to a common metric, the factor loading for one item of each subscale was fixed to 1.0 in the single and paired constructs. The items chosen had been identified

as close in value between groups (boys and girls) prior to CFA by Principal Component Analysis (Vandenberg, 2002).

Multigroup analysis

Multigroup analysis is concerned with examining the similarity of a measure across defined groups, or in other words the equivalence of all parameters of a model. The equivalence of parameters of a model is tested by placing equality constraints on unstandardised parameters (Brown, 2006). In the present study, the equality of the measurement scale (24 items) across groups was tested with a multi-step procedure using nested CFAs, where a non-significant chi-square difference test indicates invariance (Byrne, 2001). A configural invariance model was established in the first step which serves as a baseline model for further comparison. It tested the assumption that the number of factors and item-sets associated with each factor was identical across groups. Then, a restricted model of all factor loadings (equal factor loadings) was investigated, followed by intercepts (equal indicator intercepts), and finally errors (equal error variances) to establish measurement invariance. If measurement invariance can be established, comparisons between groups are valid as the set of indicators assesses the same constructs in both groups (Kline, 2005).

Equal factor loadings establish that items have the same meaning across groups and indicate construct comparability. Equal indicator intercepts demonstrate that a change in the underlying dimension (e.g. self-evaluation) is associated with an equivalent statistical change in the observed measure in both groups. Equal error variances are concerned with comparable random and systematic error variances in groups (Brown, 2006). It has been suggested that an expectation of complete invariance in group comparison might be unrealistic (Byrne, Shavelson & Muthén, 1989). Byrne et al. (1989) introduced the concept of partial invariance which allows the analysis to proceed even if some items are found to be non-invariant. Partial invariance testing was performed in the present study in accordance

with recommendations by Byrne (2001). When full equality cannot be established for parameters at the level tested (e.g. equal factor loadings), invariance of each parameter is tested for separately. Parameters found to be equal are retained cumulatively through the process. After measurement invariance had been established, population heterogeneity was examined by constraining factor variances, covariances and means to be equal. Variances, covariances and means can be expected to differ between groups independent of measurement invariance (Kline, 2005).

Model Fit

Multiple fit indices were employed in assessing the global fit of the proposed measurement models (Hu & Bentler, 1999). The chi-square statistic is sensitive to sample size, small discrepancies between variance and covariance matrix, larger correlations between latent variables and it applies to random samples only. Thus it can lead to the rejection of adequate models (Hu & Bentler, 1999; Kline, 2005). In the present study, the chi-square statistic is reported in a descriptive sense in conjunction with other measures of fit. Fit was assessed using chi-square/degrees of freedom (*df*), Root Mean Square Error of Approximation (RMSEA) and its associated p-value, the Standardised Root Mean Square Residuals (SRMSR) and the Comparative Fit Index (CFI) as recommended by Hu and Bentler (1998).

A good fit would be indicated by chi-square/*df* between one and three (Carmines & Mclver, 1981). The RMSEA assesses the degree of lack of fit of the model to the population covariance matrix but compensates for model complexity. RMSEA values < .05 indicate a close fit and values between .05 and .08 a reasonable fit. In addition, a non-significant p-value indicates a close fit (Brown and Cudeck, 1993). SRMSR is a measure of the standardised difference between the observed and predicted covariances. Although values of less than .10 are considered favourable, values of equal or less than .08 are preferred (Hu & Bentler, 1999; Kline, 2005). Lastly, the CFI

assesses the difference in non-centrality, comparing the specified model with the null model. This is a standardised measure ranging from zero to one, with one indicating a perfect fit. Values greater than .90 are considered a good fit to the model, although values approaching .95 are considered preferable (Hu & Bentler, 1999). The CFI was not used to assess model fit for the multigroup analysis as it has shown to be unreliable when constructs are correlated at smaller sample sizes (Hu & Bentler, 1995).

Results

Confirmatory Factor Analysis

Table 3.1 displays the fit indices for the final subscales (four items each). All scales apart from Enhancement-Discounting show a very good fit. For the Enhancement-Discounting subscale chi-square was significant at the .05 level and chi-square/df of over three, indicating some degree of misfit in the model. However, the other fit indices indicated an acceptable fit. As no modification indices were suggested and standardised residuals were small (< 1.1) it was decided to proceed with the scale. The model fit for the complete model including all latent variables was satisfactory with $\chi^2(237, N = 553) = 660.60$, $\chi^2/df = 2.79$. The SRMSR value was favourable (.06) and the RMSEA (.06, $p = .06$) and CFI values (.91) indicated an acceptable fit.

Table 3.1 Fit Indices of the Subscales of the Social Comparison Appraisal Scale for Adolescent

Model	$\chi^2(df)$	χ^2/df	SRMSR	RMSEA	CFI
Evaluation	5.35 (2)	2.67	.01	.05 ($p = .49$)	.99
Improvement	3.74 (2)	1.87	.01	.04 ($p = .51$)	.99
Enhancement - Discounting	7.40 (2)*	3.69	.02	.07 ($p = .21$)	.98
Enhancement - Relevance	4.31 (2)	2.15	.02	.05 ($p = .45$)	.99
Enhancement – Different Dimension	5.08 (2)	2.54	.02	.05 ($p = .37$)	.99

Enhancement - Clothing	.10 (2)	0.05	.00	.00 (p = .99)	1.00
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Note. $N = 553$.

* $p < .05$.

Table 3.2 shows standardised estimates for the final scales. Deleted items are also listed with reasons for deletion. Factor loadings were statistically significant and salient (with standardised factor loadings ranging from .46 to .81). Factor loadings were classified according to Comrey and Lee (1992). The Evaluation subscale had excellent loadings ($> .71$), the Improvement subscale very good ($> .63$) to excellent loadings, the Enhancement-Relevance subscale fair ($> .45$) to very good loadings, the Enhancement-Discounting subscale good ($> .55$) to very good loadings, the Enhancement-Comparing on a Different Dimension subscale had good to excellent loadings, and the Enhancement-Clothing subscale fair to good loadings. The main reasons for deletion of an item were ambiguity and/or redundancy as indicated by high MIs and SRs.

Table 3.2 Standardised Factor Estimates (SFE) for the Final Scale and Reasons for Deletion of Items from Subscales

Item	SFE	Reasons for deletion
Evaluation		
1. How much I weigh compared to her/muscle I have	.736	
6. What my body looks like compared to hers/his	.774	
13. How fat/weedy I am compared to her/him	.782	
30. How slim she/strong he looks is compared to me	.786	
<i>Deleted items</i>		
20. How my body shape differs from hers/his		Cross-loading on Enhancement-Relevance, -Clothing, - Different Dimension & -Discounting
25. How different my weight is/muscles are compared to him		Cross-loading on Enhancement-Different Dimension
Improvement		
4. That I feel motivated to lose weight/build up strength	.634	
17. That I would like to be thinner/be stronger just like her/him	.808	
22. That she/he inspires me to lose weight/put on more muscle	.707	
33. That I want to achieve this thinness/muscularity	.782	
<i>Deleted items</i>		
9. That I would like my body to look like her/his body		Cross-loading on Evaluation
28. That I could learn from her/him how to be thinner/develop		Low loading

Item	SFE	Reasons for deletion
more strength		
Enhancement-Relevance		
5. That how thin she is/well built he is, is not important to me	.461	
11. That how thin she is/strong he looks does not matter to me	.661	
18. That I am not interested in how thin she/muscular he is	.667	
23. That her/his shape has nothing to do with who I am	.556	
<i>Deleted items</i>		
14. That she/he is completely different to me		Cross-loading on Evaluation, Improvement, Enhancement-Discounting, -Clothing
		High positive standardised residual with item 5
31. That her/his physical appearance is not important to my life		High positive standardised residual with item 23
		Low loading
Enhancement - Discounting		
8. That models and famous people are paid to look thin/muscular	.566	
15. That media people are thinner/more muscular than the average person	.577	
26. That images of models and famous people in the media can be altered by technology to hide flaws	.656	

Item	SFE	Reasons for deletion
35. That people in the media spend hours on their appearance and shape	.660	
<i>Deleted items</i>		
2. That different expectations of thinness/muscularity apply to media characters and models		Cross-loading on Evaluation, Improvement, Enhancement-Relevance & -Different Dimension
10. That people in the media are different to 'normal' people		Cross-loading on Improvement, Enhancement-Different Dimension & -Relevance High positive standardised residual with item 15
Enhancement - Comparing on a Different Dimension		
24. That getting on with people is more important than being thin/having muscles	.740	
27. That being thin/having muscles does not necessarily mean that one is happy	.717	
29. That being able to have a good laugh is more important than being thin/having muscles	.660	
32. That thinness is/muscles are not as important as personality	.592	
<i>Deleted items</i>		
3. That intelligence is more important than being thin/muscular		Low loading

Item	SFE	Reasons for deletion
21. That I might not be as thin/muscular, but that I am very good at what I do	Low loading	
	Enhancement – Clothing	
7. That I look better in the clothes I wear because they express who I am	.492	
16. That I might not be the same weight as her/as muscular as he is, but my style is right for me	.608	
19. That I am not as slim as her/as muscular, but that my style of clothing reflects who I am	.580	
34. That I am not as thin/well built but that I can dress well	.536	
<i>Deleted item</i>		
12. That the type of clothes she/he wears are impractical in everyday life		Cross-loading on Evaluation High positive standardised residual with item 16

Note. N = 553.

All factor loadings significant at the .001 level.

Descriptive statistics, Cronbach's alpha and correlations for the SCASA are given in Table 3.3. Evaluation and improvement comparison appraisals were highly correlated with each other. All enhancement appraisals correlated significantly with each other. Comparing on a different dimension correlated negatively with improvement appraisals and was not significantly associated with evaluative appraisals. Scale reliabilities ranged from .66 to .85 for the SCASA subscales.

Table 3.3 Pearson Correlations of Scales, Descriptive Statistics and Scale Reliabilities

	1.	2.	3.	4.	5.	6.
1. Evaluation	-	.731**	-.298**	.341**	-.046	.152**
2. Improvement		-	-.312**	.266**	-.113**	.079
3. Enhancement - Relevance			-	.217**	.424**	.323**
4. Enhancement - Discounting				-	.371**	.465**
5. Enhancement - Different Dimension					-	.393**
6. Enhancement - Clothing						-
Mean	2.73	2.90	3.15	3.36	3.87	3.35
SD	1.11	1.06	0.94	0.90	0.88	0.83
Alpha	.85	.82	.66	.71	.78	.65

Note. * $p < .05$, ** $p < 0.01$.

Multigroup Comparison for Girls and Boys

Table 3.4 displays the fit indices for the invariance tests. The baseline model assessing configural invariance (Model 1) resulted in a good fit. Results for the full equal factor loading model (M2) showed that the chi-square difference was significant. Partial invariance was established by relaxing the constraints for one item from the Improvement scale and two items from the Enhancement - Comparing on a Different Dimension scale (M3). Partial equality (M5) was established for intercepts after the constraints of four intercepts had been relaxed (one from the Improvement scale, one from the Enhancement - Relevance scale and two from the Enhancement - Discounting scale). The constraints for 3 error variances out of 24 were relaxed (two from the Enhancement - Discounting scale and one from the Enhancement - Comparing on a Different Dimension scale) to achieve partial invariance of error variances (M7).

Results for equal variance and covariance testing suggest that the scale is sensitive to detect differences between boys and girls. Partial invariance of variances (M9) was established with Improvement, Evaluation and Enhancement - Comparing on a Different Dimension being unequal. Partial invariance of covariances (M11) was established with 7 out of 15 pairs being invariant, indicating that some latent variables are more strongly related in one group compared to the other. Partial invariance of means was achieved by freely estimating the means of four latent variables (M13). This indicates that mean scores for four subscales are predicted to be significantly higher for girls compared to boys (Evaluation .429 [*SE* .096], Enhancement-Discounting .308 [*SE* .079], Enhancement-Comparing on a Different Dimension .259 [*SE* .074], Enhancement-Clothing .229 [*SE* .063]). There was no significant difference for improvement and relevance appraisal mean scores (Improvement -.066 [*SE* .086], Enhancement - Relevance -.136 [*SE* .091]).

Table 3.4 Invariance Testing for Boys and Girls

	Comparison model	$\chi^2(df)$	$\Delta\chi^2(\Delta df)$	RMSEA	SRMRS	χ^2/df
Measurement invariance						
M1 Configural invariance		1036.53 (474)	-	.05 ($p = .94$)	.07	2.19
M2 Equal factor loadings	M1	1086.52 (492)	49.99 (18)**	.05 ($p = .92$)	.07	2.21
M3 Partial equal factor loadings	M1	1060.22 (489)	23.69 (15)	.05 ($p = .96$)	.07	2.17
M4 Equal intercepts	M3	1139.32 (507)	79.10 (18)**	.05 ($p = .86$)	.07	2.25
M5 Partial equal intercepts	M3	1081.31 (502)	21.09 (13)	.05 ($p = .97$)	.07	2.15
M6 Equal error variance	M5	1147.51 (526)	66.20 (24)**	.05 ($p = .95$)	.07	2.18
M7 Partial equal error variance	M6	1110.76 (523)	29.45 (21)	.05 ($p = .98$)	.07	2.12
Population heterogeneity						
M8 Equal variance	M7	1141.96 (529)	31.20 (6)**	.05 ($p = .97$)	.08	2.16
M9 Partial equal variance	M7	1114.91 (526)	4.15 (3)	.04 ($p = .99$)	.07	2.12
M10 Equal covariance	M9	1181.73 (541)	66.82 (15)**	.05 ($p = .95$)	.09	2.18
M11 Partial equal covariance	M9	1125.30 (532)	10.29 (6)	.04 ($p = .99$)	.08	2.11
M12 Equal means	M11	1203.83 (538)	78.53 (6)**	.05 ($p = .88$)	.08	2.24
M13 Partial equal means	M11	1129.01 (534)	3.71 (2)	.04 ($p = .99$)	.08	2.11

Note. Girls $n = 278$, boys $n = 275$.

Discussion

General Psychometric Findings

The aim of the present study was to develop a psychometrically sound instrument for the assessment of a range of situational social comparison appraisals with an emphasis on enhancement appraisals. Additionally, the measurement was tested for invariance across boys and girls. The psychometric properties of the final scale suggest that the SCASA may be a valuable tool for research exploring questions pertaining to body image related social comparisons in adolescents. The step-wise CFA analysis approach allowed for a detailed examination of the items. The combination of single and paired analysis provided a sound basis for decision making through inspection of factor loadings, residuals and modification indices. It was found that the hypothesised factor structure fitted the data well and multigroup analysis indicated that it is a useful tool for comparisons between adolescent boys and girls.

Specific Psychometric Considerations

In particular the Evaluation and Improvement subscales performed well as reflected in their high Cronbach's alpha coefficient and factor loadings. Previous research has shown that both these concepts are easily understood by adolescents (Martin & Gentry, 1997). Although it is a challenge to provide a comprehensive list of dimensions individuals might perceive themselves to be advantaged on, loadings and Cronbach's alpha for Enhancement-Comparing on a Different Dimension suggest that the items included identify relevant dimensions. Previous research has shown that humour, personality and popularity are relevant qualities for adolescents (Jones, 2001; Kraye et al., 2008). The Enhancement-Discounting subscale worked well which is complemented by research into prevention messages indicating that this type of message is perceived as relevant and persuasive by girls (Durkin et al., 2005).

The enhancement subscales measuring clothing as an example of comparing on a different dimension and relevance appraisals have the lowest Cronbach's alpha of the sample and also contain items with only fair loadings. Items that do not perform as well as expected might improve in later studies with minor changes in wording (Sontag & Lee, 2004). Item 7 of the clothing subscale might be amended as some adolescents might not have understood the word "express" to "That I look better in the clothes I wear because they show who I am". Item 5 and 34 are the only items containing the expression "well built" for the boys' version of the scale. These items might be better re-phrased, using muscular instead (e.g. "That how muscular he is, is not important to me").

The main reason for the deletion of items was ambiguity and/or redundancy. Of particular interest are the five deleted items with an emphasis on difference (e.g. Item 20 "How my body shape differs from hers/his"). Cross-loadings suggested that they did not clearly discriminate between the four types of enhancement and evaluation and improvement appraisals, perhaps indicating that distancing oneself from the comparison other is a general underlying feature of enhancement appraisals. This is complimented by findings suggesting that describing the comparison other as dissimilar reduces the impact of negative comparisons (Miller et al., 1988). Research also indicates that a dissimilar more advantaged comparison other might be chosen when the individual intends to learn from and be inspired by the comparison other (Wood, 1996).

A closer look at the pattern of correlations shows a high significant correlation of evaluation and improvement appraisals which might reflect a strong connection between an interest in and investment in appearance as shown previously in adults (Halliwell & Dittmar, 2005). In terms of health-protective comparison appraisals, correlations found suggest that comparing on a different dimension and relevance appraisals might play a different role compared to the other enhancement appraisals as they were negatively associated with

evaluation and improvement comparisons. A focus on perceived strengths or dimensions one feels advantaged on has been shown to lead to more positive outcomes in adults such as increased state body satisfaction, higher state self-esteem, less anxiety about appearance and fewer negative affect ratings (Lew et al., 2007; Park, 2007).

Multigroup Comparison

The testing of the equality of parameters for boys and girls revealed partial invariance for some parameters. Configural invariance was supported. Equal factor loadings were partially achieved. There was equality for all items relating to four of the six social comparison appraisals, indicating that males and females give the same meaning to the items representing the concept. Only three items were non-invariant. For the improvement item ("That I feel motivated to lose weight"), girls had higher standardised estimates than boys ("That I feel motivated to build up strength"), suggesting that this item is more strongly endorsed by females than males. Two items from the comparing on a different dimension subscale had higher factor loadings for girls than boys, suggesting that happiness and humour might be more likely to be selected as relevant different comparison dimensions by girls than boys. The three unequal error variances did not display a specific pattern and it is very rare that all error variances are found to be equal (Brown, 2006).

Having established measurement invariance, we compared variances, covariances and latent means. As mentioned earlier, variances, covariances and means can be expected to differ between groups (Kline, 2005). The latent mean for evaluation appraisals was significantly higher for girls and the variance was non-invariant. This might be related to previous findings which have suggested that boys were less likely to engage in evaluative improvement appraisals than girls and perceive comparison issues around body image as socially undesirable (Hargreaves & Tiggeman, 2006; Jones, 2004; Morrison et al., 2004). Three of the latent means for enhancement appraisals (discounting, clothing and comparing on a different dimension) differed

significantly between groups, suggesting that girls are more likely to engage in these types of appraisals. In line with these findings, variances for discounting and comparing on a different dimension were found to be unequal. Higher latent means for clothing comparisons might be related to the general importance attached to clothing and fashion by girls (Jones, 2001). The significant difference in latent means for the comparing on a different dimension subscale in conjunction with the two non-invariant factor loadings suggests that girls and boys might differ in the choice of dimension to establish a positive experience of the self. Rose and Rudolph (2006) have proposed that girls are more likely to define themselves in terms of social relationships and interpersonal concerns whereas boys are more agentic and status oriented. Thus girls might tend to self-select dimensions emphasising connectedness to others and boys dimensions related to independence to self-enhance. Of particular interest in terms of the non-invariant covariances are differences for the pairings of evaluation and improvement appraisals with clothing. Covariances were non-significant for girls which might be related to research demonstrating that in contrast to boys, girls' comparisons on clothing/style are not related to body dissatisfaction (Jones, 2001).

Conclusion and Further Research

The present study contributes to our theoretical understanding as it suggests that a range of comparison appraisals found previously in other areas of social comparison research are relevant to adolescents in the context of body image. It appears that the SCASA is understood by adolescents and taps into constructs of importance and meaning. In particular, the confirmation of six latent factors with four representing self-enhancement appraisals makes it a useful tool to examine the processing of idealised media images in specific contexts and how these may lead to behavioural and body image related problems. A range of stimuli could be used in conjunction with the measure such as visual stimuli (e.g. photographs) and self-generated comparison others.

In addition, the SCASA could be used with a range of scenarios to assess the impact of specific contexts and environments. Research suggests that women's body satisfaction varies depending on specific contexts, such as social situations or body exposing situations like looking in a mirror (Tiggemann, 2001).

Some intervention programmes with adolescents which teach a critical stance towards unrealistic standards of ideal images have shown promise (Wade et al., 2003; Wilksch et al., 2006). In contrast, some research has shown that challenging idealised images focuses attention on physical appearance, thus leading to increased negative outcomes (Botta, 2003). These inconsistent findings might be partly due to the lack of an empirical measurement that assesses a range of cognitive appraisals. The SCASA could provide insight into the different types of social comparison appraisals taking place.

Although the current research provides initial psychometric evidence supportive of the factorial validity of the SCA scale for boys and girls, further cross-validation is needed with additional samples and different age groups. Research has suggested that adolescents' development stages might influence social comparison appraisal selection and tendency (Martin & Gentry, 1997; Maltby, Giles, Barber & McCutcheon, 2005).

At the level of individual items, low loadings ($< .50$) were observed for some items. However, none had high standardised residuals or modification indices attached. Items might be improved by minor changes in wording (Sontag & Lee, 2004). Non-invariance was found for some parameters, although this is acceptable if it can be substantively explained. In particular, non-invariance of two factor loadings of the comparing on a different dimension scale items suggests a different emphasis on perceived strengths for boys and girls. This needs to be followed up by further research. The present study has concentrated on weight as the main focus for comparison for girls and muscularity for boys. Although this pattern has been confirmed by previous research, there might be some subgroups of

girls focusing on muscularity and boys focusing on weight comparisons (McVey, Tweed & Blackmore, 2005) and further research could explore the relevance of the weight scale for boys and the muscularity scale for girls. Finally, to demonstrate construct validity the SCASA needs to be embedded in theoretical propositions and tests of related hypotheses. Research is needed to study the significance of the range of comparison appraisals, identify potentially protective appraisals and to measure a variety of body-image related outcomes.

Chapter 4: COMPARING TO IDEALISED IMAGES IN
ADOLESCENCE: THE RELATIONSHIP BETWEEN
DISPOSITIONAL CHARACTERISTICS, SOCIAL
COMPARISON APPRAISALS, BODY IMAGE AND WELL-
BEING

Abstract

The present study examined the influence of social comparison appraisals on body image related outcomes, with the aim of identifying potentially health-protective social comparison appraisals. Participants were 275 boys and 278 girls (mean age = 14.80 years), completing a self-report questionnaire. Structural equation modelling was used to test how social comparison appraisals influenced state body image, affective reactions, and behavioural intentions, and how social comparison appraisals themselves were influenced by personality traits, life goals, self-esteem, and trait body image. Findings indicated that the self-enhancement comparison appraisal of comparing on a different dimension was more likely to lead to positive outcomes and be protective of well-being. The personality trait of agreeableness and the life goal of personal growth led to social comparison appraisals with more beneficial outcomes. Potentially fruitful approaches for health promotion would include encouraging the use of self-enhancement comparisons and, more profoundly, encouraging personal growth as a life goal.

Keywords: social comparison, idealised images, adolescents, body image

Introduction

Aim

This study investigates whether some social comparison appraisals could be relevant for the prevention of negative body image and detrimental body image related behaviour and affect. Social comparison theory, proposed by Festinger (1954) has been increasingly used to clarify how media and peer comparisons might influence body image perceptions and well-being (e.g., Hargreaves & Tiggemann, 2004; Jones, 2001; van den Berg et al., 2007). Prevention programmes focusing on media education that have included elements of social comparison theory have shown promise (e.g., Stice, et al., 2006). Social comparison theory is based on the premise that individuals aim to establish similarities and differences between themselves and others through social information that is sought or encountered in daily life (Wood, 1996). During adolescence individuals need to develop a sense of personal and social identity and adjust to bodily changes (Kroger, 1996). As social comparison might provide a means of gathering information about the social world, asking adolescents not to compare themselves is unlikely to be successful (Strahan et al., 2006).

It is important to remember that relatively few adolescents develop significant emotional or behavioural difficulties such as eating disorders. Identifying what might make individuals less vulnerable to idealised images is warranted (Polivy & Herman, 2004). Using social comparison theory as a framework (Festinger, 1954), we propose that male and female adolescents compare their appearance with media images and with their peers and that social comparisons mediate the relationship between dispositional characteristics and comparison outcomes. Relevant previous research is introduced below before specific hypotheses are formulated.

Social Comparison

Festinger (1954) proposed that individuals compare themselves to establish similarities and differences between themselves and others in order to gain self-knowledge. Different comparison appraisals might be used to evaluate one's standing, learn from others or deflect threats. These three types of social comparison appraisals are termed self-evaluation, self-improvement and self-enhancement (Wood, 1989). Self-evaluative appraisals serve the purpose of establishing one's standing in relation to others in terms of, for example, opinions and attitudes (Wood, 1989). Self-improvement appraisals lead to identification with the comparison other in order to learn new skills or improve performance. This type of comparison will lead to beneficial outcomes if these new or improved skills seem attainable (Lockwood & Kunda, 1997). The social comparison literature describes a range of self-enhancement appraisals used in times of threats to self-worth and self-esteem (Buunk & Gibbons, 2007). One way to self-enhance when outperformed is to distance oneself from the comparison other by discounting the information or by describing the comparison information as not relevant (Tesser, 1999). Another form of self-enhancement is to draw on alternative domains upon which one feels superior. These strategies allow the comparer to be more flexible (Wood, 2000). Festinger (1954) proposed that individuals are more likely to be interested in comparisons on domains that are of particular importance to them (self-relevant). Perceiving the other as superior on a domain high in self-relevance poses a greater threat to an individual than when the domain under comparison is low on relevance (Major et al., 1991).

Social Comparison Appraisals and Outcomes in the Context of Body Image and Well-Being

Research has in particular explored the link between evaluative social comparisons and body image as evaluative appraisals are a main feature in body image disturbances. Evaluation refers to the way the individual thinks about and perceives their body (Cash, 2002). In the

context of body image and eating disturbances, evaluative appraisals have been associated with negative outcomes such as negative mood and body dissatisfaction and have been established as mediating the effect of media exposure on body satisfaction (Durkin et al., 2007, Hargreaves & Tiggemann, 2004). For example, an experimental study exposing adolescent girls to idealised images reported lower state body satisfaction and mood following exposure (Durkin & Paxton, 2002). The onset of puberty goes hand in hand with bodily changes such as an increase in body fat in girls and development of a muscular physique for boys (McCabe, Ricciardelli & Banfield, 2001). Accordingly, research has suggested that evaluative social comparison appraisals contribute to a drive for muscularity in boys and to body image dissatisfaction in girls (Jones, 2004; Muris et al., 2005; Smolak & Stein, 2006).

There is a lack of research in the area of improvement appraisals and body image in adolescence. Improvement comparisons have been shown to lead to positive affect and higher body image satisfaction in adults if the individual identifies with the image and feels that they would be able to achieve this ideal (Halliwell & Dittmar, 2005). In line with these findings, an earlier study by Martin and Gentry (1997) found that improvement comparisons resulted in higher body image ratings in female adolescents. However, Halliwell and Dittmar (2005) proposed that improvement comparisons might lead to detrimental effects such as unhealthy eating behaviours and body dissatisfaction in the long term.

Evidence has suggested that enhancement appraisals might be relevant in terms of health promotion and prevention (Engeln-Maddox, 2005; Lew et al., 2007; Martin & Gentry, 1997). Research with adult females by Engeln-Maddox (2005) showed that diverse enhancement comparisons are present in the area of body image and media comparisons, some of which seem to reduce negative comparison outcomes. There was evidence in her study that counter-arguing, and in particular focusing on attributes on which one perceived oneself to be superior was associated with positive outcomes. Similarly, Martin

and Gentry (1997) noted beneficial effects in a study with adolescent girls when enhancement comparisons were used. However, some research has indicated that individuals who question beautiful images, but still embrace the ideal, might react negatively to media images (Botta, 2003; Irving & Berel, 2001). Botta (2003), in a study looking at the relationship between magazine reading and body image in adolescents found that female and male adolescents who generally questioned the images provided were more likely to exhibit negative body image and eating disorder symptoms compared to those who did not. Botta suggested that processing an image cognitively establishes a focus - instead of a distancing effect - which leads to a negative impact.

Another example of an enhancement comparison might be the use of clothing. Clothing and style are part of body image perceptions in so far as they can be grouped under body investment - one of the constructs of body image. Investment refers to individual actions to manage the way one looks (Cash, 2002). Clothing is an important factor during adolescence, closely linked to peer acceptance and identity development and denotes group membership (Paxton et al., 1999). Clothing may enhance or reduce body satisfaction, may be used to camouflage parts of the body and may provide assurance and influence mood (Rudd & Lennon, 2000; Sontag & Lee, 2004). The ability to experiment with clothing can engender a sense of agency and control. A better understanding of this issue might be of particular importance for health promotion and prevention, as clothing can be altered easily and is a "low risk strategy" in terms of appearance worries (Wilson & MacGillivray, 1998).

Influences of Dispositional Characteristics on Social Comparison Appraisals and Outcomes

Dispositional characteristics have been linked to health-related behaviours (e.g., de Bruijn, Kremers, van Mechelen & Brug, 2005; Williams et al., 2000). Dispositional characteristics of interest in the area of body image research are personality traits, such as the Big Five

(agreeableness, conscientiousness, extroversion, emotional instability and intellect), trait self-esteem and body image, and life goals.

Personality traits are consistent patterns of thinking, feeling and behaving, whereas goals can be described as dispositional aspirations of who we want to become and what kind of life we want to live (Emmons, 1989). However, research in the area of dispositional characteristics, social comparison appraisals and body image-related outcomes in adolescence is very limited.

With regard to personality traits, some personality traits such as perfectionism, neuroticism and narcissism have been linked to disordered eating and low body satisfaction in adults (Cassin & von Ranson, 2005; Kvalem et al., 2006). In contrast, personality traits such as conscientiousness have been linked to more positive health-related behaviours in adults (Bogg & Roberts, 2004) and agreeableness and intellect/openness have been shown to be negatively correlated with self-objectification (measuring self-worth by appearance) in women (Miner-Rubino et al., 2002). A study by Kvalem et al. (2006) found that extroversion and intellect/openness were associated with more positive appearance evaluations.

Self-esteem and trait body image are other salient dispositional variables. Low self-esteem has been linked to more negative outcomes of social comparisons generally (Buunk & Gibbons, 2007). Low self-esteem has been shown to be related to negative body image in females and males and to increase comparison tendencies to idealised images (Durkin et al., 2007; Frost & McKelvie, 2004). Lower trait body image satisfaction may promote greater negative consequences for adolescent boys and girls when viewing media images (Durkin & Paxton, 2002; Humphreys & Paxton, 2004). In prospective analyses body dissatisfaction has been found to predict negative outcomes such as unhealthy weight control behaviours, abnormal attitudes to eating and weight and low self-esteem (Johnson & Wardle, 2005; Neumark-Sztainer et al., 2006).

To our knowledge, life goals have not previously been linked to social comparisons in the context of body image although they play an important role in regulating behaviour in adolescence (Williams et al., 2000; Vansteenkiste, Matos, Lens & Soenens, 2007). Satisfaction of need (the pursuit of intrinsic life goals) has been found to be related to health and well-being and the pursuit of extrinsic or status goals to psychological distress (Sheldon et al., 2004). Self-determination theory proposes that the pursuit of extrinsic life goals allows less satisfaction of the basic psychological needs as it is based on the expectation of external rewards. In contrast, intrinsic life goals are performed out of interest and enjoyment and are self-determined (Deci & Ryan, 2000). Life goals have been shown to differ from and be linked to personality traits (Roberts, O'Donnell & Robins, 2004). The relationship is complex, confirming on one hand that life goals are related to personality traits but on the other hand that changes in goals do not necessarily mirror trends documented in personality traits (Roberts et al., 2004). The importance of life goals reflects a perception of the future and is part of identity development (Bosma, 1985).

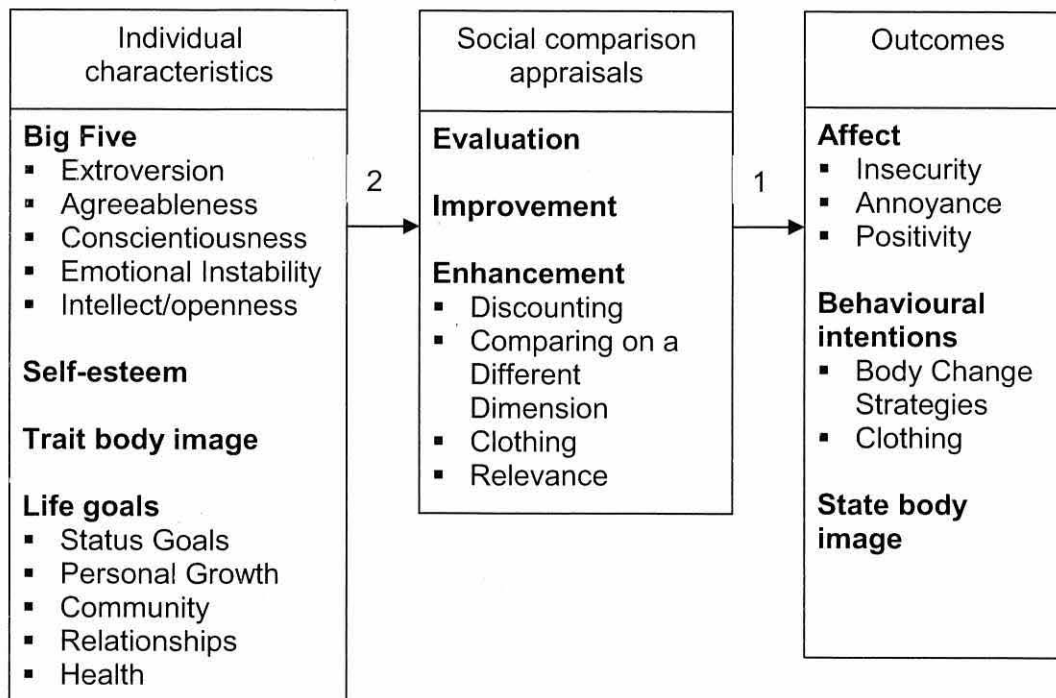
The Present Study

Work is needed to explore the mechanism through which exposure to idealised images translates into body image disturbance so as to inform prevention efforts (Tiggemann & McGill, 2004). The present study builds on and extends previous research by incorporating an extensive set of social comparison appraisals, assessed through a newly developed measure. As well as assessing the effects of these social comparison appraisals on outcomes, we assess the effects of dispositional characteristics on appraisal, and the extent to which appraisals mediate the effects of personal characteristics on outcomes (see Figure 4.1; simplified model).

Specific hypotheses were formulated based on the review of the existing literature. As a result of comparisons, affect, behavioural intentions and state body image of adolescents may be affected (path 1). Specifically, we would expect that evaluative appraisals result in

negative affective reactions, increased behavioural intentions to use body change strategies and reduced state body image satisfaction (H1a). The same results would be expected for improvement appraisals with positive affective reactions instead of negative affective reactions (H1b). The use of the self-enhancement appraisals such as discounting, comparing on a different dimension, clothing and relevance is hypothesised to result in positive affective reactions and increased state body image satisfaction (H1c).

Figure 4.1 General Social Comparison Model to be Tested



The choice of social comparison appraisals is influenced by dispositional characteristics (path 2). We would expect emotional instability, low self-esteem, and low trait body image to predict increased evaluative comparisons (H2a). As the pursuit of extrinsic goals or status goals is linked to negative well-being, we would expect status goals to predict increased evaluative and improvement appraisals (H2b). Social comparison appraisals are hypothesised to

mediate the relationship between dispositional characteristics and outcomes.

Method

Participants

Ten secondary local schools of a rural area of the United Kingdom were recruited and a total of 553 adolescents participated. The sample comprised 275 boys (mean age 14.79 years, $SD = 0.42$) and 278 girls (mean age 14.80 years, $SD = 0.36$).

Procedure

After the study had gained ethical approval from a University ethics committee, informed consent was obtained first from parents and then participating adolescents through head teachers' involvement. All measures were piloted before use and qualitative feedback collected. As a result, a few questions were reworded to facilitate understanding. For the main study, the different scales used were administered in the form of a booklet by the principal researcher in one hour classroom sessions. Participants were guided through the sections of the questionnaire to ensure understanding of the requirements.

Measures

Measures are listed in the same order as they appeared in the booklet.

Personality

Personality was assessed using an adapted version of the Big Five Questionnaire for Late Childhood, developed by Barbaranelli, Caprara, Rabasca & Pastorelli (2003). The questionnaire assesses energy/extroversion, agreeableness, conscientiousness, emotional instability and intellect/openness. There are 65 items, thirteen for each concept. The occurrence of a particular behaviour is rated on a five point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*).

Self-Esteem

Self-esteem was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1965), which is a four-point Likert scale (1= *not at all true for me* to 4= *very true for me*). This is a self-report questionnaire comprising 10 items that assesses global attitudes toward the self.

Life Goals

The importance of various life goals was assessed with the Aspiration Index developed by Kasser and Ryan (1996). This index comprises seven goals, each of which is represented by five items. There are four intrinsic goals (personal growth, affiliation, community contribution, and physical health) and three extrinsic goals (financial success, fame and appealing image). The perceived importance of life goals was assessed, which reflects desires (Ryan, et al., 1999). Participants rated the importance of the life goals on a Likert scale ranging from 1 (*not at all*) to 5 (*very*). In the present study, correlations and principal component analysis suggested that the three extrinsic life goals were highly correlated ($r > .70$) and formed a clear factor (factor loadings $> .85$). Thus, it was decided to combine these in one variable (status goals).

Trait Body Image

To establish general body image perceptions, the trait version of the Physical Appearance State and Trait Anxiety Scale by Reed, Thompson, Brannick & Sacco (1991) was used. The measure assesses a dispositional aspect of disturbance. It asks participants to rate the frequency of general anxieties and feelings regarding weight and non-weight-related body sites on a Likert scale ranging from 1 (*never*) to 5 (*always*). Only the eight appearance-related items were used for this study.

Social Comparison Appraisals

Social comparison appraisals were measured by a specially developed scale (Social Comparison Appraisal Scale for Adolescents, SCASA;

see Chapter 3). The aim was to develop a scale to assess state social comparison appraisals. It would encompass a wide range of different appraisals. It would be answerable by both boys and girls. It would be useable in the present study and in future studies of reactions to body-related images. Items were developed based on the social comparison literature discussed earlier and a previous qualitative study (Kraye, Ingledew & Iphofen, 2008). Items were included to assess Evaluation, Improvement, Enhancement-Discounting, Enhancement-Comparing on a Different Dimension, Enhancement-Clothing and Enhancement-Relevance. Four different aspects of self-enhancement were assessed as the ability to generate self-enhancement comparisons might be protective. Each scale is composed of four items. The item stem was "What I think about is...", and the items were rated on a five-point Likert scale ranging from 1 (*not at all true for me*) to 5 (*very true for me*). The focus of social comparison items and the associated vignettes was on body weight for girls and muscularity for boys as body image is to a large extent a gendered construct (Muris et al., 2005). Otherwise, the items were equivalent (e.g., "How much I weigh compared to her" and "How much muscle I have compared to him").

In the present study vignettes were used to stimulate thoughts about physically attractive comparison targets before answering the SCASA questions. Specific situational cues have been shown to activate the processing of information about one's physical appearance. These thought processes might lead to coping strategies or adjustive self-regulatory processes (Cash, 2002). Two vignettes were randomly allocated, one asking participants to picture an idealised media image and one to picture a good-looking peer.

Confirmatory factor analysis was performed using AMOS 6.0 to verify that the proposed six factors, representing various aspects of social comparison theory, were well defined and to reduce the number of items to four per subscale. The analysis strategy was sequential, based on recommendations by Jöreskog (1993). Multigroup analyses were also performed, to check for measurement invariance across the

two sexes and across the two different vignettes. Such measurement invariance is necessary for valid group comparisons (Kline, 2005). The testing of the equality of parameters for boys and girls revealed partial invariance for only three factor loadings. These three items were excluded from scale computations for the present study.

Affect

To measure affective reactions, the Profile of Mood States (McNair & Heuchert, 2003) was used. When using mood scales applying a short reference period instruction such as “How do you feel right now?” leads the answers to reflect emotions or state mood rather than general mood (Terry, Stevens & Lane, 2005). The stem used was: “Thinking about the image right now makes me feel...”. Response options ranged from 1 (*much unlike this*) to 4 (*much like this*). The eight dimensions included were hostile, anxious, confused, unsure, depressed, composed, confident and elated. Based on feedback from the pilots, the number of items per dimension was reduced to decrease questionnaire fatigue and difficult to understand items re-worded or deleted. Affective responses were conceptualised as independent as previous research suggests that independence is more likely when an evaluative component is involved (Russel & Carroll, 1999). As this measure was adapted, principal components analysis was used with oblique rotation to ascertain the structure. This resulted in three components and cross-loading items were deleted to retain the four best items for each of the three subscales. These subscales were labelled: Insecurity, Annoyance and Positivity. The loadings of the final items ranged from .60 to .86.

Behavioural Intentions

Intentions were measured by two subscales focusing on body change strategies. Items were formulated based on previous qualitative research (Kraye et al., 2008) and existing literature (Ricciardelli & McCabe, 2002; Rudd & Lennon, 2000). Six statements were rated on a five point Likert scale ranging from 1 (*not at all true for me*) to 5 (*very*

true for me). Three items referred to the intention to change clothing as a means to shift attention from body shape (e.g., “Wear baggy clothes to hide parts of my body”) and three to the intention to change exercise levels for boys (e.g., “Engage in more exercise to tone my body”) or dietary intake for girls (e.g., “Eat less”). Sociocultural influences have been implicated in the intention to change behaviour with an emphasis on decreasing weight for girls and increasing muscles for boys (e.g., McCabe & Ricciardelli, 2003b). In contrast to the subscale *clothing* of the SCASA, clothing items referred to the intention of using clothing as a means of diverting attention from body shape. The stem used was: “When I look at her/him I want to...”. A principal components analysis was run using oblique rotation to ascertain the factor structure, separately for boys and girls. The rotated solution showed two clear components for boys and girls, indicating the same structure. Thus, the scales Intention to Build Muscle (boys) and Intention to Diet (girls) were labelled Intention - Body Change Strategies for the purpose of further analysis. The second scale was labelled Intention – Clothing. Factor loadings ranged from .85 - .91.

State Body Image

This was assessed using an adapted version of the Body Image State Scale by Cash, Fleming, Alindogan, Steadman & Whitehead (2002). The response category ranged from 1 (*not at all true*) to 5 (*very true*). High scores indicate a more positive state body image rating. The scale was designed to be unidimensional and this was verified by principal components analysis. Loadings ranged from .74 - .86. The word stem used was “Right now, I feel....”.

Analysis

Descriptive statistics and correlations of the variables were examined. Structural equation modelling was performed on the covariance matrix to test the model, using AMOS 6.0. Missing value analysis was conducted using Expectation Maximization method with SPSS 14. As it was not feasible to use multiple indicators for each latent variable due

to the size and complexity of the model an alternative approach was used to adjust for measurement error (Jöreskog & Sorböm, 1993; Netemeyer, Johnston & Burton, 1990). The scale score was used as indicator for each latent variable and the path from latent variable to indicator was fixed at one. Measurement error was fixed at the variance of the indicator multiplied by one minus the reliability (Cronbach's alpha) of the indicator. Measurement errors were not free to covary. Latent dispositional variables were free to covary with each other to ensure that effects of dispositional variables on social comparison appraisal variables would be adjusted for their interrelationship. Disturbances of the latent social comparison appraisals were free to covary with each other, as were the disturbances of the affect and intention variables with each other. Modification indices were inspected for indications of direct paths from dispositional characteristics to outcomes and modifications made if conceptually appropriate. Non-significant paths were then set to zero step-by-step.

Multiple fit indices were employed in assessing the fit of the proposed measurement models. The chi-square statistic is reported in a descriptive sense as the sample was non-random. This statistic is also sensitive to sample size, small discrepancies between variance and covariance matrix and larger correlations between latent variables (Hu & Bentler, 1999; Kline, 2005). A good fit would be indicated by chi-square/df between one and three, a Root Mean Square Error of Approximation (RMSEA) non-significant value of less than .05, Standardised Root Mean Square Residuals (SRMSR) values of less than .10 and a Comparative Fit Index (CFI) value equal or over .95 (Carmines & Mclver, 1981; Hu & Bentler, 1999; Kline, 2005).

Results

Descriptive Statistics and Correlations

Table 4.1 shows descriptive statistics for the sample, Cronbach's alpha and correlation of variables. Cronbach's alpha equalled or was above .70 for all multi-item scales except the enhancement scale comparing

on a different dimension (.60), the self-enhancement clothing scale (.64) and the self-enhancement relevance scale (.66). There were significant correlations of variables at the same levels and between variables at different levels in the causal model.

Table 4.1 Descriptive Statistics, Correlations and Cronbach's Alpha

	1	2	3	4	5	6	7	8	9	10	11	12
1. Extroversion												
2. Agreeableness	.48**											
3. Emotional Instability	-.07	-.08										
4. Intellect/Openness	.42**	.41**	-.04									
5. Conscientious.	.45**	.60**	-.03	.63**								
6. Status goals	.23**	.04	.09*	.01	.09*							
7. Personal growth	.39**	.39**	.05	.46**	.47**	.18**						
8. Health	.40**	.31**	-.03	.27**	.34**	.37**	.54**					
9. Community	.30**	.47**	.07	.34**	.43**	.12**	.52**	.37**				
10. Relationships	.35**	.37**	.13**	.27**	.30**	.20**	.55**	.48**	.36**			
11. Self-esteem	.45**	.24**	-.46**	.32**	.29**	.13**	.27**	.31**	.06	.13**		
12. Trait body image	-.12**	.04	.35**	-.11**	.01	-.04	.05	-.01	.14**	.15**	-.44**	
Cronbach's alpha	.81	.83	.83	.79	.82	.91	.71	.82	.81	.80	.85	.93
Mean (SD)	3.73 (0.55)	3.50 (0.55)	2.83 (0.65)	3.18 (0.56)	3.20 (0.57)	3.15 (0.78)	4.13 (0.58)	4.19 (0.72)	3.68 (0.73)	4.35 (0.66)	2.88 (0.57)	2.54 (1.14)

Table 4.1 Descriptive Statistics, Correlations and Cronbach's Alpha contd.

	13	14	15	16	17	18	19	20	21	22	23	24
13. Evaluation												
14. Improvement	.72**											
15. Discounting	.34**	.29**										
16. Different dimension	-.03	-.11**	.30**									
17. Clothing	.15**	.08	.46**	.32**								
18. Relevance	-.30**	-.32**	.22**	.40**	-.19**							
19. Insecurity	.43**	.30**	.14**	-.08	.08*	-.14**						
20. Annoyance	.32**	.29**	.11**	-.12**	-.01	-.15**	.59**					
21. Positive	-.30**	-.24**	-.15**	.04	.02	.12**	-.29**	-.37**				
22. I – body change	.57**	.72**	.15**	-.14**	.05	-.30**	.23**	.22**	.21**			
23. I – clothing	.52**	.49**	.11*	-.14**	.04	-.19**	.33**	.33*	-.22**	.52**		
24. State body image	-.40**	-.32**	-.10*	.07	.06	.15**	-.35**	-.27**	.40**	-.22**	-.36**	
Cronbach's alpha	.85	.81	.70	.60	.64	.66	.79	.86	.78	.89	.90	.90
Mean (SD)	2.74 (1.11)	2.77 (1.13)	3.36 (0.90)	3.83 (0.97)	3.35 (0.82)	3.15 (0.94)	1.99 (0.73)	1.86 (0.83)	2.73 (0.79)	2.20 (1.20)	2.92 (1.32)	3.08 (0.99)

Table 4.1 Descriptive Statistics, Correlations and Cronbach's Alpha contd.

	1	2	3	4	5	6	7	8	9	10	11	12
13. Evaluation	-.02	-.02	.32**	-.07	.03	.14**	.04	.09*	.15**	.18**	-.33**	.59**
14. Improvement	-.02	-.01	.20**	-.07	.02	.21**	-.02	.16**	.10*	.11**	-.22**	.45**
15. Discounting	.14**	.20**	.18**	.12**	.16**	.02	.24**	.16**	.25**	.26**	-.07	.29**
16. Different dimension	.16**	.25**	-.01	.25**	.25**	-.16**	.28**	.09*	.24**	.21**	.08*	.02
17. Clothing	.11**	.18**	.10*	.08	.16**	.01	.15**	.08	.20**	.19**	.01	.10*
18. Relevance	.06	.11**	-.09*	.12**	.09*	-.09*	.07	-.06	.19	-.02	.09*	-.12**
19. Insecurity	-.16**	-.08	.35**	-.14**	-.06	.03	-.10*	-.12**	.05	-.03	-.42**	.39**
20. Annoyance	-.17**	.17**	.43**	-.15**	-.12**	.01	-.16**	-.15**	-.02	-.02	-.42**	.30**
21. Positive	.19**	.15**	-.25**	.09	.10*	.12**	.04	.09*	.03	-.07	.38**	-.32**
22. I – body change	.03	-.05	.05	.02	.04	.18**	.02	.16**	.11**	.10*	-.12**	.33**
23. I – clothing	-.15**	-.09*	.25**	-.13**	-.06	.03	-.13**	-.12**	.04	-.01	-.34**	.46**
24. State body image	.31**	.12**	-.28**	.17**	.17**	.25**	.06	.13**	.06	-.04	.49**	-.49**

Note. 1-5 Big Five; 6-10 Life Goals; 13-18 SCASA; 19-21 Affect scale; 22 & 23 Behavioural Intentions. * $p < .05$, ** $p < .01$.

Structural Equation Modelling

The fit of the starting model was $\chi^2 (83, N = 553) = 201.96$, $\chi^2/df = 2.31$, RMSEA = .05 ($p = .42$), CFI = .979 and SRMS = .020. A modification index suggested a direct path from emotional instability to annoyance with the expected change to be positive. It seemed plausible that trait emotional instability would influence the level of annoyance and the path was added to the model. Non-significant paths were then set to zero step-by-step. The final model fit was good: $\chi^2 (128, N = 553) = 200.45$, $\chi^2/df = 1.57$, RMSEA = .03 ($p = 1.00$), CFI = .986 and SRMS = .02. Table 4.2 shows standardised and unstandardised estimates of significant paths. Standardised estimates over one can be found. This can arise when suppression takes place (MacKinnon, Krull & Lockwood, 2000). However, correcting latent variables for measurement error is also likely to increase the probability of suppressor effects (Maassen & Bakker, 2001). The model accounted for 66% of the variance in state body image, 50% of the variance in the intention to change clothing, 71% of the variance in the intention to use body change strategies, 29% of the variance in positivity, 40% of the variance in annoyance and 44% of the variance in insecurity.

Effects of Social Comparison Appraisals on Outcomes

Evaluative and relevance appraisals increased feelings of insecurity and annoyance and reduced positive affect. Improvement appraisals positively predicted feelings of annoyance. Clothing and comparing on a different dimension reduced feelings of insecurity and annoyance and increased positive feelings. Discounting appraisals reduced positive affect. Intention to use body change strategies was positively predicted by improvement and negatively by evaluative appraisals. High levels of evaluation, improvement and relevance appraisals predicted intentions to change clothing, whereas individuals with high levels of comparing on a different dimension and clothing appraisals were less likely to indicate that they intended to adjust clothing. There were negative paths from evaluation, discounting and relevance appraisals to state

body image, indicating that high levels of these appraisals predicted lower state body image ratings. Clothing and comparing on different dimension appraisals had a positive effect on state body image.

Effects of Dispositional Variables on Social Comparison Appraisals

The pathways in terms of the Big Five predicted that individuals high in agreeableness were less likely to use evaluation and improvement appraisals and more likely to compare on a different dimension and to reduce relevance. Individuals high in conscientiousness and emotional instability were more likely to engage in evaluative comparisons and to use clothing comparisons to self-enhance. Intellect/openness positively predicted improvement appraisals. There was a direct path from emotional instability to annoyed affect. None of the paths from extroversion was significant. Self-esteem predicted clothing appraisals. Individuals with a low trait body image were significantly more likely to engage in evaluative, improvement, discounting and clothing appraisals and less likely to engage in relevance comparisons to self-enhance.

In terms of life goals, individuals high in personal growth scores were less likely to evaluate and improve and more likely to discount, compare on a different dimension and engage in relevance appraisals. Community, relationship and status goals predicted the use of evaluative and improvement comparisons. High health goals predicted increased improvement ratings. Individuals with a focus on relationship and community goals were also more likely to compare on clothing whereas individuals with a focus on health were less likely to compare on clothing. There were negative paths from status and health goals to comparing on a different dimension and relevance appraisals, indicating that individuals with high scores on these goals were less likely to employ these appraisals. Status goals negatively predicted and relationship goals positively predicted discounting appraisals.

Table 4.2 Standardised and Unstandardised Parameter Estimates of Full Model

Path from	To	Standardised estimate	Unstandardised estimate (SE)
Effects of social comparison appraisals on outcomes			
Evaluation	Affect insecurity	1.648	1.044 (.214)
	Affect annoyance	.874	.651 (.221)
	Affect positivity	-1.305	-.989 (.319)
	Intention body change	-.235	-.285 (.102)
	Intention clothing change	1.290	1.432 (.331)
	State body image	-2.094	-.1918 (.572)
Improvement	Affect annoyance	.359	.266 (.077)
	Intention body change	1.030	1.241 (.103)
	Intention clothing change	.361	.398 (.126)
Discounting	Affect positivity	-.942	-.988 (.215)
	State body image	-1.225	-1.552 (.342)
Clothing	Affect insecurity	-1.153	-1.213 (.389)
	Affect annoyance	-.959	-1.186 (.398)
	Affect positivity	2.144	2.699 (.661)
	Intention clothing	-1.057	-1.950 (.608)
	State body image	3.310	5.037 (1.161)
Different dimension	Affect insecurity	-.707	-.535 (.175)
	Affect annoyance	-.612	-.544 (.175)
	Affect positivity	.635	.575 (.260)
	Intention clothing	-.626	-.830 (.270)
	State body image	.827	.905 (.466)
Relevance	Affect insecurity	1.861	1.881 (.543)
	Affect annoyance	1.524	1.811 (.561)
	Affect positivity	-1.985	-2.401 (.826)
	Intention clothing	1.637	2.900 (.855)

Path from	To	Standardised estimate	Unstandardised estimate (SE)
	State body image	-3.103	-4.536 (1.476)
Effect of personality variables on social comparison			
Agreeableness	Evaluation	-.191	-.388 (.121)
	Improvement	-.162	-.332 (.125)
	Different dimension	.120	.204 (.100)
	Relevance	.144	.183 (.057)
Conscientiousness	Evaluation	.165	.327 (.098)
	Clothing	.123	.146 (.040)
Emotional instability	Evaluation	.120	.207 (.051)
	Clothing	.078	.082 (.027)
Intellect/openness	Improvement	.227	.476 (.144)
Self-esteem	Clothing	.133	.155 (.041)
Body image	Evaluation	.580	.539 (.037)
	Improvement	.518	.484 (.042)
	Discounting	.314	.211 (.032)
	Clothing	.166	.093 (.028)
	Relevance	-.236	-.137 (.029)
Personal growth	Evaluation	-.210	-.298 (.082)
	Improvement	-.580	-1.235 (.307)
	Discounting	.253	.386 (.109)
	Different dimension	.498	.881 (.153)
	Relevance	.287	.380 (.087)
Community	Evaluation	.175	.246 (.056)
	Improvement	.210	.298 (.082)
	Clothing	.150	.127 (.025)
Health	Improvement	.266	.415 (.102)
	Clothing	-.162	.151 (.051)
	Different dimension	-.164	.213 (.108)
	Relevance	-.220	-.213 (.060)

Path from	To	Standardised estimate	Unstandardised estimate (SE)
Relationships	Evaluation	.211	.363 (.102)
	Improvement	.177	.306 (.142)
	Discounting	.165	.205 (.094)
	Clothing	.179	.186 (.052)
Status goals	Evaluation	.159	.218 (.054)
	Improvement	.208	.286 (.066)
	Different dimension	-.249	-.285 (.060)
	Relevance	-.204	-.175 (.034)
Direct path			
Emotional instability	Affect annoyed	.309	.398 (.064)

Multigroup comparison was performed to explore potential moderating effects of sex and vignette (media and peer). Modification indices for the sex model suggested a direct positive path from health to intention to use body change strategies and a negative covariance between state body image and feelings of insecurity for boys. For girls, a negative covariance between positive reactions and intention to change body shape was suggested. With these modifications allowed, the fit was good: $\chi^2 (253, N = 553) = 312.71$, $\chi^2/df = 1.24$, RMSEA = .02 ($p = 1.00$), CFI = .989 and SRMS = .03. Modification indices for the vignette model suggested a direct negative path from self-esteem to annoyance for the media vignette. For the peer vignette a correlation between the errors for discounting and clothing was suggested. With these modifications allowed, the fit was good: $\chi^2 (254, N = 553) = 329.45$, with $\chi^2/df = 1.30$, RMSEA = .02 ($p = 1.00$), CFI = .986 and SRMS = .03.

Discussion

General Findings

The present study aimed to examine the extent to which differing social comparison appraisals determine comparison outcomes and what influence personality variables have on appraisals with the aim of identifying health-protective comparisons. As expected, type of social comparison appraisal influenced outcomes and in turn, dispositional variables influenced choice of social comparison appraisal. Social comparison appraisals (with one exception) mediated the relationship between dispositional characteristics and outcome measures. The following sections discuss the findings in relation to specific hypotheses.

The Effects of Social Comparison Appraisals on Outcomes

As predicted (H1a), individuals who used self-evaluative comparisons experienced more detrimental affective reactions, and reduced state body image satisfaction. The detrimental role of evaluative comparisons seemed to be reinforced by the increased intention to use clothing to camouflage the body. This is in accordance with previous research on adolescents (Durkin & Paxton, 2002; Hargreaves & Tiggemann, 2004; Jones, 2004). Contrary to expectations, the path from evaluation appraisals to intentions to use body change strategies was negative. However, the multi-sample modelling suggested that there was a positive path for girls and a negative path for boys from evaluation to body change strategies. Similar results have been found previously for boys. Exposure to idealised male images did not result in a significant mean change in wanting a different body shape (Humphreys & Paxton, 2004).

As hypothesised (H1b), improvement comparisons predicted intention to use body change strategies. However, improvement comparisons did not predict state body satisfaction ratings as was the case in previous research (Martin & Gentry, 1997) or beneficial affective reactions. This suggests that improvement comparisons are

overall not experienced very positively in adolescents, which is reinforced by increased intentions to use clothing to camouflage the body. Previous research with adults has documented that individuals feel more positively as they imagine themselves achieving the ideal (Halliwell & Dittmar, 2005; Mills, Polivy, Herman & Tiggemann, 2002). However, these effects might not be enduring as most individuals are/become aware that the ideal might not be achievable (Lockwood & Kunda, 1997). The adolescents in the present study were older, and bodily changes associated with puberty, such as weight increase for girls and development of physique (or rather the delay) for boys have been linked to increased body dissatisfaction (Clay et al., 2005; McCabe et al., 2001).

The results for the self-enhancement comparisons were mixed. Contrary to expectations (H1c), only the self-enhancement appraisals of comparing on a different dimension and clothing resulted in beneficial outcomes. These results indicate that different enhancement appraisals work in different ways. Comparing on a different dimension and clothing appraisals might allow the individual to focus on an aspect they feel superior on, and thus override the importance of physical appearance. This might also explain why these appraisals did not predict intentions to use body change strategies and negatively predicted the use of clothing to hide parts of the body. It has been suggested that downward comparison (describing someone as inferior) is a form of cognitive coping and leads to more positive outcomes (Wills, 1997). In line with results from the present study, research by Park (2007) found that individuals who thought of a personal strength (self-selected) after having received an appearance threat were less likely to report negative affect outcomes or lower state self-esteem.

The detrimental outcomes predicted by discounting and relevance appraisals suggest that challenging idealised images might involve more active cognitive processing of the comparison information and thus emphasise a focus on an idealised physique (Botta, 2003). However, discounting the comparison target was linked to fewer

detrimental outcomes than relevance appraisals. Adolescents are well aware of the significance of appearance in Western culture, which is associated with social rewards such as social and economic success (Dittmar, 2008; Milkie, 1999). Thus, arguing that appearance is not relevant might not be a successful strategy.

The Effects of Dispositional Characteristics on Social Comparison Selection

As hypothesised in H2a, high emotional instability and low trait body image predicted evaluative comparisons. Trait body image also predicted improvement enhancement. Emotional instability and low trait body image have been linked to disordered eating, anxiety and depression (Durkin & Paxton, 2002; Humphreys & Paxton, 2004). There was no support for the assertion that low self-esteem results in increased evaluative comparisons as found in previous studies. In a similar vein, a study by Bell et al., (2007) found that adolescent girls with high and low self-esteem were equally susceptible to the appearance images in music videos, resulting in lower state body image. This suggests that individuals buy into the importance of appearance regardless of self-esteem. Low trait body image and high emotional instability and self-esteem predicted the use of clothing comparison appraisals, providing support for the notion of clothing as a low risk strategy in terms of appearance management through engendering a sense of control (Wilson & MacGillivray, 1998). The direct path from emotional instability to annoyance is in accordance with previous research which has found that individuals higher in neuroticism/emotional instability are more likely to experience higher levels and a wider range of negative affect (Suls & Martin, 2005). In addition, irritable distress has been found to be one of the facets of emotional instability and includes frustration and irritation (Caspi, Roberts & Shiner, 2005).

The hypothesis (H2b), that an emphasis on status goals would predict the use of evaluative and improvement comparisons, was corroborated. An investment into extrinsic goals tends to lead to

outward comparisons (Williams et al., 2000) with a view to achieving external signs of self-worth and success (Kasser, Ryan, Couchman & Sheldon, 2004). Complementary to this finding, research has suggested that whereas moderate levels of celebrity adoration and adulation in adolescent females have entertainment and social value, a focus on celebrities in order to establish an identity and a sense of fulfilment might have consequences for mental health and perception of body shape (Maltby et al., 2005).

Other Relationships between Dispositional Characteristics and Social Comparison Appraisals

Conscientiousness emerged as a significant predictor of evaluative and clothing comparisons and thus does not seem to play as beneficial a role as found previously in relation to other health-related behaviours in young adults (Bogg & Roberts, 2004). This might be related to findings which indicate that conscientiousness is linked to conformity and higher peer acceptance (Jensen-Campbell & Malcolm, 2007). More conscientious adolescents might be inclined to evaluate in order to fit in with their peers. In addition, research with adults has linked conscientiousness to the pursuit of economic goals (Roberts et al., 2004).

As suggested by research with women on self-objectification, high agreeableness scores predicted lower use of evaluative and improvement comparisons (Miner-Rubino et al., 2002). It also predicted higher use of self-enhancement appraisals which might be explained by the link found previously between agreeableness and social competence (Shiner, 2000). Contrary to expectations, individuals with high intellect/openness scores were more likely to use improvement comparisons. An explanation might be that intellect/openness items tap into interest in other people. Previous research with female adults found that extroversion was associated with more positive appearance evaluations (Kvalem et al., 2006). In the present study extroversion did not predict any of the comparison appraisals, suggesting potential differences between adults and adolescents.

The relationship of intrinsic life goals with social comparison appraisals suggests that in particular investment into personal growth goals is protective as high scores negatively predict the use of evaluative and improvement appraisals and positively predict the use of discounting, comparing on a different dimension and relevance appraisals. This is in line with research suggesting that personal growth is linked to subjective well-being (Røysamb, 2006). Results for the other intrinsic goals indicate that investment in these goals is more likely to lead to detrimental appraisals in the context of weight and shape. A potential explanation for these relationships might be related to the link of appearance with beneficial expectations such as life satisfaction, health, happiness, success and fulfilling personal relationships (Dittmar, 2008; Grogan & Richards, 2002). Also, conceptions of health have been found to be related to shape and physique perceptions and optimal health associated with thinness (Grogan & Richards, 2002; Jutel & Buetow, 2007).

Moderators

Differences for multi-group comparisons related to affective reactions and behavioural intentions. The direct path from health goals to intention to use body change strategies for boys in the sex model might be related to previous findings that boys perceive that being muscular equals being healthy and fit (Grogan & Richards, 2002). The finding of a direct negative path from self-esteem to annoyance in the vignette model (media vignette) might be related to a feeling of being in control thus less threatened by media images. In the initial model, disturbances of latent affect variables were only free to covary with each other. The same applied to the behavioural intention variables. The added covariances for the sex model, between state body image and insecurity for boys and positive affect and intention to change body shape for girls, suggest that these variables are more strongly related. This is in accordance with previous research with female adults, which documented that positive affect mediated the relationship between body dissatisfaction and bulimia, indicating that positive emotions might

prevent unhealthy body changing practices (Heywood & McCabe, 2006). The covariance between body image state and insecurity for boys might be explained by previous findings, suggesting that negative affectivity was significantly linked to body dissatisfaction (Bearman, Presnell, Martinez & Stice, 2006).

The negative error correlation between discounting and clothing comparisons for the vignette model suggests differences between media and peer comparisons. The items of the clothing scale elicit clothing comparisons to people in general but the discounting scale items focus exclusively on media personalities. This indicates that the discounting scale might need to be adapted if comparison targets are not media images.

Limitations and Further Research

The current study provides a detailed contribution to our understanding of the role of social comparison theory in the context of body image and media influences. However, the present study has a number of limitations. It is a cross-sectional study and as such does not provide definitive information about causality and developmental processes. Longitudinal studies have shown that body image dissatisfaction predicts disordered eating and unhealthy weight control behaviours in boys and girls (e.g., Neumark-Sztainer et al., 2006; Wertheim et al., 2001). Evaluative social comparisons appraisals contribute to body dissatisfaction development in girls over time (Jones, 2004). Further longitudinal research is needed to address these issues. Second, the present study relies on self-report data. It has been argued, however, that adolescents are the best source of reports of perceived feelings and perceptions (Presnell et al., 2004). Third, it is a challenge to provide comprehensive choices for comparing on a different dimension in an empirical measurement scale. Although findings of the present study suggest that the scale developed provides an adequate measure of the concept, and dimensions have been identified as relevant for adolescents previously (Jones, 2001; Kraye et al., 2008), further knowledge of characteristics on which adolescents feel superior would

be useful. Fourth, the main focus of the study was on adolescents as a whole. However, results suggest some moderating influences of sex and comparison target and further research is needed to examine potential differences.

Theoretical and Practical Implications

The present study highlights the need for research to further our theoretical insight into the effect of social comparison appraisals and the relevance of life goals. Results suggest that integrating encouragement and facilitation of the use of more health-protective comparisons appraisals such as discounting and comparing on a different dimension in media literacy programmes might be fruitful. Adolescents should be encouraged to focus on positive characteristics instead of appearance and shape and supported in distancing themselves from media personalities (Durkin et al., 2005; Stice et al., 2006). More pertinently, however, the present study has shown that life goals play an important part in the choice of social comparison appraisals. The findings suggest that in particular fostering growth goals in adolescence might have a health-protective function and reinforce the need for a better understanding of life goals in the context of appearance.

The beneficial influence of growth goals is complemented by the finding that status goals and other intrinsic goals framed in the context of body image and appearance are more likely to result in detrimental outcomes. This might be related to the perceived link between appearance/physique and success, monetary rewards and well-being as propounded by the media and reinforced within social contexts. Body image has been identified as an identity domain along with the use of goods as a means of self-representation. Identity is increasingly perceived as something that can be achieved and material goods are a means of expressing identity and social status (Dittmar, 2008). Social environments and contexts can reinforce the pursuit of intrinsic or extrinsic goals and the preoccupation with appearance should be interpreted and targeted against the political, social and economical

background (Sagiv & Schwartz, 2000; Steiner-Adair, 1994). The emphasis should be on nurturing intrinsic goal pursuits as it is important not to alienate adolescents. In conclusion, findings of the present study reinforce the notion that focusing on social comparison appraisals in the context of body image alone might not be enough, but that personal growth goals should be encouraged. Ultimately, underlying cultural values need to be critically reflected on and challenged.

Chapter 5: DISCUSSION AND CONCLUSION

Discussion and Conclusion

Main Results

The main results of the qualitative interview study (Chapter 2) indicated that social comparison appraisals take place in adolescents' everyday life. Comparisons to information drawn from media images and messages and peers played an important role in finding out about and making sense of the social world. The study showed that situational cues might prompt comparisons but also that adolescents might search out comparisons for a particular purpose (such as learning about others). Results suggested that different types of comparisons operate in different contexts and with different outcomes. Importantly, individual accounts suggested that adolescents were aware of a societal focus on appearance and that some used different comparison appraisals to counter the impact of a potential unfavourable comparison. These types of social comparison appraisals fall under the category of enhancement comparisons. Data indicated that these comparisons might potentially lead to more beneficial outcomes as they take the focus away from the comparison target either by distancing oneself from the comparison other, reducing the relevance of appearance to oneself or focusing on a dimension on which one feels superior. Results also indicated that individual differences such as sex, perceived peer acceptance and mood might play a role.

The development of a measure assessing a range of social comparison appraisals was outlined in Chapter 3. Construct validity and support for gender invariance were found. Areas for improvement of the measure were highlighted such as changes in wording and potential differences between boys and girls in terms of the choice of dimension they feel advantaged on when comparing on a different dimension in order to self-enhance. The testing of a full model (Chapter 4) showed that social comparison appraisals acted as a mediator between dispositional variables and outcomes for all

relationships bar one. As found previously, evaluative and improvement comparisons were linked to more negative outcomes. Results for enhancement comparisons highlighted differences in outcomes. It was found that appraisals shifting the focus away from physical appearance are more likely to be beneficial. Evaluative and improvement comparisons predicted detrimental outcomes in line with previous research.

As hypothesised, individuals low in trait body satisfaction and individuals with high emotional instability scores were more likely to use evaluative and improvement comparisons. The personality trait of agreeableness and the life goal of personal growth were found to predict social comparison appraisals more likely to lead to beneficial outcomes. In contrast to expectations, level of trait self-esteem did not predict evaluative appraisals. As expected, status goals predicted the use of evaluative and improvement comparisons. Of the intrinsic goals, only the life goal of personal growth was found to predict social comparison appraisals connected to more beneficial outcomes.

Methodological Issues

Mixed Methods Approach

The present research used a mixed methods approach in that qualitative findings informed the development of a quantitative measure and the testing of a hypothesised model. The use of mixed methods has stimulated a lot of interest and debate. This debate hinges on the different paradigms or underlying views of the world in quantitative and qualitative research (Sandelowski, 2000). Qualitative research focuses on interpretive and subjective data and is interested in how individuals experience and make sense of the world in a particular context (Maxwell, 1992; Strauss & Corbin, 1998). In contrast, quantitative research is typified as reliant on a more positivist approach which focuses on 'objectively observable' and measurable facts in an objectively understandable world. There is a

focus on uncovering general patterns and behaviours (Glesne & Peshkin, 1992). The mixing of qualitative and quantitative approaches can help to gain deeper insight into complex human phenomena, which are difficult to capture through a single approach alone (Sandelowski, 2000). The use of mixed methods allows drawing on the strengths of both qualitative and quantitative approaches and can be complementary through addressing weaknesses of each method (Johnson & Onwuegbuzie, 2004; Johnson & Turner, 2003). The main strength of qualitative approaches lies in their focus on uncovering individuals' own description and experiences in a particular context, whilst being unconcerned with the formal testing of hypotheses and generalisation of findings to a specified population. In contrast, quantitative approaches strive for hypotheses testing and generalisation, whilst inevitably reducing the richness and depth of individual experiences (Johnson & Onwuegbuzie, 2004). The sequential mixed method approach in the present research enabled the in-depth exploration of adolescents' own experiences of and thoughts about idealised images in a day-to-day context. These findings then informed the development of a social comparison measure and the formulation and testing of specific hypotheses with a larger sample of adolescents. This allowed a wider range of research questions to be addressed and provided greater insight into social comparison processes in adolescence.

Validity in Qualitative Research

There is a debate about the concept of validity in qualitative research (see for example, Seale, 1999; Rolfe, 2006). Qualitative research does not represent a coherent approach, but a diversity of philosophical underpinnings and methodological techniques (Rolfe, 2006). Thus, the concept of validity "...is not a single, fixed or universal concept, but rather a contingent construct, inescapably grounded in the processes and intentions of particular research methodologies and projects" (Winter, 2000, paragraph 1). However,

qualitative researchers recognise the need to reflect on the quality of research and comparable concepts used are rigor, trustworthiness and quality (Davies & Dodd, 2002; Lincoln & Guba, 1985; Seale, 1999).

The range of criteria to assess the notion of validity in qualitative research reflects the diversity of theoretical approaches and methods. For example, Maxwell (1992) suggested five concepts to capture validity such as descriptive, interpretive and theoretical validity, generalisability and evaluative validity. Guba and Lincoln (1981) proposed credibility, fittingness, auditability and confirmability. It has been argued that some of the concepts suggested are very similar but use different labels which is confusing and counterproductive (Morse, Barrett, Mayan, Olson & Spiers, 2002). Morse and colleagues (2002) contended that criteria are often applied to judge the final research presentation rather than focusing on how interpretation was arrived at. They suggested five verification strategies that ensure reliability and validity of the data: methodological coherence, sampling sufficiency, concurrent data collection and analysis, theoretical thinking and finally theory development. These strategies were applied to the qualitative interview study. They reflect and extend criteria for evaluating the merits of grounded theory studies suggested by Strauss and Corbin (1998).

Methodological coherence focuses on establishing “congruence between the research question and the components of the method” (Morse et al., p12). In other words, the research question, method, data collected and the analysis need to form a coherent picture. This criterion only applies to research using a specific method of inquiry such as grounded theory. *Sampling sufficiency* refers to appropriate sampling, leading to saturated categories. Saturation is achieved when no new insights are gained from additional data. Concurrent data collection and analysis is important as preliminary analysis informs further data collection and focus. In grounded theory

questioning becomes more focused and structured during data collection as categories are developed. *Thinking theoretically* refers to moving away from a descriptive perspective, while grounding new ideas in the data. Finally, *theory development* focuses on linking the data (micro level) to theoretical understanding (macro level). Valid theories should be well developed and comprehensively portray a consistent and logical model.

Morse and colleagues (2002) do not refer to transferability (the qualitative equivalent of external validity). This notion is seen as problematic in qualitative research as the focus is on the experiences of selected groups in a particular context (Mason, 2002; Strauss & Corbin, 1998). However, it has been suggested that there are situation-specific elements of theory, which should translate to similar situations and more abstract levels of theory which might be more holistic in nature and more universally applicable (Auerbach & Silvermann, 2003; Strauss & Corbin, 1998). In addition, as the researcher plays a major role in qualitative data collection aspects of reflexivity will also be discussed. Reflexivity refers to recognising the impossibility of remaining impartial to the research process. It is about an awareness and critical evaluation of the interaction between the researcher and the research and the researcher and the participant (Holloway, 2005).

Finally, the concept of confirmability refers to the degree to which results could be confirmed or corroborated by others. The concept is related to objectivity in quantitative research. Qualitative research recognises that researchers bring unique experiences to the research process, which could potentially introduce bias or distortion (Lincoln & Guba, 1985). Confirmability can be addressed through clearly documenting data collection and analysis procedures. This creates an audit trail that can be inspected by independent reviewers. The independent reviewer should be able to follow the logic of interpretation and analysis that took the researcher from the data collection to the final interpretation. "Member checking" or

“respondent validation” also contributes to confirmability. This refers to presenting findings and conclusions to the participants of the research (such as interviewees) to establish whether the interpretation of the data represents participants’ experiences. If this approach is used, researchers will have to think about the possibility of competing interpretations and how to deal with them. Differences in interpretation could be due to competing perspectives or specific value bases.

Study 1: Social Comparison and Body Image in Adolescence: A Grounded Theory Approach

The grounded theory approach was suitable for this study as it aimed to capture participants’ own perceptions and interpretations of idealised images. Grounded theory analysis is interested in social processes and context (Morse, 1994). The focus in the present study was on providing a rich description of the range and variety of factors that influenced these perceptions and possible behaviours and how they fitted into the social comparison theory framework. Strauss and Corbin’s (1994, 1998) approach to grounded theory informed the analysis. Their interpretation is rooted in the constructivist paradigm, which is concerned with reality as an interpreted and constructed world. Grounded theory is based on symbolic interactionism (Blumer, 1986). Symbolic interactionism suggests that meaning is socially constructed, negotiated and changes over time. The experience of reality is seen as intersubjective. In the present research, an existing theoretical framework – social comparison theory – was explored through a grounded theory approach. Glaser and Strauss (1967) initially strongly advocated that existing literature or theoretical frameworks should never be used to inform grounded theory analysis. However, Strauss and Corbin (1998, 2007) subsequently argued for a more relaxed stand towards this issue. They recognised that a researcher brings a considerable knowledge background to the research and conceded that this can be used to enhance, rather than constrain, grounded theory development.

Corbin and Strauss (2007) acknowledged that existing concepts (e.g., coping) and existing theoretical frameworks may be a useful starting point for analysis. There is, however, an unresolved tension between the need to let theory emerge from the data and using existing literature, concepts and theoretical frameworks. Corbin (Corbin & Strauss, 2007) acknowledged that “her preference” would be not to start with a theoretical framework. However, Strauss and Corbin (1998, 2007) also stated that existing literature can be a source for comparison and provide questions during data analysis. Bruce (2007) argued that it would be impossible to distance oneself from existing literature and research, in particular in the context of requirements to be met by ethical reviews. Thus, a major challenge for the researcher is to keep an open mind and focus on emerging concepts and relationships without letting pre-conceptions and knowledge of the existing literature interfere with interpretation of the actual data. Indeed, the researcher needs to reflect upon the dangers of imposing existing concepts on the data. Predefined theoretical frameworks and concepts may be used, but “the researcher must be very careful to look for examples of incidents in their data and to identify the form that the concept takes in their study” (Corbin & Strauss, 2007, p.38).

In order to address issues of methodological coherence, theoretical thinking and theory development, the researcher used a cyclical process of data collection and analysis. It should be mentioned here that although the study was based on grounded theory it would be better described as employing a grounded theory approach. Analysis was conducted using line-by-line coding and asking sensitising (e.g. What is happening here?) and theoretical questions (e.g. How does what this participant is saying connect to what has been said elsewhere?). As concepts of interest were social comparison appraisals, initial coding focused on incidents in the data that demonstrated evidence of comparison, and the targets and dimension under comparison. These incidences of social comparison

were constantly compared with each other to develop an in-depth understanding of what was going on before labelling them specifically (e.g., as evaluative comparisons). Memos were written during the process about coding, interpretative thoughts and ideas and reflections on the research process. The presentation of the results aimed to reflect the analysis, by describing the social context of comparisons taking place and identifying potential differences and influential factors. The researcher was very aware of the need to keep an open mind during analysis while drawing on knowledge of the existing literature. This seemed at times very challenging, not in terms of the analysis but in terms of confidence in the conclusions drawn. In these instances the use of memo writing to reflect on the analysis process seemed to be particularly helpful.

Sampling sufficiency is linked to theoretical saturation. The nature of the participant recruitment constraint input of the researcher into the sample selection and number. Although saturation was achieved as far as sufficient details were identified (Cresswell, 1998), the research would have benefited from the recruitment of more male adolescents to provide more density and variations of the concepts. This may also have implications for the transferability of the findings. Recruitment was undertaken by the schools. Although participants recruited were from the population of interest (adolescents), participants were self-selected. Thus, findings of the present study relate to this particular population and context. However, this is in keeping with the grounded theory approach, where explanatory power only relates to the specific population (Strauss & Corbin, 1998). Nonetheless, this does not mean that results might not transfer to other adolescents of the same age group. Confirmability of the results was addressed through an independent review of the data collection and analysis by one of the supervisors with an expertise in qualitative data analysis. In addition, the researcher reflected on her role in the research process (see below). Member checking of the

results was not employed, mainly due to time and other resource constraints

Other issues that should be considered in the context of the qualitative study are the nature of self-report and its impact on the accounts given. As mentioned earlier, Wood (1996) pointed to the importance of not asking direct questions about comparisons. Direct questions were avoided and in particular female participants freely mentioned comparisons in a range of contexts and on a range of dimensions. This is one of the strengths of the qualitative or narrative approach to social comparison research (Wood, 1996). Male participants were slightly more reticent to talk, which has been found previously (Hargreaves & Tiggeman, 2006). Although efforts were made to establish rapport with participants, the sex of the interviewer might have influenced accounts given by boys and girls differently. In addition, all participants might have censored or adapted their accounts consciously or unconsciously for various reasons. For example, I, as the researcher was a stranger entering a school environment with a specific interest. Participants might have felt awkward talking to someone from outside the school or tried to please or impress the researcher. I realised after the first two interviews the importance of being more informed about youth culture and familiarised myself with magazines such as 'Bliss' and skateboarding web sites. In sum, the grounded theory approach was appropriate for the phenomena under investigation. Guidelines for the analysis of grounded theory such as line-by-line coding, constant comparison and the use of sensitising questions provided a useful structure to the analysis. Challenges encountered were mainly linked to the need to keep a balance between the focus on a pre-defined theoretical framework (social comparison theory) and keeping an open mind during data collection and analysis to allow the conclusions to emerge from the data.

Validity in Quantitative Research

In quantitative research validity refers to the ability of the measurement instrument to measure what it is intended to measure and consequently how “truthful” or meaningful the results are. Four types of validity can be distinguished based on the work by Cook and Campbell (as cited in Coolican, 2004): Construct validity, statistical validity, internal validity, and external validity.

Construct validity is linked to the appropriateness of the constructs under investigation. Good constructs have a theoretical basis which is translated through clear operationalisation into measurable indicators. Items might measure what they claim but the interpretation of the higher-order construct or latent variable might be false. Discriminant and convergent validity are other facets of construct validity. Discriminant validity is concerned with the potential of an overlap between constructs. Items or indicators for different constructs should not be highly correlated as this would indicate that they measure the same construct. Convergent validity is assessed by the correlation among items intended to measure the same construct. Threats to construct validity include poor operationalisation of a construct, not including all relevant constructs and one-off administrations.

Statistical validity - sometimes called statistical conclusion validity - refers to the appropriateness of the statistical procedures. Threats to statistical validity include violations of the underlying assumptions of a statistical test such as normality of data, low statistical power and unreliability of measures. Low statistical power might lead to a Type II error – concluding that there was no effect when in fact there was one (a false negative). Unreliability of measures is expressed as measurement error. Measurement errors represent unsystematic variations. For example, unsystematic variations might be due to individual differences in understanding of wording. In structural equation modelling statistical validity is related to the model testing (the sensitivity of the tests used to detect misspecification of the

model), and parameter estimates (detecting significance) (Brown, 2006). *Internal validity* is concerned with the effects found in a study. In other words, could variables other than the ones being studied be responsible for finding changes or a failure to find changes in the dependent variables. Confounders, factors not considered in the research, might be responsible for the relationship between the independent variable and the dependent variable. Threats to internal validity focus on different types of bias (for instance, response bias) and causal inference. Other threats to internal validity which are relevant to long-term studies include for example, history effects, maturation and mortality. Finally, *external validity* deals with the ability to generalise conclusions from a sample to a wider population, settings and other time periods. Threats to external validity focus on sample selection (Cooligan, 2004).

Study 2: Development and Validation of the Social Comparison Appraisal Scale for Adolescents and Testing of a Full Model

Threats to construct validity relate to the operationalisation of the constructs measured. Validation of the new scale (Chapter 3) was undertaken using CFA. Constructs were firmly embedded in a theoretical framework identified in the relevant literature. In addition, the qualitative interview study assured that the constructs measured (social comparison appraisals) were present in this particular group and that wording for the newly developed scale reflected appropriate language for this age group. Validation was undertaken rigorously by using a sequential analysis strategy based on recommendations by Jöreskog (1993). Statistical criteria were used in tandem with theoretical considerations to assure that the final scale contained substantively meaningful items and was statistically valid (MacCallum & Austin, 2000). Multigroup comparison results from the CFA suggested that some items were non-invariant for boys and girls. This indicated that there might be potential differences in the selection of dimensions males and females feel advantaged on. The indicators of each latent variable (construct) correlated positively with

each other which suggested convergent validity. Divergent validity has been shown as modification indices did not suggest any substantial cross-loadings for the final SCASA scale. This showed that the relevant indicators were associated with their respective latent variables.

Nearly all other measures collected for the testing of a full model with SEM (Chapter 4) were well established and have been shown to be reliable and valid with this particular age group. An exception was the behavioural intention scale. The scale however was developed based on the existing literature and results from the principle component analysis showed two clear factors for boys and girls and high factor loadings ($\leq .79$). In addition, all measures were piloted twice to help ensure respondents' understanding. Feedback from participants showed that some terms were not understood. Consequently, six questions from the Big Five questionnaire (Barbaranelli et al., 2003) and one item from the life goal questionnaire (Kasser & Ryan, 1996) were slightly reworded to facilitate understanding. An example from the life goal questionnaire (item 6) is the change from: "To work for the betterment of society" to "To work to make a better society". The Profile of Mood States (POMS – BI) (McNair & Heuchert, 2003) was also adapted based on feedback from the pilot studies. The number of items per dimension was reduced to decrease questionnaire fatigue and items identified as difficult to understand were re-worded (e.g., happy instead of cheerful) or deleted (e.g., jittery and grouchy). Principal component analysis with oblique rotation confirmed the proposed factor structure.

Statistical validity was also achieved. There were strong conceptual foundations for the hypothesised factor structure of the SCASA (based on the empirical literature and results from the qualitative study), which indicated that CFA was the appropriate statistical test to use for the validation of the new measurement tool. Similarly, the use of SEM to test a comprehensive model was seen

as appropriate as previous literature informed the model structure and allowed the formulation of hypotheses for several relationships. SEM allows the researcher to assess the quality of the relationships (in terms of, for example, factor loadings and explained variance). Social comparison appraisals were hypothesised to mediate the relationship between dispositional variables and outcomes. Modification indices were used to assess if mediation or direct effects were present. Comparison of results to previous findings raised confidence in the relationships found. CFA and SEM are also suited to estimate equivalence across groups within an analytical framework and to pinpoint particular sources of invariance (Brown, 2006). The estimation method used for the CFA and the SEM was maximum likelihood estimation (MLE). The underlying assumptions for MLE are large samples and normal distribution of indicator variables. The data collected for the present study showed levels of skewness and kurtosis below the recommended cut-off points (- 2 to + 2) (Klein, 2005). Values of skew and kurtosis for individual variables for the SCASA ranged from -1.20 to .590 and for the SEM from -1.20 to 1.44. Sample size influences power and small samples are not recommended (Brown, 2006). Kline (2005) categorised sample sizes of less than 100 as small, between 100 and 200 as medium and over 200 as large. There seems to be a general agreement in the literature that sample size should not be less than 150 (Schumacker & Lomax, 2004). Sample sizes needed to detect significant relationships also relate to the number of variables included in the model. In the present research, the total number of latent variables was six for the CFA (six indicators per latent variable) and 24 for the testing of the whole model (one indicator per latent variable). Stevens (1996) proposed that there should be at least 15 cases per measured variable. Bentler and Chou (1987) suggest that as few as 5 cases per estimate (which includes error terms and path coefficients) are sufficient. Based on these suggestions, sample size of the total sample and the multigroup comparison samples were appropriate

(total sample $N = 553$; $n = 278$ girls, $n = 275$ boys). Some fit indices, and in particular chi-square, are influenced by sample size, which can lead to the rejection of adequate models (Klein, 2005). Thus, in keeping with recommendations additional fit indices were selected which are less sensitive to sample size (Fan, Thompson & Wang, 1999; Hu & Bentler, 1999). As only single indicators were used for each latent variable for the model testing, measurement errors were adjusted following appropriate procedures (Brown, 2006; Netemeyer et al., 1990) which addressed concerns about the unreliability of the measures.

Internal validity is concerned with establishing causal relationships and as such is only discussed in relation to the testing of the whole model. Although SEM allows the researcher to test hypothesised causal paths, claims for causality are limited by the correlational nature of the analysis. One of the recognised facets of establishing causality is temporal precedence. In the present study the predictive variables such as personality traits were enduring dispositions that preceded the exposure to the vignette. Although this study was not experimental, the use of a vignette to prompt comparison thoughts followed by questions in relation to a particular comparison target raised confidence in a temporal sequence. Two errors were allowed to correlate in the SEM model when testing for differences between participants who compared to a good-looking peer and those who compared to an idealised image. It is suggested that this is a systematic bias introduced by the SCASA. Questions for all subscales should be related to the comparison target participants compare themselves to. However the subscale measuring discounting comparisons to a peer related questions to idealised images seen in the media. In retrospect, the discounting subscale should have been adapted to reflect comparisons to peers.

There is also the possibility that variables other than the ones measured lead to the outcomes found in the present study. Media theory argues that it is difficult to establish causality when looking at

effects of media consumption. Making sense or interpreting an image depends on the context and the individual. The same individual can be a passive or active viewer in different contexts and at different times. Interpretation of media is also influenced by social and cultural context (Arnett, Larson & Offer, 1995). Media text is dynamic and searching for the “true universal” meaning neglects the role of the reader/viewer (Livingstone, 1996). For example, research exploring adolescents’ use and interpretation of media has suggested that media might be consumed for the purpose of finding information about gender role formation, coping, peer socialisation and entertainment (Arnett, 1995).

Other types of bias could also be a threat to validity. For example, participants might have felt that they should provide socially desirable answers to the questions, might not have previously been aware of making comparisons, or were reluctant to answer. Some of these issues should have been addressed by the fact that individuals did not have to provide their name on the questionnaire. In addition, as recommended in the literature (Wood, 1996), a short introduction preceded the social comparison section to inform participants that everyone “makes” social comparisons. Some research has suggested that social desirability is not a problem in self-report social comparison measures for adults (Gibbons & Buunk, 1999). Previous research using semi-structured interviews indicated that boys are more reluctant to talk about comparisons unless it is in a sports context, as this is perceived to be a feminine or gay issue (Ricciardelli et al., 2006). This might have influenced responses made by some boys, possibly in particular for comparisons to peers. A way of addressing this in future research might be to re-phrase the introduction to the SCASA and the vignette with a focus on sports. Awareness of comparisons and processing of information should have been facilitated by asking participants to provide their own comparison target. This approach has some shortcomings as the comparison target was not standardised across participants.

However, this approach is more likely to reflect typical or representative comparisons (Wood, 1996). Wood (1996) also argued that to capture the effect of comparisons, outcomes of social comparisons have to be measured as soon as the comparison has occurred, which was the case in the present study. This raises confidence in social comparison actually having occurred.

Threats to external validity are concerned with the generalisability of findings. One issue related to external validity is sampling. Participants were recruited through the schools, who distributed information about the study to parents and adolescents. Consequently there is no record of how many adolescents declined to join the study as schools indicated that this would place too great a burden on their time. Three schools that were approached declined to join the study on the grounds of other demands made on their time. Two schools were used for the pilot and were thus not included in further data collection. However, ten schools (some from more rural areas and some from more urban areas) joined the study, which suggests that the sample should be fairly representative of the adolescent population in this particular geographical area. However, results apply only to this particular age group and cannot be generalised to older or younger adolescents. Also, outcomes only relate to comparison targets studied in the present context.

Participants in the qualitative study comprised slightly younger individuals (between 12 – 14 years) than in the quantitative studies (13 – 15.5 years). The findings of the qualitative interview study reflect the experiences of this particular age group and might not necessarily transfer to older adolescents. Age differences might have an impact on comparisons (e.g., Martin & Gentry, 1997) and further research is needed to confirm the suitability of the SCASA for different age groups and to establish potential differences in comparison processes and comparison outcomes between younger and older adolescents.

In sum, the use of CFA and SEM were appropriate for this research as a strong hypothetical framework existed. The existing literature and results from the qualitative study informed the operationalisation of the new SCASA measure. Wood (1996) recommended using a range of methods to address some of the shortcomings of specific measurement approaches such as social desirability issues in narrative approaches and constraints imposed by the researcher in quantitative studies. The use of both qualitative and quantitative approaches in the present research raises confidence in the results found.

Theoretical and Applied Implications for Health Promotion

Theoretical Implications

The present research has contributed to the area of social comparison research in the context of body image by highlighting the importance of considering the role of dispositional characteristics in comparison appraisal selection, a variety of comparison appraisals, and a range of outcomes. There are four main theoretical implications that can be drawn from the present research. First, findings from the qualitative interview study demonstrated that a variety of social comparison appraisals were present in adolescents' spontaneous accounts. This was confirmed by the quantitative study. Thus, these overall findings contribute to social comparison theory by pointing to the importance of including a range of appraisals in body image research. Additionally, these findings might contribute to the formulation of an explanatory framework for inconsistent results found in previous studies (e.g., Durkin & Paxton, 2002). The current research findings reflect the theoretical importance of evaluation in the context of body image perceptions and are in line with previous research findings in the area of idealised images (Cash, 2005; Hargreaves & Tiggemann, 2004; Humphreys & Paxton, 2004). The potential relevance of improvement comparisons were also highlighted by the present research. Although very few studies have

explicitly addressed improvement comparisons, findings of the present research reflected the importance of assessing situational evaluation and improvement appraisals as outcomes differed for both comparisons for female adolescents and adults as found previously (Halliwell & Dittmar, 2005; Martin & Gentry, 1997). Improvement appraisals might play an important role in long-term perceptions of body image as research in the area of social comparison theory has indicated that this type of appraisal is only perceived as positive by individuals if they think that they will be able to achieve an ideal (Lockwood & Kunda, 1997). Thus, if adolescents fail to achieve the ideal shape, although they keep trying, it is likely to have a negative impact on perceptions of well-being. In addition, a focus on improvement might encourage adolescents to engage in unhealthy behaviours such as unhealthy diet practices or excessive exercise.

Findings from the present research contribute to a better understanding of the concept of similarity (Miller et. al, 1988). The current qualitative data suggested that participants may actively describe others as similar in order to establish closeness, or dissimilar in order to distance themselves from a comparison target. Perceived similarity or dissimilarity might have important implications for comparison processes and outcomes (Beach & Tesser, 2000). It seems that in the context of idealised images, perceived dissimilarity to another who represents an ideal appearance is more beneficial as it allows the comparer to reduce the importance of appearance and the connected perception of personal failure when unable or unwilling to measure up. In a similar vein, Grogan (2008) suggested that individuals are more likely to compare to media images/standards if they identified with some aspect of the image. The present quantitative study extended this insight by providing a clearer picture of the “success” of these processes. Results indicated that some enhancement comparison appraisals were more successful at creating perceived difference than others. This emphasises the value of conducting a fine-grained analysis.

Second, the qualitative study suggested potential differences in comparison outcomes. These findings were extended by the quantitative study which showed that this was indeed the case. Of particular interest in theoretical terms are the findings suggesting that some enhancement comparison appraisals might have a protective function. Debates about the benefits of self-enhancement are linked to the type of appraisal process measured (Sedikides & Gregg, 2008). The comparison appraisals of comparing on a different dimension, including clothing comparisons, were found to be connected to more beneficial outcomes than discounting the comparison other and reducing relevance of the comparison dimension. These findings might partly be explained by suggestions that enhancement processes increasing the positive experience are more beneficial to well-being than those focusing on decreasing the negative experience of the self (Sedikides and Gregg, 2008). This links back to self-affirmation theory formulated by Steele (1988).

However, the different outcomes of enhancement appraisals also highlighted the importance of considering the relevance placed on shape and physique. In the context of body image, it has been suggested that an investment into appearance as a sign of self-worth or self-relevance might lead to more devastating effects of comparisons (Botta, 2003; Cash, Melnyk, et al. 2004). Similar results have been found in the general social comparison literature which suggested that perceived inferiority on a domain high in self-relevance presents a greater threat to self-worth (Major et al., 1991). Thus, some enhancement appraisals might not be as effective as others, if individuals “buy into” the importance of appearance. In line with this possibility research with adolescents has found that although adolescents questioned beautiful images and were critical of a focus on body and weight, they still embraced the ideal (Botta, 2003). More recent research with adult females suggested that in particular questioning of idealised images is associated with increased body dissatisfaction and internalisation of an idealised

standard (Engeln-Maddox & Miller, 2008). Correspondingly, Crocker & Luhtanen (2003) showed that investment of self-worth into external contingencies such as appearance lead to more negative behaviours such as alcohol and drug consumption and higher measured symptoms of disordered eating. Thus, findings of the present research underscore the importance of a deeper understanding of the theoretical foundations and measurement of enhancement processes (Chang, Chang, Sanna & Kade, 2008).

Third, findings from the current qualitative and quantitative study extend the present understanding of social comparison processes by suggesting differences in processing of comparison information depending on situational factors and comparison targets. The qualitative data suggested that comparisons might be processed differently in the company of close friends compared to “private” comparisons. The added negative path from self-esteem to hostility in the final structural equation model for comparisons to idealised images, but not for comparisons to peers, points to potential difficulties in disregarding friends and peers as relevant comparison targets. This emphasises the need to consider peer influences on perceptions and interpretations of comparisons. Previous research suggested that peers can have a positive influence on body image perceptions and well-being by providing support and making sense of experiences (Nichter, 2000) but also might provide a negative influence through re-enforcing existing norms of appearance (Jones & Crawford, 2006). Friendship groups differ in their levels of appearance concerns and value placed on appearance (Jones et al., 2004). Research with adult women has shown that groups might actively reject members based on their low degree of conformity to particular group norms such as purging behaviours (Crandall, 1988).

Findings of the present research indicate links to issues of self-representation and levels of identification with the social group. Social identity theory suggests that membership in a valued group informs self-concept development which is reflected in the adoption

of group attitudes and behaviours (Tajfel & Turner, 1986). Peers and close friends play a salient role during adolescence in terms of providing support and companionship, but also have a strong influence on shaping norms. Acceptance by peer groups is of great importance during adolescence (Bukowski et al., 1993). There are pointers in the literature suggesting that comparison processes might be driven by the aim of establishing or maintaining social connections (Leary, 2007). Adolescents might be worried about their perceived standing from the viewpoint of relevant others in terms of shape and physique, which might essentially reflect concerns about approval and acceptance. In line with these suggestions, research with female restrained eaters has shown that weight gain or loss is linked to the perceived quality of relationship with others. Eating disordered women indicated that not only their relationships with others but also their performance in school or work depended on their weight status (McFarlane, McCabe, Jarry, Olmsted & Polivy, 2001).

Fourth, another important theoretical contribution of the current quantitative study is the finding that dispositional variables may have an impact on comparison processes. This draws attention to the value of identifying individual differences. It has been noted that individuals with high body dissatisfaction, one of the main difference variables used in research, might not constitute a homogeneous group (Leahey, Crowther & Mickelson, 2007). Findings from the SEM highlight the relevance of considering dispositional characteristics as they impacted on behavioural intentions and state body image through comparison appraisals. It has been argued that there is a lack of research in the area of body image which considers individual differences in general and personality traits in particular, although such research could increase understanding of appearance concerns (Kvalem et al., 2006; Stice et al., 2001). Personality traits have previously been associated with health behaviours, such as healthy eating and exercise (De Bruijn et al., 2005; Goldberg & Strycker, 2002; Rhodes & Courneya, 2003). Additionally, research has

suggested that childhood personality traits are linked to health behaviours and outcomes forty years on (Hampson, Goldberg, Vogt & Dubanoski, 2006).

Quantitative findings related to life goals, whose concepts are rooted in self-determination theory, highlight the relevance of comparison processes in goal pursuit as previously suggested (Sheldon et al., 2004). How goals are thought about, pursued and experienced shapes behaviour, self-perception and well-being (Nurmi, 2001). Self-determination theory suggests that satisfying the innate human needs of competence, autonomy and relatedness facilitates well-being and optimal functioning. Although intrinsic goal pursuits are generally linked to autonomous motivation (Deci & Ryan, 2000; Sheldon et al., 2004), results of the present research point to the possibility that some intrinsic goals, such as health, community and relationship goals, might be linked to controlled motivation in the context of shape and physique. This potential relationship is supported by Deci and Ryan (2000) who proposed that the development of eating disorders is associated with a perceived lack of competence and autonomy. In addition, a study by Markland and Ingledew (2007) found a relationship between body mass, body discrepancies and relative autonomy for older adolescents. Relative autonomy ratings were low for boys who wanted to increase muscle size and for girls and a small subset of boys who wanted to lose weight.

Applied Implications

Corresponding to the theoretical implications outlined in the previous sections, there are four main practical implications. First, findings from the present research indicated that a full range of social comparison appraisals should be measured in further studies to strengthen insights into the processing of social comparison information. Although it has been acknowledged that the measurement of social comparison processes is challenging, a range of approaches could be used in a research programme (Wood, 1996;

Chang et al., 2008). The recommendations made by Wood (1996) would be a good starting point in addressing issues such as social desirability, recall and selectivity. A range of measurement approaches is needed to gain a deeper insight into social comparison processes. These could range from reaction studies and self-report measures to interview studies. Newer approaches such as recording of naturally occurring appearance-focused comparisons might also be fruitful (Leahey & Crowther, 2008). Issues such as differences in comparison appraisal selections depending on the target and the social context could then be explored in more detail. A measurement of a range of comparison appraisals would also enable research to explore potential moderating factors such as sex, age and weight. One intriguing question is how the rise in overweight and obesity is related to social comparisons. Research by van den Berg & Neumark-Sztainer (2007) indicated that girls with higher body satisfaction gained less weight over 5 years compared with girls low in body satisfaction. In the current study evaluative and improvement comparisons were predicted by body image dissatisfaction. This suggests a possible role of comparison appraisals in the area of overweight and obesity.

Second, in terms of health promotion, fostering social comparisons on dimensions on which adolescents feel advantaged might be beneficial. These comparisons could be stimulated in media literacy and health promotion programmes. Efforts to raise consciousness and teach critical thinking as part of media literacy programmes have been described as crucial components of prevention programmes (Levine & Smolak, 2001; Littleton & Ollendick, 2003). Research with adults has shown that comparisons on a different dimension in the context of idealised images are beneficial (e.g., Lew et al., 2007; Park, 2007). Programmes need to facilitate appraisal processes which focus on individuals' strengths instead of appearance and shape. Adolescents should be encouraged to choose their own dimensions on which to compare. This would ensure that the

dimension is relevant to each individual and would accommodate gender and developmental issues. However, there are some suggestions that this might not be sufficient in the long-term (Levine & Piran, 2004). Crocker and Park (2004) proposed that self-affirmation (comparing on a different dimension) only has short-term benefits as it does not resolve the overall threat in the long-term. The focus on appearance and shape is a cultural phenomenon which is continually perpetuated in advertisements, the media and social contexts and the health promotion focus needs to broaden and include wider social contexts.

Third, the influence of close friends and peer groups needs to be addressed through a wider focus on peer pressure and youth culture. Programmes with peer-led components to address eating disorders have shown promise (Stock et al., 2007; McVey et al., 2007). McVey and colleagues (2007) suggested that peer-led approaches that foster mutual respect and acceptance through positive peer modelling might help to create a more accepting and supportive environment which might extend beyond weight and shape teasing to other risky behaviours such as drug use. McVey et al. (2007) found that a girls' peer support group led to a rise in awareness of societal pressures and development of assertiveness. Girls developed their own media literacy materials and shared them with the school through displays and announcements. There was no specific peer support group for boys, but adolescent boys indicated in a focus group that they would like to have the opportunity to join such a group. Not only might these types of programmes be more effective than teacher-led programmes, they also have been shown to impact on the peer teacher, who is supposed to be a role model, and on the ethos of a school (Stock et al., 2007). Although a systematic review of peer-delivered health promotion for young people could not conclude that peer-delivered health promotion was superior to teacher-led programmes in terms of outcomes (Harden, Oakley & Oliver, 2001), the authors found that process feedback from

participants indicated acceptability and positive views of peer-delivered programmes. In addition, peers delivering the programmes felt that they had individually benefited from the delivery of a programme. The peer-led approach should be part of a wider comprehensive programme (McVey et al., 2007).

Fourth, findings of the present research related to individual differences point towards the relevance of targeted or tailored health promotion and intervention programmes (see Hawkins, Kreuter, Resnicow, Fishbein & Dijkstra, 2008 for a review of different types of tailoring). Intervention programmes can be distinguished as universal or targeted. Universal intervention programmes focus on non-symptomatic, but at-risk populations such as adolescents. Targeted programmes include individuals that have been identified as being at high risk, although they have not developed clinical symptoms (Levine & Smolak, 2001). Examples of risk indicators generally used are self-reported negative body image and eating concerns. Programmes targeting at risk groups have shown promise (Levine & Smolak, 2007; Stice et al., 2007). However, although several authors have pointed towards the usefulness of dispositional characteristics such as personality traits and personal motives and goals in order to provide appropriate health promotion programmes (Caspi et al., 1997; Ingledew & Markland, 2008; Stewart et al., 2005) this has not been taken on board in the context of body image. An example of the relevance of tailoring prevention messages to individual characteristics such as self-esteem is a study by Durkin et al., (2005). The authors tested the believability and acceptability of a range of prevention messages with adolescent girls and found that some messages were more effective than others.

An article by Stewart and colleagues (2005) summarised findings from a symposium on prevention and early intervention in the context of alcohol abuse in adolescence. Findings from the range of studies presented suggested that a focus on personality and motivational factors underlying alcohol misuse can inform the development and

delivery of effective programmes. For example, one of the studies (Steward et al., 2005; study 3) assessed personality profiles and drinking motivations and linked these to different maladaptive coping and cognitive strategies specific to each personality type. The intervention was then tailored to the different profiles.

Another fruitful approach could focus on life goals. As mentioned previously, life goals are linked to motivation in that extrinsic goals are more likely to be pursued for controlled reasons and intrinsic goals for autonomous reasons (Sheldon et al., 2004). However, although a link between extrinsic goals and controlled motivation has been established, there is a lack of research documenting how a shift from extrinsic to intrinsic goals could be achieved in applied terms. One of the ways forward at an individual level might be linked to fostering autonomy. There is evidence that teachers can be trained to provide an autonomy-supportive style in an educational context (Reeve, 1998; 2001). Research has indicated that autonomous motivation might be fostered through providing choice, acknowledging individuals' experiences and facilitating the development of competence (Deci & Ryan, 2008; Vansteenkiste, Simons, Lens, Sheldon & Deci, 2004). A more recent development is the link of self-determination theory with psychotherapy and in particular motivational interviewing (Markland, Ryan, Tobin & Rollnick, 2005; Ryan & Deci, 2008). Ryan and Deci (2008) suggested that extrinsic life goals are substitutes for the basic needs of autonomy, competence and relatedness. Consequently, awareness of basic needs should be fostered and choice promoted through clarifying values and goals whilst emphasising ownership and the individual's responsibility. Although this relates to the psychotherapy context (working with individuals or groups), translation of these principles into the context of the promotion of body image satisfaction might be useful. An example in the context of alcohol abuse is an intervention by Thush (Steward et al., 2005, study 4) which included principles of motivational interviewing.

Although targeted programmes play an important role and show larger effect sizes (Stice et al., 2007), Levine and Smolak (2007) argued that multidimensional programmes are needed which target organisational norms and engage schools in order to change the school ethos. This argument has been supported by others (Austin, 2000; McVey et al., 2007), who pointed out that although only a small number of adolescents will actually develop clinical disorders, these will emerge from a large pool of adolescents who are at low or moderate risk. In addition, there are practical challenges such as identification, recruitment and ensuring continued participation of at-risk adolescents (Varnado-Sullivan et al., 2001). Another difficulty lies in identifying which determinant(s) is/are the most useful to focus on, collecting information about the key determinant(s) from the intended population and then providing a tailored message/ programme (Hawkins, et al., 2008).

A supporting reason for targeting the whole school context comes from self-determination theory. Ryan and Deci (2000) suggested that social contexts play a role in promoting or thwarting motivation and thus influence psychological, developmental and behavioural outcomes. Internalisation of desired values and behaviours can be facilitated in a specific setting such as schools through fostering involvement and relatedness to the group. In addition, fostering and supporting thoughts about the values of particular behaviours increases the likelihood of integrating these values into the self (Deci & Ryan, 2008). Prevailing appearance standards and norms need to be challenged not only on the micro, but also on the macro level (Dittmar, 2008; Levine & Piran, 2004; Levine & Smolak, 2007). However, the emphasis should be on providing an environment which nurtures intrinsic goal pursuits and the development of autonomy. Although research has shown a negative impact of celebrity worship on body image, there are also tentative suggestions that this might be a “phase” which discontinues with the onset of adulthood (Giles et al., 2005). Life goals change over the life span

and individuals experiment with different goals during the transition from adolescence to adulthood (Arnett, 2000). A positive and empowering approach is essential as judgemental and stereotypical approaches to health promotion have been shown to have a negative impact. Reducing social complexities and experiences to simplistic messages about unhealthy or destructive behaviour might result in young people resisting health promotion efforts (Whitehead, 2005).

Levine and Piran (2004) outlined a prevention model fostering a critical social perspective. This type of approach recognises that social context and norms shape individuals' experiences of their bodies. There is a focus on developing agency and empowerment and changing the environment. Examples of programmes including elements of this approach for adolescent girls are the "GoGirls!" and the "Full of ourselves: Advancing girl power, health and leadership" programmes (Piran, 1999; Piran, Levine & Irving, 2000; Sjostrom & Steiner-Adair, 2005). For example, Piran (1999) noted that in addition to beneficial outcomes for adolescent girls, changes in staff's personal attitudes and behaviours were achieved and school culture transformed. Although it is increasingly recognised that boys are concerned with body image issues and particularly muscularity, there is a lack of programmes for boys (Stanford & McCabe, 2005). This needs to be addressed urgently, not only because there is an increasing emphasis on physique and appearance for boys but also because boys are part of the social context that propagates and reinforces attitudes about weight and shape (Wilksch et al., 2006).

Future Research

The findings of the present studies have implications for future research. Future research needs to address the methodological issues previously mentioned in relation to the newly developed measure (SCASA). Further research is needed which integrates a measure assessing a range of social comparison appraisals and evaluates associated outcomes with a range of targets in order to replicate and extend the findings of the present studies. Longitudinal

studies will be important in order to address causality and developmental issues. There is some longitudinal research indicating that evaluative comparisons contribute towards body dissatisfaction in girls (Jones, 2004). It could be expected that improvement comparisons might have a more negative impact long-term, in particular as adolescents' physiques change. In addition, as comparing on a different dimension has shown to have a potentially health-protective function, further qualitative exploration of dimensions on which adolescents feel advantaged might be fruitful. This might be particularly relevant for boys, but also for different age groups. Another focus might be on unravelling the link between life goals and social comparison appraisals. Studies including measures of self-regulation might help to shed a light on why some intrinsic goals might be related to more negative comparison appraisals in the context of shape and physique. In addition, research might want to focus on identifying personality profiles and motivational patterns in order to develop more targeted interventions.

Recent research developments have focused on the possibility of addressing issues of overweight and body image disturbance in tandem as they arise from the same cultural context which has an unhealthy focus on appearance and shape (e.g., Irving & Neumark-Sztainer, 2002). It might be fruitful to assess the relevance of social comparison appraisals in overweight and obese individuals. And finally, research needs to address how the theoretical implications of the present study can be translated into practice. For instance, there is a need to understand how adolescents' autonomy might be fostered and intrinsic goals nurtured within a given environment such as schools or communities. Considering the appearance-driven nature of Western society coupled with the increase in overweight and obesity, this future research will be able to explore important avenues and address relevant questions in order to add to the theoretical understanding of comparison processes in adolescents

and the development and delivery of meaningful health promotion programmes in the field of body image.

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Appendix A: Literature Searches

Literature searches were conducted throughout the research project. In addition to the searches, relevant literature was identified from reading journal articles and book chapters and through recommendations by colleagues. A large amount of the literature on qualitative (grounded theory analysis and using NVivo analysis package) and quantitative data analysis (CFA, SEM and using AMOS analysis package) was recommended during training courses.

Literature searches were performed using the following:

- Databases: Medline and PsychINFO
- University library catalogue
- Google Scholar
- Web sites of researchers in the field

Main Keywords

- body image, body shape, body satisfaction, body dissatisfaction, weight, muscularity, eating disorders, diet, exercise, disordered eating, body change strategies, internalisation, drive for thinness, drive for muscularity, eating behaviours, physical appearance
- boys, girls, adolescents, adults, male, female
- media, media images, idealised images, television, magazines, advertising, fame, sociocultural
- social comparison, self-evaluation, self-improvement, self-enhancement, health behaviour, self image, identity
- personality traits, Big Five, self-esteem, self-determination theory, life goals, extrinsic goals, intrinsic goals, motivation, wealth, relationships, community, assessment, measure
- adolescent development, peers, friends, gender
- media literacy, health promotion programme, health education programme

- qualitative methods, grounded theory, symbolic interactionism, interview, mixed methods, qualitative data analysis
- confirmatory factor analysis, sampling, structural equation modelling, fit index, validity, model fit, multigroup analysis, missing data

Web sites

A range of web sites were accessed to identify resources and publication lists.

- Beat (beating eating disorders); UK charity for people with eating disorders and their families. Available from: <http://www.beat.couk/>
- Something fishy (eating disorders). Available from: <http://www.something-fishy.org/>
- About face (aims to combat negative and distorted images of women). Available from: <http://www.about-face.org/>
- Self-determination theory. Available from: <http://www.psych.rochester.edu/SDT/>
- Social Psychology Network; this site lists profiles and publications of registered individuals. Examples of authors accessed include: Gerrard, M.; Gibbons, R.; Klein, B.; Suls, M.; Sedikides, C. Available from: <http://www.socialpsychology.org/>
- Publication web sites of specific individuals, for example: Cash, T.F. (available from: <http://www.body-images.com/>); McCabe, M. (available from <http://www.deakin.edu.au/hmnbs/psychology/staffprofiles.php?username=maritam>); Neumark-Sztainer, D. (available from: <http://www.med.umn.edu/cdr/investigators/neumark.html>); Thompson, J.K. (available from: <http://psychology.usf.edu/faculty/data/kthompson/>); Tiggemann, M. (available from: <http://socsci.flinders.edu.au/psyc/staff/MarikaTiggemann/>); Stice, E. (available from: <http://homepage.psy.utexas.edu/homepage/faculty/stice/Stice.html>)
- Quantitative and qualitative research web sites:

- Garson, G.D. (n.d.) *Statnotes: Topics in Multivariate Analysis*. Available from: <http://faculty.chass.ncsu.edu/garson/PA765/statnote.htm>
- SEMNET mailing list (Structural Equation Modelling Discussion Network). Available from: <http://www2.gsu.edu/~mkteer/semnet.html>
- The Qualitative Report; journal and resources. Available from: <http://www.nova.edu/ssss/QR/>
- CAQDAS (computer-assisted qualitative data analysis networking project). Available from: <http://caqdas.soc.surrey.ac.uk/onlinearticles.htm>

Appendix B: Qualitative Study - Letter to Parent/Guardian

Anne Kraye
University of Wales, Bangor
School of Nursing, Midwifery and Health Studies
University of Wales, Bangor
Fron Heulog
Bangor LL57 2EF

Tel: 01248-383137

Email: a.kraye@bangor.ac.uk

Dear Parent/Guardian¹

My name is Anne Kraye and I am currently working part-time as a research assistant at the University of Wales, Bangor. I am writing to you to ask if you would consent to your child participating in a research project looking at adolescent health, which I am currently undertaking for my PhD.

As you may be aware, the influence of media and behaviour and attitudes has been under much discussion. The focus of my study is the experience of adolescents with media and their motivation to seek out information about media personalities and different topics.

The research especially focuses on the influence of media messages on body image in young adolescents. It has been suggested that media messages disseminate the idea that beauty and attractiveness are important for women and muscularity for men. There is yet uncertainty about why adolescents seek out certain messages and/or media characters. This project will inform further research and the findings will be useful to inform the planning of health education programmes.

¹ Access to two English-speaking schools was arranged through a gate keeper. Interviews were conducted in English and schools requested all materials in English only.

The study aims to investigate the influence of media messages on body image by using an interview design. The interview will be in English and take about 45 minutes. All the written material will be available bilingually. Your child will be explained the aims of the study and will be asked to give their written consent after he/she had the opportunity to think about joining the study. All the data collected will be confidential and anonymous. This means that only I as the researcher will have access to the data. The findings will be written up in a thesis and possibly published in an academic journal. However, participating schools and individuals will not be identified by name. A short summary report will be made available for the school. If participants are interested, they are invited to attend a group presentation of results. Again, participants are free to withdraw from the study at any point.

I have obtained ethical approval for the study from the ethics committee at the Faculty of Health Studies, University of Wales, Bangor and the Head of your child's school has given his/her approval. If you have any concerns about your child joining in the research, you might like to discuss this with your GP or health visitor.

I would be happy to answer any questions you might have. Thank you very much for your assistance.

Kind regards

Anne Kraye

Parental/guardian consent form

- I have been given an explanation of what the study is about ☐
- I understand that the information collected will be anonymous and treated confidentially ☐
- I have discussed possible participation with my child ☐
- I agree that my child participates in the study if she/he wishes to ☐
- I **do not** want my child to participate in the study ☐

Name (Print):

.....

Llofnod / Signature:

.....

Dyddiad / Date:

.....

Appendix C: Qualitative Study - Semi-Structured Interview Guide

The interviewer aimed to use guidelines for semi-structured interviews, set out by Charmaz (1994). These were: setting a positive tone, seeking information in depth, reflecting on what has been said, and closing the interview on a positive note. In addition, the interviewer aimed to establish rapport with the interviewee and move logically from the general to the personal, addressing any potentially sensitive issues later in the interview.

Due to the nature of the grounded theory approach, questions became more focused during subsequent interviews.

1. Introduction

Self

Background

Study aims

Confidentiality

2. Key Topics to be covered

Questions focused on specific themes such as:

- Types of media consumed (interest in particular sections of magazines, favourite programmes on television)
- Favourite characters, actors or media personalities
- Context of media consumption: with friends, family or alone

Examples of questions include:

- What do you like about teen magazines?
- Which are your favourite bits in a teen magazine?
- Do you talk about people in magazines and on television with your friends?
- What do you think about how people look on television?
- Have you got a favourite sports person/actor?

- How do you feel about models in adverts?
- What do you like about a specific actor/media personality?
- Would you like to look like a model/actor?
- What do you think is the difference between a media personality and people in general?

Example of prompts:

- What do you mean by...?
- Could you say more about...?
- What did you do then...?
- Could you give me an example?
- How do you think others think about...?
- Is what you are saying...?

3. Closing comments

The researcher tried to summarise the main points of the interview and asked participants if they had any questions. The debriefing sheet was handed out to participants and individuals were asked if they were concerned about anything that had been discussed during the interview.

Appendix D: Qualitative Study - Information Leaflet for Adolescents

Anne Kraye

01248-383137

a.kraye@bangor.ac.uk

Dear Participant,

This interview is part of a project I am doing at the Faculty of Health, at the University of Wales, Bangor. I would like to have a chat with you about what programmes on TV or magazines you like and why. I am especially interested in which media characters you like best and if you compare yourself to them and which magazines and/or programmes appeal to you. It should take no more than 45 minutes. The interview will be in English and the written material available in Welsh and English.

The project I am working on is to find out what the special attraction of certain media personalities and messages is, and why you seek them out.

The Head of your School and your parents have agreed to you participating in the study. However, it is **your choice** and you can say 'no' at any time. All the data I collect is confidential and anonymous, that means no one else but me will see it or know what each individual participant has said.

If you are participating in this interview:

- I am going to tape our conversation with your permission (To make it easier for me to remember what we have said). The tapes will be destroyed after the study is completed.
- I will write up everything I have found, but your name will never be mentioned.

If you decide to join in the study, please let your teacher know so we can arrange a meeting.

Thank you very much for your help. If you decide to take part, I hope that you find this fun!

Anne Kraye

Appendix E: Qualitative Study - Consent Form

I have been explained what the study is about and want to participate.

Name (Print):

.....

Signature:

.....

Appendix F: Qualitative Study - Debriefing Sheet

I hope you have enjoyed the chat we have had. If you have any questions you would like to ask later, or are unhappy about anything we said, please contact me by phone (01248- 383137) or email (a.krayer@bangor.ac.uk) or write to me under the following address:

Anne Kraye
School of Nursing, Midwifery and Health Studies
University of Wales, Bangor
Fron Heulog
Bangor LL57 2EF

If you are not sure about getting in touch with me yourself, you could always ask your teacher to tell me about your concerns or questions without giving me your name or you could ask your parents to talk to me.

As I have explained before, I am especially interested in why you single out certain media characters and messages and what you like about them. If that made you worry at any point about yourself, and you would like to talk to someone else, you can contact the following:

- Your school nurse
- Your parents
- Your teacher
- Your GP

Appendix G: Qualitative Study - Transcription Guide

Transcription of the interview tapes was based on guidelines discussed by Poland (1995):

Abbreviations used in transcription	
Pauses	Short pauses were denoted by a series of dots (...), longer pauses by the word "pause"
Laughing, quiet speech, etc.	Indicated in parentheses, for example, (laughing), (sigh)
Interruptions	Denoted by a hyphen (-), e.g. What do you-
Garbled speech	Words not clearly understood were written in brackets, e.g., "Friends can be [difficult? distant?]" Words or sentences that could not be understood were denoted by "X"s
Emphasis	Caps were used to indicate a strong emphasis, e.g., "Can you believe THAT"

Notes were written immediately after each interview. These included, for example, perceptions of how the interview went, which questions seemed to work well, and thoughts about refining questions. Any incidents were noted, such as interruptions or perceptions about the interviewee (for example, perceived expression of animation, humour or anger at particular stages of the interview).

Appendix H: Quantitative Study - Letter to Head of School

Anne Kraye
Institute of food, active living and nutrition, Cymru
University of Wales, Bangor
Thoday Building
Bangor LL57 2UW

a.kraye@bangor.ac.uk

Dear

Your contact details have been given to me by X, the healthy schools co-ordinator for Y. She suggested that you might be interested in becoming involved in my research project looking at adolescent health, which I am currently undertaking for my PhD. My name is Anne Kraye and I work as a research assistant at the University of Wales, Bangor.

As you may be aware, the influence of media messages on behaviour and attitudes has been under much discussion. The focus of my study is the experience of adolescents with media images with particular reference to feelings about their body, weight and appearance. This project will inform further research and the findings will be useful to those planning health education programmes.

The study aims to investigate the influence of media messages on body image by using a questionnaire design. The questionnaire will be bilingual and take about 30-40 minutes to complete. If you would be happy for the Y10 pupils of your school to be invited to participate, parents will be approached to give their consent first and interested adolescents will be invited to learn more about the study. A date would have to be arranged with you for the data collection. Participating adolescents will be asked to give their written consent. They will be assured that they can discontinue at any given point.

All the data collected will be confidential and anonymous. The findings will be written up in a thesis and possibly published in an academic journal. However, participating schools and individuals will not be identified by name. A short summary report will be made available for participating schools at the conclusion of the research project.

The questionnaire has been piloted with the appropriate age group and feedback obtained from a head of school. I have been given ethical approval for the study from the ethics committee at the Faculty of Health Studies, University of Wales, Bangor.

If you have any further questions or would like to meet, please do not hesitate to contact me (email a.krayer@bangor.ac.uk; phone 01248-352928).

Kind regards

Anne Kraye

Appendix I: Quantitative Study - Letter to Parent/Guardian

Anne Kraye
D/o Sefydliad Bwyd, Byw'n Heini a Maeth Cymru
C/o Institute of food, active living and nutrition, Cymru
Prifysgol Cymru / *University of Wales, Bangor*
Adeilad Thoday / *Thoday Building*
Bangor LL57 2UW

Ffôn / *Telephone*: 01248-352928
E-bost / *E-mail*: a.kraye@bangor.ac.uk

Annwyl Riant/Gwarcheidwad / *Dear Parent/Guardian*

Anne Kraye ydy f'enw i ac rydw i'n gweithio fel cynorthwy-ydd ymchwil ym Mhrifysgol Cymru, Bangor. Ysgrifennaf i ofyn i chi a fydddech yn cydsynio i'ch plentyn gymryd rhan mewn project ymchwil sy'n edrych ar iechyd pobl ifanc, yr ydw i ar hyn o bryd yn ei gynnal ar gyfer fy noethuriaeth, PhD.

Fel y byddwch yn gwybod efallai, bu cryn drafodaeth ynghylch dylanwad y cyfryngau ar ymddygiad ac agweddau. Canolbwynt f'astudiaeth i yw profiad pobl ifanc gyda delweddau'r cyfryngau. Byddai'n golygu y byddai eich plentyn yn ateb cwestiynau ynghylch ei ganfyddiadau a'i farn ef / ei chanfyddiadau a'i barn hi ei hun, nid eiddo neb arall yn y teulu.

Mae'r ymchwil yn canolbwyntio'n arbennig ar ddylanwad negeseuon y cyfryngau ar ddelwedd corff mewn pobl ifanc yn eu llencyndod. Awgrymwyd bod delweddau'r cyfryngau yn lledaenu'r syniad mai harddwch a bod yn ddeniadol sy'n bwysig i ferched ac mai bod yn gyhyrog sy'n bwysig i ddynion. Eto mae ansicrwydd sut mae pobl ifanc yn gwerthuso'r negeseuon yma a pham y mae rhai pobl ifanc yn eu derbyn tra mae eraill yn eu gwrthod. Bydd y project hwn yn hysbysu ymchwil bellach a bydd y casgliadau o fudd i'r

My name is Anne Kraye and I work as a research assistant at the University of Wales, Bangor. I am writing to you to ask if you would consent to your child participating in a research project looking at adolescent health, which I am currently undertaking for my PhD.

As you may be aware, the influence of media on behaviour and attitudes has been under much discussion. The focus of my study is on the experience of adolescents with media messages. It involves your child answering questions about their own perceptions and views, not about anyone else's in the family.

The research especially focuses on the influence of media messages on body image in young adolescents. It has been suggested that media messages disseminate the idea that beauty and attractiveness are important for women and muscularity for men. There is yet uncertainty about how adolescents evaluate these messages and why some adolescents take them on board, whereas others reject them. This project will inform further research and the findings will be useful to

rheiny sy'n cynllunio rhaglenni addysg iechyd.

Nod yr astudiaeth ydy archwilio dylanwad delweddau'r cyfryngau ar ddelwedd corff, drwy ddefnyddio holiaduron. Bydd yr holiaduron ar gael yn ddwyieithog, ac oddeutu 30-40 munud fydd angen i'w cwblhau. A fyddwch mor garedig â thrafod gyda'ch plentyn y posibilrwydd o gymryd rhan cyn llofnodi'r ffurflen gydsynio, gan ddefnyddio'r daflen wybodaeth amgaeedig. Os ydych chi'n hapus i'ch plentyn ymuno â'r astudiaeth, gofynnir i'ch plentyn hefyd roi ei gydsyniad ysgrifenedig cyn ymuno â'r astudiaeth yn ddiweddarach. Cedwir yr holl ddata a gesglir yn gyfrinachol ac yn ddiennw. Does dim rhaid i'r rhai sy'n cymryd rhan roi eu henwau a dim ond gen i, fel ymchwilydd, y bydd mynediad at y data. Ysgrifennir y casgliadau mewn traethawd ac mae'n bosibl y cânt eu cyhoeddi mewn cylchgrawn academiaidd. Fodd bynnag, ni ellir adnabod ysgolion, fydd yn cymryd rhan, wrth eu henwau. Bydd adroddiad cryno ar gael i ysgolion fydd yn cymryd rhan ar ddiwedd y project ymchwil. Os oes arnoch eisiau gweld yr holiadur gellwch gael copi gan Bennaeth eich ysgol.

Rydw i wedi derbyn caniatâd moesegol ar gyfer yr astudiaeth gan Bwyllgor Moeseg y Gyfadran Astudiaethau Iechyd, Prifysgol Cymru, Bangor ac mae Pennaeth ysgol eich plentyn wedi rhoi ei ganiatâd i'r ysgol gael ei chynnwys yn yr astudiaeth ac felly i ddisgyblion eich ysgol gael eu gwahodd i gymryd rhan. Os oes gennych unrhyw bryderon ynghylch eich plentyn yn ymuno yn yr ymchwil, efallai yr hoffech drafod hyn gydag athro neu gyda'ch Meddyg Teulu.

Byddwn yn hapus i ateb unrhyw gwestiynau a fo gennych. Gellwch gael copi o'r holiadur gan eich Pennaeth. Os byddwch yn gwneud

those planning health education programmes.

The study aims to investigate the influence of media messages on body image by using questionnaires. The questionnaire will be available bilingually and take about 30-40 minutes to complete. Please discuss possible participation with your child before signing the consent form, using the information leaflet enclosed. If you are happy for your child to join the study, your child will also be asked to give their written consent before joining the study at a later date. All the data collected will be confidential and anonymous. Participants do not have to provide their names on the questionnaires and only I as the researcher will have access to the data. The findings will be written up in a thesis and possibly published in an academic journal. However, participating schools will not be identified by name. A short summary report will be made available for the school at the conclusion of the research project. If you would like to see the questionnaire, you can obtain a copy from your head teacher.

I have obtained ethical approval for the study from the ethics committee at the Faculty of Health Studies, University of Wales, Bangor and the head teacher of your child's school has given his/her approval for the school to be included in the study and thus for pupils of your school to be invited to participate. If you have any concerns about your child joining in the research, you might like to discuss this with a teacher or your GP.

I would be happy to answer any questions you might have. You can obtain a copy of the questionnaire from your head

hynny, byddwn yn ddiolchgar pe gallech osgoi trafod y cynnwys yn fanwl gyda'ch plentyn cyn i'r data gael ei gasglu, gan y gallai hyn effeithio ar ei atebion.

teacher. If you do so, I would be grateful if you could avoid discussing the content in detail with your child before the data collection, as this might influence their responses.

Diolch yn fawr iawn i chi am eich cymorth.

Thank you very much for your assistance.

Yn gywir / *Kind Regards,*

Anne Kraye

Ffurflen gydsynio rhiant/gwarcheidwad / Parental/guardian consent form

- Fe dderbyniais eglurhad o'r hyn y mae'r ymchwil yn ymdrin ag ef
I have been given an explanation of what the study is about ☐
- Rydw i'n deall y bydd y wybodaeth a gesglir yn ddienw ac y caiff ei thrin yn gyfrinachol
I understand that the information collected will be anonymous and treated confidentially ☐
- Rydw i wedi trafod y posibilrwydd o gymryd rhan gyda fy mhlentyn
I have discussed possible participation with my child ☐
- Rydw i'n cytuno i'm plentyn gymryd rhan yn yr astudiaeth, os ydyw ef/hi yn dymuno gwneud hynny.
I agree that my child participates in the study if she/he wishes to. ☐
- **Nid oes** arnaf eisiau i'm plentyn gymryd rhan yn yr astudiaeth
*I **do not** want my child to participate in the study* ☐

Enw (Mewn llythrennau bras) **Name** (Print):

.....

Llofnod / Signature:

.....

Dyddiad / Date:

.....

Appendix J: Quantitative Study - Information for Adolescents

Thinking about good-looking media characters. A research project - *Please will you help us with our research?*

What this research is about

Television, magazines and films often show good-looking people. It has been suggested that these 'images' give young people an idea about what they should look like themselves. We are interested to know what you think about these images when you see them. This is not a test and there are no right or wrong answers to any of these questions. Your answers will help to better understand how young people view these images.

What will happen during this research?

You are invited to answer some questions about your own experiences and feelings when looking at people on television, in films and magazines. There will be questions about what you think when you see good-looking people, how you feel about them and if they have any influence on how you might behave. To get a better idea of why your answers might be different to others, we are also going to ask you some questions about what you hope to achieve when you get older, how you feel about your body and what sort of things you like to do.

What will happen with all this information?

The information you give us will be confidential and anonymous. This means that no one will know how you answered the questions, as you do not need to write your name on the questionnaires. Also, we will report the results about what you have said in summarised form. This means that no one will know exactly how any one person responded to

the questions. The completed questionnaires are only for us the researchers and will be destroyed after a while.

The results of this research will be made available to your school and shared with others who are interested in this topic.

Do I have to participate?

You are invited to join this research, but it is up to you whether you take part in this project. No one should feel forced to agree. You do not have to give a reason for saying no. You will be asked to give your consent, which means a signature to say that you are happy to join. You are free to decide if you would like to join and even if you have signed the consent form, you can decide at any point that you no longer wish to take part without having to explain why.

If you do decide to join and complete the questionnaire, your experiences will be very helpful for others who are looking at the importance of media images. You can discuss this project with your parents, guardians and friends before you decide to join.

Who we are

This is part of a research project I am undertaking for my educational degree and I have two supervisors who guide me in conducting the research. My name is Anne Kraye and I am studying and working at the University of Wales, Bangor.

If you have any further questions you can contact me:

Anne Kraye Tel.: 01248-352928 Email: a.kraye@bangor.ac.uk

If you are not sure about getting in touch with me yourself, you could always ask your teacher to tell me about your concerns or questions without giving me your name or you could ask your parents to talk to me.

Meddwl am gymeriadau golygus ar y cyfryngau. Project ymchwil. - *Wnewch chi'n helpu ni gyda'n hymchwil, os gwelwch chi'n dda?*

Yr hyn mae'r ymchwil hon yn edrych arno:

Mae'r teledu, cylchgronau a ffilmiau yn aml yn dangos pobl olygus. Awgrymwyd bod y 'delwedday' hyn yn rhoi syniad i bobl ifan sut y dylent hwy eu hunain fod yn edrych. Mar gennym ni ddiddordeb mewn gwybod beth fyddwch chi'n ei feddwl pan fyddwch chi'n eu gweld. Nid prawf ydy hwn a does yna ddim atebion cywir nac aghywir i unrhyw rai o'r cwestiynau. Bydd eich atebion yn gymorth i no ddeall sut y mae pobl ifanc yn gweld y delweddau yma.

Beth fydd yn digwydd yn ystod yr ymchwil hon?

Gwahoddir chi i ateb rhai cwestiynau ynghylch eich profiadau a'ch teimladau chi eich hun wrth edrych ar bobl ar y teledu, mewn ffilmiau a chylchgronau.

Fe fydd yna gwestiynau ynghylch beth yr ydych chi'n ei feddwl pan fyddwch chi'n gweld pobl olygus, sut byddwch chi'n teimlo ynglŷn â nhw ac a ydyn nhw'n dylanwadu o gwbl ar sut y byddwch chi'n ymddwyn. Er mwyn cael gwell syniad pam y gall eich atebion chi fod yn wahanol i rai eraill, rydym ni hefyd yn gofyn rhai cwestiynau am yr hyn yr ydych chi'n gobeithio ei gyflawni pan fyddwch chi'n hŷn, sut rydych chi'n teimlo ynghylch eich corff a pha fath o bethau rydych chi'n hoffi eu gwneud.

Beth fydd yn digwydd gyda'r holl wybodaeth yma ?

Bydd y wybodaeth fyddwch chi'n ei rhoi i ni yn gyfrinachol ac yn ddienw. Mae hyn yn golygu na fydd neb yn gwybod sut y gwnaethoch chi ateb y cwestiynau, gan nad oes angen i chi ysgrifennu eich enw ar yr holiadur. Hefyd byddwn yn rhoi adroddiad am y casgliadau mewn ffurf gryno. Mae hyn yn golygu na fydd neb yn gwybod yn union sut y gwnaeth unrhyw un person ateb y cwestiynau. Dim ond ar ein cyfer ni, yr ymchwilwyr, y bydd yr holiaduron fydd wedi eu cwblhau, a chânt i gyd eu difa ymhen amser. Bydd canlyniadau'r ymchwil hon ar gael i'ch ysgol a chânt eu rhannu gydag eraill sydd â diddordeb yn y pwnc yma.

Oes rhaid i mi gymryd rhan?

Mae gwahoddiad i chi gymryd rhan yn yr ymchwil yma, ond eich dewis chi ydy cymryd rhan yn yr ymchwil. Ni ddylai neb deimlo ei fod yn cael ei orfodi i gytuno. Does dim rhaid i chi roi rheswm dros ddweud na. Gofynnir i chi roi eich cydsyniad, sy'n golygu llofnodi i ddweud eich bod yn hapus i ymuno. Rydych chi'n rhydd i benderfynu oes arnoch eisiau cymryd rhan ac, os byddwch chi wedi llofnodi'r ffurflen gydsynio hyd yn oed, fe gewch benderfynu wedyn nad oes arnoch eisiau cymryd rhan heb orfod egluro pam.

Os byddwch chi'n penderfynu ymuno a chwblhau'r holiadur, bydd eich profiadau o gymorth mawr i eraill sy'n edrych ar bwysigrwydd delweddau'r cyfryngau. Fe ellwch drafod y project yma gyda'ch rhieni, eich gwarcheidwaid a'ch ffrindiau cyn penderfynu ymuno.

Pwy ydym ni?

Rhan o broiect ymchwil ydy hwn rydw i'n ei gynnal ar gyfer fy ngradd addysgol ac mae dau o bobl yn goruchwyllo fy ngwaith ac yn rhoi arweiniad, wrth i mi gynnal yr ymchwil. Anne Kraye ydy f'enw i ac rydw i'n astudio ac yn gweithio ym Mhrifysgol Cymru, Bangor.

Os oes gennych chi unrhyw gwestiynau pellach gellwch gysylltu â mi:

Anne Kraye

Ffôn.: 01248-352928

Ifanc

E-bost: a.kraye@bangor.ac.uk

Prifysgol Cymru, Bangor

Adeilad Thoday

Bangor LL57 2UW

Os ydych chi'n ansicr ynghylch cysylltu â mi eich hun, gellwch ofyn i'ch athro ddweud wrthyf am eich pryderon neu eich cwestiynau heb roi eich enw neu gellwch ofyn i'ch rhieni siarad â mi.

Appendix K: Quantitative Study - Information for Teachers

Anne Kraye ydy f'enw i ac rydw i'n gweithio fel cynorthwy-ydd ymchwil ym Mhrifysgol Cymru, Bangor. Rydw i'n ysgrifennu atoch i ofyn am eich cymorth gyda'r project ymchwil yma sy'n edrych ar iechyd pobl ifanc.

Fel y byddwch yn gwybod efallai, bu cryn drafodaeth ynghylch dylanwad negeseuon y cyfryngau ar ymddygiad ac agweddau. Canolbwynt f'astudiaeth i yw profiad pobl ifanc gyda delweddau'r cyfryngau gan gyfeirio'n arbennig at deimladau ynghylch eu cyrff, eu pwysau a'u hymddangosiad. Mae'r ymchwil yn canolbwyntio'n arbennig ar ddylanwad negeseuon y cyfryngau ar ddelwedd corff mewn pobl ifanc yn eu llencyndod.

Nod yr astudiaeth yw archwilio dylanwad delweddau'r cyfryngau ar ddelwedd corff, drwy ddefnyddio holiadur. Mae'r holiadur yn ddwyieithog, ac **oddeutu 40** munud sydd ei angen i'w gwblhau.

Mae'r plant a'u rhieni i gyd wedi derbyn taflen wybodaeth, sy'n amgaeedig yma er gwybodaeth i chi. Hefyd, gwelwch enghraifft o'r holiadur wedi ei amgáu.

A fydddech cystal â thrafod y canlynol gyda'r plant cyn dosbarthu'r holiaduron, os gwelwch yn dda:

- Eglurwch yn fras i'r plant am beth mae'r astudiaeth sef 'project i weld beth rydych chi'n ei feddwl ac yn ei deimlo ynghylch gwahanol ddelweddau ar y cyfryngau'. Caiff eu cymorth ei werthfawrogi'n fawr a bydd y casgliadau o ddefnydd i'r bobl sy'n cynllunio rhaglenni addysg iechyd.

My name is Anne Kraye and I work as a research assistant at the University of Wales, Bangor. I am writing to you to help with this research project looking at adolescent health.

As you may be aware, the influence of media messages on behaviour and attitudes has been under much discussion. The focus of my study is the experience of adolescents with media images with particular reference to feelings about their body, weight and appearance. The research especially focuses on the influence of media messages on body image in young adolescents.

The study aims to investigate the influence of media messages on body image by using a questionnaire. The questionnaire is bilingual and **takes about 40** minutes to complete.

The children and their parents all received an information leaflet, which is enclosed for your information. Also, please find enclosed an example of the questionnaire.

Could you please discuss the following with the children before handing out the questionnaire:

- Explain briefly to the children what the study is about 'a project to find out what you think and feel about different media images'. Their help would be very much appreciated and the findings will be useful to those planning health education programmes.

- Oes yna rywun yn bresennol y mae eu rhieni wedi gwrthwynebu? Os felly, ni fyddant yn gallu ymuno yn yr astudiaeth.

Eglurwch i'r plant, os gwelwch yn dda:

- Na ddylent ysgrifennu eu henwau ar yr holiadur, er mwyn sicrhau ei fod yn ddienw
- Nad oes rhaid iddynt ateb cwestiwn os nad oes arnynt eisiau.
- Nad prawf ydy hwn; does yna ddim atebion cywir nac anghywir.
- Does dim rhaid iddynt gymryd rhan.

Rhowch yr holiaduron allan yn awr, os gwelwch yn dda, a nodwch fod yna holiaduron gwahanol ar gyfer y merched a'r bechgyn. Dylai cyfranogwyr sicrhau ei fod yn dweud merch / bachgen ar waelod y dudalen gyntaf fel bo'n briodol.

- Os yw'r plant yn hapus i ymuno, gofynnwch iddynt lenwi'r ffurflenni cydsynio ar ddechrau'r holiadur a thorrrwch y rhain i ffwrdd i'w casglu ar wahân
- Dylai cyfranogwyr gadw'r dudalen gyntaf er gwybodaeth iddynt.

Cyn i'r plant ddechrau eglurwch, os gwelwch yn dda:

- Y dylent fynd drwy'r cwestiynau a'u hateb heb feddwl gormod am eu hatebion na phoeni os byddant yn croesddweud eu hunain (Mae rhai cwestiynau'n debyg).
- Mae dwy ran i'r holiadur. Mae'r rhan gyntaf yn gofyn cwestiynau amdanynt hwy eu hunain. Bydd hyn o gymorth i weld sut mae pobl wahanol yn ymateb i wahanol ddelweddau (t.5-16).
- Mae'r ail ran yn gofyn iddynt ddychmygu unigolyn (gofynnir i rai plant ddychmygu **delwedd ar y cyfryngau, rhai ffrind**) ac ateb ychydig o gwestiynau am yr unigolyn yma (t.17-24). *Defnyddir*

- Is there anyone present whose parents have objected? If so, they will not be able to join the study

Please explain to the children that:

- They should not write their name on the questionnaire, thus ensuring anonymity.
- If they do not want to answer a question, they do not have to do so.
- This is not a test. There are no right or wrong answers.
- They do not have to join.

Please hand out the questionnaire now, noting that there are different questionnaires for girls and boys. Participants should check that it says on the bottom of the first page girl/boy as appropriate.

- If the children are happy to join, please ask them to sign the consent form at the beginning of the questionnaire and tear it off to be collected separately.
- Participants should keep the first page for their information

Before the children start please explain that:

- They should go through the questions and answer without thinking too much or worrying if they contradict themselves (Some questions are similar)
- The questionnaire has two parts. The first part asks questions about themselves. This will help to see how different people react to different images (p.5-16)
- The second part asks the children to imagine a person (some children will be asked to think about a **media person, some a friend**) and answer some questions about this

hyn i gymharu adweithiau i ddelweddau o'r cyfryngau a chyfoedion.

person (p.17-24). This will be used to compare reactions to media images and peers

- Gall plant ofyn cwestiynau os ydynt yn ansicr ynghylch rhyw gwestiwn
- Cesglwch yr holl holiaduron, pan fydd y cyfranogwyr wedi gorffen a gofynnwch i'r plant oes ganddynt unrhyw gwestiynau.
- A fydddech cystal â'u sicrhau nad yw pawb yn meddwl am bwysau a bod yn gyhyrog yn yr un ffordd. Does dim o'i le os oeddent heb feddwl erioed am y materion yma nac, fel arall, os oeddent wedi meddwl.
- Rhowch yr holiaduron a'r ffurflenni cydsynio i
- Children can ask for help if they are not sure about a question
- Please collect all questionnaires when participants have finished and ask the children if they have any questions.
- Please assure them that not everyone thinks about weight and muscularity in the same way. There is nothing wrong if they had never thought about these issues or if on the contrary, they had.
- Please hand the questionnaires and consent forms to

Diolch yn fawr iawn am eich cymorth!

Thank you very much for your help!

Please note: Copies of all materials were distributed to a key individual in each school prior to data collection. This key person distributed the copies to all teachers who were going to be present in the classroom during data collection. The aim was to give teachers time to familiarise themselves with the questionnaire and leave time to discuss any issues that might be identified – either with the data collection process or the questionnaire content. The researcher was present during questionnaire completion in nine out of ten schools. This enabled the researcher to introduce the research topic and answer questions about the topic and questionnaire content before and after questionnaire completion. The researcher discussed data collection in detail with the school where data collection could not be attended.

Appendix L: Quantitative Study - Questionnaire

Dear Participant,

These questions are part of a project I am doing at the School of Nursing, Midwifery and Health Studies. Completion should take about 40 minutes or less.

The project I am working on is to find out what you think and feel about different media images. There are also some questions about you.

The Head of your School has agreed to your participation in the study. However, it is **your choice** and you can say 'no' at any time. All the information I collect is confidential and anonymous. That means no one else but me will see it, and as you do not have to put your name on the questionnaires your answers cannot be identified.

- You will be asked to complete a questionnaire
- Remember that these questions are not a test and there are no right or wrong answers

Please keep this sheet for your information.

My contact details:

Anne Kraye
Institute of food, active living and nutrition, Cymru
University of Wales, Bangor
Thoday Building
Bangor LL57 2UW
a.kraye@bangor.ac.uk

Annwyl Gyfranogwr,

Mae'r cwestiynau hyn yn rhan o broiect yr wyf yn ei gynnal yn yr Ysgol Nyrsio, Bydwreigiaeth ac Astudiaethau Iechyd, Prifysgol Cymru, Bangor. Dylai'r holiadur gymryd 40 munud neu lai i'w gwblhau.

Bwriad y project yr wyf yn gweithio arno yw canfod beth yr ydych chi'n ei feddwl a'i deimlo ynghylch gwahanol ddelweddau ar y cyfryngau. Mae yna hefyd rai cwestiynau amdanoch chi.

Mae Pennaeth eich Ysgol wedi cytuno i chi gymryd rhan yn yr astudiaeth. Fodd bynnag, **eich dewis chi** ydyw, a gellwch ddweud 'na' ar unrhyw adeg. Bydd yr holl wybodaeth y byddaf yn ei gasglu yn gyfrinachol ac yn ddienw. Mae hynny'n golygu na fydd neb arall heblaw fi yn ei weld, a chan nad oes angen i chi roi eich enw ar yr holiaduron ni fydd modd adnabod eich atebion.

- Gofynnir i chi gwblhau holiadur
- Cofiwch nad prawf ydy'r cwestiynau yma ac nad oes atebion cywir nac anghywir

Cadwch y daflen hon er gwybodaeth, os gwelwch yn dda.

Fy manylion cyswllt:

Anne Kraye
Sefydliad Bwyd, Byw'n Heini a Maeth Cymru
Prifysgol Cymru, Bangor
Adeilad Thoday
Bangor LL57 2UW
a.kraye@bangor.ac.uk

I have been told what the study is about and I want to participate.

Name (Print):.....

Please tear this sheet off and return it separately from your questionnaire.

Dywedwyd wrthyf am beth mae'r astudiaeth ac mae arnaf eisiau cymryd rhan.

Torrwch y dudalen hon allan a'i dychwelyd ar wahân i'ch holiadur.

What kind of person are you?

The next statements are about you. Go through the statements and answer them without thinking too much about your answers or worrying if you contradict yourself. Just read a statement and **circle** the number that describes you best. Remember, there are no right or wrong answers. The extremes are Almost never (1) and Almost always (5), but you might decide that one of the others describes you better:

	Almost never 1	Rarely 2	Sometimes 3	A lot 4	Almost always 5
	Almost never 1				Almost always 5
1. I like to meet other people.....	1	2	3	4	5
2. I share my things with other people.....	1	2	3	4	5
3. I do my work with care and attention.....	1	2	3	4	5
4. I get nervous for silly things.....	1	2	3	4	5
5. I know many things	1	2	3	4	5
6. I am in a bad mood	1	2	3	4	5
7. I work hard and with pleasure	1	2	3	4	5
8. I get worked up when I argue with others...	1	2	3	4	5
9. I like to compete with others.....	1	2	3	4	5
10. I have a great deal of fantasy.....	1	2	3	4	5
11. I behave correctly and honestly with others	1	2	3	4	5
12. I easily learn what I study at school.....	1	2	3	4	5
13. I understand when others need my help	1	2	3	4	5
14. I like to move and do a great deal of activity.....	1	2	3	4	5
15. I easily get angry.....	1	2	3	4	5

Pa fath o berson ydych chi?

Mae'r gosodiadau nesaf amdanoch chi. Ewch drwy'r gosodiadau ac atebwch hwy heb feddwl gormod am eich atebion na phoeni os byddwch yn eich croesddweud chi eich hun. Yn syml darllenwch osodiad a rhowch **gylch** am y rhif sy'n eich disgrifio chi orau. Cofiwch, does yna ddim atebion cywir nac anghywir. Yr eithafion yw bron byth (1) a bron bob amser (5), ond efallai y byddwch yn penderfynu bod un o'r lleill yn eich disgrifio chi'n well:

Bron byth Anaml Ambell waith Llawer Bron bob amser
1 **2** **3** **4** **5**

		Bron byth 1		Bron bob amser 5		
1.	Rydw i'n hoffi cyfarfod pobl eraill.....	1	2	3	4	5
2.	Rydw i'n rhannu fy mhethau efo pobl eraill	1	2	3	4	5
3.	Rydw i'n gwneud fy ngwaith gyda gofal a sylw	1	2	3	4	5
4.	Rydw i'n mynd yn nerfus dros bethau gwirion	1	2	3	4	5
5.	Rydw i'n gwybod llawer o bethau	1	2	3	4	5
6.	Rydw i mewn tymer ddrwg	1	2	3	4	5
7.	Rydw i'n gweithio'n galed a chyda phleser	1	2	3	4	5
8.	Rydw i'n gwylltio wrth ddadlau efo pobl eraill	1	2	3	4	5
9.	Rydw i'n hoffi cystadlu gydag eraill	1	2	3	4	5
10.	Mae geni lawer o ffantasi	1	2	3	4	5
11.	Rydw i'n ymddwyn yn gywir ac yn onest gydag eraill	1	2	3	4	5
12.	Rydw i'n dysgu'r hyn rydw i'n ei astudio yn yr ysgol yn hawdd	1	2	3	4	5
13.	Rydw i'n deall pan mae ar bobl eraill angen fy help i	1	2	3	4	5
14.	Rydw i'n hoffi symud a gwneud llawer o weithgaredd	1	2	3	4	5
15.	Rydw i'n mynd yn flin yn hawdd	1	2	3	4	5

		Almost never 1			Almost always 5
16.	I like to give presents	1	2	3	4 5
17.	I quarrel with others	1	2	3	4 5
18.	When the teacher asks questions, I am able to answer correctly	1	2	3	4 5
19.	I like to be with others	1	2	3	4 5
20.	I engage myself in the things I do.....	1	2	3	4 5
21.	If someone commits an injustice to me, I forgive him/her	1	2	3	4 5
22.	During class-time, I am concentrated on the things I do	1	2	3	4 5
23.	I can easily say to others what I think.....	1	2	3	4 5
24.	I like to read a book.....	1	2	3	4 5
25.	When I finish my homework, I check it many times to see if I did it correctly	1	2	3	4 5
26.	I say what I think	1	2	3	4 5
27.	I treat my peers with affection	1	2	3	4 5
28.	I respect the rules and the need for order ..	1	2	3	4 5
29.	I easily get offended.....	1	2	3	4 5
30.	When the teacher explains something I understand immediately	1	2	3	4 5
31.	I am sad.....	1	2	3	4 5
32.	I behave with others with great kindness....	1	2	3	4 5
33.	I like scientific TV programmes	1	2	3	4 5

		Bron byth 1		Bron bob amser 5		
16.	Rydw i'n hoffi rhoi anrhegion.....	1	2	3	4	5
17.	Rydw i'n cweryla gydag eraill	1	2	3	4	5
18.	Pan fydd yr athro'n gofyn cwestiynau, rydw i'n gallu ateb yn gywir	1	2	3	4	5
19.	Rydw i'n hoffi bod efo pobl eraill.....	1	2	3	4	5
20.	Rydw i'n cymryd rhan yn y pethau rydw i'n eu gwneud.....	1	2	3	4	5
21.	Os bydd rhywun yn gwneud tro annheg â fi byddaf yn maddau iddo/I	1	2	3	4	5
22.	Yn ystod amser dosbarth, rydw i'n canolbwyntio ar yr hyn rydw i'n ei wneud ...	1	2	3	4	5
23.	Gallaf ddweud wrth eraill yn hawdd beth rydw i'n ei feddwl	1	2	3	4	5
24.	Rydw i'n hoffi darllen llyfr	1	2	3	4	5
25.	Pan ydw i wedi gorffen fy ngwaith cartref rydw i'n edrych drosto lawer gwaith i wneud yn siŵr fy mod wedi ei wneud yn iawn	1	2	3	4	5
26.	Rydw i'n dweud yr hyn rydw i'n ei feddwl ...	1	2	3	4	5
27.	Rydw i'n trin fy nghyfoedion ag anwyldeb ..	1	2	3	4	5
28.	Rydw i'n parchu'r rheolau a'r angen am drefn	1	2	3	4	5
29.	Rydw i'n cael fy nhramgwyddo'n hawdd.....	1	2	3	4	5
30.	Pan fydd yr athro'n egluro rhywbeth byddaf yn deall yn syth	1	2	3	4	5
31.	Rydw i'n drist	1	2	3	4	5
32.	Rydw i'n ymddwyn yn garedig iawn gydag eraill	1	2	3	4	5
33.	Rydw i'n hoffi rhaglenni teledu gwyddonol	1	2	3	4	5

		Almost never 1			Almost always 5
34.	If I make an engagement I keep it.....	1	2	3	4 5
35.	I do something not to get bored	1	2	3	4 5
36.	I like to watch TV news, and to know what happens in the world	1	2	3	4 5
37.	My room is in order	1	2	3	4 5
38.	I'm polite when I talk with others	1	2	3	4 5
39.	If I want to do something, I am not capable of waiting and I have to do it immediately	1	2	3	4 5
40.	I like to talk with others.....	1	2	3	4 5
41.	I am not patient.....	1	2	3	4 5
42.	I am able to convince someone of what I think.....	1	2	3	4 5
43.	I am able to create new games and entertainments	1	2	3	4 5
44.	When I start to do something I have to finish it at all costs.....				
45.	When a classmate has some difficulty I help her/him.....	1	2	3	4 5
46.	I am able to solve mathematics problems ..	1	2	3	4 5
47.	I trust in others	1	2	3	4 5
48.	I like to keep all my school things in great order	1	2	3	4 5
49.	I easily lose my calm.....	1	2	3	4 5
50.	When I speak, the others listen to me and do what I say.....	1	2	3	4 5
51.	I treat kindly also persons who I dislike	1	2	3	4 5
52.	I like to know and learn new things	1	2	3	4 5
53.	I play only when I finished my homework ...	1	2	3	4 5

		Bron byth 1		Bron bob amser 5		
34.	Os byddaf yn gwneud trefniant byddaf yn cadw ato	1	2	3	4	5
35.	Rydw i'n gwneud rhywbeth rhag i mi ddiflasu	1	2	3	4	5
36.	Rydw i'n hoffi gwyllo'r newyddion ar y teledu, a gwybod beth sy'n digwydd yn y byd.....	1	2	3	4	5
37.	Mae fy ystafell mewn trefn	1	2	3	4	5
38.	Rydw i'n gwrtais wrth siarad efo pobl eraill.....	1	2	3	4	5
39.	Os oes arnaf eisiau gwneud rhywbeth, dydw i ddim yn gallu disgwyl ac mae'n rhaid i mi ei wneud yn syth.....	1	2	3	4	5
40.	Rydw i'n hoffi siarad ag eraill	1	2	3	4	5
41.	Dydw i ddim yn amyneddgar.....	1	2	3	4	5
42.	Rydw i'n gallu argyhoeddi rhywun o'r hyn rydw i'n ei feddwl	1	2	3	4	5
43.	Rydw i'n gallu creu gemau ac adloniant newydd	1	2	3	4	5
44.	Pan fyddaf i'n dechrau rhywbeth mae'n rhaid i mi ei orffen doed a ddelo.....	1	2	3	4	5
45.	Pan fydd rhywun yn y dosbarth yn cael anhawster byddaf yn ei helpu ef/hi.....	1	2	3	4	5
46.	Rydw i'n gallu datrys problemau mathemategol.....	1	2	3	4	5
47.	Rydw i'n ymddiried mewn pobl eraill	1	2	3	4	5
48.	Rydw i'n hoffi cadw fy mhethau ysgol i gyd mewn trefn dda	1	2	3	4	5
49.	Rydw i'n colli fy nhymer yn rhwydd	1	2	3	4	5
50.	Pan fyddaf i'n siarad bydd y lleill yn gwrando arnaf ac yn gwneud yr hyn rydw i'n ei ddweud.....	1	2	3	4	5
51.	Rydw i'n garedig efo pobl nad ydw i'n eu hoffi hefyd	1	2	3	4	5
52.	Rydw i'n hoffi gwybod a dysgu pethau newydd	1	2	3	4	5
53.	Dim ond ar ôl gorffen fy ngwaith cartref y byddaf yn chwarae.....	1	2	3	4	5

		Not at all true 1			Very true 4
4.	I am able to do things as well as most other people	1	2	3	4
5.	I feel I do not have much to be proud of.....	1	2	3	4
6.	I take a positive attitude toward myself	1	2	3	4
7.	On the whole, I am satisfied with myself	1	2	3	4
8.	I wish I could have more respect for myself	1	2	3	4
9.	I certainly feel useless at times	1	2	3	4
10.	At times, I think I am no good at all	1	2	3	4

What is important to you?

Everyone has **long-term goals**. These are things that individuals hope to accomplish over the course of their lives. In this section you will find a number of goals, presented one at a time. We would like to know how important each goal is for you. Please use the following scale when answering how important each goal is to you and **circle** the appropriate number:

1 = Not at all important 2 = Not very important 3 = A little important 4 = Important 5 = Very important

		Not at all important 1			Very important 5	
<i>How important is it to you...</i>						
1.	To be a very wealthy person	1	2	3	4	5
2.	To grow and learn things	1	2	3	4	5
3.	To have my name known by many people	1	2	3	4	5
4.	To have friends I can count on	1	2	3	4	5
5.	To successfully hide the signs of ageing	1	2	3	4	5
6.	To work to make society better	1	2	3	4	5

		Dim yn wir o gwbl 1			Gwir iawn 4
4.	Rydw i'n gallu gwneud pethau gystal â'r rhan fwyaf o bobl eraill.....	1	2	3	4
5.	Rydw i'n teimlo nad oes gen i lawer i fod yn filch ohono.....	1	2	3	4
6.	Rydw i'n cymryd agwedd gadarnhaol tuag ataf fi fy hun.....	1	2	3	4
7.	Ar y cyfan rydw i'n fodlon efo fi fy hun.....	1	2	3	4
8.	Fe fyddai'n dda gen i allu cael mwy o barch ataf fi fy hun.....	1	2	3	4
9.	Rydw i'n sicr yn teimlo'n dda i ddim weithiau	1	2	3	4
10.	Ar adegau, mi fydda i'n meddwl nad ydw i'n dda o gwbl.....	1	2	3	4

Beth sy'n bwysig i chi?

Mae gan bawb **nodau tymor hir**. Pethau ydy'r rhain y mae unigolion yn gobeithio eu cyflawni yn ystod cwrs eu bywyd. Yn yr adran hon fe welwch nifer o nodau, yn cael eu cyflwyno fesul un. Hoffem wybod pa mor bwysig yw pob nod i chi. Defnyddiwch y raddfa ganlynol, os gwelwch yn dda, wrth ateb pa mor bwysig ydy pob nod i chi a rhowch **gylch** am y rhif priodol:

1 = Ddim yn bwysig o gwbl 2 = Dim yn bwysig iawn 3 = Ychydig yn bwysig
4 = Pwysig 5 = Pwysig iawn

		Ddim yn bwysig o gwbl 1			Pwysig iawn 5	
<i>Pa mor bwysig i chi ydy...</i>						
1.	Bod yn berson cyfoethog iawn	1	2	3	4	5
2.	Tyfu a dysgu pethau	1	2	3	4	5
3.	Bod llawer o bobl yn adnabod fy enw.....	1	2	3	4	5
4.	Cael ffrindiau y gallaf ddibynnu arnynt	1	2	3	4	5
5.	Cuddio arwyddion heneiddio'n llwyddiannus..	1	2	3	4	5
6.	Gweithio i wneud cymdeithas yn well.....	1	2	3	4	5

		Not at all important 1			Very important 5	
7.	To be physically healthy.....	1	2	3	4	5
8.	To have many expensive possessions.....	1	2	3	4	5
9.	At the end of my life, to be able to look back on my life as meaningful and complete.....	1	2	3	4	5
10.	To be admired by many people.....	1	2	3	4	5
11.	To share my life with someone I love	1	2	3	4	5
12.	To have many people comment often about how attractive I look	1	2	3	4	5
13.	To assist people who need it, asking nothing in return.....	1	2	3	4	5
14.	To feel good about my level of physical fitness	1	2	3	4	5
15.	To be financially successful	1	2	3	4	5
16.	To choose what to do, instead of being pushed along by life	1	2	3	4	5
17.	To be famous.....	1	2	3	4	5
18.	To have a committed, intimate relationship ...	1	2	3	4	5
19.	To keep up with fashions in hair and clothing	1	2	3	4	5
20.	To work to make the world a better place.....	1	2	3	4	5
21.	To keep myself healthy and well	1	2	3	4	5
22.	To be rich.....	1	2	3	4	5
23.	To know and to accept who I really am	1	2	3	4	5
24.	To have my name appear frequently in the media.....	1	2	3	4	5
25.	To feel that there are people who really love me, and whom I love	1	2	3	4	5
26.	To achieve the 'look' I have been after.....	1	2	3	4	5

		Ddim yn bwysig o gwbl 1			Pwysig iawn 5	
7.	Bod yn gorfforol iach	1	2	3	4	5
8.	Cael llawer o bethau drud	1	2	3	4	5
9.	Ar ddiwedd fy mywyd, gallu edrych yn ôl ar fy mywyd fel rhywbeth ystyrlon a chyfan	1	2	3	4	5
10.	Cael llawer o bobl yn fy edmygu	1	2	3	4	5
11.	Rhannu fy mywyd gyda rhywun rydw i'n ei garu	1	2	3	4	5
12.	Cael llawer o bobl yn dweud yn aml mor ddeniadol ydw i	1	2	3	4	5
13.	Helpu pobl sydd mewn angen, heb ofyn dim yn ôl	1	2	3	4	5
14.	Teimlo'n dda ynghylch fy lefel o ffitrwydd corfforol.....	1	2	3	4	5
15.	Bod yn llwyddiannus yn ariannol.....	1	2	3	4	5
16.	Dewis beth i'w wneud, yn lle cael fy ngwthio ymlaen gan fywyd	1	2	3	4	5
17.	Bod yn enwog	1	2	3	4	5
18.	Cael perthynas agos ac ymrwymiad	1	2	3	4	5
19.	Cadw i fyny efo ffasiynau mewn gwallt a dillad	1	2	3	4	5
20.	Gweithio i wneud y byd yn lle gwell.....	1	2	3	4	5
21.	Cadw fy hun yn iach ac yn dda	1	2	3	4	5
22.	Bod yn gyfoethog	1	2	3	4	5
23.	Gwybod pwy ydw i a derbyn hynny	1	2	3	4	5
24.	Cael fy enw'n ymddangos yn aml yn y cyfryngau	1	2	3	4	5
25.	Teimlo bod yna bobl sy'n fy ngharu i o ddifrif, a finnu'n eu caru nhw	1	2	3	4	5
26.	Dod o hyd i'r 'ymddangosiad' rydw i' wedi bod yn chwilio amdano	1	2	3	4	5

		Not at all important 1			Very important 5	
27.	To help others improve their lives	1	2	3	4	5
28.	To be relatively free from sickness	1	2	3	4	5
29.	To have enough money to buy everything I want	1	2	3	4	5
30.	To gain increasing insight into why I do the things I do	1	2	3	4	5
31.	To be admired by lots of different people	1	2	3	4	5
32.	To have deep lasting relationships	1	2	3	4	5
33.	To have an image that others find appealing	1	2	3	4	5
34.	To help people in need	1	2	3	4	5
35.	To have a physically healthy lifestyle	1	2	3	4	5

How do you feel about your body?

The statements listed below are to be used to describe how anxious, tense, or nervous **you feel in general (i.e. usually) about your body** or specific parts of your body. Please read each statement and **circle** the number that best indicates the extent to which each statement holds true in general. Remember, there are no right or wrong answers.

Never 1	Seldom 2	Sometimes 3	Often 4	Always 5			
			Never 1	Always 5			
<i>In general I feel anxious, tense, or nervous about...</i>							
1.	The extent to which I look overweight		1	2	3	4	5
2.	My thighs		1	2	3	4	5

		Ddim yn bwysig o gwbl 1			Pwysig iawn 5	
26.	Dod o hyd i'r 'ymddangosiad' rydw i' wedi bod yn chwilio amdano	1	2	3	4	5
27.	Cynorthwyo eraill i wella eu bywydau	1	2	3	4	5
28.	Bod yn gymharol rydd o afiechyd	1	2	3	4	5
29.	Cael digon o arian i brynu popeth y mae arnaf ei eisiau	1	2	3	4	5
30.	Dod i ddeall yn well o hyd pam rydw i'n gwneud y pethau rydw i yn eu gwneud	1	2	3	4	5
31.	Cael fy edmygu gan lawer o bobl wahanol	1	2	3	4	5
32.	Cael perthynas ddofn a pharhaol	1	2	3	4	5
33.	Cael delwedd sy'n apelio at eraill	1	2	3	4	5
34.	Cynorthwyo pobl mewn angen	1	2	3	4	5
35.	Cael dull o fyw sy'n gorfforol iach	1	2	3	4	5

Sut rydych chi'n teimlo ynghylch eich corff?

Mae'r gosodiadau a restrwyd isod i gael eu defnyddio i ddisgrifio pa mor boenus, pryderus neu nerfus **rydych chi'n teimlo'n gyffredinol (h.y. fel arfer) ynghylch eich corff**, neu rannau penodol o'ch corff. Darllenwch bob gosodiad, os gwelwch yn dda, a rhwch **gylch** o amgylch y rhif sy'n dangos orau y graddau y mae pob gosodiad yn wir yn gyffredinol. Cofiwch nad oes atebion cywir nac anghywir.

Byth 1	Yn anaml 2	Weithiau 3	Yn aml 4	Bob amser 5				
				Byth 1	Bob amser 5			
<i>Yn gyffredinol rydw i'n teimlo'n boenus, pryderus neu nerfus ynghylch ...</i>								
1.	Y graddau yr ydw i'n edrych yn rhy drwm...			1	2	3	4	5
2.	Rhan uchaf fy nghoesau			1	2	3	4	5

		Never 1			Always 5
3.	My buttocks	1	2	3	4 5
4.	My hips	1	2	3	4 5
5.	My stomach	1	2	3	4 5
6.	My legs	1	2	3	4 5
7.	My waist.....	1	2	3	4 5
8.	My muscle tone.....	1	2	3	4 5

		Byth		Bob amser		
		1			5	
3.	Gwaelod fy nghefn.....	1	2	3	4	5
4.	Fy ngluniau	1	2	3	4	5
5.	Fy stumog.....	1	2	3	4	5
6.	Fy nghoesau	1	2	3	4	5
7.	Fy nghanol.....	1	2	3	4	5
8.	Tyndra fy nghyhyrau	1	2	3	4	5

What do you think about others?

To find out about the world around us we tend to make comparisons with other people. For example, you might compare the way you look with how someone else looks. Comparing yourself means looking for what is different or similar about someone else. Following is a **situation** with questions about your reactions to it.

Before answering the questions, think carefully about the **last time you have come across a situation like this**. With this in mind, go through the questions and answer them without thinking too much about your answers or worrying if you contradict yourself. For example, you can think positively about something and still have negative feelings. Remember, there are no right or wrong answers to the questions.

GIRLS

Media

Imagine that you are looking at a **thin female media image**. This could be someone you have seen recently on television or in a magazine, such as a model in an advert or an actress in a film. What are your thoughts at this moment? Before reading through the following statements can you please describe briefly whom you are thinking about and why you have chosen her?

Peer

Now imagine that you are looking at a **female friend or peer who is thin**. Before reading the following statements, can you briefly describe whom you are thinking about and why you have chosen her? (Do not write down any names).

BOYS

Media

Imagine that you are looking at a **muscular male media image**. This could be someone you have recently seen on television or in a magazine, such as a model advertising a product or an actor in a film. What are your thoughts at this moment? Before reading through the following statements can you please describe briefly whom you are thinking about and why you have chosen him?

Peer

Think about one of your **male friends or peers who are muscular**. What are your thoughts at this moment? Before reading the following statements, can you briefly describe whom you are thinking about and why you have chosen him? (Do not write down any names).

I am thinking about....

Note. Not actual size of response box

Beth ydych chi'n ei feddwl am eraill?

Er mwyn darganfod pethau am y byd o'n cwmpas rydym yn tueddu i wneud cymariaethau gyda phobl eraill. Er enghraifft, efallai y byddech chi'n cymharu'r ffordd rydych chi'n edrych gyda sut y mae rhywun arall yn edrych. Mae cymharu eich hun yn golygu edrych am yr hyn sy'n wahanol neu'n debyg yn rhywun arall.

Cyn ateb y cwestiynau, meddyliwch yn ofalus am **y tro diwethaf i chi ddod ar draws sefyllfa fel hyn**. Gyda hyn mewn golwg, ewch drwy'r cwestiynau a'u hateb heb feddwl gormod am eich atebion na phoeni os byddwch yn eich croesddweud eich hun. Er enghraifft, gellwch feddwl yn gadarnhaol am rywbeth ac eto gael teimladau negyddol. Cofiwch, does yna ddim atebion cywir nac anghywir i'r cwestiynau.

HOGYN

Dychmygwch eich bod yn edrych ar **ddelwedd o ferch denau ar y cyfryngau**. Gallai hon fod yn rhywun a welsoch yn ddiweddar ar y teledu neu mewn cylchgrawn, megis model mewn hysbyseb neu actores mewn ffilm. Beth yw eich meddyliau chi y funud yma? Cyn darllen drwy'r gosodiadau canlynol ellwch chi ddisgrifio'n gryno, os gwelwch yn dda, yr un rydych chi'n meddwl amdani a pham y gwnaethoch ei dewis hi?

Yn awr dychmygwch eich bod yn edrych ar **ffrind neu ferch sydd yr un oed â chi, sy'n denau**. Cyn darllen y gosodiadau canlynol, ellwch chi ddisgrifio'n gryno yr un yr ydych yn meddwl amdani a pham yr ydych wedi ei dewis hi? (Peidiwch ag ysgrifennu unrhyw enwau).

HOGAN

Dychmygwch eich bod yn edrych ar **ddelwedd o ferch denau ar y cyfryngau**. Gallai hon fod yn rhywun a welsoch yn ddiweddar ar y teledu neu mewn cylchgrawn, megis model mewn hysbyseb neu actores mewn ffilm. Beth yw eich meddyliau chi y funud yma? Cyn darllen drwy'r gosodiadau canlynol ellwch chi ddisgrifio'n gryno, os gwelwch yn dda, yr un rydych chi'n meddwl amdani a pham y gwnaethoch ei dewis hi?

Yn awr dychmygwch eich bod yn edrych ar **ffrind neu ferch sydd yr un oed â chi, sy'n denau**. Cyn darllen y gosodiadau canlynol, ellwch chi ddisgrifio'n gryno yr un yr ydych yn meddwl amdani a pham yr ydych wedi ei dewis hi? (Peidiwch ag ysgrifennu unrhyw enwau).

Rydw i'n meddwl am

The following sections are the female versions of the questionnaire

Now read the following statements and **circle** the number that describes you best.

1 = Not at all true for me 2 = Not very true for me 3 = A little true for me
4 = True for me 5 = Very true for me

		Not at all true				Very true
		1				5
<i>What I think about is...</i>						
1.	How much I weigh compared to her	1	2	3	4	5
2.	That different expectations of thinness apply to media characters and models than to me	1	2	3	4	5
3.	That intelligence is more important than being thin.....	1	2	3	4	5
4.	That I feel motivated to lose weight.....	1	2	3	4	5
5.	That how thin she is, is not important to me	1	2	3	4	5
6.	What my body looks like compared to hers	1	2	3	4	5
7.	That I look better in the clothes I wear because they express who I am	1	2	3	4	5
8.	That models and famous people are paid to look thin	1	2	3	4	5
9.	That I would like my body to look like her body ...	1	2	3	4	5
10.	That people in the media are different to 'normal' people	1	2	3	4	5
11.	That how thin she is does not matter to me.....	1	2	3	4	5
12.	That the type of clothes she wears are impractical in everyday life	1	2	3	4	5
13.	How fat I am compared to her	1	2	3	4	5
14.	That she is completely different to me.....	1	2	3	4	5

Yn awr darllenwch y gosodiadau canlynol a rhowch **gylch** o amgylch y rhif sy'n eich disgrifio chi orau.

1 = Dim yn wir o gwbl amdanaf 2 = Dim yn wir iawn amdanaf 3 = Ychydig yn wir amdanaf 4 = Gwir i mi 5 = Gwir iawn i mi

	Dim yn wir o gwbl 1			Gwir iawn i mi 5
<i>Yr hyn rydw i'n meddwl amdano ydy...</i>				
1. Faint rydw i'n ei bwysu o gymharu efo hi.....	1	2	3	4 5
2. Bod y safonau o deneuwch sy'n berthnasol i gymeriadau a modelau ar y cyfryngau yn wahanol i'r hyn sy'n berthnasol i mi.....	1	2	3	4 5
3. Bod deallusrwydd yn bwysicach na bod yn denau	1	2	3	4 5
4. Teimlo cymhelliant i golli pwysau	1	2	3	4 5
5. Nad ydy pa mor denau ydy hi yn bwysig i mi	1	2	3	4 5
6. Sut mae fy nghorff i'n edrych o'i gymharu â'i hun hi.....	1	2	3	4 5
7. Mod l'n edrych yn well yn y dillad rydw l'n eu gwisgo am eu bod yn mynegi pwy ydw l	1	2	3	4 5
8. Bod modelau ac enwogion yn cael eu talu l edrych yn denau	1	2	3	4 5
9. Yr hoffwn l fy nghorff l edrych yn debyg l'w chorff hi.....	1	2	3	4 5
10. Bod pobl yn y cyfryngau yn wahanol i bobl 'normal'	1	2	3	4 5
11. Nad oes ots gen l pa mor denau ydy hi.....	1	2	3	4 5
12. Bod y math o ddillad y mae hi'n eu gwisgo yn anymarferol mewn bywyd pob dydd.....	1	2	3	4 5
13. Mor dew ydw l o gymharu efo hi	1	2	3	4 5
14. Ei bod hi'n hollol wahanol l mi.....	1	2	3	4 5

		Not at all true 1				Very true 5
15.	That media people are thinner than the average person.....	1	2	3	4	5
16	That I might not be the same weight as her, but my style is right for me	1	2	3	4	5
17.	That I would like to be thinner just like her	1	2	3	4	5
18.	That I am not interested in how thin she is	1	2	3	4	5
19.	That I am not as slim as her, but that my style of clothing reflects who I am and she is just dressing up	1	2	3	4	5
20.	How my body shape differs from hers	1	2	3	4	5
21.	That I might not be as thin, but that I am very good at what I do	1	2	3	4	5
22.	That she inspires me to lose weight	1	2	3	4	5
23.	That her shape has nothing to do with who I am	1	2	3	4	5
24.	That getting on with people is more important than being thin	1	2	3	4	5
25.	How different my weight is compared to her	1	2	3	4	5
26.	That images of models and famous people in the media can be altered by technology, e.g. computers technology, to hide flaws	1	2	3	4	5
27.	That being thin does not necessarily mean that one is happy	1	2	3	4	5
28.	That I could learn from her how to be thinner	1	2	3	4	5
29.	That being able to have a good laugh is more important than being thin	1	2	3	4	5

		Dim yn wir o gwbl 1			Gwiriaw n 5	
15.	Bod pobl yn y cyfryngau yn deneuach na'r unigolyn cyffredin.....	1	2	3	4	5
16.	Nad ydw I efallai yr un pwysau â hi, ond bod fy steil I yn iawn I mi	1	2	3	4	5
17.	Yr hoffwn I fod yn deneuach, yn union fel hi.....	1	2	3	4	5
18.	Nad oes gen I ddiddordeb ym mha mor denau ydy hi	1	2	3	4	5
19.	Nad ydw I mor denau â hi, ond bod fy steil I o ddillad yn adlewyrchu pwy ydw I, ac mai gwisgo I fyni'n unig y mae hi	1	2	3	4	5
20.	Sut mae siâp fy nghorff I yn wahanol I'w hun hi ..	1	2	3	4	5
21.	Nad ydw I mor denau efallai, ond mod I'n dda iawn yn yr hyn rydw I'n ei wneud.....	1	2	3	4	5
22.	Ei bod hi'n fy ysbyrdoli I golli pwysau	1	2	3	4	5
23.	Nad oes a wnelo ei siâp ef ddim â'r hyn ydw i.....	1	2	3	4	5
24.	Bod cael ymlaen efo pobl yn bwysicach na bod yn denau.....	1	2	3	4	5
25.	Mor wahanol ydy fy mhwysau I o gymharu efo hi.....	1	2	3	4	5
26.	Bod delweddau o fodelau a phobl enwog yn y cyfryngau yn gallu cael eu newid drwy dechnoleg, e.e. technoleg gyfrifiadurol, i guddio brychau	1	2	3	4	5
27.	Nad ydy bod yn denau yn golygu eich bod chi'n hapus o reidrydd	1	2	3	4	5
28.	Y gallwn I ddysgu oddi wrthi hi sut I fod yn deneuach.....	1	2	3	4	5
29.	Bod medru cael hwyl iawn yn bwysicach na bod yn denau	1	2	3	4	5

	Not at all true 1				Very true 5
30. How slim she is compared to me	1	2	3	4	5
31. That her physical appearance is not important to my life	1	2	3	4	5
32. That thinness is not as important as personality..	1	2	3	4	5
33. That I want to achieve this thinness	1	2	3	4	5
34. That I am not as thin but that I can dress well	1	2	3	4	5
35. That people in the media spend hours on their appearance and shape	1	2	3	4	5

How does the thin image you thought of make you feel?

Following are a number of words that describe different feelings and emotions. Read each item and put the number that describes you best in the space next to the word. Think about **how you feel about the image right now**.

Much unlike this	Unlike this	Like this	Much like this
1	2	3	4

Thinking about the image makes me feel

_____ relaxed	_____ cheerful	_____ lonely
_____ angry	_____ nervous	_____ bad tempered
_____ stressed	_____ confused	_____ happy
_____ sure of myself	_____ untroubled	_____ anxious
_____ sad	_____ mixed-up	_____ muddled
_____ calm	_____ confident	_____ negative about myself
_____ uncertain	_____ depressed	_____ unsure
_____ furious	_____ positive about myself	_____ joyful

		Dim yn wir o gwbl 1				Gwir iawn 5
30.	Mor denau ydy hi o'i chymharu efo fi	1	2	3	4	5
31.	Nad yw ei ymddangosiad corfforol ef yn bwysig yn fy mywyd i.....	1	2	3	4	5
32.	Nad ydy bod yn denau mor bwysig â phersonoliaeth.....	1	2	3	4	5
33.	Bod arna i eisiau bod yn denau fel yna	1	2	3	4	5
34.	Nad ydw i mor denau ond mod l'n gallu gwisgo'n dda.	1	2	3	4	5
35.	Bod pobl yn y cyfryngau yn treulio oriau ar eu hymddangosiad a'u siâp.....	1	2	3	4	5

Sut mae'r ddelwedd denau y buoch yn meddwl amdani yn gwneud i chi deimlo?

Yn dilyn ceir nifer o eiriau sy'n disgrifio gwahanol deimladau ac emosiynau. Darllenwch bob eitem a rhwng y rhif sy'n eich disgrifio chi orau yn y lle wrth y gair. Meddyliwch am **sut rydych chi'n teimlo am y ddelwedd y funud hon.**

Dim fel hyn o gwbl 1	Dim fel hyn 2	Fel hyn 3	Tebyg iawn i hyn 4
_____ yn hamddenol	_____ siriol	_____ unig	
_____ blin	_____ nerfus	_____ mewn tymer ddrwg	
_____ dan straen	_____ cymysglyd	_____ hapus	
_____ sicr ohonof fy hun	_____ dibryder	_____ pryderus	
_____ trist	_____ wedi drysu	_____ wedi cymysgu	
_____ tawel fy fi fy hun	_____ hyderus	_____ ansicr	
_____ negyddol amdanaf meddwl	_____ digalon	_____ ansicr	
_____ blin gynddeiriog	_____ cadarnhaol	_____ llawen fi fy hun amdanaf	

Thinking about the image, would you want to change your behaviour?

Still thinking about the thin image would you like to change something about your behaviour **right now**?

	Not at all true 1				Very true 5
<i>When I look at her I want to...</i>					
1. Skip meals	1	2	3	4	5
2. Eat less.....	1	2	3	4	5
3. Go on a diet	1	2	3	4	5
4. Wear baggy clothes to hide parts of my body	1	2	3	4	5
5. Make an effort to hide aspects of my body shape with clothes.....	1	2	3	4	5
6. Wear clothes that will divert attention from my body shape	1	2	3	4	5

How does the thin image you thought of make you feel about your body right now?

Read through the statements and describe how you feel right now about your body still thinking about the thin image. Remember there are no right or wrong answers.

	Not at all true 1				Very true 5
<i>Right now I feel ...</i>					
1. Satisfied with my appearance	1	2	3	4	5
2. Satisfied with my body size and shape..	1	2	3	4	5
3. Satisfied with my weight.....	1	2	3	4	5
4. Physically attractive	1	2	3	4	5
5. Better about my looks than I usually feel.....	1	2	3	4	5
6. I look better than the average person....	1	2	3	4	5

Wrth feddwl am y ddelwedd, fyddai arnoch chi eisiau newid eich ymddygiad?

A dal i feddwl am y ddelwedd denau, hoffech chi newid rhywbeth ynghylch eich ymddygiad **y funud yma?**

	Dim yn wir o gwbl 1				Gwir iawn 5
<i>Pan ydw i'n edrych arni hi mae arna i eisiau...</i>					
1. Gwneud heb brydau o fwyd	1	2	3	4	5
2. Bwyta llai	1	2	3	4	5
3. Mynd ar ddiet	1	2	3	4	5
4. Gwisgo dillad llac i guddio rhannau o'm corff	1	2	3	4	5
5. Gwneud ymdrech i guddio agweddau ar siâp fy nghorff â dillad	1	2	3	4	5
6. Gwisgo dillad fydd yn tynnu sylw oddi wrth siâp fy nghorff	1	2	3	4	5

Sut mae'r ddelwedd denau y buoch yn meddwl amdani yn gwneud i chi deimlo ynglŷn â'ch corff y funud hon?

Darllenwch drwy'r gosodiadau a disgrifiwch sut rydych chi'n teimlo'r funud yma ynglŷn â'ch corff gan ddal i feddwl am y ddelwedd denau. Cofiwch, does yna ddim atebion cywir nac anghywir i'r cwestiynau.

	Dim yn wir o gwbl 1				Gwir iawn 5
<i>Ar hyn o bryd rydw i'n teimlo ...</i>					
1. Yn fodlon ar fy ymddangosiad	1	2	3	4	5
2. Yn fodlon ar faint a siâp fy nghorff	1	2	3	4	5
3. Yn fodlon ar fy mhwysau	1	2	3	4	5
4. Yn ddeniadol yn gorfforol	1	2	3	4	5
5. Yn well am sut rydw i'n edrych nag rydw i'n teimlo fel arfer	1	2	3	4	5
6. Rydw i'n edrych yn well na'r person cyffredin	1	2	3	4	5

And finally, could you please tell us a bit about you:

Your age: years months

Your weight: kg, stones or pounds (please circle)

Your height: cm or feet and inches (please circle)

Thank you very much for helping with this project.

Ac yn olaf, ellwch chi ddweud ychydig wrthym amdanoch chi eich hun, os gwelwch yn dda:

Eich oedran:..... blwyddyn..... mis

Eich pwysau:..... kg, stôn neu bwys (rhowch gylch)

Eich taldra:..... cm neu droedfedd a modfedd (rhowch gylch)

Diolch yn fawr iawn i chi am helpu efo'r project yma

The following sections are the male versions of the questionnaire

Now read the following statements and **circle** the number that describes you best.

1 = Not at all true for me 2 = Not very true for me 3 = Slightly true for me
4 = True for me 5 = Very true for me

	Not at all true for me 1				Very true for me 5
<i>What I think about is...</i>					
1. How much muscle I have compared to him.....	1	2	3	4	5
2. That different expectations of muscularity apply to media characters and models than to me	1	2	3	4	5
3. That intelligence is more important than being muscular.....	1	2	3	4	5
4. That I feel motivated to build up strength.....	1	2	3	4	5
5. That how well built he is, is not important to me.....	1	2	3	4	5
6. What my body looks like compared to his.....	1	2	3	4	5
7. That I look better in the clothes I wear because they express who I am	1	2	3	4	5
8. That models and famous people are paid to look muscular	1	2	3	4	5
9. That I would like my body to look like his body	1	2	3	4	5
10. That people in the media are different to 'normal' people	1	2	3	4	5
11. That how strong he looks does not matter to me	1	2	3	4	5
12. That the type of clothes he wears are impractical in everyday life	1	2	3	4	5
13. How weedy I am compared to him	1	2	3	4	5
14. That he is completely different to me	1	2	3	4	5

Yn awr darllenwch y gosodiadau canlynol a rhowch **gylch** o amgylch y rhif sy'n eich disgrifio chi orau.

1 = Dim yn wir o gwbl amdanaf 2 = Dim yn wir iawn amdanaf 3 = Ychydig yn wir amdanaf 4 = Gwir i mi 5 = Gwir iawn i mi

	Dim yn wir o gwbl 1				Gwir iawn 5
<i>Yr hyn rydw i'n meddwl amdano ydy...</i>					
1. Faint rydw i'n ei bwyso o gymharu efo hi.....	1	2	3	4	5
2. Bod y safonau o deneuwch sy'n berthnasol i gymeriadau a modelau ar y cyfryngau yn wahanol i'r hyn sy'n berthnasol i mi	1	2	3	4	5
3. Bod deallusrwydd yn bwysicach na bod yn denau	1	2	3	4	5
4. Teimlo cymhelliant i golli pwysau	1	2	3	4	5
5. Nad ydy pa mor denau ydy hi yn bwysig i mi	1	2	3	4	5
6. Sut mae fy nghorff i'n edrych o'i gymharu â'i hun hi	1	2	3	4	5
7. Mod i'n edrych yn well yn y dillad rydw i'n eu gwisgo am eu bod yn mynegi pwy ydw i	1	2	3	4	5
8. Bod modelau ac enwogion yn cael eu talu i edrych yn denau	1	2	3	4	5
9. Yr hoffwn i fy nghorff i edrych yn debyg i'w chorff hi	1	2	3	4	5
10. Bod pobl yn y cyfryngau yn wahanol i bobl 'normal'	1	2	3	4	5
11. Nad oes ots gen i pa mor denau ydy hi.....	1	2	3	4	5
12. Bod y math o ddillad y mae hi'n eu gwisgo yn anymarferol mewn bywyd pob dydd.....	1	2	3	4	5
13. Mor dew ydw i o gymharu efo hi.....	1	2	3	4	5
14. Ei bod hi'n hollol wahanol i mi	1	2	3	4	5

	Not at all true for me 1			Very true for me 5	
15. That media people are more muscular than the average person	1	2	3	4	5
16. That I might not be as muscular as he is, but my style is right for me.....	1	2	3	4	5
17. That I would like to look stronger just like him	1	2	3	4	5
18. That I am not interested in how muscular he is.....	1	2	3	4	5
19. That I am not as well built as him, but that my style of clothing reflects who I am and he is just dressing up	1	2	3	4	5
20. How my body shape differs from his	1	2	3	4	5
21. That I might not be as muscular, but that I am very good at what I do	1	2	3	4	5
22. That he inspires me to put on more muscle	1	2	3	4	5
23. That his shape has nothing to do with who I am.....	1	2	3	4	5
24. That getting on with people is more important than having muscles	1	2	3	4	5
25. How different my muscles are compared to his	1	2	3	4	5
26. That images of models and famous people in the media can be altered by technology, e.g. computer technology, to hide flaws.....	1	2	3	4	5
27. That having muscles does not necessarily mean that one is happy	1	2	3	4	5
28. That I could learn from him how to develop more strength	1	2	3	4	5
29. That being able to have a good laugh is more important than having muscles	1	2	3	4	5
30. How strong he looks compared to me...	1	2	3	4	5

	Dim yn wir o gwbl 1				Gwir iawn 5
15. Bod pobl yn y cyfryngau yn fwy cyhyrog na'r unigolyn cyffredin.....	1	2	3	4	5
16. Nad ydw i efallai yr un pwysau â hi, ond bod fy steil i yn iawn i mi	1	2	3	4	5
17. Yr hoffwn i fod yn deneuach, yn union fel hi.....	1	2	3	4	5
18. Nad oes gen i ddiddordeb ym mha mor denau ydy hi	1	2	3	4	5
19. Nad ydw i mor denau â hi, ond bod fy steil i o ddillad yn adlewyrchu pwy ydw i, ac mai gwisgo i fyny'n unig y mae hi.....	1	2	3	4	5
20. Sut mae siâp fy nghorff i yn wahanol i'w hun hi.....	1	2	3	4	5
21. Nad ydw i mor denau efallai, ond mod i'n dda iawn yn yr hyn rydw i'n ei wneud	1	2	3	4	5
22. Ei bod hi'n fy ysbrydoli i golli pwysau	1	2	3	4	5
23. Nad oes a wnelo ei siâp hi ddim â'r hyn ydw i.....	1	2	3	4	5
24. Bod cael ymlaen efo pobl yn bwysicach na bod yn denau	1	2	3	4	5
25. Mor wahanol ydy fy mhwysau i o gymharu efo hi	1	2	3	4	5
26. Bod delweddau o fodelau a phobl enwog yn y cyfryngau yn gallu cael eu newid drwy dechnoleg, e.e. technoleg gyfrifiadurol, i guddio brychau	1	2	3	4	5
27. Nad ydy bod yn denau yn golygu eich bod chi'n hapus o reidrwydd	1	2	3	4	5
28. Y gallwn i ddysgu oddi wrthi hi sut i fod yn deneuach	1	2	3	4	5
29. Bod medru cael hwyl iawn yn bwysicach na bod yn denau	1	2	3	4	5
30. Mor denau ydy hi o'i chymharu efo fi.....	1	2	3	4	5

	Not at all true for me 1			Very true for me 5	
31. That his physical appearance is not important to my life.....	1	2	3	4	5
32. That muscles are not as important as personality	1	2	3	4	5
33. That I want to achieve this muscularity..	1	2	3	4	5
34. That I am not as well built but I can dress well.....	1	2	3	4	5
35. That people in the media spend hours on their appearance and shape	1	2	3	4	5

How does the muscular image you thought of make you feel?

Following are a number of words that describe different feelings and emotions. Read each item and put the number that describes you best in the space next to the word. Think about **how you feel about the image right now**.

Much unlike this	Unlike this	Like this	Much like this
1	2	3	4

Thinking about the image makes me feel

_____ relaxed	_____ cheerful	_____ lonely
_____ angry	_____ nervous	_____ bad tempered
_____ stressed	_____ confused	_____ happy
_____ sure of myself	_____ untroubled	_____ anxious
_____ sad	_____ mixed-up	_____ muddled
_____ calm	_____ confident	_____ negative about myself
_____ uncertain	_____ depressed	_____ unsure
_____ furious	_____ positive about myself	_____ joyful

		Dim yn wir o gwbl 1				Gwir iawn 5
31.	Nad yw ei ymddangosiad corfforol hi yn bwysig yn fy mywyd i.....	1	2	3	4	5
32.	Nad ydy bod yn denau mor bwysig â phersonoliaeth	1	2	3	4	5
33.	Bod arna i eisiau bod yn denau fel yna .	1	2	3	4	5
34.	Nad ydw i mor denau ond mod i'n gallu gwisgo'n dda.	1	2	3	4	5
35.	Bod pobl yn y cyfryngau yn treulio oriau ar eu hymddangosiad a'u siâp	1	2	3	4	5

Sut mae'r ddelwedd denau y buoch yn meddwl amdani yn gwneud i chi deimlo?

Yn dilyn ceir nifer o eiriau sy'n disgrifio gwahanol deimladau ac emosiynau. Darllenwch bob eitem a rhowch y rhif sy'n eich disgrifio chi orau yn y lle wrth y gair. Meddyliwch am **sut rydych chi'n teimlo am y ddelwedd y funud hon.**

Dim fel hyn o gwbl	Dim fel hyn	Fel hyn	Tebyg iawn i hyn
1	2	3	4

Mae meddwl am y ddelwedd yn gwneud i mi deimlo

_____ yn hamddenol	_____ siriol	_____ unig
_____ blin	_____ nerfus	_____ mewn tymer ddrwg
_____ dan straen	_____ cymysglyd	_____ hapus
_____ sicr ohonof fy hun	_____ dibryder	_____ pryderus
_____ trist	_____ wedi drysu	_____ wedi cymysgu
_____ tawel fy fi fy hun	_____ hyderus	_____ ansicr
_____ negyddol amdanaf meddwl	_____ digalon	_____ ansicr
_____ blin gynddeiriog	_____ cadarnhaol	_____ llawen fi fy hun amdanaf

Thinking about the muscular image, would you want to change your behaviour?

Still thinking about the muscular image would you like to change something about your behaviour **right now**?

	Not at all true 1				Very true 5
<i>When I look at him I want to...</i>					
1. Play more sports to increase my built	1	2	3	4	5
2. Start exercising more to build up muscle....	1	2	3	4	5
3. Engage in more exercise to tone my body.....	1	2	3	4	5
4. Wear baggy clothes to hide parts of my body.....	1	2	3	4	5
5. Make an effort to hide aspects of my body shape with clothes.....	1	2	3	4	5
6. Wear clothes that will divert attention from my body shape	1	2	3	4	5

How does thinking about the muscular image make you feel about your body right now?

Read through the statements and describe how you feel right now about your body still thinking about the muscular image. Remember there are no right or wrong answers.

	Not at all true 1				Very true 5
<i>Right now I feel ...</i>					
1. Satisfied with my appearance	1	2	3	4	5
2. Satisfied with my body size and shape.....	1	2	3	4	5
3. Satisfied with my muscles	1	2	3	4	5
4. Physically attractive	1	2	3	4	5
5. Better about my looks than I usually feel....	1	2	3	4	5
6. I look better than the average person.....	1	2	3	4	5

Wrth feddwl am y ddelwedd, fyddai arnoch chi eisiau newid eich ymddygiad?

A dal i feddwl am y ddelwedd denau, hoffech chi newid rhywbeth ynghylch eich ymddygiad **y funud yma?**

	Dim yn wir o gwbl 1				Gwir iawn 5
<i>Pan ydw i'n edrych arni hi mae arna i eisiau...</i>					
1. Gwneud heb brydau o fwyd	1	2	3	4	5
2. Bwyta llai	1	2	3	4	5
3. Mynd ar ddiet.....	1	2	3	4	5
4. Gwisgo dillad llac i guddio rhannau o'm corff	1	2	3	4	5
5. Gwneud ymdrech i guddio agweddau ar siâp fy nghorff â dillad	1	2	3	4	5
6. Gwisgo dillad fydd yn tynnu sylw oddi wrth siâp fy nghorff.....	1	2	3	4	5

Sut mae'r ddelwedd denau y buoch yn meddwl amdani yn gwneud i chi deimlo ynglŷn â'ch corff y funud hon?

Darllenwch drwy'r gosodiadau a disgrifiwch sut rydych chi'n teimlo'r funud yma ynglŷn â'ch corff gan ddal i feddwl am y ddelwedd denau. Cofiwch, does yna ddim atebion cywir nac anghywir i'r cwestiynau.

	Dim yn wir o gwbl 1				Gwir iawn 5
<i>Ar hyn o bryd rydw i'n teimlo ...</i>					
1. Yn fodlon ar fy ymddangosiad.....	1	2	3	4	5
2. Yn fodlon ar faint a siâp fy nghorff.....	1	2	3	4	5
3. Yn fodlon ar fy mh wysau.....	1	2	3	4	5
4. Yn ddeniadol yn gorfforol	1	2	3	4	5
5. Yn well am sut rydw i'n edrych nag rydw i'n teimlo fel arfer	1	2	3	4	5
6. Rydw i'n edrych yn well na'r person cyffredin	1	2	3	4	5

And finally, could you please tell me a bit about you:

Your age: years months

Your weight: kg, stones or pounds (please circle)

Your height: cm or feet and inches (please circle)

Thank you very much for helping with this project.

Ac yn olaf, ellwch chi ddweud ychydig wrthym amdanoch chi eich hun, os gwelwch yn dda:

Eich oedran:..... blwyddyn..... mis

Eich pwysau:..... kg, stôn neu bwys (rhowch gylch)

Eich taldra:..... cm neu droedfedd a modfedd (rhowch gylch)

Diolch yn fawr iawn i chi am helpu efo'r project yma

Appendix M: Quantitative Study - "Thank You" Letter for Schools

Anne Kraye
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Dear

Thank you again for your help and support with my research project. I am anticipating finishing data collection before the summer holidays. Data analysis will proceed during the summer and I am hoping to complete the summary report for all participating schools by the end of the year.

Most schools have asked for information about eating disorders and I have enclosed some materials and contacts that might be of interest. There are two organisations, which might be of interest: Childline and the Eating Disorders Association (EDA).

Childline has got a website with downloadable (www.childline.org.uk) resources and I have enclosed a copy of an information leaflet about eating disorders. There is also a helpline for young people (0800-1111). Childline works closely with schools and there is a new initiative called 'childline in partnerships with schools' (CHIPS). As part of this partnership, seminars and workshops can be arranged for teachers focusing on bullying in schools and eating problems. In addition, leaflets and other resources are available.

The North Wales contact for CHIPS is Hannah March (Tel. 0207650-6865; Email: hmarch@chiline.org.uk). Calls are charged at a local

call rate and Hannah is based in Rhyl, in the Royal Alexander Hospital. She would be very happy to have a chat with you about their work. Their services are free, but the schools might be asked to hold a fundraiser for CHIPS.

The **Eating Disorders Association** (eda.org.uk) has got a number of resources (leaflets and educational materials) available. Please find enclosed some samples of their leaflets and an order form. They also provide a youth line (0845-634-7650), which is open Mon – Fri 4.30pm to 8.30pm and Saturdays from 1.00 – 4.30.

There is an educational resource for teachers and youth workers “*It’s not about food, it’s about feelings*” with background information, suggestions for activities and worksheets. The pack is multidisciplinary including activities for Food Technology, Biology, Psychology, English and Drama and ICT. It also includes examples of EDA literature and other suggested resource material.

I have spoken to the EDA and they are currently looking for schools that might want to participate in a free workshop pilot (*‘Educate’*). This workshop is for Y10 students and provides information about eating disorders and addresses the stigma of mental illness. Schools who are interested will go through a selection process for the pilot to ensure diversity. If you are interested, please contact Clare Curtis (0870 – 7703256 ext233).

Please do not hesitate to contact me if you have any questions about the research.

Kind regards

Anne Krayner

Appendix N: Quantitative Study - Unstandardised Parameter
Estimates SCASA

Items	Unstandardised Estimates (SE)
Evaluation	
How much I weigh compared to her/muscle I have	.910 (.051)
What my body looks like compared to hers/his	1.022 (.054)
How fat/weedy I am compared to her/him	1.046 (.055)
How slim she/strong he looks is compared to me	1.000
Improvement	
That I feel motivated to lose weight/build up strength	.873 (.064)
That I would like to be thinner/be stronger just like her/him	1.196 (.070)
That she/he inspires me to lose weight/put on more muscle	1.000
That I want to achieve this thinness/muscularity	1.107 (.066)
Enhancement-Comparing on a different dimension	
That getting on with people is more important than being thin/having muscles	1.000
That being thin/having muscles does not necessarily mean that one is happy	1.005 (.070)
That being able to have a good laugh is more important than being thin/having muscles	.861 (.065)
That thinness is/muscles are not as important as personality	.832 (.068)
Enhancement-Discounting	
That models and famous people are paid to look	.963 (.099)

thin/muscular

That media people are thinner/more muscular than the average person	1.000
---	-------

That images of models and famous people in the media can be altered by technology to hide flaws	1.129 (.106)
---	--------------

That people in the media spend hours on their appearance and shape	1.064 (.100)
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Relevance

That how thin she is/well built he is, is not important to me	.651 (.080)
---	-------------

That how thin she is/strong he looks does not matter to me	.990 (.087)
--	-------------

That I am not interested in how thin she/muscular he is	1.000
---	-------

That her/his shape has nothing to do with who I am	.847 (.084)
--	-------------

Clothing

That I look better in the clothes I wear because they express who I am	1.000
--	-------

That I might not be the same weight as her/as muscular as he is, but my style is right for me	1.291 (.150)
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That I am not as slim as her/as muscular, but that my style of clothing reflects who I am	1.274 (.151)
---	--------------

That I am not as thin/well built but that I can dress well	1.104 (.137)
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Appendix O: Quantitative Study - Missing Data Values

Missing data can present a problem for the analysis as it may lead to deceptive conclusions (Byrne, 2001). There are several approaches available to handle missing data and the choice should depend on the type of missing data. It is important to consider if there is an underlying pattern to the missing data. Missing data can be classified as: missing completely at random (MCAR), missing at random (MAR) and systematic or nonignorable data (Kline, 2005). With MCAR data, missing values are randomly distributed across all cases. In other words, there are no underlying reasons for the missing observations. MAR data reflects some randomness and the occurrence of a missing value can be explained by other variables in the data set (Kline, 2005). For example, depressed respondents might be less likely to record their daily dietary intake. Although this occurs at a higher rate in depressed individuals than non-depressed individuals, the occurrence is random. Systematically missing data, also called not missing at random (NMAR), can be very problematic as it may affect parameter estimates.

Dealing with missing Data

Possible methods to deal with missing data are: listwise deletion, pairwise deletion, mean substitution, simple regression imputation, regression imputation with added error term, and expectation maximization method (EM). Listwise deletion of data means the exclusion of all cases with missing values. This reduces the sample size which leads to fewer degrees of freedom, less statistical power and larger standard errors (Cohen & Cohen, 1983). In pairwise deletion, exclusion of cases from the analysis only takes place if the missing values occur on the variables included in the particular calculation. In mean substitution, the missing value is substituted with the overall mean of the sample. Mean substitution does not take individuals' patterns of scores on other variables into consideration and reduces variance of the item (Tabachnik & Fidell, 2006). In

simple regression imputation, relevant variables of the data set are used to predict the missing (dependent) variable (Hair, Anderson, Tatham & Black, 1998). Difficulties may arise as the approach is likely to inflate tests statistics such as correlations and underestimate the variance of the missing variable.

Regression imputation with an error term involves adding an estimated error term which is added to the estimated value. The error term is chosen at random from a theoretical distribution of error variances of the non-missing data. This approach can be problematic as it might calculate missing value estimates that are outside the range of scores (Hair et al., 1998). With the EM approach, values are generated through iterative procedures using expectation and maximization algorithms (Brown, 2006). The EM approach is particularly suitable for estimating model parameters which depend on unobserved latent variables. However, standard errors of the parameter estimates might not be consistent (Allison, 2003). Musil, Warner, Yobas & Jones (2002) compared listwise and pairwise deletion, mean substitution, simple regression, regression with an error term and the EM algorithm using an original data set. The authors concluded that two approaches (regression with an error term and the EM algorithm) produced the closest estimates to the original variables. This is in agreement with others who noted that the maximum likelihood method produces the closest results (Raghunathan, 2004; Schafer & Graham, 2002). However, the preferred method is the direct Maximum Likelihood (ML) estimation, which is available in the latest versions of AMOS (Brown, 2006). However, ML was not seen as suitable for the present research as the version of AMOS used for the data analysis was not able to impute values for missing data as newer versions of AMOS are. Thus, analysis of a data set using ML would have been very restricted (for example, modification indices could not have been calculated).

The Present Research

The data set for the questionnaire in the present quantitative study included 563 individuals. Missing data analysis indicated that the percentage of missing values ranged from 0.2 to 3.1%. Cohen and Cohen (1983) suggest that 5% - 10% missing responses to a variable may be considered small. Little's MCAR test indicated that the data was not MCAR ($\chi^2 = 1925.490$, $df = 1754$; $p \leq 0.05$). A test for the MRA status of the data was also run. For some items, p values were equal or less than 0.05, indicating that the data was not MRA. However, it has been argued that a few NMAR values and less than 5% missing data are not a serious problem (Tabachnik & Fidell, 2006). A look at the missing pattern output showed that some respondents had not completed the sections on social comparison ($n = 6$) and some had completed less than 50% (completed 35%) of the scale ($n = 4$). These cases were deleted from the data file. The EM approach was then used to calculate values and a new data file saved.

Appendix P: Quantitative Study - Principal Component Analyses

Table 1 Principal Component Analysis of Affect Scale

Items	Component		
	1	2	3
Uncertain	.82	-.06	-.09
Nervous	.71	.12	.13
Confused	.73	.07	.11
Unsure	.68	-.16	.10
Calm	.12	.70	-.16
Cheerful	.01	.86	.06
Positive about myself	-.30	.67	.12
Happy	.07	.79	-.11
Angry	.05	-.06	.81
Stressed	.29	-.11	.60
Furious	.00	-.03	.84
Bad tempered	-.01	.03	.85

Table 2 Principal Component Analysis of Behavioural Intention Scale

	Component	
	1	2
Intentions – body change strategies		
1. Skip meals ¹ /play more sports ²	-.05	-.91
2. Eat less ¹ /start exercising more ²	-.03	-.95
3. Go on a diet ¹ /engage in more exercise ²	.12	-.85
Intentions – clothing		
4. Wear baggy clothes to hide parts of my body	.91	.03
5. Make an effort to hide aspects of my body shape with clothes	.91	-.01
6. Wear clothes that will divert attention from my body shape	.89	-.02

Notes: ¹ girls, ² boys

Appendix Q: Quantitative Study – Simplified Path Diagrams

Figure 1 Relationships of Personality Traits and Trait Self-Esteem and Body Image With Social Comparison Appraisals

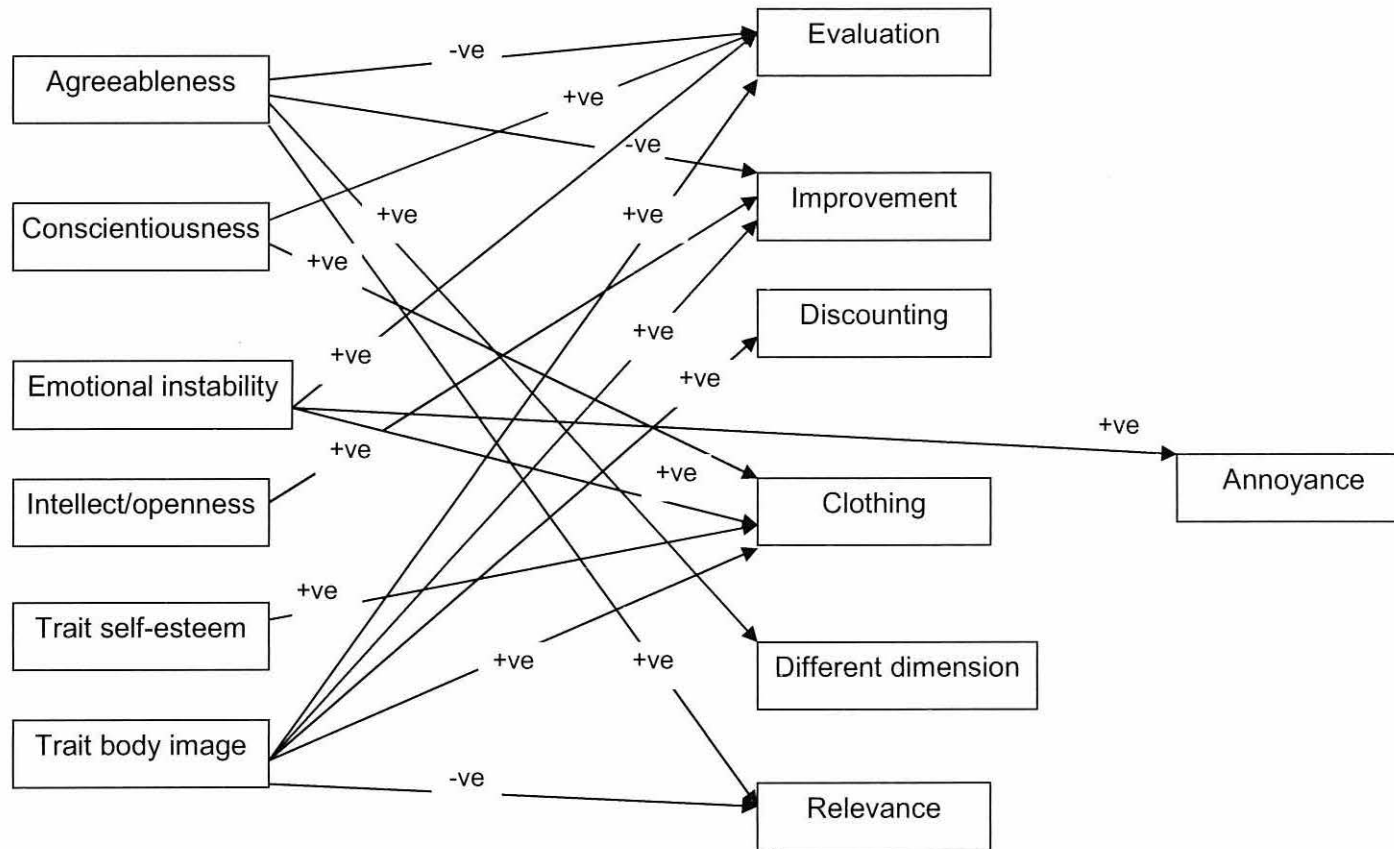


Figure 2 Relationships of Life Goals With Social Comparison Appraisals

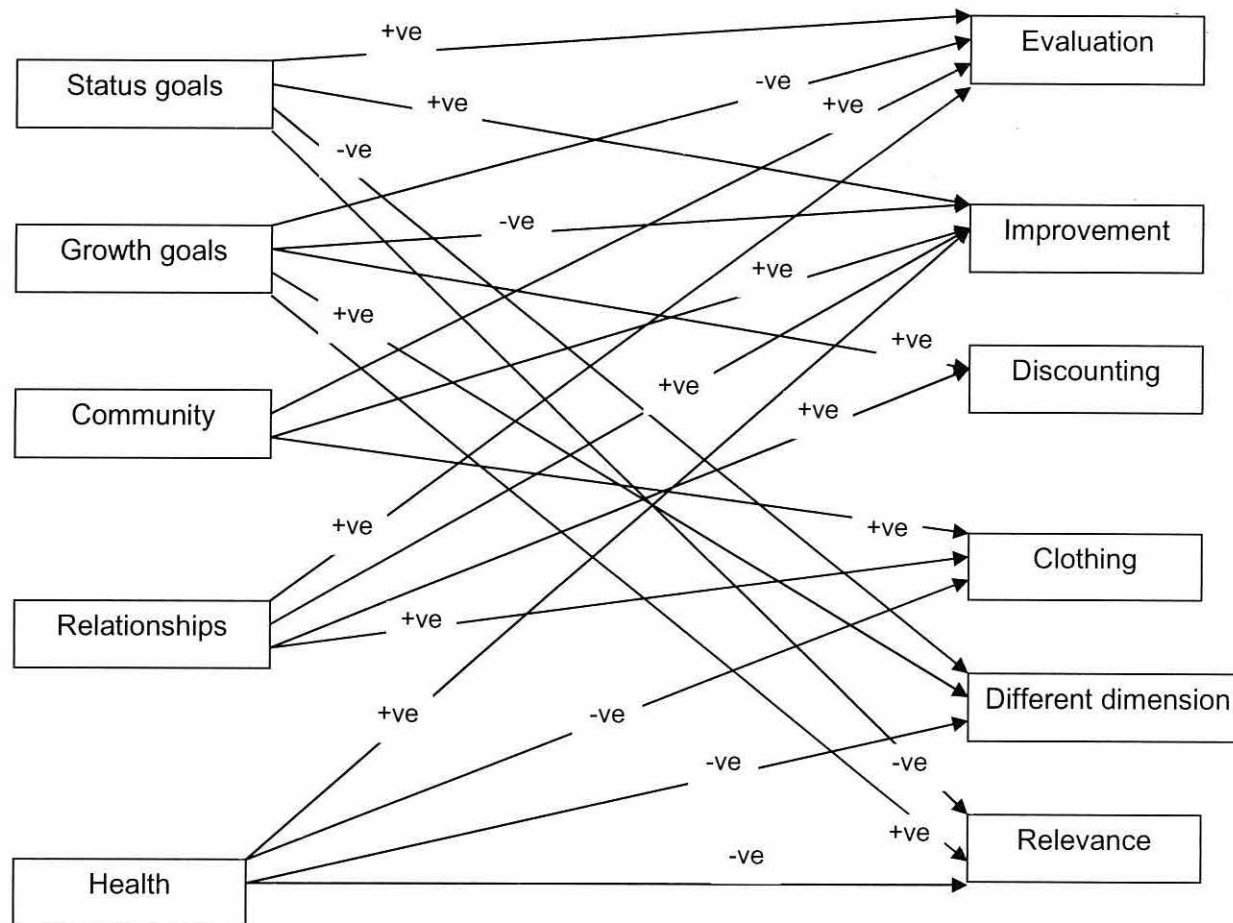


Figure 3 Relationships of Social Comparison Appraisals With Affect

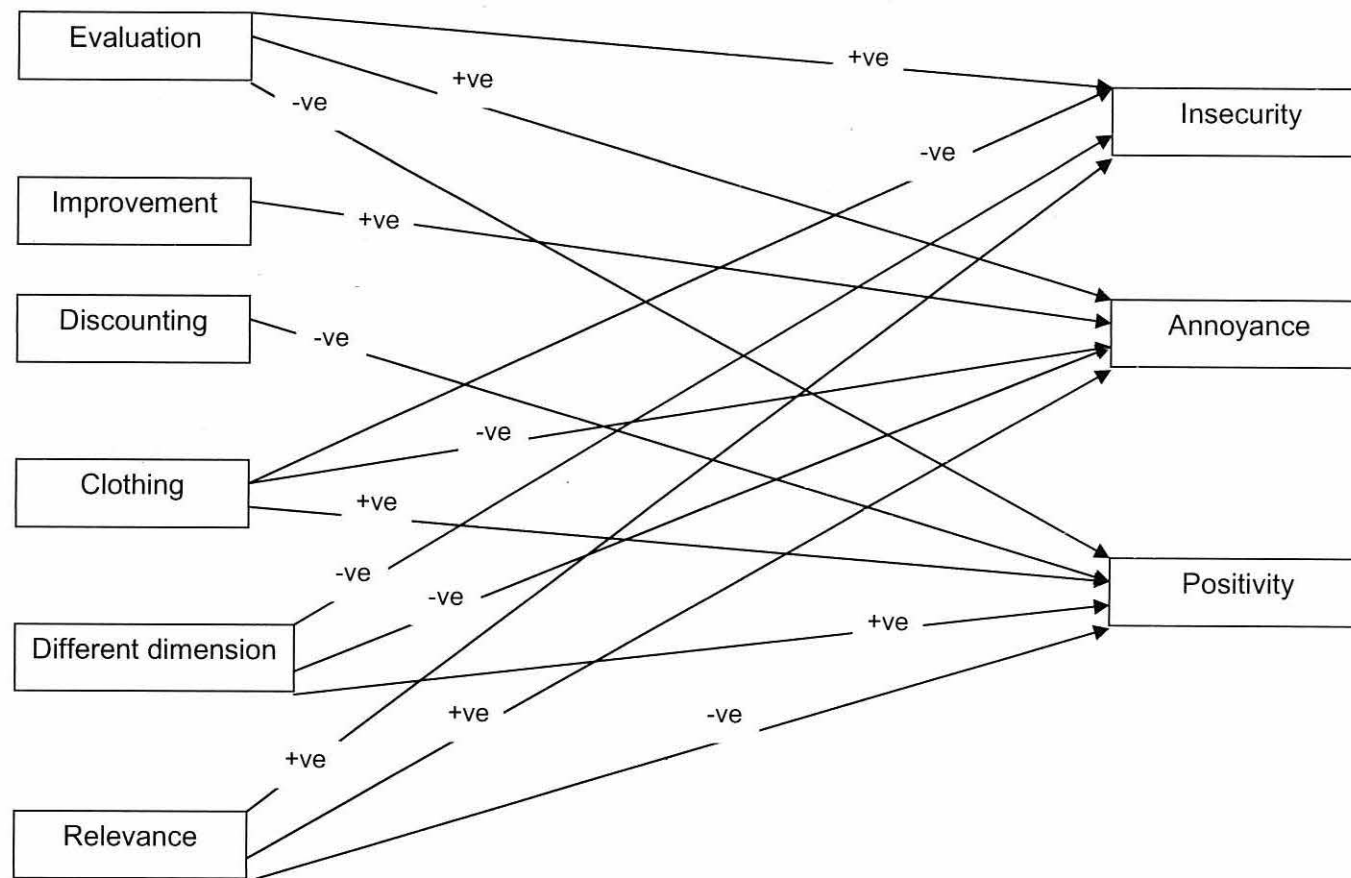


Figure 4 Relationships of Social Comparison Appraisals With Behavioural Intentions and State Body Images

