



Government
Equalities Office

Body image – a rapid evidence assessment of the literature

A project on behalf of the Government Equalities Office

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Executive Summary

Introduction

The Government is concerned that people – men, women and children – suffer from negative feelings about their body image and this can influence their wellbeing and self-esteem. As a response, the Government launched the body confidence campaign. This rapid evidence assessment has been commissioned to inform the work of the campaign, focusing on the causes, consequences and potential interventions associated with body image.

The term ‘body image’ incorporates themes of body perception (the extent to which an individual has an accurate perception of their body size, shape and weight) and body satisfaction (the extent to which an individual is satisfied with their body size, shape and weight). The aim of this rapid evidence assessment was to provide a broad overview of the body image research using the most robust research evidence available.

It should be noted that this rapid evidence assessment suffers with the same limitations as previous literature reviews, including: an over-reliance on correlational studies, a lack of research on certain populations, and insufficient information provided in some research papers.

What are the potential causes and consequences of negative body image?

The methodology used in the majority of body image research means that it is not possible to robustly establish the *precise* causes and consequences of negative body image, due to an over-reliance on correlational studies. However, the research indicates that *potential* causes of negative body image include being overweight or obese; viewing media images of ideal body shapes; the influence of family and peers; and individual psychological factors such as an increased tendency to compare yourself to others. The potential consequences of negative body image include low self-esteem, depression, and the use of unhealthy weight control behaviours (such as crash dieting).

Who is impacted by negative body image?

Gender is the main factor in establishing who is most impacted by negative body image, with females more likely to have lower body satisfaction than males regardless of age or ethnicity. Negative body image is found across all ages and ethnicities however, it should be noted that there is more research evidence available on younger populations and White populations.

What can be done about negative body image?

Studies indicate a number of potential factors that may help to protect against negative body image or prevent negative body image. These include maintaining a healthy weight, encouraging close relationships with others, improving well-being, and reducing any tendency to compare yourself to others. Research indicates that exercise-based interventions and psychotherapeutic interventions are effective at improving body image.

Conclusion

The research presented in this rapid evidence assessment indicates that there is a complicated relationship between factors such as weight, the media, relationships with others, individual factors and body image. Future research needs to identify the mechanisms under which these

factors combine to produce low body satisfaction. Such research will help improve our understanding of how the different aspects of body image combine to cause low body satisfaction and will facilitate efforts to improve body image.

I. Introduction

What is the policy context for this review?

The Government is concerned that people – men, women and children – suffer from negative feelings about their body image and this can influence their wellbeing and self-esteem, with damaging impacts on physical and mental health.

As a response, the Government launched the body confidence campaign which has three broad aims:

- To promote a wider spectrum of body shapes in popular culture to include all shapes and sizes, ages and ethnicities;
- To give people the tools they need to critically assess the images around them;
- To encourage people to recognise that emotional qualities – character and individuality – are equally expressive of beauty as physical appearance.

In order to inform the policy behind the campaign and target intervention most effectively, the government wants to better understand:

- The causes of negative body image – this may include, but is not limited to societal factors (such as the media or peer influence) and individual factors (such as a lack of individual resilience);
- The impacts of negative body image – who is impacted and how;
- The potential interventions – to protect against negative body image, prevent negative body image or improve body image.

This rapid evidence assessment has been commissioned to answer these questions and inform the Government's body confidence campaign going forwards.

What is body image?

The 'body image' literature generally incorporates two themes.

1. **Body perception.** This is an individual's assessment of the physical aspects of their body and the extent to which this assessment is accurate. In extreme cases individuals suffer from body dysmorphic disorder (BDD), a psychological disorder related to eating disorders whereby individuals have very inaccurate perceptions of their body size.
2. **Body satisfaction.** This is the extent to which an individual is content with their body size and shape. Incorporated into this theme are terms such as body confidence, body esteem, and body dissatisfaction.

The term 'body image' can therefore refer to either body perception or body satisfaction. This rapid evidence assessment will use the same terms as those found in the literature, moving from body image to body satisfaction to body perception as a reflection of the terms used in the research papers that are being discussed. Where necessary clarification will be given as to whether the paper is discussing body perception or body satisfaction.

Most of the literature on body image is focused on whole body size, shape and satisfaction.

Consequently most of the research focuses on body weight, body mass, muscle mass, or overall body satisfaction rather than specific areas of the body such as skin tone, facial features, body hair, or other aspects of appearance. Where a research paper focuses on a specific aspect of body image (e.g. muscle mass rather than weight) this will be specified.

How is body image measured?

Many of the papers in this review use a body image 'score'. This score can reflect body perception (how accurately someone assesses their size or weight) or body satisfaction (how satisfied someone is with their body). If body image is not accurately measured then this will have an adverse impact on the accuracy of the findings. There are a number of different techniques for measuring this body image score, including:

1. **Self-report questionnaire.** These scales include the Body Shape Questionnaire¹, Body Esteem Scale² and the Body Shape Satisfaction Scale³. A low score on these scales would indicate inaccurate body perception or low levels of body satisfaction. These scales are generally well established and have been subjected to a number of tests to assess their reliability and validity. The use of different scales to measure body image can make it difficult for researchers who are reviewing the research as it is difficult to compare data when different scales are used.
2. **Figure drawings.** Typically when using this method a participant is presented with a series of drawings of body shape and asked to identify their 'ideal' body shape or the body shape that they feel best reflects their actual body shape. A low score using this measure would indicate inaccurate body perception or low levels of body satisfaction⁴.
3. **Actual body weight and shape.** An additional strand of data collection in this field is to gain accurate body shape and weight measurements for each participant. Some research studies use physical examinations by trained medical professionals to gain accurate body weight and shape data whereas others rely on participant self-report on their weight and height. Whilst the latter option is a much more convenient method of data collection research has shown that self-report measures can be inaccurate with 35-48% of obese participants under-reporting their weight on self-report measures⁵.

Previous reviews of the literature

There have been a number of systematic reviews and meta-analyses in the area. This rapid evidence assessment identified 22 systematic reviews or meta-analyses on body image. These have mostly focused on the impact of the media on body image, differences in body image across

¹ Cooper, P., Taylor, M., Cooper, Z., & Fairbum, C. (1987). The development and validation of the body shape questionnaire, *International Journal of Eating Disorders*, 6(4), 485-494.

² Franzoi, S. & Shields, S. (1984). The body esteem scale: Multidimensional structure and sex differences in a college population, *Journal of Personality Development*, 48(2), 173-178.

³ Slade, P., Dewey, M., Newton, T., Brodie, D., & Kiemle, G. (1990). Development and preliminary validation of the body satisfaction scale (BSS), *Psychology and Health*, 4(3), 213-220.

⁴ E.g. Gardner, R., Jappe, L., & Gardner, L. (2009). Development and validation of a new figural drawing scale for body-image assessment: the BIAS-BD. *Journal Of Clinical Psychology*, 65(1), 113-122.

⁵ Rastmanesh, R., Gluck, M., & Shadman, Z. (2009). Comparison of body dissatisfaction and cosmetic rhinoplasty with levels of veil practicing in Islamic women. *The International Journal Of Eating Disorders*, 42(4), 339-345.

gender and race, the impact of other people (such as parents and peers) on body image, and interventions to improve body image.

These meta-analyses identify a number of methodological problems with previous research including: low sample sizes, insufficient information provided in research reports, the use of different scales to measure body image, an over-reliance on correlational studies, and a lack of breadth when sampling which means that much of the research has been conducted on younger people (Filiault and Drummond, 2009; Menzel et al., 2010).

All of these meta-analyses and systematic reviews are included in this rapid evidence assessment, along with all of the individual studies that met the selection criteria (see Appendix A).

Methodological challenges

The research exploring the potential causes of negative body image is heavily dominated by studies that rely on correlational data rather than experimental design. A typical study will identify a correlation between body image scores and some other factor such as depression. This type of study will state that people with low body satisfaction have higher levels of depression. The problem with this type of research design is that it is not possible to identify causal relationships. For example, whilst many studies identify a relationship between low body satisfaction and increased depression they are unable to identify whether low body satisfaction causes increased depression, increased depression causes low body satisfaction, or that body satisfaction and depression are both aspects of one core construct such as overall 'low mental well-being'. The literature is therefore dominated by research papers that identify *links* between body image and other constructs, but there is less robust information available that isolates the *causes* or *consequences* of negative body image.

A number of papers explore which groups in society are more likely to have negative body image. These studies generally use surveys to establish the prevalence and differences in body image between different groups. Certain groups in society have been the subject of far more research than others. A great deal of research has been conducted on adolescents; comparatively little research has been conducted on body image in later adulthood. Similarly more research has been conducted on women than men, with non-White men being the subject of very little body image research.

Eight studies that evaluated interventions to improve body image met the selection criteria for this rapid evidence assessment. Whilst these studies are of good quality the low number of studies included in the review indicates that many evaluations are conducted with low sample sizes and/or less robust research designs and therefore did not meet the selection criteria.

Limitations of this rapid evidence assessment

The aim of this rapid evidence assessment was to provide a short overview of the body image literature over a significant time period using the most robust and relevant research available. As such, a large body of research is not included, as it did not meet the selection criteria (see Appendix A). Additionally, this rapid evidence assessment suffers with the same limitations as

previous literature reviews, including: an over-reliance on correlational studies, a lack of research on certain populations, and insufficient information provided in some research papers.

The findings presented throughout this report are based on the best evidence available.

However, given the limitations outlined above it should be noted that the findings are sometimes based on a small number of research articles, albeit of very good quality. The findings should be read with these limitations in mind.

Main themes in the literature: associations, impacts, interventions

Topics identified in the literature include:

- Factors associated with negative body image including: weight, social causes, the impact of images portrayed in the media, and individual psychological factors that may contribute to lower body satisfaction.
- Who is impacted by negative body image including: gender, age, ethnicity, and sexual orientation.
- Interventions to either protect against negative body image, prevent negative body image or improve body image including: physical exercise programmes, education programmes and psychotherapeutic programmes.

2. What is associated with body image?

As outlined in chapter one of this rapid evidence assessment, the body image literature is dominated by correlational studies which are able to identify a relationship between two factors but are not able to reliably infer causation. This section explores these relationships and where possible identifies the factors that may cause low body satisfaction, or be a consequence of low body satisfaction. These include: body weight, the media, individual psychological factors, other people, socio-economic status, genetic links, cosmetic surgery, health behaviours and suicide.

Body weight

Key findings

- Individuals who are overweight are more likely to have lower body satisfaction than individuals who are normal weight.

All the studies that explored the relationship between body image and body weight found that increased weight was associated with lower body satisfaction. Body weight was found to be the strongest predictor of negative body image regardless of gender or ethnicity (Xanthopoulos et al., 2011). The research suggests that overweight people are more prone to low body satisfaction compared to people of normal weight. Individuals who are obese are particularly likely to have low body satisfaction (Goldfield et al., 2010).

Due to the methodology that can be used when studying the relationship between body weight and body image none of the studies are able to provide evidence that increased body weight *causes* lower body satisfaction, or lower body satisfaction *causes* increased body weight. It is possible that for some individuals an increase in body weight is associated with social pressure to lose weight which leads to a reduction in body satisfaction (Cafri et al., 2005). For other individuals low body satisfaction may lead to ineffective or unhealthy dieting behaviours that result in weight gain (Goldfield et al., 2011).

Description of the literature: This rapid evidence assessment did not include a review of the obesity literature as it was outside the scope. Seven papers that explored the relationship between weight and body image met the selection criteria (Caccavale, Farhat, and Iannotti, 2012; Forrest and Stuhldreher, 2007; Goldfield et al., 2010; Holsen, Carlson Jones, and Skogbrott, 2012; O'Dea and Caputi, 2001; Paxton, Eisenberg, and Neurnark-Sztainer, 2006¹; Xanthopoulos et al., 2011). All of these studies were correlational studies using self-report data on body satisfaction and weight status (often assessed using BMI). The sample sizes used ranged from 1131 to 6909 with two of the studies (Holsen et al., 2012; Paxton et al., 2006¹) using a longitudinal design that explored the relationship between weight and body image over a five to seventeen year period. Most of the studies were conducted with young people or university age participants.

The media

Key findings

- Watching images of thin women or muscly men can reduce body satisfaction.

- The impact of media images is not universal, some people are unaffected by media images.
- The impact of media images depends on the extremity of the images used and the amount of pre-existing low body satisfaction in the viewer.

One of the areas that has received a great deal of research attention is the impact of the media on body image. This area typically explores the impact of images of thin and attractive women, or men with well-defined muscles, on those viewing them.

The extent to which these images relate to the 'media' varies between studies. Some studies use commercials and advertisements from the media and assess the impact of these images on their participants. Other studies use images of 'idealised body shapes' but do not source these images directly from the media. Other methods include asking participants to estimate how many hours of media coverage they view each week and then relating this to body satisfaction, or asking participants how much pressure they feel the media places on them to have a perfect body shape.

The majority of research indicates that exposure to idealised body images can result in a small to moderate reduction in body satisfaction and body perception (e.g. Grabe, Ward, & Hyde 2008). This is a finding that has been reproduced in many studies using both male and female participants (e.g. Barlett, Vowels, & Saucier, 2008). However, this finding is not universal. Some studies have failed to replicate the finding and have instead found that exposure to idealised body images has the same impact as being exposed to images of inanimate objects (e.g. pictures of homes and gardens, Holmstrom, 2004).

For women who are only slightly bigger than the models used in the media, exposure to media images improved their body satisfaction (Holstrom, 2004). It is suggested that for these women exposure to thin images may act as a motivational factor to help maintain lower weight.

Another important factor is the extremity of the images used. Barlett et al. (2008) only found a relationship between idealised body images and low body satisfaction when extreme images were used (e.g. very muscular men).

In addition, any pre-existing low body satisfaction in the participants appears to have an impact on the results. Individuals who already have low body satisfaction are likely to be negatively affected by images of idealised body shapes whereas individuals who have high body satisfaction are unlikely to be affected by images of idealised body shapes (Blond, 2008; Want, 2009).

Description of the literature: This area has more individual studies published so it has also been the subject of a larger number of meta-analyses in comparison to the other topic areas covered in this rapid evidence assessment. As a consequence this section summarises the main findings from these meta-analyses rather than seeking to replicate this work. Six meta-analyses exploring the relationship between the media and body image were found (Barlett, Vowels, and Saucier, 2008; Blond, 2008; Grabe, Ward, and Hyde, 2008; Groesz, Levine, and Murnen, 2002; Holmstrom, 2004; Want 2009). Three of these meta-analyses explored the impact of the media on body image for women (Grabe et al., 2008; Groesz et al., 2002; Want, 2009), two on men (Bartlett et al., 2008; Blond, 2008) and one on both men and women (Holstrom, 2004). In general the research studies that were reviewed relied on self-report assessment of volume and nature of media consumption which was then correlated with body image measures, or experimental design using exposure to different types of media and measuring the consequent impact on body image. Methodological problems with the research in this field include use of different scales to measure body image and media use, small sample sizes and a reliance on correlational studies. Reported sample sizes ranged from 1085 to 4324.

Individual psychological factors

Key findings

- Low body satisfaction is linked with low self-esteem and depression.
- Individuals who have low body satisfaction are more likely to also have low self-esteem or depression if they are female or overweight.
- People who have certain psychological patterns, such as believing they should have perfect bodies or an increased tendency to compare themselves to others, are more likely to have low body satisfaction.

Many of the studies that found a link between negative body image (both body satisfaction and body perception) and depression were conducted with adolescents. The relationship between depression and body image was found for both girls (Pesa et al., 2000) and boys (Cohane et al., 2001), although girls are more likely to experience depression along with negative body image than boys (e.g. Sujoldzić, et al., 2007).

Adolescents who are overweight are more likely to experience low body satisfaction and depression (Chaiton et al., 2009). Research indicates that low body satisfaction may be the link that explains this association between weight and depression. Pesa et al. (2000) found that there was no statistical relationship between weight and depression when the influence of body satisfaction scores was controlled, implying that body image is important in understanding the relationship between weight and depression.

In terms of other psychological factors that are related to body image, Izgiç, Akyüz, Dogcaron, and Kugcaron (2004) found that individuals who had previously suffered from a social phobia were at increased risk of suffering from lower body image. Cafri, Yamamiya, Brannick, and Thompson (2005) found that ‘internalising the thin idea’ (taking on board societal thin ideals as standards for yourself) were key components of negative body image. Increased levels of social comparison (an increased tendency to evaluate yourself by comparing yourself to others) is linked to an increased risk of low body satisfaction (Myers and Crowther, 2009).

Description of the literature: Twenty two articles that met the selection criteria for this rapid evidence assessment provided data on individual psychological factors associated with body image. These factors may be causes of lower body satisfaction, consequences of lower body satisfaction, or aspects of a larger phenomenon of which low body satisfaction is also a characteristic. The studies are made up of three systematic reviews, six longitudinal studies, and twelve cross-sectional survey studies. Fourteen of the studies identify a relationship between ‘negative affect’ and low body satisfaction. These studies identified a relationship between low self-esteem, reduced emotional well-being, or increased depression and low body satisfaction (Chaiton et al., 2009; Cohane and Pope, 2001; Delfabbro et al., 2011; El Ansari et al., 2011; Fenton, Brooks, Spencer, and Morgan, 2010; Gavin, Simon, and Ludman, 2010; McCabe, Ricciardelli, and Banfield, 2001; Mond et al., 2011; Morin, et al., 2011; Paxton, Eisenberg, and Neurnark-Sztainer, 20061; Pesa, Syre, and Jones, 2000; Pimenta, Bes-Rastrollo, and Lapez, 2009; Sujoldzić and De Lucia, 2007; Xie et al., 2010). Sample sizes ranged from 806 to 4543.

Other people

Key findings

- Parents influence the body satisfaction of their children both positively and negatively.
- Individuals who sense a general social pressure to have an ideal body shape are likely to feel worse about their bodies.
- People who have lower body satisfaction are likely to experience teasing.

Parents and peers

In a study that explored the interaction between parental and peer relationships with body satisfaction Holsen et al. (2012) found that good quality relationships with parents and peers were associated with higher body satisfaction whereas poor quality relationships with parents and peers were associated with lower body satisfaction. The quality of these relationships also predicted body satisfaction over time, with individuals who had good quality relationships in childhood also experiencing higher body satisfaction in adulthood.

Many authors highlight the importance of the role of parents when considering any attempts to improve body image amongst young people. Mothers and fathers are able to influence body image in positive directions through words of encouragement and negative directions through criticism (Rodgers et al., 2009). This is especially the case for girls (Crespo et al., 2010; van den Berg et al., 2010). Parents are also able to influence the body satisfaction of their children by acting as role models. In a study focusing on the impact of mothers' attitudes towards their own bodies van den Berg et al. (2010) found that mothers who are concerned about their weight are more likely to have daughters who are dissatisfied with their bodies and more likely to have both daughters and sons who try to control their weight.

Societal pressure

A general sense that society will only accept you if you have an 'ideal' body shape is also related to low body satisfaction. Individuals who feel pressurised by society to achieve an ideal body are more likely to have lower body satisfaction than individuals who do not feel pressurised (Cafri et al., 2005). Girls appear to be more likely to feel pressurised to have an ideal body than boys (Esnaola et al., 2010) and will often 'internalise' this pressure so that they are placing pressure on themselves rather than simply responding to perceived pressure from others.

Teasing

Individuals who have low body satisfaction are likely to say that they have been teased about their bodies. Children are more likely to say they have been teased than adults, and females are more likely to say they have been teased than males. However, it is not clear whether children and females experience more teasing than others, or whether they are more affected by the teasing they experience (Lunde et al., 2007; Menzel et al., 2010).

Description of the literature: Eleven individual studies explored the role of other people on individual body image. These studies explored a range of issues including the role of general perceived societal pressure to achieve an ideal body shape (Cafri, Yamamiya, Brannick, and Thompson, 2005; Esnaola, Rodríguez, and Goñi, 2010), the role of teasing on body satisfaction (Lunde, Frisén, and Hwang, 2007; Menzel et al. 2010; Paxton, Eisenberg, and Neurnark-Sztainer, 2006²), and the role of parents and peers on body satisfaction (Crespo, Kieplkowski, Jose, and Pryor, 2010; Holsen et al., 2012; Kelly, 2005; Rodgers and Chabrol, 2009; Thatcher and Rhea, 2003; van den Berg,

Keery, Eisenberg, and Neumark-Sztainer, 2010). The sample sizes used in the studies ranged from 874 to 4746.

Socio-economic status

Key findings

- In comparison to children with higher socio-economic status, children of lower socio-economic status are more likely to be overweight, but also more likely to perceive themselves as weighing less than they actually do.
- Girls from middle to upper socio-economic status groups are likely to have the lowest body satisfaction.

Children with lower socio-economic status are more likely to be overweight than children from middle to higher socio-economic status groups but are also more likely to perceive themselves as weighing less than they actually do (O'Dea et al., 2001). This suggests that children of lower socio-economic status groups may be more likely to misperceive their body image in a way that encourages them to remain over-weight. O'Dea et al. found that the group with the lowest body satisfaction overall were girls from middle to upper socio-economic status groups.

Description of the literature: Three studies explored the relationship between socio-economic status and body image; two focused on young people (O'Dea et al., 2001; Paxton et al., 2006¹) and one on older adults (Gavin, Simon, and Ludman, 2010). The sample sizes ranged from 1113 to 4543.

Genetic links

Key findings

- There appears to be a stronger genetic link for some aspects of body satisfaction for females in comparison to males.
- The ability to accurately estimate body size is associated with a genetic link.
- Choice of ideal body size appears to be more influenced by environmental factors than genetic factors.

Twin studies compare data from monozygotic twins (identical twins with approximate 99% gene match) and dizygotic twins (non-identical twins with approximately 50% genetic match) to identify the impact of genetic match over environmental factors such as parenting styles. These studies can indicate whether a trait is associated with 'nature' (genes – assessed using monozygotic twins) or 'nurture' (the environment – assessed using dizygotic twins).

Studies using twins to explore the link between genes and body image found that females appear to have a stronger genetic link to body image than males. Specifically the ability to accurately estimate your own body size appears to be associated with a genetic link to body image. However, when asked to identify an ideal body shape participants were more influenced by environmental factors (such as the media or pressure from other people) than genes. This implies that body perception is perhaps more linked to genetic factors than overall body image.

Given the small number of studies that have explored the genetic link with body image and the mixed findings of these studies, overall it is unclear whether there is a genetic component to body image.

Description of the literature: Two studies exploring the impact of genetics on body image met the selection criteria for this review. Both of these studies (Keski-Rahkonen et al., 2005; and Wade et al., 2001) used large samples (N=4667 and N=10650 respectively) of twins and explored the relationship between genetic factors and environmental factors on body image by examining differences between Monozygotic (identical twins with approximate 99% gene match) and Dizygotic (non-identical twins with approximately 50% genetic match) twins.

Cosmetic surgery

Key findings

- Individuals who have low body satisfaction are more likely to have favourable attitudes to certain types of cosmetic surgery.

People are more likely to be interested in having cosmetic surgery if they have low body satisfaction (Javo & Sørli, 2010; Menzel et al., 2011). The relationship between body satisfaction and interest in cosmetic surgery appears to vary depending on the nature of the cosmetic surgery. Individuals who are interested in cosmetic procedures to reduce body size (e.g. liposuction) tend to be of higher weight and report lower body satisfaction than those who favour other types of cosmetic surgery (e.g. rhinoplasty) (Frederick, Lever, & Peplau, 2007).

There appears to be a relationship between reality TV cosmetic surgery shows and body image with viewers of these programmes more likely to have low body satisfaction and more favourable attitudes towards cosmetic surgery (Sperry, Thompson, Sarwer, & Cash, 2009). The correlational nature of this study means that it is not possible to determine whether viewing these programmes changed body image and attitudes to cosmetic surgery, or whether people choose to watch these types of programmes because they already have negative body image and a positive attitude to cosmetic surgery.

Certain religious practices may limit the desire for cosmetic surgery. In a study exploring the relationship between veil wearing and body image Islamic women who regularly wear a veil have improved body image and lower interest in cosmetic surgery than Islamic women who wear veils less often (Tastmanesh, Gluck, & Shadman, 2009).

Description of the literature: The five studies that explored the relationship between cosmetic surgery and body image were all cross-sectional survey designs with sample sizes ranging from 1771 to 52677. The studies generally explored attitudes towards cosmetic surgery and the relationship with body image.

Health behaviours

Key findings

- Negative body image is linked to eating disorder symptoms, unhealthy weight control behaviours, and risky sexual practices.

- Low body satisfaction may act as a barrier to quitting smoking

Girls who mis-perceive their actual body shape or size, and estimate that they are heavier than their actual weight, are more likely to use extreme weight control behaviours such as vomiting (Liechty, 2010). Lower body satisfaction appears to increase the chances of adolescents using unhealthy weight control behaviours (such as crash dieting) that are likely to result in weight gain and poorer overall health (Neumark-Sztainer et al., 2006). These papers all indicate that body image may have a key role in predicting risk of eating disorder behaviour.

In relation to sexual health, women with lower body satisfaction are more likely to be inconsistent with safer-sex practices (e.g. using a condom), more likely to have had multiple sex partners in the past year, and more likely to have had sex after drinking alcohol or using drugs in comparison to women with higher body satisfaction (Littleton, Radecki, Britkopf, & Berenson, 2005).

Smokers are more pre-occupied with their weight than non-smokers. Fear of weight gain may prevent people from trying to quit smoking therefore body image (both body perception and body satisfaction) may play a role in supporting continued smoking (Clark et al., 2005).

Description of the literature: This rapid evidence assessment did not include papers that were exclusively focused on eating disorders or body dysmorphic disorder. However three papers met the selection criteria and explored the relationship between body image and unhealthy eating, weight, and other health related factors amongst non-eating-disordered individuals. These studies had sample sizes between 1547 and 5173. Two studies were repeated measures longitudinal surveys (Liechty, 2010; Neumark-Sztainer et al., 2006), the other was a non-repeated measure survey (Littleton et al., 2005). Three studies that met the criteria for this review explored the relationship between smoking and body image (Clark et al., 2005; Croghan et al., 2006, and Kaufmann & Augustson, 2008). These articles tended to explore the relationship from the smoking, rather than body image, perspective and therefore their findings have limited relevance to this review. The sample sizes ranged from 1456 to 6956.

Suicide

Key findings

- Individuals with low body satisfaction may be more likely to report that they have thought about killing themselves or have attempted suicide.
- The relationship between body image and suicide varies depending on age and physical development.

There is a mixture of findings relating body image to suicide. Some studies have found no relationship between body satisfaction and suicide (e.g. Crow, Eisenberg, Story, & Neumark-Sztainer, 2008¹). Other studies have found a link between reduced body satisfaction and reported suicide attempts (Crow, Eisenberg, Story, & Neumark-Sztainer, 2008²; Rodríguez-Cano, Beato-Fernández, & Llarío, 2006).

An important factor in the relationship between body satisfaction and suicide may be the presence of extreme weight control behaviours (such as vomiting). Both of the studies that explored the relationship between extreme weight control behaviours and suicide found that an

increase in extreme weight control behaviours was associated with an increase in reported suicide attempts. One study (Crow et al. 2008²) found a similar relationship between body satisfaction and reported suicide attempts.

Body dissatisfaction and suicidal thoughts have been shown to progressively increase during adolescence, peaking at mid-adolescence and slightly decreasing thereafter (Kim & Kim, 2009). Body dissatisfaction has also been found to predict the risk of suicidal thoughts in early-adolescent girls and mid-adolescent boys, but not in early-adolescent boys or mid-adolescent girls. This finding suggests that any relationship between body satisfaction and suicide may vary depending on gender and stage of adolescence.

Description of the literature: All four of the studies that explore the relationship between body image and suicide use adolescent populations. The research consists of one cross-sectional survey design with 4746 participants and three longitudinal studies with sample sizes ranging from 1766 to 5455 and a follow time ranging from 2 to 5 years.

Summary: What is associated with negative body image?

As mentioned at the start of this rapid evidence assessment, the types of methods used by most of the papers reviewed make it difficult to identify clear causal links in relation to body image. Instead the papers here represent the factors that are associated with negative body image, either as part of the possible cause or as a possible consequence.

The strongest evidence suggests that the possible causes of negative body image are:

- Being overweight;
- Being exposed to media images;
- Attitudes and behaviours of family and peers;
- Personal psychological characteristics.

The strongest evidence suggests that the possible consequences of negative body image are:

- Low self-esteem and depression;
 - Using unhealthy and ineffective weight-control behaviours.
-

3. Who is impacted by negative body image?

The following sections present the research evidence setting out which groups in society experience negative body image, and where possible, what the specific impacts are for these groups. This includes gender, age, ethnicity and sexual orientation.

Gender

Key findings

- Both males and females experience low body satisfaction, but females tend to have lower body satisfaction compared to males.

Both men and women experience low body satisfaction (Barlett, Vowels & Saucier, 2008; Blond, 2008) however women generally have lower body satisfaction than men (Algars et al., 2009; Frederick, Forbes, Grigorian, & Jarcho, 2007; Knauss, Paxton, & Alsaker, 2007; Wardle, Haase, & Steptoe, 2006). Males and females are unhappy with different aspects of their bodies. Females tend to want to lose weight whereas males tend to want to increase muscle mass (Petrie, Greenleaf, and Martin, 2010). Consequently very slender males are much less satisfied with their bodies than very slender females (Frederick et al., 2007).

There are also differences in the way males and females respond to questions about their body. Men are more likely to report that they are lighter than their actual weight (Rasmussen, Eriksson, & Nordquist, 2007), less likely to say that they are too heavy, less likely to rate their bodies as unattractive, and less likely to avoid wearing a swimsuit in public (Frederick, Peplau, & Lever, 2006). In addition over-weight men are unlikely to report that they are over-weight and men are less likely to report that they are trying to lose weight (Wardle et al., 2006).

When examining the different potential causes of body image between males and females traditional male characteristics such as being competitive (Blashill, 2011) and perceived pressure from others to have a better body are key contributing factors to male body dissatisfaction. In contrast believing it is important to meet societal standards of the perfect body is a key contributing factor to female body dissatisfaction (Knauss et al., 2007). A difference between males and females therefore appears to be male body image is driven by external pressures (other people) whereas female body image is driven by internal pressures (setting high standards for yourself to achieve).

Description of the literature: Ten articles specifically explored gender differences in body image. These papers consist of three meta-analyses and seven cross sectional survey studies with sample sizes ranging from 1288 to 52677.

Age

Key findings

- Age is not as important as gender when it comes to explaining differences in

body image.

- In adolescence low body satisfaction is linked to low mood and teasing.
- In older adulthood low body satisfaction is linked to a reduction in day to day activities.

Whilst a significant amount of research has explored the relationship between age and body image in general studies find that age is not as important at predicting body image than gender (Cafri, Yamamiya, Brannick, and Thompson, 2005; Esnaola, Rodriguez, and Goñi, 2010) with females having lower levels of body satisfaction than males across different ages (e.g. (Meland, Haugland, & Breidalik, 2007; Zaborskis, 2008).

Children and adolescents

The vast majority of age-related research into body image has been conducted on children and adolescents. In a recent study exploring the prevalence of low body satisfaction amongst children Bun et al. (2012) found that 8% of boys and 14% of girls aged 9-10 had a negative image of their body with 3% of normal weight boys and 7% of normal weight girls rating themselves as 'too fat'. Data from 13-14 year olds indicated that these figures increase with age with 9% of normal weight boys and 28% of normal weight girls rating themselves as 'too fat'.

Some studies have explored changes in body satisfaction through the course of adolescence. The research indicates that body satisfaction gradually increases through adolescence and stabilises in adulthood (Holsen et al., 2012). Body development may explain some of these changes. For boys, faster physical development is associated with feeling overweight, lower body satisfaction, and an increase in teasing (Barlett, Vowels, & Saucier, 2008; Nishina, Ammon, Bellmore, & Graham, 2006). For girls, faster physical development is associated with less teasing (Nishina et al., 2006). In general low body satisfaction in adolescence is associated with increased experience of weight-related bullying (Brixval et al., 2012) for both boys and girls.

A number of papers illustrate the link between negative body image (both body perception and body satisfaction) and depression or low self-esteem in young people (for example, McCabe, Ricciardelli, & Banfield, 2001; Sujoldzić & De Lucia, 2007). The link between body satisfaction and depression or self-esteem is found across all adolescent age groups (van den Berg, et al., 2010) and may be experienced by adolescent girls more than adolescent boys (Meland et al., 2007).

Whilst these studies highlight a link between low body satisfaction and low self-esteem amongst adolescents, overall the number of adolescents suffering from both low body satisfaction and low self-esteem appears to be relatively low. Morin et al. (2011) found that both self-esteem and body satisfaction remained high and stable amongst the adolescent population used in their 4 year longitudinal study.

Additionally, the nature of body satisfaction during adolescence may be undergoing a period of change. In a ten year study exploring trends in body satisfaction with adolescents Storvoll, Strandbu, and Wichstrøm (2005) found a gradual polarisation of adolescent body satisfaction scores with more adolescents having either very high or very low scores, and less adolescents having 'mid-level' body satisfaction scores. Another trend is illustrated in a recent study by Asgeirsdottir, Ingolfsdottir, and Sigfusdottir (2012) who found that the levels of body satisfaction amongst adolescents had increased significantly between 1997 and 2010. Whilst girls showed

lower levels of body satisfaction than boys in all years the levels of body satisfaction amongst girls appears to be improving faster than boys, consequently the gap in levels of body satisfaction between the two genders appears to be getting smaller over time.

Older adults

One study explored the prevalence and nature of body image in middle aged women. McLaren and Kuh (2004) found that 80% of the women reported weight dissatisfaction and increased present-day dissatisfaction with their bodies in comparison to their younger years (defined as below the age of forty). Women in this age group also reported that their dissatisfaction with their bodies curtailed their day to day activities, suggesting that the prevalence and impact of low body satisfaction could be high for middle aged women.

Description of the literature: The majority of age-related research on body image focuses on body image in adolescence with less research conducted on body image through the life span and into older adulthood. Twenty one individual studies explored age-related issues as part of this review, seventeen of which focus on body image during adolescence. The research identifies the presence of body dissatisfaction amongst adolescents using both longitudinal and cross-sectional survey designs (for example, Austin, Haines, & Veuglers, 2009; Caccavale et al., 2012; Flament et al., 2012; Paxton, Eisenberg, & Neurnark-Sztainer, 2006¹; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006²). Sample sizes range from 1113 to 32397.

Ethnicity

Key findings

- In general there are more similarities rather than differences in body satisfaction across different ethnic groups.
- Where differences occur White and Asian populations tend to have lower body satisfaction than Black-African populations.

Many studies have found more similarities than differences in body image across different ethnic groups (e.g. Holmqvist, Lunde, & Frisén, 2007; Thatcher & Rhea, 2003). Where differences exist they are small, and they generally indicate that White (Nishina, Ammon, Bellmore, & Graham, 2006; van den Berg et al., 2010²) or Asian (Kennedy, Templeton, Gandhi, & Gorzalka, 2004; Wardle, Haase, & Steptoe, 2006; Xanthopoulos et al., 2011; Xie, et al., 2010) people are less satisfied with their bodies than other ethnic groups. People from Black African descent tend to be most satisfied with their bodies (Breitkopf, Littleton, & Berenson, 2007). Trends in body image that have already been discussed in this paper such as differences between genders, differences between ages, and differences in body weight are all generally replicated in ethnically diverse populations, suggesting that ethnicity has less of an influence on body image than gender, age, or weight (e.g. Wilkosz, Chen, Kenndey, & Rankin, 2011).

Studies that compare body image across different countries generally find that White/European or more Westernised countries have lower levels of body satisfaction than other countries (Holmqvist et al., 2007; Jaeger et al., 2002). The extent to which ethnic minority groups or migrant communities adopt the patterns and behaviours of the dominant culture also has an impact on body image. The majority of studies find that the more an individual adopts the dominant culture the lower their body image (both body satisfaction and body perception) (Ball &

Kenardy, 2002; Brietkopf et al., 2007; Xie et al., 2010). However some studies find the opposite effect of culture-adoption with individuals who have not adopted the dominant culture having lower body satisfaction (Nieri, Kulis, Keith, & Hurdle, 2005).

Different ethnic groups aspire to different body shapes (Roberts, Cash, Feingold, & Johnson, 2006; Swami et al., 2010), with heavier bodies being preferred by indigenous Australian adolescents and Black African groups (Cinelli & O’Dea, 2009; Grabe & Hyde, 2006) in comparison to other ethnic groups. Differences in weight-satisfaction between ethnicities appear to have diminished over time, while differences based on other body image factors such as shape have increased over time. This suggests that some differences between ethnicities may depend on whether body image is assessed on a weight based scale or shape based scale (Roberts et al., 2006).

Description of the literature: Twenty articles explored the relationship between ethnicity and body image. Four of these were meta-analyses (Cafri, Yamamiya, Brannick & Thompson, 2005; Grabe & Hyde, 2006; Roberts et al., 2006; Wildes, Emery, & Simons, 2001), one a longitudinal study and fifteen were cross sectional survey studies with sample sizes ranging from 1100 to 18512. The majority of articles explored ethnicity with adolescent or university-age participants.

Sexual orientation

Key findings

- Heterosexual men have higher body satisfaction than homosexual men, homosexual women, and heterosexual women.

Heterosexual men tend to be more satisfied with their bodies than homosexual men, homosexual women or heterosexual women (Filiault et al., 2009; Morrison, Morrison & Sager, 2004; Peplau et al., 2009). Heterosexual men are less preoccupied with their weight, are more comfortable wearing a swimsuit in public, and are more willing to reveal aspects of their body to their partner during sexual activity (Peplau et al., 2009). In contrast the differences in body image between gay men, gay women, and heterosexual women are small (Peplau et al., 2009).

However one study indicated that gay women are more satisfied with their bodies and less likely to diet than heterosexual women (Polimeni, Austin, and Kavanagh, 2009).

Description of the literature: Four studies explored the relationship between sexual orientation and body image. Overall the area suffers from a number of methodological problems including an over-reliance on internet-based studies, difficulties defining sexual orientation, and an over-reliance on studies that use younger men as participants (Filiault and Drummond, 2009). Sample sizes were large, ranging from 5220 to 57377.

Summary: who is impacted by negative body image?

This section has explored which types of people experience negative body image. The findings should be read with the caveat that some groups have received little research attention (for example non-white men and older adults).

The strongest evidence suggests that:

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- Gender accounts for the biggest differences in body image with women being more likely to have negative body image in comparison to men regardless of age or ethnicity;
 - Negative body image is found across all age groups;
 - Negative body image is found across all ethnicities.
-

4. Protection, prevention and improvement

There are a number of ways to take action to reduce levels of negative body image.

- Protection: individual factors that may protect people from experiencing negative body image;
- Prevention: societal or environmental factors that may be used to prevent negative body image;
- Improvement: interventions that can be used to improve negative body image.

The following sections on protection and prevention are based mainly on literature that has already been discussed in this rapid evidence assessment. As such, there are no key findings for these two sections.

Protection

Individuals may be protected from negative body image by increasing their individual resilience. Research already mentioned in this rapid evidence assessment indicates that certain people are at lower risk of experiencing negative body image. These include men, particularly heterosexual men (Peplau et al., 2009), and individuals from non-White or non-Asian ethnic groups (van den Berg et al., 2010; Xanthopoulos et al., 2011). In terms of age, some studies suggest that body satisfaction improves as you enter into adulthood (e.g. Holsen et al., 2012). Efforts to increase individual resilience would benefit from a better understanding of why some people are less likely to experience negative body image in comparison to others.

This rapid evidence assessment has also discussed certain factors which have the potential to change (unlike factors such as age, ethnicity, gender which are fixed). The main changeable factor associated with negative body image is body weight. Whilst the causal link between body weight and body satisfaction is open to debate one of the most consistent findings in the literature is that individuals who are overweight are more likely to have low body satisfaction than individuals who are normal weight (e.g. Forrest and Stuhldreher, 2007). Consequently maintaining normal weight is likely to reduce the likelihood of low body satisfaction regardless of whether low body satisfaction is the result of having increased weight, or other factors such as teasing (e.g. Menzel et al., 2010).

Other factors that are associated with higher body satisfaction and have been previously mentioned in this rapid evidence assessment include not feeling pressurised by yourself or others to have a perfect body (Cafri et al., 2005); having increased well-being (Fenton, Brooks, Spencer, and Morgan, 2010) not comparing yourself to others too frequently (Myers and Crowther, 2009); and not adopting the dominant culture if you are from an ethnic minority group (Xie et al., 2010).

In addition to the topics already covered, other research suggests that women who identify as feminists are less likely to have low body satisfaction (Murnen & Smolak; 2009). The specific causes of this finding are not clear. It may be that factors associated with feminism improve resilience to negative body image or that individuals who are resilient to negative body image are more likely to identify as feminists.

Another protective factor, identified by Dijkstra and Barelds (2011), found that individuals who

practice mindfulness (a meditative practice that helps individuals focus on the present moment) have a reduced tendency to compare themselves to others and improved body satisfaction.

In all of these instances a greater understanding of *why* these groups experience less negative body image will help inform efforts to protect other individuals from negative body image.

Description of the literature: The majority of studies cited in this section have featured in previous sections of this rapid evidence assessment. Only two studies are not mentioned elsewhere, these are Murnen and Smolak (2009) which was a meta-analysis reviewing 26 studies on feminism and body image and Dijkstra and Barelds (2011) which explores mindfulness using data from a survey of 1287 women.

Prevention

Negative body image may be prevented by working with some of the societal or environmental causes of negative body image. For example, the research covered in this rapid evidence assessment suggests that certain media images are associated with reduced body satisfaction for some individuals. Changing the types of images that are portrayed in the media may help to prevent negative body image.

Other external factors that may prevent negative body image include the role that family and peers play in negative body image. Efforts to improve relationships are likely to prevent negative body image (Holsen et al., 2012). This may even be the case for individuals who are at higher risk of developing negative body image. For example, in their study exploring the relationship between body weight and body satisfaction Caccavale et al. (2012) found that overweight or obese girls who had high levels of social engagement were less likely to be dissatisfied with their bodies compared to overweight or obese girls with low levels of social engagement. The authors suggest that developing healthy relationships with family and peers may protect overweight girls from low body satisfaction.

Description of the literature: All of the studies cited in this section have featured in previous sections of this rapid evidence assessment.

Intervention

Key findings

- Exercise-based interventions appear to be successful at improving body image
- Psychotherapeutic interventions may also be effective at improving body image.
- Health-based educational interventions do not appear to be effective at improving body image.

In contrast to most of the other body image literature, the research on interventions is based more on experimental design so findings are often clearer.

Exercise based interventions

The research indicates that exercise based interventions are able to improve body image (both body satisfaction and body perception) (Campbell & Hausenblas, 2009; Hausenblas & Fallon, 2006; Reel et al., 2007). A combination of aerobic (e.g. running) and anaerobic (e.g. weights) exercise

produces the greatest improvements in body image. Moderate to strenuous exercise appears to have a greater impact than mild levels of exercise. Exercise-alone interventions appear to have more of an impact than exercise-with-other-therapy interventions. Perceived body improvement appears to be as important as actual gains in fitness or body composition (Campbell & Hausenblas, 2009).

One of the concerns about using exercise-related interventions, especially with young people, is that the interventions may have a negative impact on body image and self-esteem. However, Huang et al. (2007) explored this issue and confirmed that self-esteem and body satisfaction did not worsen as a result of participating in the exercise intervention for either boys or girls. This finding was regardless of whether or not the participants lost, maintained, or gained weight during the intervention. This study suggests that these types of interventions may be safely used with girls and boys even if the participants fail to lose weight.

Psychotherapeutic interventions

Research that explored the impact of psychotherapeutically-based interventions to improve body image was generally positive. Jarry and Berardi (2004) found that stand-alone body image therapy based on cognitive-behavioural principles appear to be highly effective at improving body image. Geraghty, Wood, and Hyland (2010) found that the use of gratitude diaries (daily expressions of gratitude aimed at increasing wellbeing) and thought monitoring and restructuring techniques (based on cognitive behaviour therapy) were effective at improving body satisfaction.

Health education interventions

Two studies explored the impact of health-based educational interventions which typically gave health advice in relation to dieting and weight control. Saarilehto et al. (2003) found no beneficial outcomes as a result of an 8 year individualised education programme for young children and their parents. In a review of university-based programmes to improve body satisfaction, dieting, disordered eating and exercise behaviours Yager and O'Dea (2008) found that these information-based educational approaches had limited impact on body image and eating problems among university students. Based on the findings from the study the authors suggest that future programmes take a media literacy educational approach, incorporating health education activities that build self-esteem, and use the internet as a delivery medium.

Description of the literature: The level of research evidence for this section is generally very good with five papers being meta-analyses and three randomised control trials with sample sizes ranging from 479 to 1062. The studies explore the impact of exercise, education, and psychotherapeutic interventions on body image.

Summary of protection, prevention, and improvement

This section has explored the ways to protect against negative body image, prevent negative body image and improve body image. One of the main findings of this section is to highlight the importance of what we do *not* know in relation to body image – an improved understanding of why some people are more likely to experience negative body image and why some factors appear to prevent negative body image would help in the development of more effective measures.

The main research evidence relates to the impact of interventions to improve body image. The

strongest evidence indicates that the best ways to improve negative body image are:

- Exercise based intervention;
 - Media literacy education, rather than health based education;
 - Psychotherapeutic based programmes.
-

5. Conclusion: what does the body image literature indicate?

This rapid evidence assessment has a purposefully broad scope. It aims to provide an overview of the body image literature by identifying the types of topics that are covered, commenting on the quality of the research, and presenting the main findings from the most robust and relevant research available. As a consequence, one of the limitations of the rapid evidence assessment is that it lacks depth. The studies covered have not been assessed in great detail but have been used to help present a picture of the body image literature as a whole.

The picture that this rapid evidence assessment paints is of a body of research that explores the potential causes of negative body image, the potential consequences of negative body image, which populations have negative body image, and the effectiveness of interventions to improve body image. Whilst research has been conducted across all ages and a range of ethnicities most research has focused on younger people (school age to university age) compared to older people, and White populations compared to other ethnic groups. The research indicates that negative body image and its associated problems are prevalent amongst a wide range of different people but that certain groups, such as females or people who are overweight, are at higher risk of having negative body image.

In terms of the potential causes of negative body image the research explores topics as diverse as twin studies and socio-economic status but by far the most researched topic is the influence of the media on body image. The research indicates that being exposed to images of ideal body shapes via the media can negatively impact some people. The research also shows that other factors such as the attitudes of family and peers, and individual psychological factors (such as a tendency to compare yourself to others) are all associated with lower body image.

In terms of the potential consequences of negative body image slightly more focus has been paid to the relationship between body image and mental wellbeing in comparison to other topics such as smoking and attitudes to cosmetic surgery. The research indicates that negative body image is associated with low self-esteem, depression, and the use of unhealthy and ineffective weight-control behaviours.

Research exploring potential interventions to improve body image has mainly been focused on the impact of exercise-based interventions. These types of interventions appear to be effective at improving body image, regardless of whether a person loses weight as a result of the exercise. Research also indicates that psychotherapeutic interventions can be effective at improving body image.

There are a number of ways in which the evidence base surrounding body image could be improved. In general body image research relies too heavily on correlational designs which only identifies 'relationships' rather than 'causes'. An increased use of experimental design along with an increased focus on falsification (attempting to *disprove* rather than *prove* your hypothesis) would help to generate a more robust evidence base.

As with every other field of research, the body image literature is constantly expanding and improving. One area of research which may become useful for those with an interest in body

image is the Tripartite Influence Model of Body Image⁶. The research presented in this rapid evidence assessment indicates that there is a complicated relationship between factors such as weight, the media, relationships with others, individual factors and body image. The Tripartite Influence Model of Body Image aims to identify the mechanisms under which these factors combine to produce low body satisfaction which then in turn results in unhealthy behaviours and eating disorders. Whilst a number of papers have been written on this model, only one paper met the selection criteria for this rapid evidence assessment (Menzel et al., 2011). Should the research on this model develop further it may provide a useful tool for understanding how the different aspects of body image highlighted (such as the influence of peers and the media) combine to cause low body satisfaction.

⁶ For example, see: van den Berg, P., Thompson, K., Obrowski-Brandon, K., & Covert, M. (2002). The tripartite influence model of body image and eating disturbance. A covariance structure modelling investigation testing the mediational role of appearance comparison, *Journal of Psychosomatic Research*, 53, 1007-1020.

Appendix I - Method

This rapid evidence assessment set out to systematically map the body image literature in order to

- Draw together the most robust evidence on this subject area
- Understand and present the findings to better inform government policy

A systematic search of the research literature was conducted using British Humanities Index, Communications and Mass Media Complete, Design and Applied Arts Index, ERIC, International Bibliography of the Social Sciences, Medline, PsychInfo, Sociological Abstracts, Sociological Index, Social Services Abstracts, and SportDiscus. These databases were searched using the search terms "body confidence" or "body image" or "body dissatisfaction" or "body satisfaction" or "body esteem" in the title of the document between January 2000 and May 2012. 4039 articles were screened for inclusion in this review (this figure will include duplicates across different literature databases).

As this was a systematic search of the literature, criteria were written so that a judgement could be made about whether to include an article in the final rapid evidence assessment. The first screening process was based on the topic area of the article. From the 4039 articles screened, articles were **excluded** if:

- The study only explored body image for a specialist group that was not generalizable to the public, for example, professional dancers or top athletes, amputees, cancer patients, the mentally ill, individual diagnosed with Body Dysmorphic Disorder, people with Muscle Dysmorphia, people with disabilities, people undergoing any kind of hospital treatment, people with gender-identity issues, people whose body image was related to sexual abuse, burns victims, and HIV patients;
- The study explored whether negative body image could be identified in new geographical (non-UK) areas;
- The study exclusively collected data from individuals with a diagnosed eating disorder. However studies that explored the relationship between eating disorder symptoms and body image amongst people who were not diagnosed with an eating disorder were included.

The second screening process was based on the methodology used in the research studies screened. Articles were selected for **inclusion** if they were any of the following:

- Meta-analyses or systematic reviews of the literature
- Experiments using randomisation to create two groups with at least 200 participants in each group
- Experimental using either a longitudinal/repeated measures design or pre/post measures with at least 500 participants
- Survey studies with at least 1000 participants.

Any article that passed both screening processes has been included in this rapid evidence assessment. Any article that did not include sufficient information in the abstract to rate it according to the criteria above (e.g. no information on sample size) was excluded. In total, from the 4033 articles screened 101 articles were included in this rapid evidence assessment.

Appendix 2 - Summary tables for all articles

Abbott, B. D., & Barber, B. L. (2011). Differences in functional and aesthetic body image between sedentary girls and girls involved in sports and physical activity: Does sport type make a difference? *Psychology Of Sport & Exercise*, 12(3), 333-342.

Aim and method: Self-report data on functional and aesthetic body image, BMI, pubertal timing, age, and involvement in sports and general physical activities from 1002 13-18 year old girls was gathered.

Results and conclusion: Sports participants reported higher functional value of their bodies and functional satisfaction than physically active and non-physically active girls. Girls who participated in general physical activity did not differ significantly from non-physically active girls on functional satisfaction. Body image differed significantly among girls participating in different sport-type portfolios. Although girls in different sport types differ in their body image, **any involvement in sporting activities was associated with more functional body image than those not involved in sports.**

Algars, M., Santtila, P., Varjonen, M., Witting, K., Johansson, A., Jern, P., & Sandnabba, N. (2009). The adult body: how age, gender, and body mass index are related to body image. *Journal Of Aging And Health*, 21(8), 1112-1132.

Aim and method: Explores the relationship between age, gender, BMI and body image. Data was gathered from 11468 men and women aged between 18 and 49.

Results and conclusion: **Women were generally less satisfied with their bodies than men.** BMI had a stronger influence on women's body image than men's.

Asgeirsdottir, B. B., Ingolfsson, G., & Sigfusdottir, I. D. (2012). Body image trends among Icelandic adolescents: A cross-sectional national study from 1997 to 2010. *Body Image*, Available on line 12 March 2012. Accessed 11/05/12.

Aim and method: To investigate trends in body image from 1997 until 2010. Cross sectional data from 32397 Icelandic 14 and 15 year olds was collected over 5 intervals between 1997 and 2010.

Results and conclusion: Body image significantly improved over the 13 year time period. Whilst girls reported more negative body image at all 5 time points their improvement in body image over the 13 year period was greater than boys, narrowing the gap in body image between boys and girls. **This study indicates that body image amongst adolescents is improving.**

Austin, S., Haines, J., & Veugelers, P. (2009). Body satisfaction and body weight: gender differences and socio-demographic determinants. *BMC Public Health*, 9313.

Aim and method: Explored the relationship between body dissatisfaction, weight, gender, rural residence, parental education and income, and neighbourhood household income for adolescents. Self-report data was gathered from 4254 10-11 year old boys and girls.

Results and conclusion: A linear relationship between body satisfaction and increasing BMI was found for girls with less satisfaction as weight increased. For boys a U-shape association was found with both under-weight and over-weight boys reporting low body satisfaction. Poor body satisfaction was more prevalent for girls whose parents had lower educational attainment and for those who lived in rural areas. **Both boys and girls appear to experience low body satisfaction although this pattern varies as a function of weight and other socio-demographic factors.**

Ball, K., & Kenardy, J. (2002). Body weight, body image, and eating behaviours: relationships with ethnicity and acculturation in a community sample of young Australian women. *Eating Behaviors*, 3(3), 205-216.

Aim and method: Self-report data on country of birth, length of time spent in Australia, body weight, weight dissatisfaction, dieting, binge eating, and compensatory disordered eating behaviours was collected from 14779 women aged between 18 and 23.

Results and conclusion: Risk factors for eating disorders were found across the range of ethnic groups. An acculturation effect appeared to be present, the longer the length of time spent in Australia the more women reported similar behaviours and weight-related values to Australian-born women. **Risk factors for disordered eating, such as body dissatisfaction, are present in women from a range of different ethnic groups and are not limited to White women.**

Barlett, C. P., Vowels, C. L., & Saucier, D. A. (2008). Meta-analyses of the effects of media images on men's body-image concerns. *Journal Of Social & Clinical Psychology*, 27(3), 279-310.

Aim and method: Two meta-analyses, one looking at correlational studies between 'pressure from mass media' and negative body image; and the other looking at experiments exploring exposure to muscular images and negative self-images. The meta-analyses are thorough and clear selection criteria, assessment criteria, and an assessment of publication bias is presented. N=4324, males, both over and under 18 years of age

Results and conclusion: Small to medium effect sizes were found that showed a relationship between pressure from mass media and negative body image. Effects between exposure to muscular images and negative self-rating were only found using extreme muscular images. Findings are comparable to meta analyses on body image for women, suggesting that the effects are similar for men and women. Post-pubescent men appear more effected than pre-pubescent men. **Men, as well as women, appear to be effected by media images.**

Blashill, A. (2011). Gender roles, eating pathology, and body dissatisfaction in men: a meta-analysis. *Body Image*, 8(1), 1-11.

Aim and method: Explored the relationship between masculinity/femininity and eating pathology, body dissatisfaction, and muscle dissatisfaction in men. This meta-analysis gives clear information on selection criteria for studies and includes a search for grey literature. The sample size varied for all of the different hypotheses but ranged from 40 to 1287. Participants were heterosexual and homosexual men mostly over the age of 18.

Results and conclusion: Aspects of masculinity such as placing an emphasis on winning, emotional control, risk-taking, violence, dominance, power over women, and pursuit of status, seem to place men at risk for higher levels of dissatisfaction with their muscularity. **Masculinity, rather than femininity, appears serves as an important variable in eating pathology and body/muscle dissatisfaction.**

Blond, A. (2008). Impacts of exposure to images of ideal bodies on male body dissatisfaction: a review. *Body Image*, 5(3), 244-250

Aim and method: To explore the impact of exposure to ideal body images on male body satisfaction. This meta-analysis used 15 studies exploring impact of exposure to images of men on body satisfaction. N=1085, participants were males over and under 18 years of age

Results and conclusion: **Exposure to images of idealized male bodies had a small but statistically significant negative impact on men's body dissatisfaction.** The impact of exposure may be influenced by existing body image with **men who are dissatisfied with their bodies are at increased risk of negative self-evaluations when exposed to idealized images.** Whilst men with good body image may be protected against negative impacts from seeing such images.

Breitkopf, C., Littleton, H., & Berenson, A. (2007). Body Image: A Study in a Tri-Ethnic Sample of Low Income Women. *Sex Roles*, 56(5/6), 373-380.

Aim and method: To explore the different components of body image for low income women of different ethnicities. 1217 low-income European American, African American, and Latina women provided self-report data and had their BMI measured for this study

Results and conclusion: Nearly all normal weight African Americans characterized their weight as normal. In contrast over 30% of normal weight European Americans and Latinas characterized themselves as being over-weight. European Americans and Latinas with higher BMIs reported more appearance shame than their lower BMI peers; this pattern was not observed among African Americans. Among Latinas, body image was appeared to be influenced by length of residency in the U.S. **African American women may be at reduced risk of body image in comparison to European American and Latina women.**

Brixval, C., Rayce, S., Rasmussen, M., Holstein, B., & Due, P. (2012). Overweight, body image and bullying--an epidemiological study of 11- to 15-years olds. *European Journal Of Public Health*, 22(1), 126-130

Aim and method: Explored the relationship between weight status, bullying, and body image among early to mid-adolescents. Self-report data from 4781 11, 13, and 15 year olds was collected for this study.

Results and conclusion: Overweight and obese children were exposed to more bullying than normal-weight children. Body image fully mediated the associations between weight status and exposure to bullying for both genders. **The relationship between weight and bullying may be explained by body image.** However the study is correlational so causality cannot be inferred.

Bun, C. J. E., Schwiebbe, L., Schuetz, F. N., Bijlsma-Schlosser, J., & Hirasing, R. A. (2012). Negative body image and weight loss behaviour in Dutch school children. *European Journal of Public Health*, 22(1), 130-133

Aim and method: To explore the prevalence of negative body image and weight loss behaviours amongst primary and secondary school aged children. Data was collected during interviews with 10767 9-10 and 13-14 year olds.

Results and conclusion: that 7.8% of boys and 13.9% of girls aged 9-10 had a negative image of their body with 2.9% of normal weight boys and 6.9% of normal weight girls rating themselves as 'too fat'. 3.7% of normal weight boys and 7% of normal weight girls in this age bracket reported dieting. Data from 13-14 year olds indicated that 8.6% of normal weight boys and 27.5% of normal weight girls rating themselves as 'too fat'. 4.7% of normal weight boys and 12.9% of normal weight girls in this age bracket reported dieting. **The presence of negative body image and unnecessary weight loss behaviours was found amongst 9-10 year olds, the levels of negative body image and weight loss behaviours were especially high for 13-14 year old girls.**

Caccavale, L., Farhat, T., & Iannotti, R. (2012). Social engagement in adolescence moderates the association between weight status and body image. *Body Image, 9*(2), 221-226.

Aim and method: To investigate whether the relationship between weight and body image is affected by social engagement. This study used survey data from 6909 adolescents.

Results and conclusion: There was a relationship between weight and body image with overweight/obese participants having lower body image than normal weight participants. Social engagement appeared to affect the relationship between weight and body image for girls. Overweight/obese girls with high levels of social engagement had significantly better body image than overweight/obese girls with low levels of social engagement. Social engagement did not appear to improve body image for boys. **Improved social engagement may act as a protective factor against poor body image for adolescent girls.**

Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J. K. (2005). The influence of sociocultural factors on body image: A meta-analysis. *Clinical Psychology: Science and Practice, 12*(4), 421-433.

Aim and method: To explore what the relationship between awareness of a thin ideal, internalization of a thin ideal, and perceived pressures to be thin and body image. To also assess these factors in relation to age and ethnicity. This was a thorough meta-analysis using 22 studies and including a search for grey literature. Clear selection and appraisal criteria were presented. Only studies using validated scales to measure constructs were included. Studies used a variety of ages (average ranged from 10.25 to 26.5), ethnicities, and genders. Sample size ranged from 31 to 652 with most studies having a sample size of >100

Results and conclusion: All three sociocultural factors had statistically significant relationships with body image. Internalization and perceived pressures have a significantly stronger relationship to body image than awareness. Neither age nor ethnicity was a statistically significant moderator of the relationship between awareness and body image or that between internalization and body image. **Internalising societal 'thin ideals' appears to be a key moderator on body image.**

Campbell, A., & Hausenblas, H. (2009). Effects of exercise interventions on body image: a meta-analysis. *Journal Of Health Psychology, 14*(6), 780-793

Aim and method: To test the impact of interventions to improve body image. To include an assessment across different ages, ethnicities, and genders. This meta-analysis explored the impact of exercise interventions on body image using 57 different interventions. Clear inclusion and appraisal criteria were used. A search for grey literature was conducted and a good level of detail about interventions was included. Analysis was conducted to assess level of publication bias.

Results and conclusion: There was a small effect size indicating that exercise interventions resulted in improvements in body image compared to a control group. **Interventions using exercise to improve body image appear to have a small but successful impact.**

Chaiton, M., Sabiston, C., O'Loughlin, J., McGrath, J., Maximova, K., & Lambert, M. (2009). A structural equation model relating adiposity, psychosocial indicators of body image and depressive symptoms among adolescents. *International Journal Of Obesity, 33*(5), 588-596

Aim and method: Explores the relationship between adiposity (fatness), body image, and depression in adolescents. A sample of 1127 boys and 1167 girls (ages 13-16) was used to measure adiposity, pressure to be thin, body dissatisfaction, and depressive symptoms.

Results and conclusion: Adiposity was strongly associated with depressive symptoms via the mediating effects of pressure to be thin and body dissatisfaction. **Overweight adolescents may be more likely to suffer from depressive symptoms as a result of body dissatisfaction.**

Cinelli, R., & O'Dea, J. (2009). Body image and obesity among Australian adolescents from indigenous and Anglo-European backgrounds: implications for health promotion and obesity prevention among Aboriginal youth. *Health Education Research*, 24(6), 1059-1068.

Aim and method: Explores the relationship between body image, obesity and ethnicity in Australian adolescents. Self-report data from 4367 Anglo-European and indigenous Australian adolescents was gathered for this study.

Results and conclusion: Both male and female indigenous adolescents were more likely to desire and pursue weight gain in comparison to Anglo-European adolescents. Male indigenous adolescents were most likely to want to build up their bodies and receive parental advice on weight and exercise. Levels of body image was similar between both ethnic groups. **There are both similarities and differences in body image between different ethnic groups. Interventions into body image should consider different cultural pressures.**

Clark, M., Croghan, I., Reading, S., Schroeder, D., Stoner, S., Patten, C., & Vickers, K. (2005). The relationship of body image dissatisfaction to cigarette smoking in college students. *Body Image*, 2(3), 263-270.

Aim and method: Explored the relationship between smoking status and body image dissatisfaction. 1575 college students (aged 18-24) completed self-report measures on smoking status and body-self relations. 482 participants were current smokers, 1093 students reported that they had never smoked.

Results and conclusion: Current smokers scored higher on the overweight preoccupation scale compared to never smokers. **Low body satisfaction and a preoccupation with weight may act as barriers for smoking cessation.**

Cohane, G., & Pope, H. (2001). Body image in boys: a review of the literature. *The International Journal Of Eating Disorders*, 29(4), 373-379.

Aim and method: A fairly systematic review of the literature of body image for boys but with limited information provided on the methodology used. The final review consisted of 17 studies.

Results and conclusion: Whilst boys generally displayed better body image than girls, negative body image was present amongst many boys of all ages and was associated with lower self-esteem. Boys typically wanted to be bigger than their current size, however studies were unclear whether this was a desire for increased muscle mass or general mass. **Negative body image is prevalent amongst boys and is associated with reduced self-esteem.**

Crespo, C., Kielpikowski, M., Jose, P., & Pryor, J. (2010). Relationships Between Family Connectedness and Body Satisfaction: A Longitudinal Study of Adolescent Girls and Boys. *Journal Of Youth & Adolescence*, 39(12), 1392-1401

Aim and method: To explore the link between family connectedness and body satisfaction. This was a longitudinal study with 1774 10-15 year old male and females who completed self-report measures on body satisfaction and family connectedness at time 1, again at time 2 one year later, and for a final time 3 after a further year.

Results and conclusion: Both body satisfaction levels and perceived family connectedness decreased for the whole sample over the one year period. Girls generally had lower body satisfaction than boys, this was especially the case for older girls. **Family connectedness appears to be related to body image in adolescents, especially for girls.**

Croghan, I. T., Bronars, C., Patten, C. A., Schroeder, D. R., Nirelli, L. M., Thomas, J. L., & Hurt, R. D. (2006). Is smoking related to body image satisfaction, stress, and self-esteem in young adults? *American Journal of Health Behavior*, 30(3), 322-333

Aim and method: Explores the relationship between smoking, gender, body image, stress, and self-esteem. 483 current smokers and 973 never smokers completed self-report measures on body image, stress, and self-esteem.

Results and conclusion: Females reported lower body image and lower levels of self-esteem. Current smoking status was associated with lower self-esteem. This study illustrates the relationship between smoking and stress but does not clearly identify the link between smoking and body image.

Crow, S., Eisenberg, M., Story, M., & Neumark-Sztainer, D. (2008¹). Are body dissatisfaction, eating disturbance, and body mass index predictors of suicidal behavior in adolescents? A longitudinal study. *Journal Of Consulting And Clinical Psychology*, 76(5), 887-892.

Aim and method: Examined the relationship between body dissatisfaction, eating disturbance, BMI and suicidal behaviour in adolescents. Longitudinal study with 2516 adolescents who provided self-report data on body dissatisfaction, eating behaviours, BMI, suicidal ideation and suicidal attempts at time 1 and then 5 years later at time 2.

Results and conclusion: Neither BMI nor body dissatisfaction was associated with suicidal ideation or suicidal attempts. For females increased suicidal ideation and increased suicidal attempts at time 2 was associated with higher extreme and unhealthy weight control behaviours at time 1 even after controlling for time 2 depressive symptoms. Extreme and unhealthy weight control behaviours was not associated with elevated suicidal ideation or suicidal attempts for males. **For females elevated risk of suicide appears to be more closely related to extreme and unhealthy weight control behaviours rather than low body satisfaction.**

Crow, S., Eisenberg, M., Story, M., & Neumark-Sztainer, D. (2008²). Suicidal behavior in adolescents: relationship to weight status, weight control behaviors, and body dissatisfaction. *The International Journal Of Eating Disorders*, 41(1), 82-87.

Aim and method: Examined associations between suicidal behaviours and extreme and less extreme weight control behaviours, body dissatisfaction, and weight status in adolescents. Self-report data was collected on body dissatisfaction, depressive symptoms, suicidal ideation and attempts, and body mass index was provided by 4746 adolescents who were aged between 13 and 17.

Results and conclusion: Increased suicidal ideation and suicidal attempts were associated with extreme weight control behaviour, lower level weight control behaviour, and higher body dissatisfaction in girls and boys even after controlling for depressive symptoms. No relationship was found between BMI and suicidal ideation or suicidal attempts. **Even lower level eating-disorder behaviours appear to be associated with increased risk of suicide amongst adolescents.**

Delfabbro, P., Winefield, A., Anderson, S., Hammarström, A., & Winefield, H. (2011). Body image and psychological well-being in adolescents: the relationship between gender and school type. *The Journal Of Genetic Psychology*, 172(1), 67-83.

Aim and method: Explored the relationship between body image, wellbeing, gender and school-type (mixed-gender or co-educational) for adolescents. 1281 adolescents (mean age 15.2 years) completed self-report measures on wellbeing, family functioning, extraversion, and body image for this study.

Results and conclusion: Girls reported lower body image than boys. This lower body image was associated with lower self-esteem rather than other measures of wellbeing. The relationship between body image and self-esteem was not moderated by school type. Girls who had negative body image but scored well on the wellbeing measures tended to be extraverted, and reported having more friends and greater family support. **Girls may be particularly susceptible to negative body image, which is likely to be associated with low self-esteem.** Individual factors such as extraversion and social factors such as family and peer relationships may protect some girls from negative body image impacting on their well-being.

Dijkstra, P., & Barelds, D. P. H. (2011). Examining a model of dispositional mindfulness, body comparison, and body satisfaction. *Body Image*, 8(4), 419-422

Aim and method: Self-report data on dispositional mindfulness, body comparison, and body satisfaction was gathered from 1287 women.

Results and conclusion: Increased mindfulness was associated with better body satisfaction. Increased body comparison was associated with less mindfulness and body satisfaction. Mindfulness partially mediated the link between body comparison and body satisfaction. **Mindfulness-based interventions may reduce body comparison which in turn, may improve body satisfaction**

Eisenberg, M., Neumark-Sztainer, D., & Paxton, S. (2006). Five-year change in body satisfaction among adolescents. *Journal Of Psychosomatic Research*, 61(4), 521-527.

Aim and method: Examines changes in adolescent body image over a 5 year period. This was a longitudinal study using self-report data from 2516 male and female adolescents and time 1, and five years later at time 2.

Results and conclusion: Body satisfaction decreased between time 1 and time 2 for all groups except older females. Body satisfaction decreased more for younger adolescents and those who's BMI increased over the time period. Changes in body satisfaction for males depended on BMI category at baseline. **Body satisfaction for adolescents appears to vary as a function of age, gender, and weight.**

El Ansari, W., Stock, C., Phillips, C., Mabhala, A., Stoate, M., Adetunji, H., & Snelgrove, S. (2011). Does the association between depressive symptomatology and physical activity depend on body image perception? A survey of students from seven universities in the UK. *International Journal Of Environmental Research And Public Health*, 8(2), 281-299.

Aim and method: Explored the role of body image in mediating the relationship between depression and physical activity. 3706 university students in the UK completed self-report measures on sociodemographic information, health behaviours and awareness, as well as measures for depression, educational achievement, and physical activity.

Results and conclusion: Increased physical exercise was associated with reduced depression, better health perception and better health awareness. Students who exercised more and had good body image also had less depression. However students who exercised more but had negative body image had higher levels of depression. **Lower body image may reduce the positive impact of exercise on depression.**

Esnaola, I., Rodríguez, A., & Goñi, A. (2010). Body dissatisfaction and perceived sociocultural pressures: Gender and age differences. *Salud Mental, 33*(1), 21-29

Aim and method: To explore which factors are related to negative body image. 1259 participants (627 adolescents, 271 young adults, 248 midlife adults, 112 over 55s) completed self-report measures on body image and other social and personal factors.

Results and conclusion: There was a strong relationship between body satisfaction and perceived sociocultural pressures with females reporting higher body dissatisfaction and being more effected by sociocultural factors than males. These gender differences were stronger for younger participants than older participants, despite this gender remained a better predictor of body dissatisfaction than age. **Young females appear to be more at risk from low body dissatisfaction and susceptibility to sociocultural pressures than other groups.**

Fenton, C., Brooks, F., Spencer, N., & Morgan, A. (2010). Sustaining a positive body image in adolescence: an assets-based analysis. *Health & Social Care In The Community, 18*(2), 189-198

Aim and method: Explores how young people create or sustain positive body images. 2898 English adolescents aged between 11 and 15 completed self-report measures on body image.

Results and conclusion: Factors that were associated with improved body image included ease of talking with a father figure, perceived intelligence, perception of family financial security, belief that teachers were interested in them as people, BMI, age, gender, and living in a household that included a father. Emotional well-being as well as demographic factors are associated with body image. **Future interventions may want to consider a strength-based approach focusing on how they can support and sustain the factors that appear to protect young people from negative body image.**

Filiault, S. M., & Drummond, M. J. N. (2009). Methods and methodologies: Investigating gay mens body image in westernized cultures. *Critical Public Health, 19*(3-4), 307-323.

Aim and method: Systematic review of 45 articles exploring the impact of body dissatisfaction on gay and heterosexual men.

Results and conclusion: **Most of the literature finds that gay men experience more body dissatisfaction than heterosexual men.** The field suffers from an over-reliance on internet-based studies, difficulties defining sexual orientation, and an over-reliance on studies that use younger men as participants.

Flament, M., Hill, E., Buchholz, A., Henderson, K., Tasca, G., & Goldfield, G. (2012). Internalization of the thin and muscular body ideal and disordered eating in adolescence: the mediation effects of body esteem. *Body Image, 9*(1), 68-75.

Aim and method: Explores the relationship between weight and appearance esteem with 'internalisation of the ideal body figure' and unhealthy weightloss behaviours using survey data from 1947 adolescents.

Results and conclusion: Relationships were found between weight esteem and appearance esteem and unhealthy weight loss behaviours for both males and females. **Body esteem is important to consider for prevention of unhealthy weightloss behaviours for both boys and girls.**

Forrest, K. Z., & Stuhldreher, W. L. (2007). Patterns and correlates of body image dissatisfaction and distortion among college students. *American Journal Of Health Studies, 22*(1), 18-25.

Aim and method: Study explored the relationship between body image and gender, weight, and depression. 2512 college students provided self-report data on body image, gender, weight, and depression in two separate waves over a 5 year period.

Results and conclusion: Being overweight significantly correlated with negative body image which in turn significantly correlated with depression. **People who are overweight are more likely to have negative body image.**

Frederick, D. A., Forbes, G. B., Grigorian, K. E., & Jarcho, J. M. (2007). The UCLA Body Project I: Gender and Ethnic Differences in Self-Objectification and Body Satisfaction Among 2,206 Undergraduates. *Sex Roles, 57*(5/6), 317-327.

Aim and method: Explored the relationship between gender, BMI, ethnicity and body satisfaction. 2206 American university students completed self-report data on body satisfaction.

Results and conclusion: Females reported lower body satisfaction compared to males across the majority of the BMI continuum. Very slender men were less satisfied with their bodies than very slender women. **Differences in body dissatisfaction across different ethnicities (White, Asian, Hispanic) were small to moderate.** The association between body dissatisfaction and appearance surveillance was strongest for heavier and ethnic minority women.

Frederick, D., Lever, J., & Peplau, L. (2007). Interest in cosmetic surgery and body image: views of men and women across the lifespan. *Plastic And Reconstructive Surgery*, 120(5), 1407-1415.

Aim and method: To explore the relationship between interest in cosmetic surgery and gender, age, relationship status, BMI, and body image across the lifespan. Data was obtained from 52677 men and women aged 18-65 from the online ELLE/MSBNC.com sex and body image survey.

Results and conclusion: 48% of women and 23% of men were interested in cosmetic surgery. There was no relationship between general interest in cosmetic surgery and body image; however participants who were interested in liposuction tended to be of higher weight and report lower body satisfaction. **The impact of body image on interest in cosmetic surgery may be restricted to certain surgical procedures.**

Frederick, D., Peplau, L., & Lever, J. (2006). The swimsuit issue: Correlates of body image in a sample of 52,677 heterosexual adults. *Body Image*, 3(4), 413-419.

Aim and method: Explored the relationship between personal characteristics and body satisfaction. 52677 adults aged between 18 and 65 provided self-report survey data on body satisfaction, age, height, gender, and BMI.

Results and conclusion: In comparison to women, men were less likely to report being too heavy, rate their bodies as unattractive, or avoid wearing a swimsuit in public. Men generally felt better about their weight than women across all weight levels with the exception of under-weight men. For women, slender women were more satisfied than most other women.

Men generally have better body satisfaction than women.

Gavin, A., Simon, G., & Ludman, E. (2010). The association between obesity, depression, and educational attainment in women: the mediating role of body image dissatisfaction. *Journal Of Psychosomatic Research*, 69(6), 573-581

Aim and method: Explores the mediating role of negative body image on the association between obesity and depression. In addition the study explores the variation as a function of years of education. 4543 women (aged 40-65) who were enrolled on a health plan gave self-report data on height, weight, depression, education, and body image

Results and conclusion: **Negative body image was significantly associated with depression regardless of level of education.**

Geraghty, A. A., Wood, A. M., & Hyland, M. E. (2010). Attrition from self-directed interventions: Investigating the relationship between psychological predictors, intervention content and dropout from a body dissatisfaction intervention. *Social Science & Medicine*, 71(1), 30-37

Aim and method: To examine attrition from self-directed interventions on body image and examine the impact of gratitude on body satisfaction. 479 participants aged 18-76 and based in the UK were randomised into either a gratitude diaries condition, thought monitoring and restructuring, or waitlist control as part of a 2 week self-help body dissatisfaction intervention.

Results and conclusion: The gratitude intervention and monitoring restructuring interventions were equally effective at reducing body dissatisfaction. Both interventions were more effective at reducing body dissatisfaction in comparison to the control group. Attrition was twice as likely in the monitoring and restructuring group. **Gratitude-based interventions appear to be effective both in creating positive outcomes and maintaining treatment participation.**

Goldfield, G. S., Moore, C., Henderson, K., Buchholz, A., Obeid, N., & Flament, M. F. (2010). Body Dissatisfaction, Dietary Restraint, Depression, and Weight Status in Adolescents. *Journal Of School Health*, 80(4), 186-192.

Aim and method: Explored the relationship between body image and weight, eating behaviour, and depression in young people. 1490 7 to 12 year olds completed a survey on body image, eating behaviour and mood. They were also weighed and measured to calculate BMI.

Results and conclusion: Independent of age and gender, young people with higher BMI had lower body image. Obese youth reported more depressive symptoms than over-weight or normal-weight youth. **Obese youth are likely to be more at risk from developing negative body image and depressive symptoms.**

Grabe, S., & Hyde, J. (2006). Ethnicity and Body Dissatisfaction Among Women in the United States: A Meta-Analysis. *Psychological Bulletin*, 132(4), 622-640.

Aim and method: To explore differences in body dissatisfaction in women across different ethnicities. This was a thorough meta-analysis using 98 studies giving a great level of detail on all aspects of selection and appraisal criteria. The study had a combined sample size of 42667 including over and under 18 year old ethnically diverse women in the USA.

Results and conclusion: White women were more body dissatisfied than black women. However there was only a small effect size and the difference is smaller than the general difference in body dissatisfaction between men and women. There was little difference in body dissatisfaction between White women and Asian women, and White women and Hispanic women.

Hispanic women were slightly more body dissatisfied than Black women. Women of different ethnicities will have different types of body dissatisfaction for different reasons to one another. Consequently body image measures and interventions will need to be adapted according to ethnicity. **There are not large variations in body dissatisfaction across different ethnicities. The small differences that exist vary between different ethnic groups.**

Grabe, S., Ward, L., & Hyde, J. (2008). The role of the media in body image concerns among women: a meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134(3), 460-476

Aim and method: To explore the impact of media images on body image in women. This was a thorough meta-analysis of 77 studies with clear information on selection and appraisal criteria. The sample included over and under 18 year old women.

Results and conclusion: Small to moderate effects were found linking thin-ideal images to body dissatisfaction, internalisation of the thin ideal, and eating behaviours and beliefs in women. **Exposure to thin-ideal images is related to body image concerns for women**

Groesz, L., Levine, M., & Murnen, S. (2002). The effect of experimental presentation of thin media images on body satisfaction: a meta-analytic review. *The International Journal Of Eating Disorders*, 31(1), 1-16.

Aim and method: To explore the impact of media images on body image in females. This was a meta-analysis using 25 studies exploring the impact of media on body image. The selection were not especially strict and only limited information is given in the results section. N=2292, college-age females

Results and conclusion: Studies found mostly small, negative impact of exposure of media images on body image. **Exposure to thin-ideal images is related to body image concerns for women, however the effect size is small.**

Hausenblas, H. A., & Fallon, E. A. (2006). Exercise and body image: A meta-analysis. *Psychology & Health*, 21(1), 33-47.

Aim and method: To explore the impact of exercise on body image. This was a meta-analysis using 121 studies, with clear selection and appraisal criteria, including search for grey literature. A mixture of ages, both genders, and ethnicities was included in the sample.

Results and conclusion: Exercise improved body image across all ages. Exercise improved body image in both men and women, although it was more effective for men. A combination of aerobic and anaerobic exercise produced the greatest improvements in body image. Moderate to strenuous interventions had a greater impact than mild interventions. Thus, **to improve body image, exercise interventions should incorporate both aerobic and anaerobic activities of at least a moderate intensity level.**

Holmstrom, A. J. (2004). The Effects of the Media on Body Image: A Meta-Analysis. *Journal Of Broadcasting & Electronic Media*, 48(2), 196-217.

Aim and method: To explore the impact of media images on body image. Thorough meta-analysis of 34 studies with clear and strict inclusion and evaluation criteria. Participants were over and under 18 years old, mostly college age, male and female.

Results and conclusion: A very small negative relationship between media images and body image was found. Differences in effect sizes between studies varied due to type of control condition used, with the use of overweight women producing a moderate positive effect on body image. The results suggest that women who view thin images have a similar experience to women who view average weight or non-human images (a very small impact on body image), in comparison, women who view overweight women have improved body image. A small correlation indicated that the longer participants were exposed to media images the better their body image. Suggesting that there is a subset of women for whom media exposure plays a positive role. Social comparison theory maintains that in order to enhance their motivation to improve on a particular dimension (in this case, weight), people may compare themselves with others who are slightly better on that dimension.

Exposure to thin images appeared to have little effect on body image whilst exposure to overweight images appears to improve body image. The area suffers from methodological shortcomings including the use of different outcome measures and measures of body image. Prolonged exposure to media images can improve body satisfaction for some women.

Holmqvist, K., Lunde, C., & Frisé, A. (2007). Dieting behaviors, body shape perceptions, and body satisfaction: cross-cultural differences in Argentinean and Swedish 13-year-olds. *Body Image*, 4(2), 191-200.

Aim and method: To explore differences in body image, dieting behaviours, and body shape perceptions between Argentinean and Swedish adolescents. Self-data was gathered from 358 Argentinean and 874 Swedish 13 year olds.

Results and conclusion: Overall there was no difference in body satisfaction between the adolescents from both countries. For both countries girls reported more body dissatisfaction than boys. Argentinean adolescents reported more weight loss attempts whereas Swedish adolescents appeared to suffer more from negative body shape perceptions. **There are limited differences in body satisfaction when comparing between different countries.**

Holsen, I., Carlson Jones, D., & Skogbrott Birkeland, M. (2012). Body image satisfaction among Norwegian adolescents and young adults: a longitudinal study of the influence of interpersonal relationships and BMI. *Body Image*, 9(2), 201-208.

Aim and method: This longitudinal study explored the changes in body image between the ages of 13 and 30 for 1132 Norwegian participants. The relationship between BMI and peer/family relationships to body image was also explored.

Results and conclusion: Body image improved through adolescence and stabilised in adulthood. The quality of relationships with peers and family at age 13 predicted the rate of improvement in body image for both girls and boys. **Body image improves during adolescents and stabilises in adulthood. Individuals with good quality peer and family relationships show greater improvement in body image.**

Huang, J., Norman, G., Zabinski, M., Calfas, K., & Patrick, K. (2007). Body image and self-esteem among adolescents undergoing an intervention targeting dietary and physical activity behaviors. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 40(3), 245-251.

Aim and method: Assessed the impact of a one-year intervention targeting physical activity, sedentary, and diet behaviours among adolescents on self-reported body image and self-esteem. This was a randomised control trial evaluating the PACE intervention using repeated measures self-report data on body image and self-esteem from 657 adolescents with data collection at baseline, 6 months, and 12 months.

Results and conclusion: There were no intervention effects on body image or self-esteem for either girls or boys. Self-esteem and body satisfaction did not worsen as a result of participating in the PACE+ intervention for either boys or girls whether or not they lost or maintained their weight or gained weight. Girls assigned to the PACE intervention who experienced weight reduction or weight maintenance at either 6 or 12 months reported improvements in body image satisfaction over time compared with subjects who had experienced weight gain during the 12-month study period. Adverse effects on body satisfaction and self-esteem were not observed among adolescents undergoing this behavioural intervention. These results suggest that **a behavioural intervention directed at improving physical activity and diet habits may be safely undertaken by adolescents, including those who are overweight and at risk for overweight.** Inclusion of specific elements in the intervention that directly addressed body image and self-esteem issues may have reduced the risk for negative psychological effects.

Izgiç, F., Akyüz, G., Doğan, O., & Kuru, N. (2004). Social Phobia Among University Students and Its Relation to Self-Esteem and Body Image. *Canadian Journal Of Psychiatry*, 49(9), 630-634.

Aim and method: To explore the relationship between social phobia, body image, and self-esteem. 1003 university students were administered validated scales measuring social phobia, body image and self-esteem.

Results and conclusion: The prevalence of a social phobia in the last year amongst the sample was 7.9%. Students with a social phobia were rated as having lower self-esteem and lower body image. **Individual who have suffered from a social phobia are more likely to have lower self-esteem and lower body image.**

Jaeger, B., Ruggiero, G., Edlund, B., Gomez-Perretta, C., Lang, F., Mohammadkhani, P., & Lamprecht, F. (2002). Body dissatisfaction and its interrelations with other risk factors for bulimia nervosa in 12 countries. *Psychotherapy And Psychosomatics*, 71(1), 54-61.

Aim and method: 1751 medical and nursing students from 12 nations responded to a series of 10 silhouettes which were designed to be culturally neutral.

Results and conclusion: Participants from northern Mediterranean countries, followed by northern European countries showed the most body dissatisfaction. Participants from countries currently undergoing a process of westernization showed an intermediate amount of body dissatisfaction. Participants from non-western countries had lower dissatisfaction. Body dissatisfaction was closely related to dieting behaviour in most countries. **Aspects of body dissatisfaction were found in all countries although differences in levels of body dissatisfaction were found with more Westernised countries having higher levels of body dissatisfaction.**

Jarry, J., & Berardi, K. (2004). Characteristics and effectiveness of stand-alone body image treatments: a review of the empirical literature. *Body Image*, 1(4), 319-333.

Aim and method: Meta-analysis of 18 studies with clear inclusion and selection criteria. Participants were mostly non-clinical populations (female college students) but some clinical populations of individuals diagnosed with eating disorders were included.

Results and conclusion: **Stand-alone body image therapies based on cognitive-behavioural principles appear to be highly effective at improving body image in clinical and non-clinical populations.** Interventions also appear to be able to improve eating attitude and behaviour.

Javo, I., & Sørli, T. (2010). Psychosocial predictors of an interest in cosmetic surgery among young Norwegian women: a population-based study. *Plastic Surgical Nursing: Official Journal Of The American Society Of Plastic And Reconstructive Surgical Nurses*, 30(3), 180-186.

Aim and method: Explored the psychosocial factors that predict interest in cosmetic surgery. 1880 participants aged between 18 and 35 completed self-report measures on personality, interpersonal attachment insecurity, low self-esteem, poor body image, dissatisfaction with sexual life, distorted eating behaviour, emotional distress, low education, poor relationship with parents and friends, teasing history, social acceptance of cosmetic surgery, low level of physical activity and interest in cosmetic surgery.

Results and conclusion: **Interest in cosmetic surgery was related to body-dysmorphic disorder-like symptoms,** body image orientation, having children, a history of teasing for appearance, knowing someone who has had cosmetic surgery and being recommended to have cosmetic surgery. People who scored highly on agreeability, body image evaluation, education, and quality of relationship with parents were less interested in cosmetic surgery.

Johnson, F., & Wardle, J. (2005). Dietary Restraint, Body Dissatisfaction, and Psychological Distress: A Prospective Analysis. *Journal Of Abnormal Psychology*, 114(1), 119-125

Aim and method: Explores the relationship between dietary restraint, body dissatisfaction and psychological distress in adolescent girls. 1177 adolescent girls completed self-report measures on emotional eating, binge eating, abnormal attitudes to eating and weight, low self-esteem, stress, depression, dietary restraint and body dissatisfaction.

Results and conclusion: Body dissatisfaction was associated with all adverse outcomes whereas dietary restraint was only associated with negative attitudes to eating. **Body dissatisfaction rather than dietary restraint may play a more important role in bulimic symptoms, emotional eating, and psychological distress.**

Kaufman, A. R., & Augustson, E. M. (2008). Predictors of regular cigarette smoking among adolescent females: Does body image matter? *Nicotine & Tobacco Research*, 10(8), 1301-1309.

Aim and method: Explored whether factors associated with body image predicted regular smoking in adolescent females. 6956 adolescents from the National Longitudinal Study of Adolescent Health completed self-report measures on body image, perceived weight, perceived physical development, weight loss attempts, self-esteem and smoking.

Results and conclusion: Perceived weight, perceived physical development, weight loss attempts, and self-esteem all predicted regular smoking 1 year later. Females who felt they were more physically developed than their peers were more likely to report being a regular smoker. **Perceived physical development and perceived weight are important when predicting regular smoking in adolescent females.**

Kelly, A. M., Wall, M., Eisenberg, M. E., Story, M., & Neumark-Sztainer, D. (2005). Adolescent girls with high body satisfaction: who are they and what can they teach us? *Journal of Adolescent Health*, 37(5), 391-396.

Aim and method: To explore the scale of body satisfaction amongst a multi-ethnic urban population of adolescent females and to examine the personal, demographic, socio-environmental and behavioural factors that are associated with body satisfaction. 2357 female adolescents completed self-report measures on body satisfaction, personal, demographic, socio-environmental and behavioural factors.

Results and conclusion: 26.7 % of girls reported high body satisfaction. Factors associated with high body satisfaction included being African-American, under-weight and being exposed to positive parental and peer attitudes to fitness and health rather than dieting. **Parents and peers appear to have a strong influence on body image. Messages that promote fitness and health rather than weight control are likely to help improve body satisfaction.**

Kennedy, M., Templeton, L., Gandhi, A., & Gorzalka, B. B. (2004). Asian Body Image Satisfaction: Ethnic and Gender Differences across Chinese, Indo-Asian, and European-Descent Students. *Eating Disorders*, 12(4), 321-336.

Aim and method: Explores the relationship between body image satisfaction, ethnicity, and gender. This study used self-report data from 1471 Canadian university students.

Results and conclusion: The lowest levels of body satisfaction were found in participants of Chinese descent, followed by participants of Indo-Asian descent, and finally participants of European descent. Body satisfaction was lower for females across all ethnic groups. All participants expressed a desire to be thinner. **The results indicate similarities and differences in body image across different ethnic groups.**

Keski-Rahkonen, A., Bulik, C. M., Neale, B. M., Rose, R. J., Rissanen, A., & Kaprio, J. (2005). Body dissatisfaction and drive for thinness in young adult twins. *International Journal Of Eating Disorders*, 37(3), 188-199.

Aim and method: To explore the relationship between genetics and negative body image. This study used twin modelling (N=4667, aged between 22-27) to explore the contribution of the environment and genes to body image.

Results and conclusion: For females a pattern emerged whereby additive genes accounted for nearly 60% of the variance in body dissatisfaction. No pattern was found for males. **Any heritable pattern in body image appears to vary as a function of gender.**

Kim, D., & Kim, H. (2009). Body-image dissatisfaction as a predictor of suicidal ideation among Korean boys and girls in different stages of adolescence: a two-year longitudinal study. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 45(1), 47-54.

Aim and method: To explore the relationship between body dissatisfaction and suicidal ideation during adolescence. This was a longitudinal study using self-report data from 5455 adolescents. Two age groups were used in the study with half of the sample being aged 10 at time 1 and half of the sample aged 15 at time 1. The same measures were completed at time 2, two years later.

Results and conclusion: For both boys and girls body dissatisfaction and suicidal ideation progressively increased until peaking at mid-adolescence and slightly decreasing thereafter. After controlling for psychological problems and other possible variables, body dissatisfaction prospectively predicted the risk of suicidal ideation in early-adolescent girls and mid-adolescent boys, but not in early-adolescent boys or mid-adolescent girls. **Body dissatisfaction appears to be associated with increased suicidal ideation but this relationship is mediated by both gender and stage of adolescents. Consequently interventions to reduce suicidal risk need to be tailored to age and gender**

Knauss, C., Paxton, S., & Alsaker, F. (2007). Relationships amongst body dissatisfaction, internalisation of the media body ideal and perceived pressure from media in adolescent girls and boys. *Body Image*, 4(4), 353-360

Aim and method: Explored the relationship between internalisation of media body ideals, perceived pressure to meet ideals and body dissatisfaction in adolescents. 1610 male and female adolescents completed measures of internalization of body ideals, perceived pressure, BMI and body dissatisfaction

Results and conclusion: Girls reported higher body dissatisfaction, internalisation, and pressure to meet ideals than boys. Internalisation, pressure to meet ideals, and BMI were all related to levels of body dissatisfaction. The strongest predictor of body dissatisfaction was internalisation of ideals for girls and perceived pressure for boys. **Whilst both boys and girls report body dissatisfaction there are gender differences in the scale and potential causes of body dissatisfaction.**

Liechty, J. (2010). Body image distortion and three types of weight loss behaviors among nonoverweight girls in the United States. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 47(2), 176-182.

Aim and method: Explores the relationship between body image distortion and weight loss behaviour among non-overweight girls. 5173 non-overweight adolescent girls aged 11-19 provided data via the National Longitudinal Study of Adolescent Health. Body image distortion was calculated by comparing actual to perceived weight status.

Results and conclusion: At time 1 29% of girls over-estimated their weight status, these girls were 4.3 times more likely to engage in extreme weight loss behaviour (e.g. bulimia) and 2.3 time more likely to engage in weight control behaviour at time 2. Girls who engaged in extreme weight loss behaviour at time 1 were 10.7 times more likely to be engaging in extreme weight loss behaviour at time 2. There was no relationship between weight-over estimation and engaging in exercise for weight control. **Girls who have a distorted view of their weight are at increased risk in engaging in extreme weight control dieting behaviours and are likely to maintain these behaviours over time.** Eating disorder prevention interventions may consider identifying these higher-risk groups using a body image measure.

Littleton, H., Radecki Breitkopf, C., & Berenson, A. (2005). Body image and risky sexual behaviors: an investigation in a tri-ethnic sample. *Body Image*, 2(2), 193-198.

Aim and method: Explores the link between body image (appearance shame and appearance investment) and risky sexual behaviours. A multi-ethnic sample of 1547 women were recruited from family planning clinics and provided self-report data on body image and sexual behaviours.

Results and conclusion: Negative body image was associated with inconsistent condom use, having multiple sex partners in the past year, and having sex after drinking alcohol or using drugs. Age, marital status, and ethnicity did not mediate these results. **Negative body image may put women at higher risk of engaging in sexual risky behaviours.**

Lunde, C., Frisén, A., & Hwang, C. (2007). Ten-year-old girls' and boys' body composition and peer victimization experiences: prospective associations with body satisfaction. *Body Image*, 4(1), 11-28.

Aim and method: Explores the relationship between child weight and height, body perceptions, and experiences of peer victimisation at age 10 with body esteem at age 13. This was a longitudinal study with 474 girls and 400 boys who completed self-report measures at time 1 (aged 10) and time 2 (aged 13).

Results and conclusion: Actual large body size at age 10 was associated with lower body image at age 13 for girls. For boys, perceived large body size was associated with lower body image at age 13. Boys who perceived themselves to be too short at age 10 were more dissatisfied than others at age 13. Peer victimisation was associated with weight-esteem for girls and lower perceptions of third party body image for boys. Overall participants were significantly less satisfied with their bodies at age 13. **Body dissatisfaction may increase with age during adolescence.**

McCabe, M., Ricciardelli, L., & Banfield, S. (2001). Body image, strategies to change muscles and weight, and puberty: do they impact on positive and negative affect among adolescent boys and girls? *Eating Behaviors*, 2(2), 129-149.

Aim and method: Explored the relationship between strategies to change body shape and emotional wellbeing in adolescents. Self-report data on body image satisfaction, body image importance, body change strategies to decrease weight, body change strategies to increase muscle tone, and use of food supplements was obtained from 1185 adolescents.

Results and conclusion: Overall there was a strong relationship between the use of body change strategies and reduced wellbeing but no association with body change strategies and improved wellbeing. For girls there was a strong association between body dissatisfaction and reduced well-being, however this finding was not replicated in boys. **Girls appear to be more likely than boys to experience negative affect in conjunction with low body dissatisfaction.**

McLaren, L., & Kuh, D. (2004). Body Dissatisfaction in Midlife Women. *Journal Of Women & Aging*, 16(1/2), 35-54.

Aim and method: Explored body dissatisfaction amongst midlife women. 1026 54 year old women completed self-report measures on body dissatisfaction as part of the MRC National Survey of Health and Development

Results and conclusion: Overall 80% of the women reported weight dissatisfaction. Half of normal weight women reported dissatisfaction with their weight. Women reported increased present-day dissatisfaction in comparison to their bodies in their younger years (up to their forties). Dissatisfaction was higher for women of higher SES. Women who reported low body satisfaction also reported that this impacted on their daily activities. Women who reported being happy with their weight were more likely to report negative body image about other aspects of their appearance. **The prevalence of body dissatisfaction amongst mid-life women appears to be high. Body dissatisfaction appears to impact on daily activities for this age group.**

Meland, E., Haugland, S., & Bredablik, H. (2007). Body image and perceived health in adolescence. *Health Education Research*, 22(3), 342-350.

Aim and method: Explored the relationship between perceived negative health, body image, age, and gender in adolescents. 5026 11, 13, and 15 year olds completed self-report data for the study.

Results and conclusion: Girls reported more negative health than boys, a finding that increased with age. Girls and older age groups reported dieting and dissatisfaction with weight and appearance more often than boys and younger age groups. Whilst both boys and girls report low body satisfaction **girls report less body satisfaction than boys. Body satisfaction may decrease with age over adolescence.** Low satisfaction may be related to poor estimation of health

Menzel, J., Schaefer, L., Burke, N., Mayhew, L., Brannick, M., & Thompson, J. (2010). Appearance-related teasing, body dissatisfaction, and disordered eating: A meta-analysis. *Body Image*, 7(4), 261-270.

Aim and method: To explore the relationship between appearance and weight-based teasing and body image, restrictive eating and bulimic behaviours. This was a meta-analysis with a large sample size (N>10000). Clear information is given on selection, evaluation, and appraisal criteria including unpublished literature and assessment of publication bias. Participants include a range of age, gender, and ethnicities.

Results and conclusion: Results indicate a moderate relationship between teasing and body image. Moderators of this effect were teasing measure used, publication type, age group and gender. The association between body dissatisfaction and weight-related teasing was larger for children and adolescents than adults, however this may be the result of the teasing measures used as some relied on reports of historic teasing. A stronger relationship between teasing and body image was found for females, indicating that females either experience more body image teasing than males, or that they are more affected by teasing. **These findings suggest that teasing may play a significant role in body image.** Body image interventions may want to consider including a focus on how to deal with negative appearance related teasing.

Menzel, J., Sperry, S., Small, B., Thompson, J. J., Sarwer, D., & Cash, T. (2011). Internalization of Appearance Ideals and Cosmetic Surgery Attitudes: A Test of the Tripartite Influence Model of Body Image. *Sex Roles*, 65(7/8), 469-477.

Aim and method: Examined the relationship between body satisfaction, perceived pressure to have cosmetic surgery, internalisation of societal appearance ideals, and cosmetic surgery attitudes. 1603 female and 445 male American university students completed self-report measures on body satisfaction, perceived appearance pressures, internalization of appearance standards, and cosmetic surgery attitudes.

Results and conclusion: Both internalisation of ideals and body satisfaction mediated the effect of perceived pressures to have surgery. The study suggests that **the specific contributing factors related to body image that are associated with increased willingness to have cosmetic surgery are internalising societal ideals about body image and feeling pressurised by others to have surgery.**

Mond, J., van den Berg, P., Boutelle, K., Hannan, P., & Neumark-Sztainer, D. (2011). Obesity, body dissatisfaction, and emotional well-being in early and late adolescence: findings from the project EAT study. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 48(4), 373-378.

Aim and method: Explored the relationship between body dissatisfaction, obesity, and emotional well-being in late adolescence. A longitudinal repeated measures study with 806 adolescents who completed self-report measures on body dissatisfaction, emotional well-being, socio-demographic information, height and weight and time 1 (mean age 12.8 years) and time 2 (mean age 17.3 years).

Results and conclusion: Obesity was not associated with lower self-esteem or higher depressive symptoms once the effects of body dissatisfaction were controlled. These effects were found for both genders at both time points. **Reduced well-being in overweight adolescents may be primarily due to the impacts of weight-related body dissatisfaction.**

Morin, A. S., Maiano, C., Marsh, H. W., Janosz, M., & Nagengast, B. (2011). The Longitudinal Interplay of Adolescents' Self-Esteem and Body Image: A Conditional Autoregressive Latent Trajectory Analysis. *Multivariate Behavioral Research*, 46(2), 157-201.

Aim and method: Explores the relationship between body image and self-esteem throughout the course of adolescence as well as the impact of gender, ethnicity and pubertal development. A longitudinal study with 1001 adolescents who completed self-report measures on 6 occasions over a 4 year period.

Results and conclusion: Whilst White females had the lowest self-esteem and body image overall, in general there was a positive relationship between levels of self-esteem and body image which remained high and stable over the course of the study. The impact of pubertal development was limited to White females who appeared to benefit from early pubertal development.

Adolescents with negative body image also have low self-esteem. The impact of body image may be moderated by pubertal development in adolescence, with early development reducing levels of body dissatisfaction.

Morrison, M., Morrison, T., & Sager, C. (2004). Does body satisfaction differ between gay men and lesbian women and heterosexual men and women? A meta-analytic review. *Body Image*, 1(2), 127-138

Aim and method: Thorough meta-analysis using 27 studies and an overall sample size of 5220. Clear selection criteria including assessment of publication bias.

Results and conclusion: Heterosexual men appear to be slightly more satisfied with their bodies than homosexual men. Lesbians were slightly more satisfied with their bodies than heterosexual women. **Heterosexual men appear to have the greatest levels of body satisfaction in comparison to gay men, gay women, and heterosexual women.**

Murnen, S., & Smolak, L. (2009). Are Feminist Women Protected from Body Image Problems? A Meta-analytic Review of Relevant Research. *Sex Roles*, 60(3/4), 186-197

Aim and method: Meta-analysis using 26 studies exploring whether feminist women were less susceptible to negative body image

Results and conclusion: A significant positive association was found between feminist identify and body image, especially for older women. **Feminist identity may act as a protective factor from body image concerns.**

Myers, T., & Crowther, J. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal Of Abnormal Psychology*, 118(4), 683-698.

Aim and method: To explore the relationship between social comparison and body dissatisfaction. This was a meta-analysis of 156 studies examining 189 different effect sizes

Results and conclusion: Increased social comparison was related to higher levels of body dissatisfaction. This effect was stronger for women than men and was more present in younger people in comparison to older people. **Comparing yourself unfavourably to others may lead reduced body satisfaction.**

Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). Does Body Satisfaction Matter? Five-year Longitudinal Associations between Body Satisfaction and Health Behaviors in Adolescent Females and Males. *Journal of Adolescent Health*, 39(2), 244-251.

Aim and method: Explores the relationship between body satisfaction, weight-related health-promoting and weight-related health-compromising behaviours among adolescents. This was a longitudinal study using self-report data from 2516 ethnically and socioeconomically diverse adolescents at two time points over a 5 year period.

Results and conclusion: For girls, even when the data was adjusted for BMI, lower body satisfaction was associated with higher levels of dieting, very unhealthy weight control behaviours, and lower levels of physical activity. In males, when the data was adjusted for BMI, lower body satisfaction was associated with higher levels of dieting, unhealthy weight control behaviour, and binge eating. **Rather than acting as a motivator for healthy weight control lower body satisfaction appears to increase the chances of adolescents engaging in unhealthy weight control behaviours that are likely to result in weight gain and poorer overall health.**

Nieri, T., Kulis, S., Keith, V. M., & Hurdle, D. (2005). Body Image, Acculturation, and Substance Abuse Among Boys and Girls in the Southwest. *American Journal Of Drug & Alcohol Abuse*, 31(4), 617-639

Aim and method: Explored the relationship between body image and drug use amongst Mexican American adolescents. Self-report data on body image, lifetime and recent alcohol, cigarette, and marijuana use and antidrug norms was collected from 1343 mainly Mexican-American adolescents.

Results and conclusion: In comparison to more acculturated youth less acculturated (Spanish-dominant) youth reported the poorest body image. However more acculturated Latino youth with poor body image had the highest risk of substance use with boys reporting greater amounts of alcohol use and girls reporting a greater amount of cigarette use. **Reduced acculturation may protect these adolescents from coping with negative body image using drugs or alcohol.**

Nishina, A., Ammon, N. Y., Bellmore, A. D., & Graham, S. (2006). Body Dissatisfaction and Physical Development Among Ethnic Minority Adolescents. *Journal Of Youth & Adolescence*, 35(2), 179-191

Aim and method: Explores the relationship between body dissatisfaction, physical development, and ethnicity in adolescents. The population for this study was 1100 urban 14 year old girls and boys of difference ethnicities.

Results and conclusion: Overall there were more similarities than differences in body dissatisfaction across the different ethnic groups however African American girls reported higher levels of body satisfaction than girls from other ethnic groups. For boys, faster physical development was associated with feeling overweight and peer victimization. Feeling too small was only associated with victimization if boys were actually low in physical development. For girls, actual physical development directly predicted less peer victimization, while perceived faster development predicted more victimization. **This study found more differences than similarities in body dissatisfaction amongst an ethnically diverse group of adolescents.**

O'Dea, J., & Caputi, P. (2001). Association between socioeconomic status, weight, age and gender, and the body image and weight control practices of 6- to 19-year-old children and adolescents. *Health Education Research*, 16(5), 521-532.

Aim and method: To explore the relationship between socioeconomic status, age, weight and gender on negative body image. 1131 6 to 10 year olds completed measures on SES, age, gender, body weight, body image, skipping breakfast, physical self-esteem, attempts to lose or gain weight, and dietary and weight control advice received from others.

Results and conclusion: Low SES children were more likely to be overweight, to perceive themselves as too thin, to be trying to gain weight, and less likely to receive dietary advice. Overweight girls of middle to upper SES had the lowest body image. Boys of low SES had the highest body image. **Interventions into body image may need to be tailored depending on SES and nutritional advice may need to be more targeted at low SES groups.**

Paxton, S. J., Eisenberg, M. E., & Neurnark-Sztainer, D. (2006¹). Prospective Predictors of Body Dissatisfaction in Adolescent Girls and Boys: A Five-Year Longitudinal Study. *Developmental Psychology*, 42(5), 888-899.

Aim and method: To explore prospective risk factors for negative body image for adolescents. BMI, socioeconomic status, ethnicity, parent dieting environment, peer environment, psychological factors and body dissatisfaction was measured at time one (n=440 girls, n=366 boys) in early adolescence and again at time two (n=946 girls, n=764 boys) 5 years later.

Results and conclusion: Body dissatisfaction at time 1, BMI, SES, being African American, friend dieting and teasing, self-esteem, and depression were all predictors of Time 2 body dissatisfaction with different profiles for different groups. **BMI, SES, ethnicity, peers, self-esteem and depression are all associated with negative body image.**

Paxton, S., Neurnark-Sztainer, D., Hannan, P., & Eisenberg, M. (2006²). Body dissatisfaction prospectively predicts depressive mood and low self-esteem in adolescent girls and boys. *Journal Of Clinical Child And Adolescent Psychology: The Official Journal For The Society Of Clinical Child And Adolescent Psychology, American Psychological Association, Division 53*, 35(4), 539-549.

Aim and method: Explored the relationship between body dissatisfaction, depressed mood, and self-esteem in adolescents. This was a longitudinal study using self-report data from 806 early adolescent and 1710 mid adolescent girls and boys at time 1 and five years later at time 2.

Results and conclusion: Time 1 body dissatisfaction was strongly related to time 2 depressive mood and low self-esteem in early-adolescent girls and mid adolescent boys. **Body dissatisfaction appears to be a risk factor for depressive mood for both girls and boys in adolescence but patterns vary as a function of both gender and age.**

Peplau, L., Frederick, D., Yee, C., Maisel, N., Lever, J., & Ghavami, N. (2009). Body image satisfaction in heterosexual, gay, and lesbian adults. *Archives Of Sexual Behavior*, 38(5), 713-725

Aim and method: Online study using self-report data on body satisfaction and comfort with one's body during sexual activity from 57377 participants.

Results and conclusion: Heterosexual men had the most positive body image, were least preoccupied with their weight, reported more positive effects of their body image on their quality of life and the quality of their sex life, were more comfort wearing a swimsuit in public, and reported a greater willingness to reveal aspects of their body to their partner during sexual activity. There were few differences between gay men, lesbians, and heterosexual women. **Heterosexual men appear to have higher body satisfaction than homosexual men, homosexual women, and heterosexual women.**

Pesa, J., Syre, T., & Jones, E. (2000). Psychosocial differences associated with body weight among female adolescents: the importance of body image. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 26(5), 330-337.

Aim and method: To explore the relationship between weight, psychological factors and body image amongst adolescent girls. 3197 female adolescents provided data as part of the National Longitudinal Study of Adolescent Health. Measures included depression, self-esteem, trouble in school, school connectedness, family- connectedness, sense of community, autonomy, protective factors, and grades.

Results and conclusion: While overweight female adolescents seem to suffer from low self-esteem, it may be explained by body image. Efforts should be directed toward encouraging and supporting healthy eating patterns and physical activity while encouraging students to recognise personal strengths not related to physique.

Petrie, T., Greenleaf, C., & Martin, S. (2010). Biopsychosocial and Physical Correlates of Middle School Boys' and Girls' Body Satisfaction. *Sex Roles*, 63(9/10), 631-644

Aim and method: Explores the relationship between physical factors, biopsychosocial factors and body satisfaction amongst school age children. 1288 children aged 11 to 14 completed self-report measures on pubertal development, weight pressures, internalization, social appearance comparison, self-esteem, depression, and physical self-concept, and objective measures of cardiorespiratory fitness and BMI.

Results and conclusion: Gender moderated the impact between all of the variables and body satisfaction. Girls were more affected by pressures to lose weight whereas boys were more affected by pressures to gain weight and muscle mass. **Whilst both boys and girls are impacted by body dissatisfaction there are different patterns between the genders.**

Polimeni, A., Austin, S., & Kavanagh, A. M. (2009). Sexual Orientation and Weight, Body Image, and Weight Control Practices among Young Australian Women. *Journal Of Women's Health* (15409996), 18(3), 355-362.

Aim and method: Self- report data on sexual orientation, weight, weight control practices, and body image was collected from 9683 young adult women in Australia.

Results and conclusion: Lesbians reported the most body satisfaction, and were less likely to diet or engage in weight control behaviours compared to heterosexual women. Bisexual women were more likely to weight cycle and engage in unhealthy weight control behaviours (such as smoking) in comparison to heterosexual women. The study suggests that **lesbians have a healthier body image and are at reduced risk from unhealthy weight control behaviours in comparison to bisexual and heterosexual women.**

Rasmussen, F., Eriksson, M., & Nordquist, T. (2007). Bias in height and weight reported by Swedish adolescents and relations to body dissatisfaction: the COMPASS study. *European Journal Of Clinical Nutrition*, 61(7), 870-876

Aim and method: The data for this study consisted of a physical examination and the collection of self-report data for 2726 15 year old males and females.

Results and conclusion: Under reporting of weight was high for both obese girls and boys with 35% of obese girls under-reporting their weight and 48% of boys under-reporting their weight. Boys who rated themselves as unattractive were more likely to under report their weight and BMI than boys who considered themselves to be attractive. Both boys and girls who wished to be leaner under-reported their weight in comparison to weight-satisfied participants. **Studies that rely on self-report measures to assess obesity are likely to miss large numbers of obese participants due to the level of weight-underestimation.**

Rastmanesh, R., Gluck, M., & Shadman, Z. (2009). Comparison of body dissatisfaction and cosmetic rhinoplasty with levels of veil practicing in Islamic women. *The International Journal Of Eating Disorders*, 42(4), 339-345.

Aim and method: Explored the relationship between wearing a veil, body dissatisfaction, depression, self-esteem and a desire for rhinoplasty (cosmetic altering of the nose). 1771 Iranian females completed a series of self-report measures to assess body dissatisfaction, depression, self-esteem, desire for rhinoplasty and level of veil wearing.

Results and conclusion: Despite having a similar BMI, women who wore veils more frequently scored significantly lower on body dissatisfaction, prevalence of dieting and exercising in order to be sexually appealing, and depression, higher on self-esteem, and had a lower desire for a rhinoplasty than the two other groups. The desire for rhinoplasty was significantly higher in the group that practiced the least veil wearing. **Women who practiced more strict Islamic veiling techniques had increased body satisfaction and self-esteem, and decreased depression scores and desire for cosmetic surgery.**

Reel, J., Greenleaf, C., Baker, W., Aragon, S., Bishop, D., Cachaper, C., & Hattie, J. (2007). Relations of body concerns and exercise behavior: a meta-analysis. *Psychological Reports*, 101(3 Pt 1), 927-942

Aim and method: Meta-analysis of 35 studies examining the impact of exercise programmes on body concerns.

Results and conclusion: Exercise had a positive effect on body concerns, regardless of gender. Anaerobic exercise (weight training) appeared to have a stronger impact than aerobic exercises (jogging). **Exercise interventions may be an effective way to improve body image. Weight training programmes may be more effective than aerobic programmes.**

Roberts, A., Cash, T., Feingold, A., & Johnson, B. (2006). Are black-white differences in females' body dissatisfaction decreasing? A meta-analytic review. *Journal Of Consulting And Clinical Psychology*, 74(6), 1121-1131.

Aim and method: Meta-analysis exploring the levels of body dissatisfaction across different ethnicities.

Results and conclusion: Black women had more favourable body image than White women, especially in their early 20s. Differences in body image between ethnicities based on weight-satisfaction appear to have diminished over time. Differences in body image between different ethnicities based on global body image have increased. **Differences in body image between different ethnicities may depend on whether body image is assessed on a weight-based dimension.**

Rodgers, R., & Chabrol, H. (2009). Parental attitudes, body image disturbance and disordered eating amongst adolescents and young adults: a review. *European Eating Disorders Review: The Journal Of The Eating Disorders Association*, 17(2), 137-151.

Aim and method: To explore the relationship between parental influence and body image. A systematic review of 56 studies with fairly clear selection criteria and a large overall sample size.

Results and conclusion: Studies indicate that mothers and fathers have a large impact on child body image. This influence is expressed by verbal messages and active encouragement. **Parents can influence negative body image and prevent negative body image through their encouragement.**

Rodríguez-Cano, T., Beato-Fernández, L., & Llarío, A. (2006). Body dissatisfaction as a predictor of self-reported suicide attempts in adolescents: a Spanish community prospective study. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 38(6), 684-688.

Aim and method: To explore the relationship between body dissatisfaction and suicidal attempts amongst adolescents. This was a longitudinal study using self-report data from 1766 13 year olds at time 1 and two years later at time 2.

Results and conclusion: After controlling for gender both previous suicidal thinking and negative body image was associated with increased reporting of suicidal attempts at time 2. **Adolescents with negative body image may be at increased risk of suicide.**

Saarilehto, S., Lapinleimu, H., Keskinen, S., Helenius, H., & Simell, O. (2003). Body Satisfaction in 8-Year-Old Children After Long-term Dietary Counseling in a Prospective Randomized Atherosclerosis Prevention Trial. *Archives Of Pediatrics & Adolescent Medicine*, 157(8), 753-758.

Aim and method: To investigate whether dietary counselling designed for primary prevention of atherosclerosis (hardening of the arteries) and given repeatedly since infancy had an effect on pre-pubertal children's body satisfaction. This was a randomised control trial using repeated measures to assess the impact of regular individualised health education and advice. 1062 participants were randomised into a treatment and control group at age 7 months and followed up at age 8 (n=435 at follow up).

Results and conclusion: No differences were found in estimated current size, desired size, or body dissatisfaction between the treatment and control group for either boys or girls. The degree to which participants were satisfied with their size, wished to be thinner, or wished to look heavier did not differ between the intervention and control groups. **Long-term, individualized dietary counselling since infancy with the focus on dietary fat did not enhance body dissatisfaction or desire to be thinner in 8-year-old children**

Sperry, S., Thompson, J., Sarwer, D., & Cash, T. (2009). Cosmetic surgery reality TV viewership: relations with cosmetic surgery attitudes, body image, and disordered eating. *Annals Of Plastic Surgery*, 62(1), 7-11

Aim and method: Explored the relationship between reality TV viewership, body image, disordered eating, and attitudes to cosmetic surgery. 2057 college women provided data on reality TV viewership, cosmetic surgery attitudes, body image, and disordered eating

Results and conclusion: Viewership of reality cosmetic surgery shows was significantly related to more favourable cosmetic surgery attitudes, perceived pressure to have cosmetic surgery, past attainment of a cosmetic procedure, a decreased fear of surgery, as well as overall body dissatisfaction, media internalization, and disordered eating

Storvoll, E., Strandbu, A., & Wichstrøm, L. (2005). A cross-sectional study of changes in Norwegian adolescents' body image from 1992 to 2002. *Body Image*, 2(1), 5-18.

Aim and method: Explored changes in adolescent body image over a 10 year period. In 1992 data was gathered from a population of 10460 13-19 year olds. The study was then repeated in 2002 when the same measures were used to gather data from a population of 11371 13-19 year olds (different participants in both waves of data collection).

Results and conclusion: The data showed that whilst there was an increase in the number of adolescents with negative body image between 1992 and 2002 there was also an increase in the number of adolescents with positive body image. Girls had lower body image in comparison to boys in both cohorts. **The data suggests a polarisation of adolescent body image over the 10 year period with adolescents either having high or negative body image and fewer people having mid-range levels.**

Sujoldzić, A., & De Lucia, A. (2007). A cross-cultural study of adolescents--BMI, body image and psychological well-being. *Collegium Antropologicum*, 31(1), 123-130.

Aim and method: Explores the relationship between BMI, body image, and well-being in adolescents across a range of cultures. Self-report data was collected from 2000 adolescents (15 to 18 years of age) from six different European countries.

Results and conclusion: In general there was a strong relationship between BMI and body dissatisfaction, body image and dietary habits, and body image and psychosocial health. Girls reported lower levels of body satisfaction and increased dieting in comparison to boys. Gender differences were also apparent in adolescent evaluation of their bodies with girls primarily viewing their bodies as a means to attract others and boys viewing their bodies in terms of functionality. Low body satisfaction was associated with psychological distress, high body satisfaction was associated with psychological well-being with this effect being larger for girls. **There were significant variations across countries, suggesting that local culture may play a mediating role in the prevalence and impact of body dissatisfaction.**

Swami, V., Frederick, D., Aavik, T., Alcalay, L., Allik, J., Anderson, D., & Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: results of the international body project I. *Personality & Social Psychology Bulletin*, 36(3), 309-325.

Aim and method: International comparison of female body dissatisfaction and weight. Self-report data was provided on body weight ideal and body dissatisfaction by 7343 participants from 10 regions of the world.

Results and conclusion: Results indicated significant cross-regional differences in the ideal female figure and body dissatisfaction. Within cultures, heavier bodies were preferred in low-SES sites compared to high-SES sites in Malaysia and South Africa but not in Austria. Participant age, BMI, and Western media exposure was associated with body weight ideals. **Results indicate that body dissatisfaction and desire for thinness is commonplace in high-SES settings across world regions.**

Thatcher, W. W., & Rhea, D. D. (2003). Influences on body image and disordered eating among secondary school students. *American Journal Of Health Education*, 34(6), 343-350

Aim and method: Explored the relationship between weight control behaviours (such as exercise or dieting), factors thought to influence body image (media, family, friends, medical professionals) and body image. A mixed-race (black and white) sample of 3957 men and women completed a series of self-report measures on body image and behaviour.

Results and conclusion: More than 40% of participants reported concerns about their weight and reported weight control behaviours. **The media and family were reported to be the most influential factors on body image.**

van den Berg, P., Mond, J., Eisenberg, M., Ackard, D., & Neumark-Sztainer, D. (2010). The link between body dissatisfaction and self-esteem in adolescents: similarities across gender, age, weight status, race/ethnicity, and socioeconomic status. *The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine*, 47(3), 290-296

Aim and method: Explored the relationship between body dissatisfaction, self-esteem, gender, age, weight status, ethnicity, and socioeconomic status in adolescents. This was a longitudinal study using self-report measures with 11-18 year olds. Data was collected at time 1 (N=4746) and five years later at time 2 (N=2516)

Results and conclusion: Overall there was a strong relationship between body dissatisfaction and self-esteem for both genders and for all ages. For girls this relationship varied according to weight status, ethnicity, and SES. The relationship between body dissatisfaction and self-esteem was not significant for under-weight, Black, Asian, and low SES group girls but was strong for white and high SES girls. There was no variation in the relationship between self-esteem and body dissatisfaction according to any demographic factor for boys. No significant changes were found in the data at time 2. **Body dissatisfaction and self-esteem appear to be strong related to each other for nearly all adolescent groups.**

van den Berg, P., Keery, H., Eisenberg, M., & Neumark-Sztainer, D. (2010). Maternal and adolescent report of mothers' weight-related concerns and behaviors: longitudinal associations with adolescent body dissatisfaction and weight control practices. *Journal Of Pediatric Psychology*, 35(10), 1093-1102.

Aim and method: Assessed the relationship between mothers' weight-related concerns and child body image. This was a longitudinal study with 443 pairs of mothers and adolescents who completed self-report measures on mothers' weight related concerns (assessed by both the mothers themselves and their adolescent children) at time 1 and body image in the adolescent sample 5 years later at time 2.

Results and conclusion: Maternal reports of higher weight-related concerns was associated with greater body dissatisfaction in girls at time 2. Maternal report of high weight-related concerns was also associated with increased weight loss behaviours in both girls and boys at time 2. Adolescent perceptions of their mothers' weight-related concerns was associated with increased weight loss behaviours for girls at time 2. **Mothers' weight-related concerns, and the perception of these concerns by their children, appears to be important in later negative body image and increased weight loss behaviours for adolescents.**

Wade, T., Bulik, C., Heath, A., Martin, N., & Eaves, L. (2001). The influence of genetic and environmental factors in estimations of current body size, desired body size, and body dissatisfaction. *Twin Research: The Official Journal Of The International Society For Twin Studies*, 4(4), 260-265.

Aim and method: To explore the relationship between genetics and negative body image. The study explored differences in ideal and current body size for 5325 twin pairs (both monozygotic and dizygotic) over a number of different age ranges.

Results and conclusion: Genes had the biggest influence on current body size measures. **Heritability is important in estimation of current body size. Choice of ideal body shape is more influenced by environmental factors than genetic factors for both males and females.**

Want, S. (2009). Meta-analytic moderators of experimental exposure to media portrayals of women on female appearance satisfaction: Social comparisons as automatic processes. *Body Image*, 6(4), 257-269.

Aim and method: To explore which factors moderate the effect of the media on body image. This was a thorough review including clear selection and evaluation criteria. Participants were all women aged over 18.

Results and conclusion: Pre-existing body image concerns and the processing instructions given during experiments both had a significant moderating effect on body image. These findings were counter-intuitive, participants who were instructed to focus on the appearance of women reported better body image than those who were presented with distracting or non-appearance conditions. The authors suggest social comparisons are automatic processes, the effects of which can be modified through conscious processing

Wardle, J., Haase, A. M., & Steptoe, A. (2006). Body image and weight control in young adults: International comparisons in university students from 22 countries. *International Journal of Obesity*, 30(4), 644-651

Aim and method: To compare body image and weight control across different countries. Self-report data on weight, height, body image, and weight loss status was collected from 18512 university students in 22 different countries as part of the International Health Behaviour Survey. BMI and perceptions of weight were categorised in accordance with country-norms

Results and conclusion: Generally women perceived themselves to be overweight at all weight-levels. In contrast even very over-weight men were unlikely to perceive themselves as over-weight and men were less likely to report that they were trying to lose weight. Men and women from Asian countries reported higher levels of trying to lose weight than other regions. **Perceptions of being overweight are present across many countries with gender patterns that appear consistent across all regions. Women tend to perceive themselves as overweight whereas men are unlikely to do so.**

Wildes, J., Emery, R., & Simons, A. (2001). The roles of ethnicity and culture in the development of eating disturbance and body dissatisfaction: a meta analytic review. *Clinical Psychology Review*, 21(4), 521-551.

Aim and method: To explore the relationship between ethnicity, acculturation, eating disturbance and body image among females. Meta-analysis of 35 studies using a large sample size and clear selection criteria. Participants were White, Asian, African American and other Blacks (e.g., from the Caribbean and Ghana), Hispanic, Arab, and other ethnic and racial groups, age range was 9.51 to 73 years.

Results and conclusion: White females reported more eating disturbance than non-whites. These differences were greatest where comparing college-age women on measures of subclinical eating pathology, such as dietary restraint, ideal body shape, and body dissatisfaction. **White people experience greater eating disturbance and body dissatisfaction than their non-white counterparts.** Some ethnic groups may be less prone to the development of eating pathology. However many questions remain unanswered including the role of acculturation.

Wilkosz, M., Chen, J., Kennedy, C., & Rankin, S. (2011). Body dissatisfaction in California adolescents. *Journal Of The American Academy Of Nurse Practitioners*, 23(2), 101-109

Aim and method: Explored the relationship between body dissatisfaction, ethnicity and gender in adolescence. Self-report data was gathered from 1807 White, Latino, and Asian American adolescents from ages 12 to 17 years

Results and conclusion: Results indicated that **high BMI and poor/fair health status were strongly related to body dissatisfaction across genders and ethnicities**

Xanthopoulos, M., Borradaile, K., Hayes, S., Sherman, S., Vander Veur, S., Grundy, K., & Foster, G. (2011). The impact of weight, sex, and race/ethnicity on body dissatisfaction among urban children. *Body Image*, 8(4), 385-389.

Aim and method: To explore the relationship between weight, race, gender and age on body image in children. 1212 children aged between 9 and 12 completed the Eating Disorder Inventory-2 and had their height and weight measured.

Results and conclusion: Relative weight was the biggest predictor of negative body image followed by ethnicity and gender. Body dissatisfaction was greatest in obese, Asian, and female children. **Body satisfaction appears to vary based on weight status, race, and gender amongst urban children.**

Xie, B., Unger, J. B., Gallaher, P., Johnson, C. A., Wu, Q., & Chou, C. (2010). Overweight, body image, and depression in Asian and Hispanic adolescents. *American Journal of Health Behavior*, 34(4), 476-488.

Aim and method: To explore the relationship between overweight and depressive symptoms in Asian and Hispanic adolescents. 780 Hispanic and 375 Asian student completed measures on weight, body satisfaction, and depression.

Results and conclusion: A significant mediation effect of body dissatisfaction was only found for Asian girls and girls with high acculturation. **Being overweight significantly predicted lower body satisfaction which was related to an increase in depressive symptoms.**

Zaborskis, A., Petronyte, G., Sumskas, L., Kuzman, M., & Iannotti, R. (2008). Body image and weight control among adolescents in Lithuania, Croatia, and the United States in the context of global obesity. *Croatian Medical Journal*, 49(2), 233-242.

Aim and method: Explored differences in body image and weight control amongst adolescents in three different countries. Self-report data was gathered from adolescents (aged 13-15) in Lithuania (N=3778), Croatia (N=2946) and America (N=3546).

Results and conclusion: Girls were more likely than boys to rate themselves as too fat in all three countries. The perception of being too large appeared to increase with age for girls but reduce with age for boys. Lithuanian adolescents were least likely to perceive themselves as too fat. In general over-weight adolescents were more likely to perceive themselves as too fat than under-weight adolescents were likely to perceive themselves as too thin. **This study suggests that there are both similarities and differences in body image between adolescents from different countries.**