



Centre for Appearance Research

Body Image and Adolescent Girls Literature Review: An Update December 2017

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Executive Summary

Since the 2012 literature review, academic research into the nature, causes, and consequences of body image has continued to burgeon. Researchers have also continued to refine intervention approaches, and are focusing on exploring strategies to scale up the rate and scope of dissemination efforts.

Nature and prevalence of body image concerns

The definition of body image has expanded to incorporate positive body image, including feelings of acceptance, respect, and appreciation for the body, and a focus on body functionality as well as appearance. Researchers have developed and refined theories to explain the nature and development of body positivity, and measures to assess this construct have been refined among adults and tested among children.

Where there was previously a dominance of research originating from the US, Australia, and the UK, the scope of body image research has broadened to low- and middle-income countries. Emerging evidence documents body image concerns among girls in all corners of the globe, while studies show that poor body image continues to be prevalent among girls in high-income countries. Consequently, there is more evidence than ever to suggest that body image concerns are a global issue for adolescent girls. Nonetheless, more work is needed to develop measurement tools that are validated and acceptable in non-English speaking countries to fast track quality research.

Historically, studies of body image were constrained to focus on girls' concerns with their body weight and shape specifically. While weight and shape concerns remain a pernicious issue for girls, increasingly the boundaries of body image research are expanding and more studies are seeking to assess multiple appearance domains, including concerns with skin, teeth, facial features, height, and hair.

Researchers have begun to identify how demographic characteristics, such as sexuality, gender, ethnicity, and socio-economic status may influence body image. While there is increasing recognition that body image intersects with these broader characteristics, the evidence is yet to paint a clear picture of whether or not sexual and ethnic minority groups, and groups of different economic classes,

are more or less at risk for concerns than majority demographic groups. Nonetheless, there is mounting pressure, from within and outside the academic field, for body image research, theories, interventions, and advocacy efforts to be more intersectional and to acknowledge the privileges afforded to those who are White, well-educated, heterosexual, affluent and/or cisgender.

Body image consequences and influences

Research assessing the consequences and predictors of body image concerns has increasingly become more methodologically rigorous through the more frequent use of longitudinal and prospective research designs. There is now substantial high quality evidence that body image concerns lead to low self-esteem, symptoms of depression, and disordered eating and unhealthy weight control behaviours.

There is also evidence linking body image concerns to suicide, self-harm, unhealthy exercise behaviours, substance misuse, intentions to have cosmetic surgery, interpersonal relationships, and poor educational attainment. However, more research with longitudinal designs is needed to understand whether or not these correlations extend to causal relationships. Additionally, although research into the impact of body image concerns on girls' lives is emerging in low- and middle-income countries, high quality research in these geographic areas remains lacking. Furthermore, although a lot is known about the consequences of poor body image, very little research has explored the potential benefits to well-being and functioning afforded by positive body image.

Research has continued to document the role of mass media, family, peers, appearance conversations, teasing, appearance comparisons, self-objectification, and internalisation of beauty ideals as being important influences on body image. However, one of the most striking developments since 2012, has been the surge in research investigating the impact of social networking sites on body image, in particular Facebook and Instagram.

Overall, research documents that overall time spent on social media is predictive of body image concerns, with more time spent on social media being associated with greater levels of concern. Studies also point towards certain aspects of social networking as being particularly potent for poor body image, including photo-sharing activities, photo editing and manipulation, the 'fitspiration' trend, and monitoring the appearance and attractiveness of peers. Further longitudinal research is

needed to strengthen knowledge relating to social media and body image, and research has only just begun to explore the potential positive aspects of social media on body image.

Self-compassion and perfectionism have been identified as two new potentially important influences on the development and maintenance of body image concerns. However, while researchers have increasingly acknowledged since 2012 that more research should be dedicated to understanding positive body image, there continues to be a lack of studies and knowledge on factors that promote resilience to body image concerns and are predictive of body appreciation, respect, and acceptance.

Strategies to improve body image

Researchers continue to focus on building the evidence base for school-based body image interventions. Cognitive dissonance, media literacy, and approaches targeting peers and appearance comparisons continue to have the strongest evidence base. Researchers have also increasingly focused on task-shifting the delivery of these interventions from highly skilled external providers to trained school teachers. The development and evaluation of the *Dove Confident Me* school workshops has been an important point of progress in the field, with studies showing that the workshops can be effectively delivered by teachers. Mindfulness-based programmes to improve body image is a new area of research in schools that shows potential. However, further research is required before a mindfulness approach can be confidently recommended as an effective strategy.

Interventionists and advocates are increasingly making use of the internet as a platform to develop and disseminate body image interventions and to promote positive body image. However, there is evidence that they may be less effective than face-to-face interventions and more work is needed to improve the social and community aspects of these approaches. More recently, researchers have begun to explore how social networking sites might offer novel, low-intensity ways of promoting positive body image and this appears to be a fruitful area for future research.

Societal and macro-level interventions have increased in recent years in an attempt to alleviate the pressures people face with regard to their appearance (e.g., setting standards for advertisers in relation to the display of retouching disclaimer labels, minimum body mass index standards for models). However, research suggests that disclaimer labels on retouched images are not an effective strategy. Furthermore, most macro-level interventions have not been evaluated and therefore their impact is largely unknown.

Conclusions

The field of academic research has continued to thrive with the past five years offering new insights into body image in middle- and low-income countries, positive body image, social networking sites, and the task-shifting of delivering body image interventions to community providers. Ongoing priority areas for research are highlighted at the end of each section of the report.

Background

In 2012, the Centre for Appearance Research was commissioned by Dove to review the scientific literature documenting the nature, consequences, and influences on adolescent girls' body image. This literature review was used to inform the re-launch of the Dove Self-Esteem Project educational tools in 2012.

Scope

In 2017, Dove commissioned the Centre for Appearance Research to provide an update on recent developments in the scientific research on adolescent girls' body image made since the 2012 literature review. This report presents this update through an integrated summary of findings from the scientific and academic research conducted between 2013 and 2017.

Rather than repeating knowledge presented in the 2012 literature review, this report presents new insights gained over the past five years in rigorous research. Further, it contains predictions for future trends in the body image research field, and offers recommendations for future research in this area.

Authors

The Centre for Appearance Research (CAR) is based at the University of the West of England (UWE) and is the world's largest group of researchers focusing on the role of body image and appearance in people's lives. The Centre strives to make a real difference to the lives of the millions of people with appearance-related concerns both in the United Kingdom and across the world. It is internationally regarded as a centre of excellence for psychological and interdisciplinary research in appearance, disfigurement, body image, and related studies.

Dr Helena Lewis-Smith is the Dove Self-Esteem Project Research Fellow at the Centre for Appearance Research. Having both worked and studied for her PhD at CAR over the previous six years, she possesses vast experience of conducting body image research and delivering body image interventions among a variety of populations. Dr Lewis-Smith is particularly interested in conducting research to identify social and psychological influences upon body image, with the view of targeting these within psychosocial interventions. She contributed towards the first literature review completed for Dove in 2012, and currently works across a range of projects for the Dove Self-Esteem Project.

Miss Kirsty Garbett is a Research Associate at the Centre for Appearance Research with a Masters qualification in Health Psychology. Working with Dr Diedrichs, her research is focused on developing and evaluating evidence-based interventions to improve body image among adolescent girls across the world. She has extensive experience and knowledge of the Dove Self Esteem Project's workshops for schools, as well as the website for mothers, having been involved in the development and evaluation of both these resources in 2014-2015. More recently, Kirsty has been exploring the body ideals of young women in low-income countries, with the aim of understanding how interventions to improve body image can be adapted and applied to diverse global contexts.

Miss Arabella Macrae is an undergraduate student on the psychology programme at the University of the West of England. She is currently undergoing a placement year at the Centre for Appearance Research before she enters the third and final year of her degree. She has previous experience as a peer facilitator, delivering body image programmes to adolescent girls. She has also observed school teachers deliver a wide range of body image programmes. Bella is keen to explore the impact of social media on adolescents' body image within her final year dissertation project.

Dr Phillipa Diedrichs is a research health psychologist with an international reputation for creating and using evidence-based strategies to improve body image in community, education, corporate, and policy settings on a local, national, and global scale. As an Associate Professor she leads a team of researchers investigating psychological and social influences on body image, and the development and evaluation of online and face-to-face body image interventions, advocacy efforts, and campaigns. The evidence-based body image programmes that she has co-created and evaluated are delivered in 139 countries through multi-stakeholder partnerships between Dove, the World Association for Girl Guides and Girl Scouts, schools, and other community organisations. Her research has garnered international media attention and awards, and is published in esteemed, academic peer-reviewed journals. Dr Diedrichs regularly consults with businesses, agencies, and organisations on research, communications, campaigns, and advocacy.

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Key Definitions

Appearance comparisons	The tendency to compare one's appearance to the appearance of others.
Body image	Body image refers to how people think, feel, and behave in relation to the appearance and functionality of their bodies. It comprises perceptual, cognitive, affective, and behavioural elements.
Clinical sample	A group of people with a specific clinical or medically diagnosed condition (e.g., eating disorders, or hospitalised participants).
Cognitive behavioural therapy (CBT)	A talking therapy that focuses on how thoughts, beliefs, and attitudes can affect feelings and behaviour. CBT teaches coping skills for dealing with various problems.
Control group	The group in an experimental study that does not receive the intervention and is used as a benchmark with which to compare the group that receives an intervention to.
Correlation	A measure of the extent to which two variables are related. For example, researchers may find that someone high in self-esteem is also high in body satisfaction. This is a positive correlation (i.e., the variables are related in the same direction).
Cross-sectional study	A research design that typically involves measurement (e.g., a questionnaire) conducted at one point in time. For example, researchers may correlate outcomes on measures of body image and related constructs taken at the same time. Causal inferences cannot be made as cross-sectional studies are conducted at one moment in time with measures administered simultaneously.
Experimental study	A research design that typically involves randomly assigning participants to two or more study conditions (usually including a control group), then exposing the groups to different stimuli or interventions and assessing any differences in outcomes between the groups after exposure. Experimental studies are considered strong research designs, as causality can be inferred.
Internalisation of appearance ideals	The extent to which a person cognitively 'buys into' social and culturally defined appearance ideals, and takes them on as their own personal standards of beauty.

Longitudinal study	A research design that involves repeated observations of the same outcomes using the same measures over a period of time. These studies provide stronger evidence than cross-sectional studies, as causal inferences can be made.
Meta-analysis	Similar to a systematic review. Collates data from multiple research studies and uses statistical methods to summarise and integrate the findings of all the studies in an area.
Mindfulness	The psychological process of bringing one's attention to experiences occurring in the present moment in a non-judgemental manner.
Positive body image	A multi-faceted construct that incorporates love and respect for the body, an appreciation of the uniqueness of the body and diverse beauty ideals, feeling gratitude toward the body, and not dwelling on bodily imperfections.
Prospective study	See ' <i>longitudinal study</i> '.
Qualitative research	Studies that gather and analyse research data that are not in numerical form, typically gathered through conducting interviews or focus groups with participants, or via written answers and texts.
Randomised controlled trial (RCT)	The most rigorous way to determine whether a cause-effect relation exists between an intervention and outcome. Randomly assigned individuals receive an intervention and their outcomes are compared to randomly assigned control groups of individuals who receive no intervention.
Sample size	The number of people who took part in a study.
Self-esteem	An individual's overall judgement of their own self-worth.
Self-objectification	The extent to which a person sees themselves as an object to be observed, rather than a person with agency. Can include an over-emphasis on appearance rather than body functionality, feelings of body shame, body surveillance behaviours, and a sense of self-worth dominated by how one's appearance is judged by others.
Systematic review	Studies are systematically collated, reviewed, and assessed for methodological quality. Findings are usually summarised in a narrative format. Systematic reviews can be considered thorough and comprehensive reviews of a particular area.

1. Methodology

1.1 Search strategy

A rigorous search strategy was employed to ensure all relevant scientific research from 2013-2017, both published and unpublished, was collated for this review. The search was a staged process summarised in Figure 1 below.



Firstly, the three most widely recognised international scientific journals focusing on body image and disordered eating were manually scanned for relevant articles published between 2013 and 2017. All research articles related to the body image of adolescent girls were collated (*Body Image* = 49 articles, *Eating Behaviors* = 26, *International Journal of Eating Disorders* = 17).

Secondly, we searched two of the most highly subscribed scientific databases in the field (i.e., *PsycINFO* and *PubMed*) to identify relevant articles published between 2013 and 2017 outside of the three journals reviewed above. The specific search terms and search strategy adopted for these databases is outlined in Appendix 1. The database search produced 3,003 potentially relevant articles, which were then further reviewed in detail for relevance (451 from *PsycINFO* and 2,552 from *PubMed*).

Thirdly, we consulted three years of content from the Appearance Matters Conference programmes (the world's largest body image academic conference), a body image and disordered eating prevention closed email list (with 572 members in 30 countries), and the Centre for Appearance Research's (CAR) Steering Committee Reports (which outline current and unpublished research from CAR). These sources were consulted as they were likely to have included research that was not published and therefore would not have been included in the journals and databases reviewed above.

Fourthly, we moved beyond the academic literature to consider grey literature. Grey literature is unpublished work or work that has been published for non-commercial use. This type of literature often includes government papers, policy statements, and government proceedings. It may also include unpublished academic work, such as PhD theses. This search was conducted via a Google search and guided by our expertise, knowledge, and contributions, in this area.

Finally, a search of Google Scholar verified that the research we had gathered on body image and adolescents girls in the previous steps was comprehensive, with no additional articles being uncovered using this method.

In total, research from 290 articles are summarised in this report.

1.2 Quality of studies

We included studies that had adopted the most rigorous methodologies (see Appendix 2 for research designs), in addition to research that had made particularly novel contributions to knowledge concerning body image.

1.3 Inclusion criteria

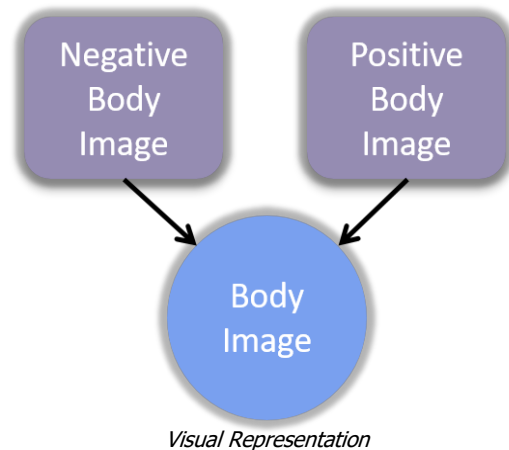
Studies must have been conducted or published between 2013 and 2017. We focused on research conducted with adolescent girls. For this review, adolescents were defined as young people between the ages of 10 and 19 years, which is consistent with the World Health Organisation's definition of adolescence (World Health Organisation, 2014). However, we have also included research conducted beyond adolescence when we believed it to represent a novel or pioneering development in the broader field of body image research. Further, upon occasion we make reference to studies published prior to 2012 where recent research supporting a statement is lacking.

2. Current definitions of body image

Put simply, **body image refers to how people think, feel, and behave in relation to the appearance and functionality of their bodies.** Body image is recognised as a multidimensional construct comprising perceptual, cognitive, affective and behavioural elements.

2.1 Changes in the conceptualisation of body image

One of the major developments in the conceptualisation of body image in recent years has been the increased focus and exploration of positive body image. Historically, researchers focused on the appearance or aesthetic components of the body when describing and examining body image. They also focused on aspects of body image rooted in negative thoughts, feelings, and behaviours. This pathologised body image as a problematic issue for many, particularly adolescent girls. However, it is now recognised that there is a need to not only alleviate body image concerns among adolescent girls, but to also promote body positivity too. It is thought that by both targeting concerns about appearance and promoting positive body image, the greatest impact and effectiveness of intervention efforts may be seen (Tylka & Wood-Barcalow, 2015b).

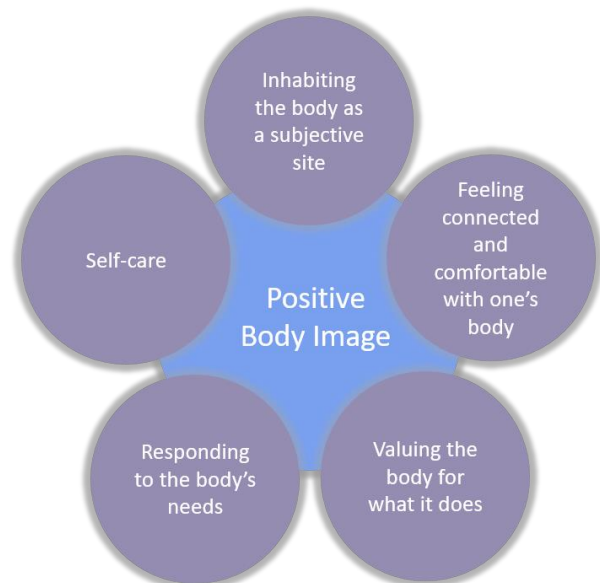


2.2 Positive body image

Positive body image moves beyond focusing on the body's appearance and also includes how individuals feel about their bodies. It involves an appreciation for what the body does and how it moves and functions, rather than just how it looks. Positive body image involves body acceptance and care for the body, whereby a person acknowledges their body may not be consistent with cultural beauty and appearance standards and ideals, but admires and loves their body regardless. Positive body image also involves a person emphasising and focusing on their body's assets. Positive body image is thought to be closely aligned with theories of embodiment (Piran, 2016a), whereby a person is in tune with their inner states, acknowledges bodily experiences, and responds and attends to the body's needs in a compassionate way.

Research on positive, adaptive, or healthy body image is essential to the future of the field
(Cash & Smolak, 2011, p.472)

It is important to recognise that positive body image is not on a continuum with negative body image. In other words, you do not automatically have positive body image if you have an absence of negative body image. Likewise, adolescents can score highly on negative body image scales, whilst also displaying signs of positive body image (Pope, Corona, & Belgrave, 2014; Tylka & Wood-Barcalow, 2015a; Webb, Butler-Ajibade, & Robinson, 2014).



Positive Body Image (Piran, 2016)

Research exploring positive body image has increased greatly in recent years and there is a growing number of validated measures (e.g., body appreciation scale and functionality appreciation scale) to assess this construct in a number of populations (Webb, Wood-Barcalow, & Tylka, 2015). However, as yet, our knowledge of positive body image is still relatively little compared to what we know about negative body image, and this is an area of research which is likely to continue to grow over the coming years.

2.3 Ongoing debates regarding definitions of body image

There is on-going discussion and debate in the academic field concerning how body image should be defined, as illustrated by the multiple terms and outcomes used to describe it across studies. Common terms include body dissatisfaction, appearance concerns, appearance evaluation, weight and shape concerns, body perception, body esteem, body confidence, and appearance investment. As a consequence, many different measures are used to assess body image across studies.

For example, some researchers measure body image using purely perceptual measures (i.e., instructing individuals to review a line-up of body silhouettes, and asking them to ‘please select the silhouette that most looks like your body’ and ‘please select the silhouette you would most like your body to look like’ and calculating the discrepancy in their ratings as an indicator of body dissatisfaction). Other researchers may use an affective (i.e., moods, feelings) measurement scale (e.g., ‘My looks upset me’, with participants responding with the extent they agree or disagree with this statement). Alternatively, a cognitive measure might be used (e.g., ‘I like the way I look in pictures’, where participants are asked the extent they agree or disagree). Appendix 2 includes examples of commonly used measures across the field.

In studies conducted by the Centre for Appearance Research to evaluate the Dove Self-Esteem Project's body image educational tools, measures of body esteem, body appreciation, and body dissatisfaction have been employed (Diedrichs et al., 2016; Diedrichs et al., 2015).

2.4 Body image definition adopted in this report

For the purposes of this report, we define body image as 'a person's perceptions, thoughts, and feelings about his or her body' (Grogan, 2008, p. 3), and therefore draw upon research that has adopted measures in line with this definition.

3. Nature and prevalence of body image concerns among adolescent girls

3.1 Body image concerns remain prevalent within high-income countries

Studies continue to document body image as a significant and prevalent concern for adolescent girls in high-income countries such as the UK, the United States of America (US), and Australia. For example, a nationally representative survey of nearly 22,000 young people in Australia found that 4 in 10 adolescent girls are very concerned about their body image (Bailey et al., 2016). Indeed, this survey has been conducted annually in Australia between 2013 and 2017 and has consistently found body image to be among the top three life concerns for young Australians every year.

Similar results have been reported in the UK, with a study of 1,600 11-16 year old girls and young women finding four in ten are unhappy with the way they look (Girlguiding, 2016). Of the girls surveyed, two-thirds felt embarrassed or ashamed about how they look at least some of the time (Girlguiding, 2016). In Ireland, a Government report found 82% of 2,156 girls aged between 10-21 years felt body image was important to them, with less than half expressing satisfaction with their body (O'Connell & Martin, 2012). Evidently, body image remains a prevalent concern for girls in high-income countries. Interestingly, to our knowledge, no studies published between 2013-2017 report on the prevalence rates of body image concerns among adolescent girls in the US.

3.2 Body image concerns are increasingly recognised as a global issue

A key advancement over the past five years has been the recognition of body image as a global issue, rather than an issue relegated to privileged White girls in high-income Westernised countries. For example, in a study of 286 girls in the city of Udupi, South-West India, 57% of adolescents aged 15-19 years reported being concerned with their appearance (Singh, Ashok, Binu, Parsekar, & Bhumika, 2015). Similarly, almost half of more than 1,400 10th grade girls in Taiwan reported dissatisfaction with their overall appearance (Chang et al., 2013). In an urban region of Brazil, 43% of 236 girls surveyed expressed dissatisfaction with their bodies (Amaral & Ferreira, 2017). Among a sample of more than 1000 Thai girls living in central Bangkok, two-thirds of 15-18 year olds desired a thinner figure (Chongwatpol & Gates, 2016).

Studies conducted in low- and middle-income countries have tended to focus on individual countries, making cross-cultural comparisons based on the same measures of body image difficult. Only three

studies have compared body image concerns cross-culturally among adolescents. One study compared body satisfaction in adolescents from Australia, Fiji, Malaysia, Tonga, Tongans in New Zealand, China, Chile, and Greece, collecting data from 2,489 girls. The lowest levels of body satisfaction were reported by adolescent girls in China, Greece and Malaysia (McCabe et al., 2012). Conversely, girls from Fiji (indigenous) and New Zealand had the highest levels of body satisfaction. More recently, a study compared Japanese girls' body dissatisfaction to that of girls in China, Malaysia, Australia, Tonga, and Fiji (Brockhoff et al., 2016). The study found that Japanese girls had higher levels of body dissatisfaction than all other countries studied, despite the average body mass index (BMI) of Japanese girls being significantly lower than girls from Malaysia, Australia, Tonga, and Fiji. Further, another study found the prevalence of body dissatisfaction to be as high, or in some cases higher, among girls from low- to middle-income countries as it was among girls in high-income countries (Mellor et al., 2013). Specifically, 15-year-old girls from China and Malaysia were more dissatisfied with their bodies than Australians girls of the same age.

3.3 Body image concerns arise across appearance domains

As body image research has become more globalised in its scope, the nature and different types of appearance concerns experienced by young girls has come under greater scrutiny. This is perhaps driven by the potential for certain countries and cultures to value certain body parts or types more than others.

3.4 Weight and shape concerns

Historically, most research has focused on body image concerns among girls related to body weight and shape. Recent studies indicate that weight and shape concerns continue to be a core body image issue for girls. Many adolescent girls in high-income countries (e.g., The Netherlands, Spain, UK) typically see their bodies as 'too fat', are restricting their food intake, and may have a (sometimes extreme) fear of becoming fat (Bun, Schwiebbe, Schütz, Bijlsma-Schlösser, & Hirasing, 2011; Cruz-Sáez, Pascual, Salaberria, Etxebarria, & Echeburúa, 2015; Nadia Micali, Ploubidis, De Stavola, Simonoff, & Treasure, 2014).

70.4% of girls age 12-18 years in China desire a thinner figure (Lai et al., 2013)

The quest for a thin body has also emerged in studies with girls from low- and middle-income countries, such as China, Thailand, Iran, and South Africa (Amaral & Ferreira, 2017; Chongwatpol & Gates, 2016; Chung & Joung, 2012; Garousi, Garrusi, Baneshi, & Sharifi, 2016; Gitau, Micklesfield, Pettifor, & Norris, 2014). However, in some low-income

countries, such as Tonga and Ghana, girls continue to show a preference for larger, more average-sized bodies (Amenyah & Michels, 2016; McCabe et al., 2012). For example, in Ghana, a study found most girls (64%) chose a figure in the 'normal BMI' category as their most desirable, while 42% of girls thought they were 'too thin' and only 18% thought they were 'too heavy' (Michels & Amenyah, 2017).

In addition, there has been a documented shift towards some girls and young women desiring a muscular or toned body in high-income countries (Homan, McHugh, Wells, Watson, & King, 2012; Simpson & Mazzeo, 2017; Webb et al., 2017). However, cross-cultural differences are also likely to exist in relation to the extent to which girls desire this trait, with adolescent girls in South Africa being afraid to gain muscle due to its perceived association with poverty (Kinsman et al., 2015).

Regardless of the weight and shape ideal young girls aspire to, it is important to recognise that studies consistently show that girls across the world feel pressure to conform to the current standard of beauty within their culture, particularly in relation to body weight and shape.

In the UK, 63% of 13 year old girls say they are afraid of gaining weight or getting fat, with 12% of girls being extremely afraid or terrified of gaining weight/getting fat (Micali et al. 2014).

3.5 Skin concerns

Researchers, especially those working in low- and middle-income countries, are increasingly looking beyond weight and shape when researching body image in adolescent girls. Skin colour appears to be a particularly salient source of appearance concern for some girls. There is evidence that girls in predominantly Caucasian countries desire a darker skin tone. In Australia, a study found 55% of girls aged 12-15 years were unhappy with their skin tone and wished to be darker (Hutchinson, Prichard, Ettridge, & Wilson, 2015). Likewise, in a US sample, 15% of adolescent girls reported engaging in indoor tanning and 25% said they use a sunless tanning product to darken the appearance of their skin (Quinn et al., 2015).

In Asian, African, and South American countries, dissatisfaction with skin tone also exists, but here the desire is often for a lighter skin tone. Research examining adolescent desire for a lighter skin tone is lacking, but one large-scale study of more than 19,000 undergraduate students from 26 countries across Asia, Africa, and the Americas found that 30% of young women had used a skin lightening product in the previous 12 months (Peltzer, Pengpid, & James, 2016). This figure varied by country, ranging from 0% in Turkey to 84% in Thailand. This study suggests that dissatisfaction with skin tone is widespread amongst young women and warrants further investigation among adolescents.

The use of skin lightening products appears to be a persistent and escalating trend, with global spending on skin lightening products projected to triple over the next seven years (Global Industry Analysts, 2017). The widespread use of these products is increasingly seen as a growing public health, social justice, and environmental justice issue by public health professionals, researchers, and activists, as many products contain potentially harmful ingredients and their marketing and advertising often relies on imagery and narratives that perpetuate racism and classism (Shroff, Diedrichs, & Craddock, in press; Zota & Shamasunder, 2017).

3.6 Other appearance concerns

Research demonstrates a number of other aspects of appearance that girls are concerned about across the world. Teeth appear to be a cause for concern, with a study of 376 US adolescents finding that 15% were dissatisfied with the appearance of their teeth, particularly with regard to colour and alignment (Kavand, Broffitt, Levy, & Warren, 2012). Likewise, in Jordan, adolescents reported their teeth were the most likely part of their appearance they got teased about, over their weight (Al-Bitar, Al-Omari, Sonbol, Al-Ahmad, & Cunningham, 2013).

Finally, one study explored adolescent satisfaction with their face, height, and hair in Australian, Chinese, and Malaysian samples. They found adolescent girls expressed concerns about each of these traits to similar levels across all three countries, with Malaysian and Australian girls' dissatisfaction with their face being particularly salient in terms of their overall body image satisfaction (Mellor et al., 2013).

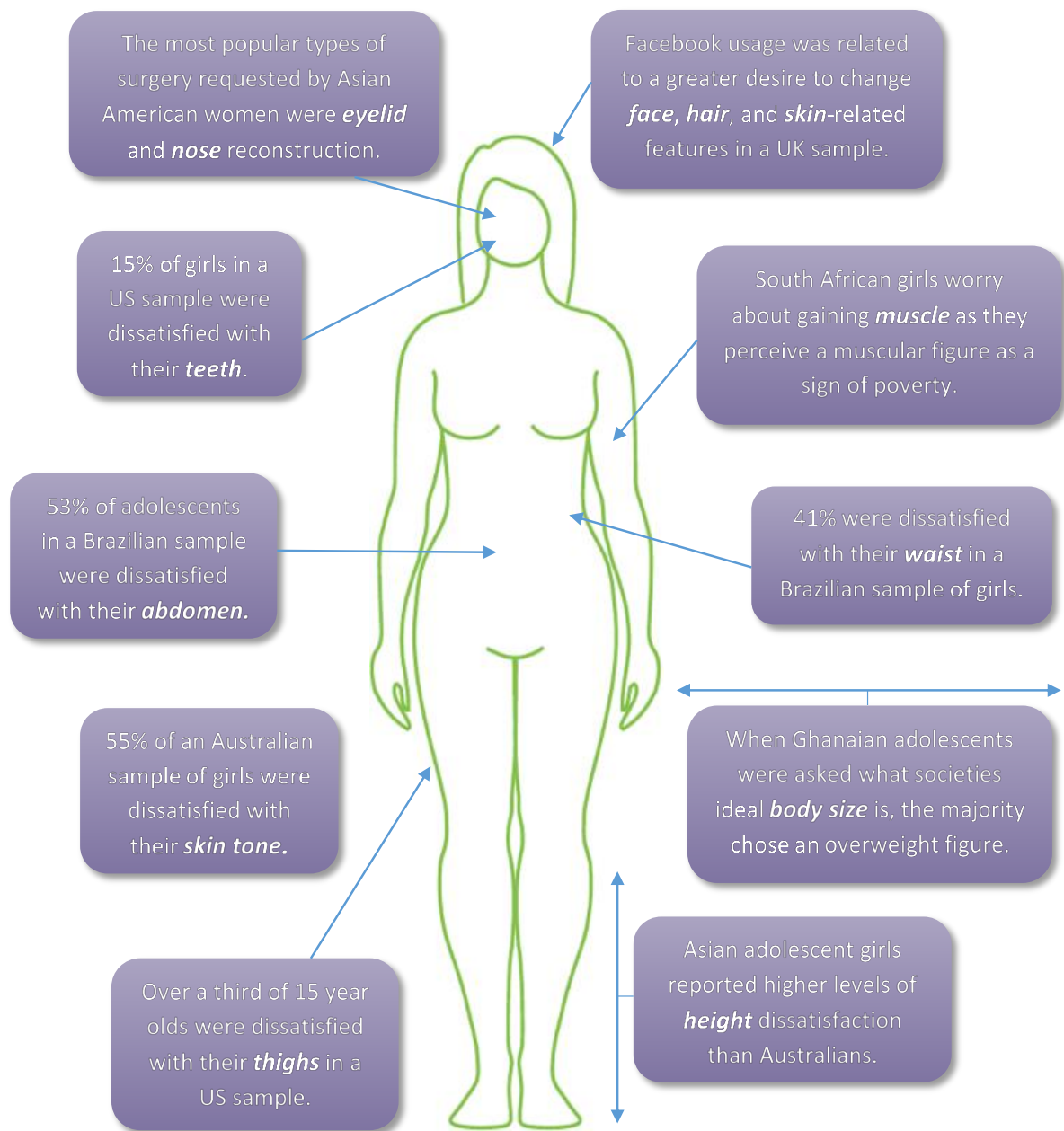


Figure illustrating the nature and prevalence of body image concerns experienced by girls

3.7 Demographic differences in body image concerns

In addition to the consideration of how body image concerns among adolescent girls may differ between countries, research is beginning to unpick the differences within countries and between demographic groups. A number of demographic factors may influence the extent to which young girls experience body image concerns, with ethnicity, socio-economic status (SES) and sexuality receiving the most research attention. Although research has mostly studied these demographic factors independently, it is important to acknowledge that these factors are likely to intersect (for example, issues of ethnicity may be tied to issues regarding racism and socio-economic status).

3.8 Ethnicity

Several studies in the US have found the prevalence of body image concerns to differ between girls of different ethnicities. For example, two large scale studies found that White adolescent girls in the 'healthy BMI' category were significantly more likely to view themselves as overweight (or 'too fat') compared to African American girls of the same weight (Duong & Roberts, 2016; Mikolajczyk, Iannotti, Farhat, & Thomas, 2012). In addition, White American girls have reported higher levels of body dissatisfaction than African American girls (Duong & Roberts, 2016). Further still, two studies found that Asian American girls had significantly worse body image than White girls and African American girls living in the US (Arcan et al., 2014; Bucchianeri et al., 2016).

Few studies have explored the influence of ethnicity outside of the US. A study in South Africa found 17-year-old girls of mixed-race ancestry exhibited poorer body esteem than Black girls, despite Black girls reporting that they engaged in more weight loss practices, and being at a higher risk for developing an eating disorder (Gitau et al., 2014). Ethnic differences

In a US sample, white adolescent girls with a 'normal BMI' were twice as likely to view themselves as 'too fat' compared to African American girls of the same age and weight (Duong & Roberts, 2016)

have also been identified in India. A recent study compared two groups of ethnically different girls in Kolkata and Sikkim, two distinct urban areas of Eastern India, and found that the girls from Kolkata were more dissatisfied with their weight and more likely to report dieting than girls from Sikkim (Som, Mishra, & Mukhopadhyay, 2016). In a sample of 12-19 year-old girls recruited from middle-class suburbs of Kuala Lumpur, Malaysian Chinese girls reported higher levels of overall body dissatisfaction than Malaysian Malay girls from the same area (Mellor et al., 2013).

The reasons for the ethnic differences observed in these studies are unclear, however, there is some evidence to suggest that girls who retain a connection with their cultural ancestry, or hold a stronger sense of their aboriginal or ethnic identity, may be in some way protected from the negative effects of idealised media messages (Lopez, Corona, & Halfond, 2013; McHugh, Coppola, & Sabiston, 2014; Schooler & Daniels, 2014).

3.9 Socio-economic status

Research conducted in multiple countries suggests that socio-economic status is associated with body satisfaction levels within a country; however, the direction of this relationship is unclear. Research conducted in Brazil and the US suggests that girls from more wealthy socio-economic backgrounds

were more likely to experience body image concerns (Duong & Roberts, 2016; Martini, Assumpção, Barros, Canesqui, & Barros Filho, 2016). Studies in Thailand, Korea and Canada have found the opposite, however, whereby girls from less affluent backgrounds experienced poorer body image (Chongwatpol & Gates, 2016; Lee & Lee, 2016; Roberts, 2016).

There is little research proposing why these differences exist between countries and studies. Research conducted with high-income countries suggests that girls from high socio-economic backgrounds feel greater pressure from the media and family to achieve appearance ideals, therefore increasing their vulnerability for body image concerns (Wang, Byrne, Kenardy, & Hills, 2005). However, contradictory research conducted within high-income countries has found that girls from higher socio-economic backgrounds experience higher levels of overall self-esteem compared to lower socio-economic girls (Twenge & Campbell, 2002). This may be due to socio-economic status intersecting with race, discrimination, and bullying, which may lead to girls from lower socio-economic backgrounds being at greater risk of being excluded or discriminated against. Equally, it may be the case that self-esteem is a less salient construct among different cultural and racial groups.

Differences between studies may also exist not because of observed differences between socio-economic groups from different countries, but due to methodological differences. For example, some studies focus solely on body weight (whether a girl feels she is too fat, too thin, or about right), whereas it may be more informative to consider a range of appearance concerns. Specifically, it may be that when a broader range of appearance concerns are explored socio-economic status differences in body image may be smaller.

3.10 Sexuality

An emerging body of research has explored how sexual minority groups experience body image concerns. The majority of this work has been conducted in adult populations, however, two studies have examined sexuality and disordered eating behaviours (a common correlate of body dissatisfaction) among adolescent girls. One US study of nearly 13,000 adolescents found that lesbian and bisexual girls aged 14-18 years were significantly more likely to engage in unhealthy weight control behaviours compared to heterosexual girls (Hadland, Austin, Goodenow, & Calzo, 2014). Similarly, bisexual girls and women, and girls and women unsure of sexuality, aged 14-24 years, had significantly higher disordered eating symptoms than heterosexual girls (Shearer et al., 2015). There were no differences between girls and women who reported as being heterosexual or lesbian. Interestingly, these findings do not mirror research conducted among adult women. Indeed, several

studies have found heterosexual women to experience poorer body image than lesbian women (Ludwig & Brownell, 1999; Morrison, Morrison, & Sager, 2004; Share & Mintz, 2002). However, bisexual women have been found to exhibit a higher degree of body image concerns and disordered eating than both heterosexual and lesbian women (Davids & Green, 2011; Koh & Ross, 2006; Polimeni, Austin, & Kavanagh, 2009).

With regard to body image among transgender adolescents, only one study has been conducted to date. Steensma, McGuire, Kreukels, Beekman, and Cohen-Kettenis (2013) followed 127 transgender children below the age of 12 years who were referred to a gender clinic for gender dysphoria. It was found that those who later reapplied to the clinic in adolescence reported higher levels of body dissatisfaction compared with those who did not. Based on the authors' presumptions that gender dysphoria had desisted among adolescents who did not reapply to the clinic, it was concluded that body image dissatisfaction is prevalent among adolescents experiencing persistent gender dysphoria.

Research is inconclusive as to why sexual minority and transgender groups may experience different levels of body image concerns than heterosexuals. Some researchers suggest that sexual minority group's experience, and are therefore more likely to expect, prejudice behaviours against them, therefore leading these groups to self-monitor themselves and their bodies more frequently (Shearer et al., 2015). Similarly, sexual minority adolescent girls are more likely to experience sexual harassment, which may contribute to an increase in body shame (Mitchell, Ybarra, & Korchmaros, 2014). However, there is also research suggesting sexual minority groups are less likely to internalise appearance ideals, suggesting that these individuals may be less likely to experience body image concerns (Austin et al., 2004). Furthermore, adolescents who conform strongly to traditional gender norms of femininity are also more likely to experience body dissatisfaction (Calzo, Sonnevile, Scherer, Jackson, & Austin, 2016). Indeed, it may be that sexual minority and transgender groups experience entirely different notions of physical appearance ideals to heterosexual populations (Calzo, Corliss, Blood, Field, & Austin, 2013).

Despite researchers recognising that sexual minority girls experience sociocultural pressures surrounding appearance differently to heterosexual girls, these individuals continue to be overlooked in the literature (Hadland et al., 2014; Shearer et al., 2015). There is a pressing need to understand the body image concerns of sexual minority females, and how and why these may differ to those of heterosexual girls.

3.11 Other

There are other demographic influences on girls' body image that have received less attention in the research. For example, studies have suggested that adolescent girls are at heightened risk of having body image concerns if they have a disability (Helseth, Abebe, & Andenæs, 2016), have immigrant status (Kimber, Georgiades, Couturier, Jack, & Wahoush, 2015; Roberts, 2016), or live in a rural area (Laus, Miranda, Almeida, Braga Costa, & Ferreira, 2013; Miranda, Conti, Carvalho, Bastos, & Ferreira, 2014). In addition, religion has been shown to be a protective factor against body image concerns (Đurović, Tiosavljević, & Šabanović, 2016). However, more research is needed to understand and replicate the effect of these factors on girls' body image before they can be confidently described as risk factors for body image concerns.

3.12 Evidence for changes in girls' body dissatisfaction over time

There is conflicting evidence as to whether body image concerns have increased, declined, or stabilised among adolescent girls over time. A UK report by the Children's Society reported a trend towards decreasing satisfaction with overall appearance among girls between 2009 and 2014 (Pople, 2016). Likewise, a recent Girl Guiding UK report found that 31% of girls aged 11-16 years were not happy with how they looked in 2011, with this figure rising to 39% in 2016 (Girlguiding, 2016). Contrary to these studies, however, data from 326 academic studies were recently combined to explore how dissatisfaction with shape and weight has changed over time for adolescent girls and women (Karazsia, Murnen, & Tylka, 2017). The study combined research studies from North America, Europe, Australia, Asia and the Middle East and found that overall, body dissatisfaction has decreased over the last 31 years.

Taken together, these studies suggest that body image concerns may be getting worse in the UK, but perhaps not in other countries. However, it is important to acknowledge that different measures of body image have been used across studies, and therefore the differences in the results may be an artefact of methodological differences, as opposed to genuine differences between countries. The need for standardised measurements of body image across world regions is required to make more robust conclusions in this area.

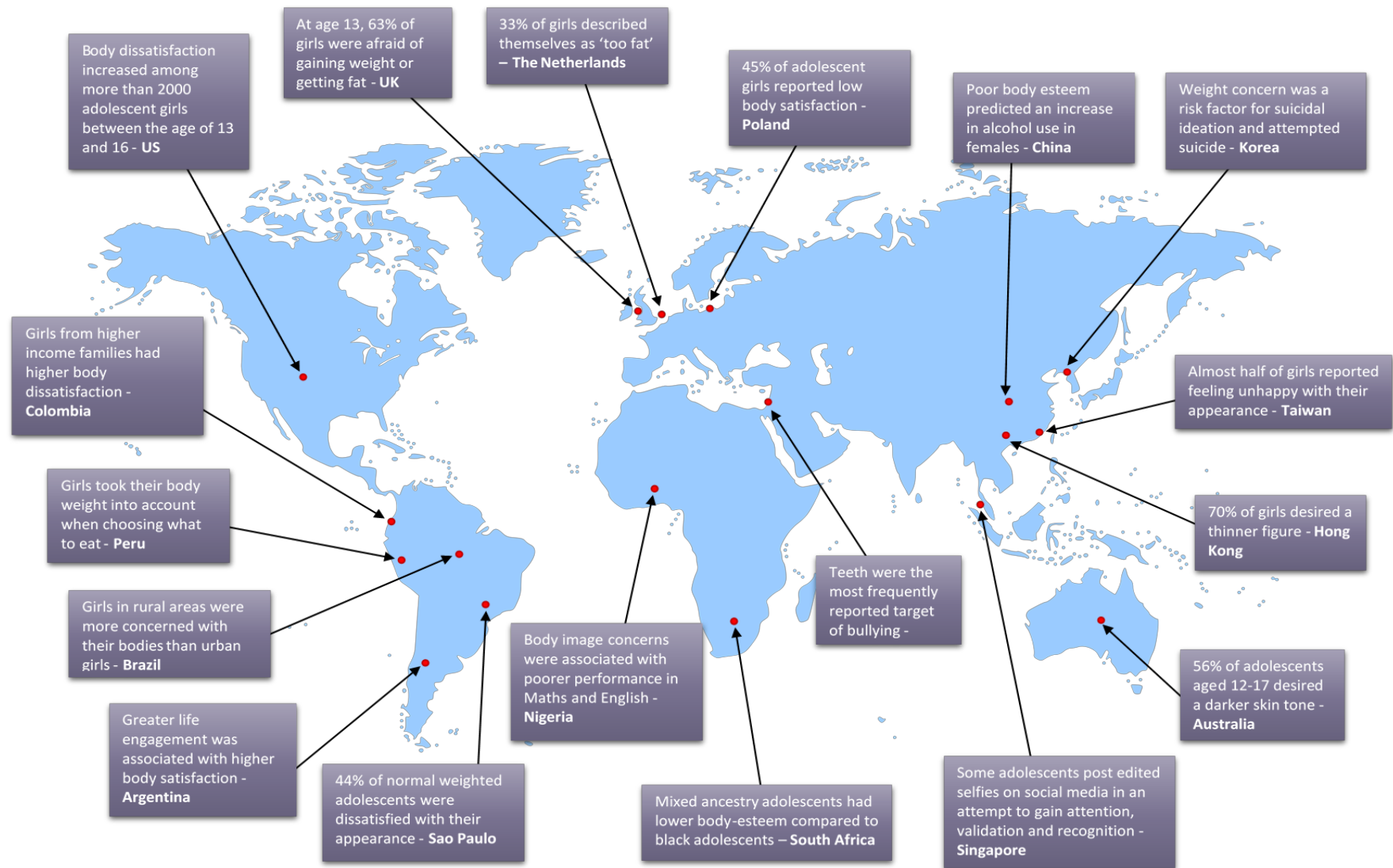


Figure illustrating the nature, prevalence, influences, and impacts of body image concerns experienced by girls around the world

Progress in the Field

- Body dissatisfaction is prevalent among adolescent girls across the world.
- Girls express dissatisfaction with multiple appearance domains, including weight, shape, skin, teeth, height and facial features.
- Socio-economic status, ethnicity, and sexuality may influence body image.

Future Directions

- Further research exploring the diverse aspects of appearance concerns beyond weight and shape would be beneficial.
- More robust longitudinal research across countries is required to better understand the prevalence and nature of body image in young girls.
- More high-quality research with validated measures is needed in middle- and low-income countries.
- Cross-cultural studies often use non-validated scales, or rely heavily on figure rating scales, which are only occasionally culturally adapted. Standardised body image measures that are validated across countries and cultures are needed to allow for more robust assessments and cross-country comparisons.
- Research is needed to understand how body image concerns intersect with issues of race, class and gender.

4. The impact of body image on girls' lives

This section reviews research exploring the impact of body image on the lives of adolescent girls. Research continues to indicate adverse effects of body image concerns on girls in a range of life areas, including psychological well-being, health behaviours, interpersonal relationships, and education.

It is promising to see a greater number of rigorous longitudinal studies published since 2012 investigating the impact of body image concerns on girls' lives. Longitudinal research designs, which gather data from the same participants over time, instil greater confidence regarding the direction of causality between two variables, in comparison with a cross-sectional design, which measures both variables at one time point, consequently limiting understanding regarding the direction of causality. However, some areas of the research, particularly studies focusing on newly identified constructs associated with body image, such as self-harm, sexual behaviour and education, still rely on cross-sectional research designs. Nonetheless, such studies are still informative as they provide the necessary first steps towards exploring these relationships in greater depth in future research.

Despite progress in the evidence base regarding the impact of body image upon the psychological and physical health of adolescent girls in recent years, the findings from these studies are sometimes contradictory. It is important to consider the methodological reasons for why these inconsistencies may exist. First, different measures are employed across studies to assess body image and related variables. For example, one study may measure an individual's evaluation of their appearance as a whole, whereas another may focus on satisfaction with individual body parts. The findings may therefore differ for each measure, and therefore differ between studies. Second, when a longitudinal design is adopted to examine two or more variables, the time lag between measurements is an influential factor. For example, body image may be found to impact self-esteem in the short-term (e.g., one month later), however, not in the long-term (e.g., one year later). Third, the age group of adolescents under study may influence the results obtained. For example, it may be that body image impacts depressive symptoms among young adolescent girls, but not among older adolescent girls. Fourth, not all studies focus solely on adolescent girls. Some studies use a mixed-gender sample, whereas others use a mixed sample of girls and young women. Lastly, cross-cultural differences will likely play in role in the consistencies evident in the research.

The sections below summarise evidence regarding the impact of body image upon different areas of young girls' lives. Specifically, we consider how body image concerns impact girls' psychological wellbeing, health behaviours, relationships and education. The methodological issues outlined above

are considered whilst reviewing the evidence regarding the impact of body image on girls' lives in this section. Where there are inconsistencies or gaps in knowledge, a critique of the research is provided.

<i>Impacts of body image on adolescent girls' lives</i>	
Psychological wellbeing	Self-esteem
	Depressive symptoms
	Self-harm and suicide
Health behaviours	Disordered eating
	Sexual behaviour and substance abuse
	Physical activity
	Other health behaviours
Interpersonal relationships	Bullying
	Peer pressure
Education	Poor attendance
	Lower classroom participation

4.1 Psychological wellbeing

Body image is closely related to psychological wellbeing. In the last five years, more prospective research has been conducted to assess the causal nature and direction of the relationship between body image and psychological well-being.

4.1.1 Self-esteem

Self-esteem and body image are closely related, yet separate, constructs. Self-esteem is a broader construct than body image, incorporating not only how a person feels about the way they look, but how a person perceives themselves overall (i.e., their overall self-worth). Body image is one component of a person's self-esteem, therefore their impact on each other is likely to be bi-directional (i.e., self-esteem impacts body image, and body image impacts self-esteem).

Recent research has deepened our understanding of the relationship between body image and self-esteem in adolescent girls. There is now substantial longitudinal evidence that body image concerns lead to lower self-esteem in the future. This has been found in a number of studies with US, Australian, and Korean adolescents (Fuller-Tyszkiewicz et al., 2015; Park & Epstein, 2013; Sutter, Nishina, & Adams, 2015). A study in Norway followed 3,251 girls over a 13-year period and found that body dissatisfaction had a strong impact on future self-esteem throughout adolescence and into early adulthood (Wichstrøm & von Soest, 2016). Interestingly, body image during early adolescence had a greater impact on self-esteem in later adolescence, than the impact of body image during older

adolescence on self-esteem in young adulthood. This finding suggests that body image may be particularly crucial to girls' future self-esteem during early adolescence, and perhaps other components of self-esteem become more important as a girl becomes a young adult. Although, more research is needed to explain these results.

4.1.2 Depressive symptoms

Body image also plays a central role in the mental health of adolescent girls. Substantial prospective evidence shows that body image concerns lead to increased depressive symptoms among girls in the future; this has been found in US and Spanish samples (Fay & Lerner, 2013; Ferreiro, Seoane, & Senra, 2012, 2014; Goldschmidt, Wall, Choo, Becker, & Neumark-Sztainer, 2016). In a Spanish study of 465 girls, body dissatisfaction at age 13 years was predictive of depressive symptoms at age 15 years (Ferreiro et al., 2012). Similarly, in a US study, body dissatisfaction in middle adolescence predicted depressive symptoms five years later (Goldschmidt, Wall, Choo, et al., 2016).

Research beyond the US and Spain has only been correlational research, with greater body image concerns being associated with more depressive symptoms in a range of countries such as Iceland, South Korea, Malawi, and Portugal (Almeida, Severo, Araújo, Lopes, & Ramos, 2012; Eidsdottir, Kristjansson, Sigfusdottir, Garber, & Allegrante, 2013; Kim et al., 2015; J. Lee & Lee, 2016). There is a need to conduct longitudinal research studies to explore the relationships between body image and depressive symptoms in more diverse populations around the world.

4.1.3 Self-harm and suicide

There is some correlational evidence linking body image concerns with self-harm, suicide ideation, and suicide attempts in adolescent girls (du Roscoät et al., 2016; Muehlenkamp & Brausch, 2012). For example, a cross-sectional study of 172 15-year olds in the US, recruited from both clinical and non-clinical settings, found girls highly invested in their appearance were more likely to self-harm (Muehlenkamp & Brausch, 2012). In a large-scale study of more than 60,000 adolescents aged 12-18 years from Korea and the US, adolescents who were concerned about their weight or had body image concerns were more likely to have suicidal thoughts (Chung & Joung, 2012). Also, a study of more than 18,000 French girls found that girls who saw themselves as 'too fat' were more likely to have attempted suicide (du Roscoät et al., 2016). However, at present, the relationships between body image and self-harm, suicide ideation, and suicide attempts, have only been studied using cross-sectional designs, so causal

“Depressive symptoms were the strongest predictors of (suicidal) attempts. The second strongest predictor was body image” (du Roscoät et al, 2016).

inferences cannot be inferred. Future longitudinal research is required to consider the directional nature of these relationships.

4.2 Health behaviours

4.2.1 Disordered eating

For some time, body dissatisfaction has been established as the most potent modifiable risk factor for eating disorders (Jacobi & Fittig, 2010). Research continues to demonstrate the detrimental impact of body image concerns upon eating behaviours among adolescent girls. Indeed, longitudinal research conducted in high-income countries (US, Italy) found that body dissatisfaction, weight concerns, and perceptions of being overweight, predicted a range of disordered eating behaviours, including binge eating (Goldschmidt, Wall, Choo, et al., 2016) and dietary restraint (Dakanalis et al., 2015). Further, cross-sectional research in the US demonstrates the extreme and unhealthy measures pursued by girls who are unhappy with their weight, including taking diuretics, laxatives, diet pills, and diet powders, and liquids (Thorlton, Park, & Hughes, 2014).

Qualitative research has found that body image concerns may also influence the eating behaviours of adolescent girls in low-income countries, such as Peru and South Africa. A Peruvian study found that in rural areas where food availability is sparse, adolescent girls were choosing to further restrict their diet in order to lose weight (Banna, Buchthal, Delormier, Creed-Kanashiro, & Penny, 2016). A qualitative study of 40 South African adolescents found girls engaged in a wide range of dysfunctional eating practices as a consequence of Western pressures to be thin, resulting in body image concerns (Morris & Szabo, 2013). More research exploring how eating behaviours are impacted by body image concerns in low- to-middle income countries is required.

4.2.2 Substance use and sexual behaviour

No prospective evidence exists, but, cross-sectional research indicates that body image is related to smoking among adolescent girls. The findings, however, are inconsistent with regard to the nature of the relationship, thus limiting our conclusions. Indeed, while research conducted among 9-17 year old girls in the US found that those who were concerned with their body shape were more likely to smoke (Farhat, Iannotti, & Caccavale, 2014; Okeke, Spitz, Forman, & Wilkinson, 2013), a Korean study found the opposite, whereby 14 year old girls who perceived themselves as overweight were less likely to smoke (Lee et al., 2015). These inconsistencies may be a consequence of cultural differences; however, there were differences in the measures used and the samples studied, precluding definitive

explanations of these results. Further, longitudinal research is necessary to understand the direction of causality.

The evidence is stronger in relation to the influence of body image upon sexual intercourse among adolescent girls. A longitudinal study conducted in Belgium found that girls aged 12-18 years who more strongly internalised (i.e., cognitively 'bought into') cultural beauty ideals were more likely to initiate sex at a younger age than girls with lower levels of internalisation (Vandenbosch & Eggermont, 2015). The same study also found that girls who were highly invested in their appearance (i.e., felt their appearance was very important to them) were more likely to initiate sexual intercourse between the ages of 12–18 years, compared to girls the same age who were not invested in their appearance. Further prospective and qualitative research is required to understand why this might be the case, and whether this is also the case within low- and middle-income countries.

4.2.3 Physical activity

The direction of the causality between body image and participation in physical activity and sports is unclear due to the majority of research being cross-sectional in nature. One study demonstrated positive body image to be associated with higher levels of physical activity among adolescent girls (Kantanista, Osiński, Borowiec, Tomczak, & Król-Zielińska, 2015). However, girls performing sports at an elite level are at a greater risk of developing an eating disorder (Francisco, Narciso, & Alarcao, 2013).

Cultural differences have been considered with regard to physical activity and body image. For example, a qualitative study in Costa Rica found girls did not want to exercise because they did not think they looked feminine or beautiful during or following exercise (Monge-Rojas et al., 2017). Specifically, girls were concerned about looking messy, ruining their make-up, and having sweat marks. Girls were also concerned that boys would objectify them during exercise (Monge-Rojas et al., 2017). Similarly, a qualitative study of South African girls found attitudes towards exercising were purely driven by appearance goals, specifically whether they favoured a large, curvy figure or not (Kinsman et al., 2015).

4.2.4 Other health-related behaviours

Adolescent girls with poor body image are more likely to engage in a number of unhealthy behaviours. For instance, Australian girls who were unhappy with their skin tone were more likely to reduce their use of sun protection (e.g., girls were less likely to wear a sun hat, use sunscreen or wear protective

clothing; Hutchinson et al., 2015). Girls dissatisfied with their skin tone were also less likely to seek shade from the sun. Possible reasons for dangerous tanning behaviours and desire for darker skin may stem from body-related bullying by friends (Harland, Griffith, Lu, Erickson, & Magsino, 2016), thin ideal internalisation (Darlow, Heckman, & Munshi, 2016) and parental beliefs that tanned skin is more attractive (Holman & Watson, 2013).

There is limited research examining the relationship between body image and the desire for cosmetic surgery in adolescent girls. One correlational study found that girls who were highly invested in their appearance were more likely to desire cosmetic surgery than those with low appearance investment (de Vries, Peter, Nikken, & de Graaf, 2014). More research exploring body image and cosmetic surgery has been conducted in adult populations. These cross-sectional studies have found that young women dissatisfied with their bodies are more likely to consider having cosmetic surgery (Henderson-King & Henderson-King, 2005). Additionally, young women who self-objectify are more likely to report that they would consider having cosmetic surgery in the future (Calogero, Pina, Park, & Rahemtulla, 2010).

4.3 Interpersonal relationships

Two recent prospective studies have demonstrated the adverse effect of body image concerns upon interpersonal relationships. One study found that girls who perceived themselves as overweight at age 15 were more likely to be both a bully, and a victim of bullying, at 17 years of age (Kaltiala-Heino, Lankinen, Marttunen, Lindberg, & Fröjd, 2016). These findings were suggested to be a consequence of psychological dysfunction and emotional disorders among girls who perceive themselves to be overweight. However, data to examine this were not collected, and further research is therefore needed to explore this further.

A study of more than 1,000 Australian girls found that 12-year old girls dissatisfied with their body size were more likely to perceive pressure from their peers to lose weight one year later (Rayner, Schniering, Rapee, & Hutchinson, 2013). There are a number of potential reasons for this. Firstly, it may be that girls with weight concerns are more attentive to weight-related conversations within their peer group. Secondly, it may also be that girls concerned with their weight are directly contributing to their environment by bringing up the topic of weight, thus creating a peer-group norm that reinforces appearance ideals held by wider society. Lastly, it may be that girls with weight concerns receive more pressure from their friends for other reasons. For example, girls dissatisfied with their bodies may also have higher BMIs, and are therefore more likely to experience pressure to lose weight. However, this

is unlikely, as weight concerns were predictive of perceived pressure from friends among girls with both normal and overweight BMIs.

Collectively, these studies suggest that appearance concerns can harm girls' relationships with their peers and can lead to perceived pressure from peers to change their appearance. It would be valuable for research to consider how body appreciation and positive body image may impact peer relationships, and how body image more broadly may affect the initiation and maintenance of friendships throughout adolescence.

4.4 Education

There has been very little research since 2012 exploring the impact of body image on adolescent girls' education, grades, or future career aspirations. However, a literature review published in 2014 summarised the evidence to date and found that body image was related to education performance and academic aspirations in adolescents (Halliwell, Diedrichs, & Orbach, 2014). Within this report, the authors cited studies that have found body image concerns to be associated with low engagement in the classroom (Lovegrove & Rumsey, 2005), poor school attendance (Etcoff, Orbach, Scott, & D'Agostino, 2004), and short attention span (Green & Rogers, 1998). In addition to the research conducted among adolescent girls, findings from a US cross-sectional study of 149 young women indicated that women who internalised appearance ideals have the lowest levels of academic engagement (Schrack, Sharp, Zvonkovic, & Reifman, 2012). In contrast, women who rejected appearance norms were the most academically engaged.

Despite these findings, research examining the impact of body image on girls' education and career is severely limited. There is a need for more rigorous, longitudinal research in the field to advance this evidence. This is particularly necessary in low-to-middle income countries where there is currently no research at all looking at the relationship between body image concerns and education in adolescent girls.

Progress in the Field

- There has been more research adopting a prospective design, thus increasing our understanding of body dissatisfaction as a risk factor for a range of psychosocial outcomes.

Future Directions

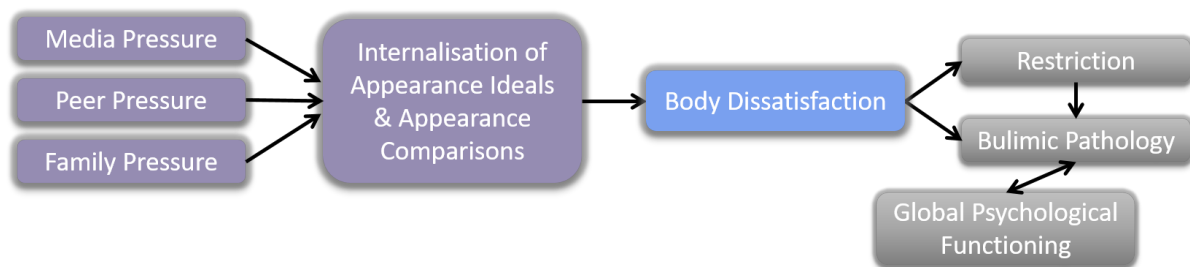
- Whilst the prevalence of body image concerns among adolescent girls has been recognised as a global issue, the impact of these concerns remains relatively unknown among low- and middle-income countries.
- More research is necessary to enhance understanding of the impact of body image upon a wider range of health behaviours (e.g., seeking cosmetic procedures), and on interpersonal relationships and education.
- Research should consider the potentially protective influence of body appreciation upon well-being.

5. Body image theories

Theories focused on social and cultural factors (i.e., sociocultural theories) of body image have received considerable empirical support. Although these theories were developed prior to 2013, they continue to provide insight into useful targets for interventions to improve girls' body image. Research conducted between 2013 and 2017 continues to provide support for their ability to explain how body dissatisfaction develops among adolescent girls (Cash & Smolak, 2011; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Many of these models also include reference to disordered eating, as body dissatisfaction is a key modifiable risk factor for eating disorders and much body image research has stemmed from the eating disorders prevention field.

5.1 The Tripartite Influence Model

The Tripartite Influence Model (Thompson et al., 1999) proposes that culturally defined appearance ideals are transmitted and reinforced by three sociocultural influences: media, parents, and peers. It also proposes two psychological processes through which the three sociocultural influences exert their effects on body image: the degree to which an individual cognitively “buys into” socially determined ideals of beauty (i.e., internalisation of the appearance ideals) and the tendency to compare one’s appearance to the appearance of others (i.e., appearance comparisons). The tendency for appearance comparisons is also theorised to reinforce internalisation. Subsequently, body dissatisfaction is believed to lead to eating disturbance, including dietary restriction and bulimic pathology. Finally, bulimic pathology is proposed to have a reciprocal relationship with global psychological functioning (e.g., self-esteem, depression).



The Tripartite Influence Model (Thompson et al., 1999)

The Tripartite Influence Model has received considerable empirical support in cross-sectional studies among adolescent girls and young adult women (Keery, Van den Berg, & Thompson, 2004; Hemal Shroff & Thompson, 2006). This research shows that the variables in the model are indeed related to each other and to body dissatisfaction. However, prospective research examining how the full model

operates over time and whether the variables lead sequentially to each other as indicated in the diagram is still lacking. This is particularly important, given that previous cross-sectional research conducted among girls and young women has indicated direct influences of sociocultural sources of pressures upon body image, in addition to these indirect influences via internalisation of appearance ideals and appearance comparisons (Rodgers, Chabrol, & Paxton, 2011; Van den Berg, Thompson, Obremski-Brandon, & Coovert, 2002).

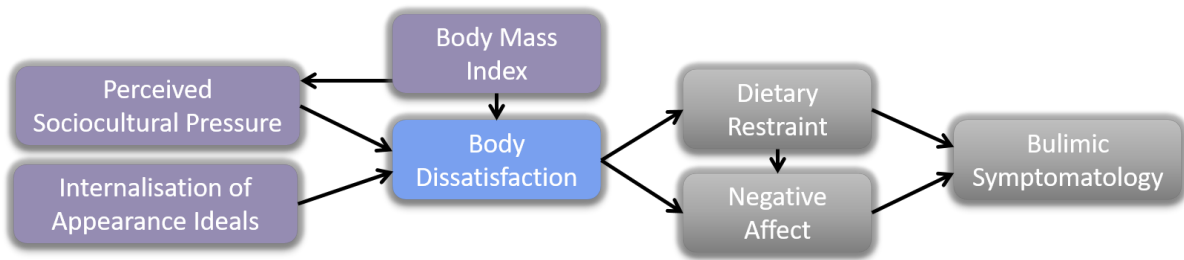
Since 2013, the influence of individual components in the model on body image continue to be researched and validated among adolescent girls (e.g., Cook-Cottone, 2016; Rodgers, Paxton, & McLean, 2014). Further, a longitudinal study conducted in Australia has enhanced our understanding regarding the temporal associations within the Tripartite Influence Model (Rodgers, McLean, & Paxton, 2015). Specifically, the relationships between internalisation of appearance ideals, appearance comparisons, and body dissatisfaction, were examined across a year among 277 13-year old Australian girls. Researchers found that higher internalisation predicted greater appearance comparisons and body dissatisfaction a year later; however, body dissatisfaction at baseline was also found to predict internalisation a year later. This finding indicates that increased feelings of body dissatisfaction may lead to increased aspirations to look like the cultural appearance ideals. This suggests that the Tripartite Influence Model should include reciprocal effect loops, rather than representing the process as a linear relationship between the components.

5.2 The Dual-Pathway Model

The Dual-Pathway Model (Stice, 2001) is similar to the Tripartite Influence Model. However, it proposes that girls perceiving sociocultural pressures to be thin (e.g., via the media, parents, and peers) promotes body dissatisfaction directly, and indirectly, via internalisation of appearance ideals. The model also proposes that body mass index (BMI) predicts both perceived sociocultural pressure and body dissatisfaction, whereby girls with a higher BMI are likely to experience increased pressure to have a thin body, and are at higher risk of experiencing body dissatisfaction. Body dissatisfaction is subsequently proposed to promote bulimic eating pathology through two pathways: dietary restraint and negative effect.

Longitudinal and cross-sectional research has validated the Dual-Pathway Model among adolescent girls and young adult women prior to 2013 (Stice, 2001; Stice, Nemeroff, & Shaw, 1996; Stice, Shaw, & Nemeroff, 1998). Since 2013, further cross-sectional and longitudinal studies have examined individual components of the model and found them to be predictive of body image concerns (e.g.,

Suchert, Hanewinkel, & Isensee, 2016; Wojtowicz & Von Ranson, 2012), however, there have not been any recent studies testing the full model cross-sectionally or prospectively.



The Dual-Pathway Model (Stice, 2001)

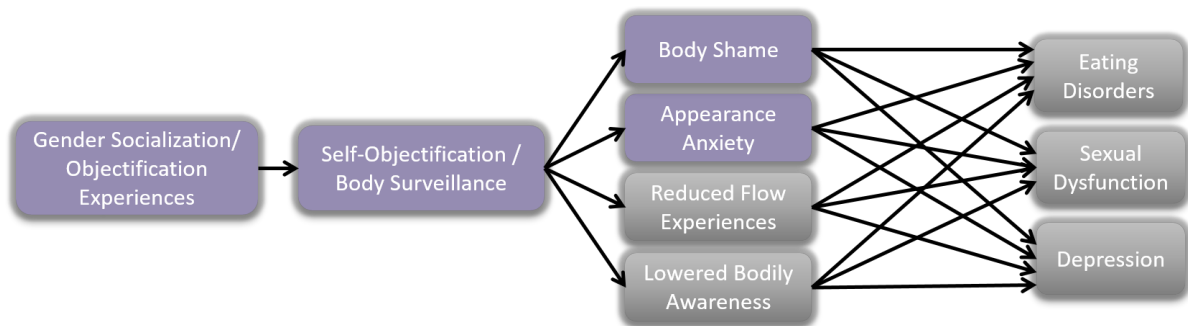
5.3 Objectification Theory

Objectification Theory (Fredrickson & Roberts, 1997) argues that in many societies, girls' and women's bodies are on public display and are sexually objectified. Sexual objectification refers to the reduction of a person to an assortment of body parts and sexual functions, while overlooking her psychological being, agency, and other personal attributes. Girls and women may experience sexual objectification on a daily basis through verbal comments, whistling, cat calling, leering, and unwanted sexual advances. Objectification is also evident in the media; for example, in pornography, TV programmes and commercials, and on social media, particularly when women are posed passively or submissively, or when they are displayed as headless bodies in media images.

Objectification Theory proposes that living in a sexually objectifying culture can be harmful to girls and women. A major consequence of frequent objectification is self-objectification, whereby girls and women begin to see themselves as objects to be viewed, judged, and consumed by others based only on their appearance (Fredrickson & Roberts, 1997). This fosters feelings of self-consciousness, which can lead to persistent monitoring and worrying about the body's appearance, referred to as body-surveillance. Self-objectification and body surveillance are believed to cause increased body shame and appearance anxiety (in addition to reduced levels of concentration on physical and mental tasks, and reduced awareness of internal bodily states such as fatigue and emotions; Fredrickson & Roberts, 1997). In turn, body shame and appearance anxiety are proposed to lead to a range of adverse mental health consequences, including disordered eating.

With regard to empirical support for Objectification Theory, one study using a cross-sectional design has comprehensively tested and validated the model among young adult women (Tiggemann & Williams, 2012). However, longitudinal research is necessary to ascertain the proposed temporal

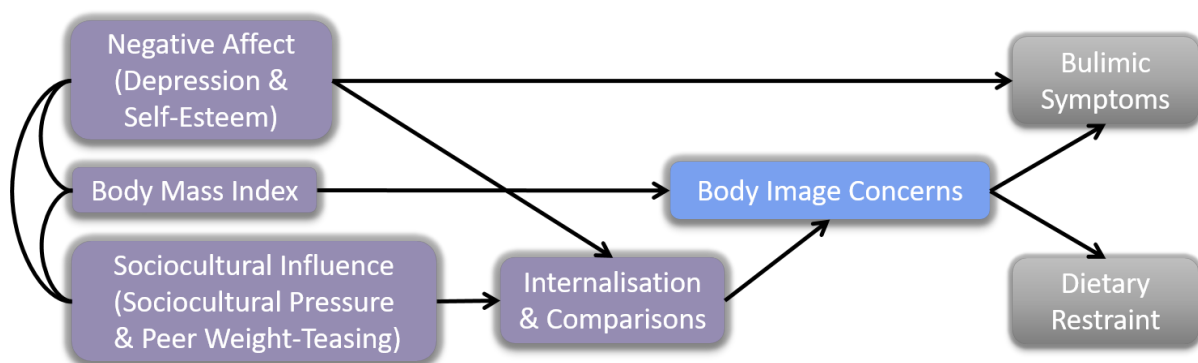
relationships between the model variables. In addition to cross-sectional support (Slater & Tiggemann, 2010; Tiggemann & Slater, 2001), an Italian prospective study has also provided evidence for the impact of self-objectification on the development of eating disorders (Dakanalis et al., 2015). Researchers followed 718 adolescent boys and girls aged 14-15 years for three years and found that self-objectification predicted body shame and appearance anxiety, which in turn predicted dietary restraint and binge eating.



Objectification Theory

5.4 The Biopsychosocial Model

The Tripartite Influence Model, Dual-Pathway Model, and Objectification Theory, have received considerable empirical support for explaining body image concerns among adolescent girls, however, they fail to capture the role of other factors that have been found to influence girls' body image. These include over-investment in appearance, negative affect and mood, and low self-esteem. Unfortunately, no model encapsulates all of these factors. Therefore, researchers have recently called for the extension of sociocultural models to recognise other biological, psychological, and social influences upon body image. An extended 'biopsychosocial model' that includes these factors has begun to be tested and has received cross-sectional empirical support among adolescent girls (Rodgers et al., 2014).

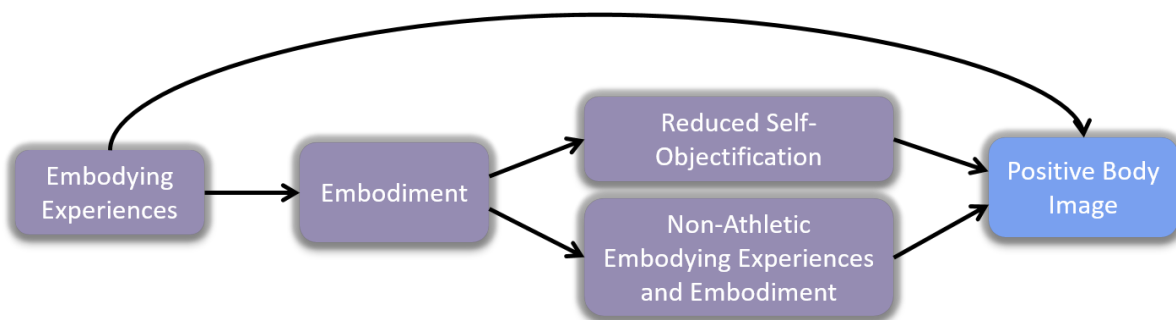


The Biopsychosocial Model

5.5 Theories of Embodiment and Positive Body Image

The theories outlined above focus on explaining the development of body dissatisfaction or negative body image. Much less is known regarding the sociocultural factors that influence the development of positive body image. One theory proposed to explain positive body image focuses on embodiment as the core to fostering positive body image (Menzel & Levine, 2011). Embodiment is an abstract concept, defined according to philosopher Merleau-Ponty as the way in which an individual experiences the 'engagement of [their] body with the world' (Allan, 2005, p. 177). A person would be defined as being 'embodied' if they have a strong sense of bodily awareness, respect, control, instrumentality, and mind-body connectedness.

In a model proposed by Menzel and Levine (2011), positive body image is influenced by participation in embodying experiences, which are further broken down into athletic and non-athletic experiences. Athletic embodying experiences include sporting activities, whereby a person fosters a greater appreciation of what the body does, rather than what it looks like (Krane, Choi, Baird, Aimar, & Kauer, 2004; Menzel & Levine, 2011; Tiggemann, Coutts, & Clark, 2014). Non-athletic embodying experiences have received little research attention, but authors theorise that these may include activities similar to athletics, such as horse riding, hiking, and scuba diving (Menzel & Levine, 2011). These activities are theorised to impact positive body image both directly and indirectly, via feelings of embodiment and reduced self-objectification.

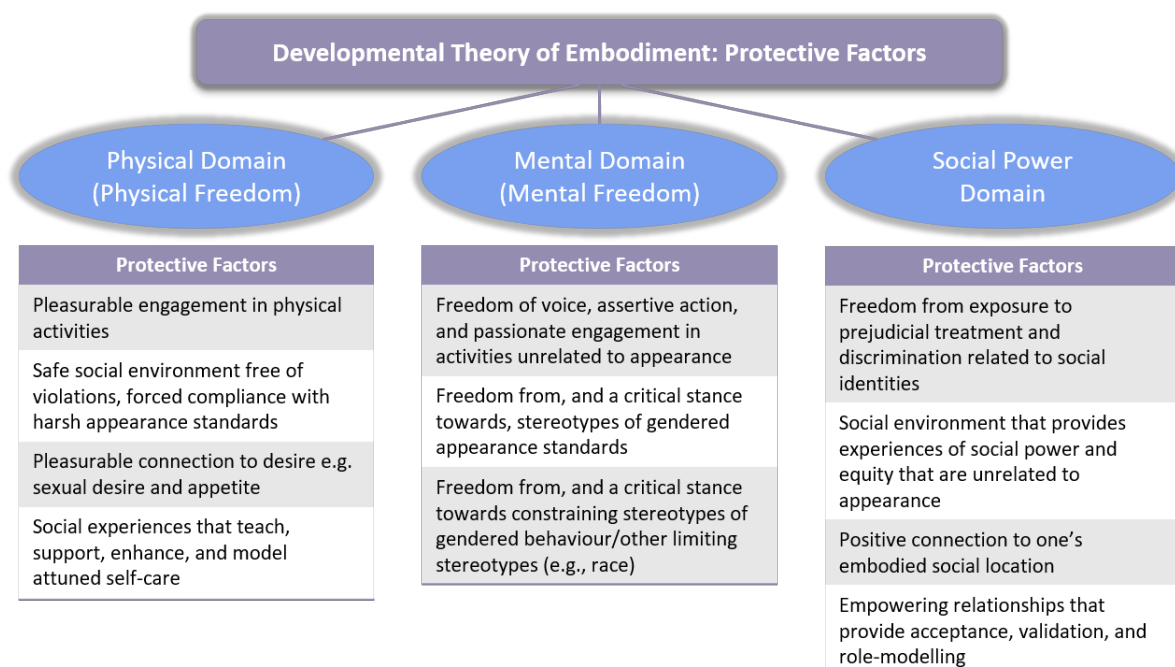


Theory of Embodiment and Positive Body Image

There was some early evidence to support this theory. For example, Krane et al. (2004) found that female athletes have a greater appreciation for their bodies as a result of the unique physical experiences they have with their bodies (Krane et al., 2004). Similarly, Tiggemann, Coutts, et al. (2014) compared a group of belly dancing women to women who had never belly danced and found belly dancers had lower self-objectification scores and more positive body image than the non-belly dancers. Although correlational, this study suggests that belly dancing is an activity that promotes positive body image through reducing self-objectification. Additionally, recent research has looked at

how life drawing may impact positive body image through embodiment. In a small-scale study, Swami (2017) found that participating in weekly life drawing sessions for a six-week period resulted in increases in embodiment and higher levels of positive body image. Further research is needed to explore this theory among adolescent girls.

A second theory of positive body image has been put forward by Piran and Teall (2012). In this developmental theory of embodiment, the authors suggest three domains within which positive body image can be fostered; **the physical domain, the mental domain, and the social power domain.** Within the physical domain, participating in enjoyable physical activities, feeling safe and free of violations in a social environment that does not reinforce appearance ideals, social support to act in accordance with one’s own bodily needs, and a pleasurable connection to bodily desires, are all considered important in fostering positive body image. Likewise, in the mental domain, fostering positive body image is argued to occur from being passionate about activities unrelated to appearance, and being critical of gender stereotypes in relation to both appearance and behaviours. Finally, in the social power domain, positive body image is thought to be fostered in an environment free of prejudice, where social power is unrelated to appearance, where relationships are empowering and accepting of differences, and by feeling connected with one’s physical being (i.e., mind-body connectedness).



Developmental Model of Embodiment (Piran & Teall, 2012)

This model has not been tested in quantitative research, however, it has been developed on the basis of extensive qualitative research with girls and women (Piran, 2016a, 2016b). There is a need to test this theory cross-sectionally and prospectively to further establish its ability to predict and explain the development of body image among adolescent girls.

Progress in the Field

- Research continues to support sociocultural models and theories of body image development among adolescent girls, with a particular focus on social influences including media, parents and peers.
- New theories have been proposed to explain positive body image development, building on past theories that have focused on negative body image only.
- There is increasing recognition that sociocultural models should be expanded to include other factors, including demographic factors.

Future Directions

- Greater theoretical development and testing of models of positive body image.
- Greater testing of models among adolescent girls in low- and middle-income countries.
- Greater prospective examination of models to test time sequencing of the proposed pathways between components.

6. Influences on body image

We have separated our discussion of research exploring influences on body image into **body image-specific influences and other distal non-specific influences**. Body image-specific influences **have direct relevance to appearance and body image**, for example, appearance comparisons. Distal influences **include general psychological factors** that make people more susceptible to poor functioning and well-being in general (including body image), for example, self-esteem. Whilst influences falling under both categories may be important for the development of body image, **previous research indicates that targeting risk factors specific to body image in interventions is more effective than targeting distal body image influences (Diedrichs & Halliwell, 2012)**.

Body image-specific influences

- **Media (media exposure & social media)**
- Family interactions and modelling
- Appearance conversations
- Appearance teasing & bullying
- **Appearance comparisons**
- **Internalisation**
- **Self-objectification**

Distal body image influences

- Negative mood & emotions
- Stress & anxiety
- Self-esteem
- Peer relationship quality
- Sports participation
- Perfectionism

6.1 Body image-specific influences

The following section will discuss research that has explored the influence of body image-specific influences among adolescent girls, that is, influences that have been shown to be particularly important for the development of body image specifically, rather than simply important for overall psychological well-being.

6.1.1 Media exposure

Exposure to traditional forms of mass media continues to be an established risk factor for the development of negative body image in girls, due to the unrealistic appearance ideals that are often portrayed. Although some progress has been made with select brands and companies choosing to represent more diverse bodies, the vast majority of media and advertising targeting teenage girls still reinforces narrowly defined appearance ideals of female attractiveness (Simpson, Kwitowski, Boutte,

Gow, & Mazzeo, 2016; Slater, Tiggemann, Hawkins, & Werchon, 2012; Vandebosch, Vervloessem, & Eggermont, 2013). A study by Simpson and colleagues (2016) analysed the most recent content of five of the most popular US television shows targeting 8 to 14 year-olds on the Disney Channel in 2015. They found that 'appearance-related incidents' occurred in each of the 15 episodes they analysed, each reinforcing appearance ideals and stereotyping female attractiveness (Simpson et al., 2016). Similarly, Slater et al. (2012) analysed 631 adverts found on websites popular with teenagers and found the vast majority of the women used in the adverts conformed to the dominant standard of female beauty in Western countries by being thin, White and young.

Prospective research with girls from high-income countries (e.g., Belgium, Germany, Australia) has continued to show that exposure to media, whether in the form of TV, magazines, music videos, video games, or online, leads to increased internalisation of the thin ideal (Vandebosch & Eggermont, 2012, 2015, 2016), greater tendency to make appearance comparisons (McLean, Paxton, & Wertheim, 2013), greater frequency of engaging in appearance conversations (Slater & Tiggemann, 2015), increased self-objectification (Vandebosch, Driesmans, Trekels, & Eggermont, 2017), and greater body dissatisfaction (Suchert et al., 2016).

Prior to 2012, knowledge relating to body image and the media was almost exclusively based upon studies conducted with adolescents in the UK, the US, and Australia. It is promising to see research increasingly conducted on a global scale, despite many studies in low- and middle-income countries relying on cross-sectional research designs. One of the only prospective studies in a middle-income country, Brazil, found that perceived appearance pressures from the media predicted higher weight and shape concerns six months later among 12 to 15 year-old girls (Fortes, Filgueiras, Oliveira, Almeida, & Ferreira, 2016). This relationship has also been identified in cross-sectional research conducted among adolescents in Taiwan (Wong, Lin, & Chang, 2014), Iran (Garousi et al., 2016), and Ghana (Michels & Amenyah, 2017). More prospective studies is required to substantiate and validate findings elsewhere.

There have been two experimental studies over the past five years that have examined the impact of the media on adolescent girls' body satisfaction. Both have reported results consistent with the extensive body of research pre-2012 that documented adverse effects on body image after brief exposure to idealised media images among adolescent girls. Most recently, a study of 11 to 14 year-olds in Belgium explored the impact of using a sexualised avatar while playing a video game, compared to using a non-sexualised avatar (Vandebosch et al., 2017). These avatars were identical in body

shape and size, the only difference between the conditions was the dress of the avatar, varying from scantily dressed to fully clothed. The study found that playing as a sexualised avatar immediately increased self-objectification among both adolescent boys and girls. Future research should explore the longer-term consequences of playing as a sexualised avatar (i.e., how long do increased levels of self-objectification last after playing a sexualised avatar in a video game?), and the impact of sexualised media content in other formats.

Secondly, an experimental study conducted in The Netherlands considered the combined impact of models portrayed in the media alongside peer comments towards them on the body image of adolescent girls (Veldhuis, Konijn, & Seidell, 2014). To do this, the researchers created stimuli that mirrored content on YouTube, where a model is pictured along with a peer comment typed underneath. Girls were randomly assigned to view images of one of three models (either extremely thin, thin, or normal weight), which were further randomly paired with comments expressing that the model was 'extremely thin', 'thin' or 'normal weight'. This resulted in nine experimental conditions. The study found that exposure to extremely thin or thin images alone did not predict changes in adolescent girls' body image (although it could be argued that this is because girls only looked at the image for a very brief amount of time). However, an interaction effect was found between the media images and the peer comments towards the image. Specifically, girls experienced the greatest reduction in body satisfaction when faced with an extremely thin image along with peer comments that she was thin, as opposed to comments that she was 'extremely thin' or of 'normal weight'. The researchers propose that this finding is due to peer comments giving the impression to the reader that the body size of the model is an achievable goal. The authors coined this the '*idealisation effect*'. This study is particularly noteworthy for not only being experimental in nature, but for systematically exploring the combined effect of media imagery and peer commentary on girls' body image in an ecologically valid way.

Overall, a much richer picture is emerging as to how the media is impacting the body image of girls. Not only is more data available in low- and middle-income countries, but new experimental studies are beginning to consider how real life scenarios involving both peers and the media may interact to influence the body image concerns of adolescent girls. The results of these studies further suggest a need to gain a more nuanced understanding of how the media may impact girls in low- and middle-income countries.

6.1.2 Social networking and media

In the last five years, there has been a stark change in the consumption of media among adolescents, with an increased amount of time spent on social media and social networking sites. In Europe and the US, adolescent social media use is between 88-96% (Bányai et al., 2017; Rousseau, Eggermont, & Frison, 2017), with the most popular platforms for girls being Snapchat and Instagram (both appearance-based applications; Lenhart et al., 2017). When using social media, adolescents are not only viewing media created by professionals and companies, but they are also viewing media created by their peers and themselves. This may make social media particularly potent when it comes to influencing adolescent girls' body image (Fardouly & Vartanian, 2016). Additionally, there is a tendency for people to showcase their ideal self on social media; editing, manipulating, and only posting photos they consider themselves to look attractive in (Zhao, Grasmuck, & Martin, 2008). In addition, instead of comparing to models and celebrities, social media encourages comparisons between peers, which research suggests can be particularly detrimental to a persons' body image (Carey, Donaghue, & Broderick, 2014). For all these reasons, social media has become a burgeoning area of research in recent years and an area that is set to grow in the coming years.

A number of cross-sectional studies indicate associations between various aspects of social media use and body dissatisfaction. A large Canadian study of more than 2000 girls aged 11 to 19 years found that girls who reported using social media for two or more hours a day were more likely to be dissatisfied

Adolescent girls who use social media for more than two hours a day have poorer body image than girls that use social media less often (Sampasa-Kanyinga, Chaput, & Hamilton, 2016)

with their weight than girls who spent less time on social media (Sampasa-Kanyinga et al., 2016). Similarly, a study of 10 to 12 year olds in Australia found that girls who spent more time online were more likely to internalise the thin ideal standard of female beauty, and in turn, expressed more body image concerns (Tiggemann & Slater, 2014). In a study of 17 to 25 year old women, Fardouly and colleagues (2015) found that women who spend a greater amount of time on Facebook were more likely to make appearance comparisons and have higher levels of self-objectification than those who spend less time on Facebook.

The cross-sectional studies discussed have examined the correlation between overall time spent on social media and girls' and womens' body image. However, other research has suggested specific aspects of social media use are particularly potent for body image, including the posting and editing of selfies. A cross-sectional study conducted in Australia found that 13-year old girls who shared selfies

on social media were more dissatisfied with their appearance than those who did not (McLean, Paxton, Wertheim, & Masters, 2015). Similarly, cross-sectional research has found that girls who more frequently manipulate or edit images of themselves, and comment on or 'like' images of others are more likely to be dissatisfied with their appearance (Vandenbosch & Eggermont, 2016). The direction of causality within these relationships is unknown and warrants longitudinal investigation. Qualitative studies suggest that girls post selfies to gain compliments and boost their self-esteem, with studies in Sweden and Singapore finding that girls report posting images of themselves on social media as a way to gain 'attention, validation and recognition' (Berne, Frisén, & Kling, 2014; Chua & Chang, 2016).

As already highlighted, there is limited longitudinal research regarding the direction of causality between aspects of social media use and body image. One study found that, over an 18-month period, greater social media use predicted greater body dissatisfaction in future, with no evidence that body dissatisfaction predicted later time spent on social media (de Vries, Peter, de Graaf, & Nikken, 2016). Similarly, a recent Australian study by Tiggemann and Slater (2017) found that the number of Facebook friends predicted body image concerns among 13 to 15 year-old girls. Specifically, having a higher number of Facebook friends increased levels of internalisation of the thin ideal, which in turn led to increase in drive for thinness, two years later.

Other longitudinal research has highlighted peer competition as key to the relationship between social media and body image. In a sample of Hispanic girls, a US study conducted over six months found that social media use increased perceived peer competition, which then led to body dissatisfaction later on (Ferguson, Muñoz, Garza, & Galindo, 2014). This study is congruent with Tiggemann and Slaters' findings, whereby having more friends on social media may provide greater opportunity to make social comparisons and for competition with friends.

Finally, one particularly noteworthy study conducted in Belgium examined the combined impact of exposure to mass media and social media (Vandenbosch & Eggermont, 2016). This prospective study followed more than 1000 adolescents over 18-months and found that adolescents who reported watching music videos and/or reading fashion or gossip magazines had higher levels of internalisation than those who did not. These internalised standards of beauty subsequently predicted how adolescents consumed social media, with those higher in internalisation more likely to use social networking sites to monitor the attractiveness of their peers (e.g., search through photo albums of people they find attractive, or add people they do not know but find attractive). Girls higher in internalisation were also more likely to self-objectify. This is the first study of its kind to consider the

combined effect of mass media and social media, and strongly suggests that the two types of media offer combined effects that interact with each other.

It is important that more longitudinal research is conducted to further support or refute the findings described above with girls of different ages and from different countries. So far, the research has described multiple mechanisms through which mass and social media may impact the body image of young girls. Prospective and experimental research will facilitate greater understanding of these relationships.

6.1.3 Family interactions and modelling

Family interactions, including parents modelling negative body image-related behaviours and attitudes, conversations about appearance and body change strategies (e.g., dieting), and direct criticism and teasing about appearance, have a substantial impact on the body image of young girls across the world. A Brazilian cross-sectional study found that weight-related teasing from family members was associated with greater bulimic behaviours, dieting and laxative use among adolescent girls (Leme & Philippi, 2013).

Parental behaviours impact body image. Parenting behaviours are commonly conceptualized on two dimensions: (a) the extent to which parents nurture their child (i.e., “responsiveness/warmth”) and (b) the degree to which parents monitor their child (i.e., “aware of their child’s daily activities and whereabouts”). Longitudinal studies have found that low parental warmth (less praise directed towards the child) and low parental monitoring (less knowledge of where and what the child is doing) of Australian and North American adolescents predicts higher risk of body dissatisfaction and increased weight concern later in life (Krug et al., 2016; Lam & McHale, 2012). Further, a meta-analysis in 2013 summarised the literature to date regarding the impact of family members on the body image of adolescents (Marcos, Sebastián, Aubalat, Ausina, & Treasure, 2013). They combined the results of 12 studies from the US, Europe, and Australia. The pooled results indicated that families strongly influence the body image of adolescent girls, with most of the studies conducted in the area focusing on family encouragement to diet as an influencer. This highlights the need for greater research exploring other types of family influence, such as modelling or teasing. An additional finding of interest from this review was that when comparing across countries, families had a stronger impact on the body image of adolescent girls in the US compared to Australia. This highlights the need to compare across a greater number of high-income countries, as well as between high- and low-income countries, as cultural differences may be present.

Mothers appear to play a particularly important role in the development of their daughters' body image and self-esteem. A survey of adolescents and their mothers in Japan found that mothers with higher levels of internalisation of beauty ideals were more likely to have daughters with a higher drive for thinness. It has been suggested that daughters may emulate the weight and shape concerns of their mothers (Yamazaki & Omori, 2016). A large prospective UK study of 3,404 mother-daughter dyads found mothers who had an eating disorder were more likely to have daughters dissatisfied with their bodies and who have weight concerns than mothers without a history of eating pathology (N Micali et al., 2015). Additionally, a US study found that appearance comments from mothers were positively correlated with increased bulimic tendencies among daughters (Arroyo & Andersen, 2016). A qualitative study found that South African girls often mimicked their mothers' eating behaviours (Tshililo, Netshikweta, Tshitangano, & Nemathaga, 2016). However, it may also be that some mothers actively encourage girls to monitor their weight, causing them to engage in unhealthy dieting behaviours (Garousi et al., 2016; Thøgersen-Ntoumani et al., 2016). More generally, a cross-sectional study conducted in the US found that lower levels of maternal care (i.e., the extent mothers are there for child) was associated with lower levels body satisfaction among daughters (Patton, Beaujean, & Benedict, 2014). An experimental study found that 12 to 14-year-old Belgian girls with higher levels of attachment anxiety (i.e., excessive anxiety when separated from their mother, developed primarily from early childhood relationships with parents), were more likely to experience higher levels of body dissatisfaction (Goossens, Van Durme, Van Beveren, & Claes, 2017). While it is evident that mothers influence their daughters' body image, it is important not to victimise and blame mothers, as they are also likely to have grown up with narrowly defined appearance ideals and pressures. Consequently, this research suggests that improving mothers' body image, in addition to interventions directly targeting their daughters, may be beneficial.

Very little research has considered the impact of fathers upon the body image of adolescent girls. Although few studies exist, existing research indicates that fathers play an influential factor in their daughters' body image. A cross-sectional study conducted in the US found that fathers' appearance-related teasing was associated with higher levels of body dissatisfaction among 12 to 16-year-old girls (Schaefer & Salafia, 2014). Interestingly, a qualitative study conducted with African American parents of adolescent girls found that parents were not aware that they were participating in the detrimental act of weight-related comments and teasing, as they viewed it as "being playful" (Berge, Trofholz, Fong, Blue, & Neumark-Sztainer, 2015). Fathers may have a long-lasting impact upon the body image of their daughters, as indicated by a recent longitudinal study conducted in the US. Researchers found that paternal comments concerning their adolescent daughter's weight (as reported by daughters)

prospectively predicted their daughters' drive for thinness 20 years later (Klein, Brown, Kennedy, & Keel, 2017). This noteworthy finding indicates that paternal impacts must be brought to attention and undergo further investigation.

6.1.4 Appearance conversations

Appearance conversations include comments and conversations about an individual's own appearance (e.g., 'I look so fat today'), or about someone else's appearance (e.g., 'I wish I had hair like her'). Sometimes appearance conversations are referred to as 'fat talk' and 'body talk'. These types of comments can be positively (e.g., 'You look great, have you lost weight?') or negatively framed (e.g., 'Her skin is so gross, look at those pimples'). These types of comments and conversations can be damaging to an adolescent girls' body image, regardless of whether they are intended to be positive and complimentary, because they tend to reinforce narrowly defined appearance ideals and standards of beauty (Slater & Tiggemann, 2015).

Appearance conversations may occur between siblings, parents, peers, and friends of the same or different gender. One cross-sectional US study explored sibling conversations between sisters and brothers, and found that while talking about body image issues together was related to good sibling relationships, it was concurrently associated with greater body concerns among sisters (Greer, Campione-Barr, & Lindell, 2015). In addition, a Greek cross-sectional study of 230 young adolescent girls found that peer appearance conversations were associated with weight concerns (Thøgersen-Ntoumani et al., 2016). A longitudinal study in the US, which followed 89 young adolescent girls (11 to 13 years-old) across two years, has revealed interesting findings in relation to appearance conversations (Hillard, Gondoli, Corning, & Morrissey, 2016). The girls reported their perception of their mother's encouragement to diet and their mother's personal weight concerns. The study found that the influence of maternal encouragement to diet upon daughters' body image was reduced by mothers' talk of personal weight concerns. Specifically, when both mother encouragement to diet and mother talk of personal weight concerns were high, daughters subsequently experienced a reduced drive for thinness and dieting behaviours compared to when mother encouragement to diet was high and mother talk of personal weight concerns was low.

'Fat talk' is a specific type of appearance conversation, when people talk about their own or others' body weight or shape. There is a lack of research exploring fat talk amongst adolescent girls, but studies have explored the relationship between fat talk and body image in adult populations. A meta-analysis combining results from 35 cross-sectional, experimental, and prospective studies found increased engagement in fat talk was positively related to higher levels of body surveillance, body

shame, perceived pressure to be thin, appearance based comparisons, and internalisation of the thin-ideal (Mills & Fuller-Tyszkiewicz, 2017).

6.1.5 Peer teasing and bullying

Peer teasing and bullying specifically about appearance is prevalent among adolescent girls. In a study of African American girls, 95% said that they had been teased about their weight (Olvera, Dempsey, Gonzalez, & Abrahamson, 2013). In the Czech Republic, 76% of girls reported having been teased about their appearance (Almenara & Ježek, 2015). A longitudinal study found experiencing bullying, including pressures to be attractive from friends and weight-based harassment, was found to be associated with higher body dissatisfaction within a sample of 2,666 US girls (Juvonen, Lessard, Schacter, & Suchilt, 2017). Being bullied has also been found to be positively correlated with perceptions of being overweight (Wilson, Viswanathan, Rousson, & Bovet, 2013), lower self-esteem (Bucchianeri, Eisenberg, Wall, Piran, & Neumark-Sztainer, 2014), increased risk of eating disorders (Copeland et al., 2015), and low self-confidence (Duarte, Pinto-Gouveia, & Rodrigues, 2015). These studies indicate that bullying can influence body image, and researchers have tried to understand how this can occur. Studies from the US have suggested that girls aged 10 to 16 who are bullied are likely to develop higher levels of anxiety and are more likely to compare their appearance to their peers, and consequently experience greater dissatisfaction with their body image. This was found in two studies with sample sizes of 771 and 81 girls respectively (Cook-Cottone et al., 2016; Schaefer & Salafia, 2014).

Cyber bullying has received greater research attention over the past five years, and almost half of adolescents report being a victim (Landstedt & Persson, 2014). In a cross-sectional quantitative study, cyber-bullying was reported by 10 to 15 year old Swedish girls as almost always being related to the victim's appearance, particularly when the victim was a girl (Frisén, Berne, & Lunde, 2014). These findings are perhaps not surprising given the visual nature of social media. Further, another study found that girls who reported being cyberbullied were almost twice more likely than those who did not report being cyberbullied to consider themselves to be fat (Kenny, Sullivan, Callaghan, Molcho, & Kelly, 2017). However, this study was cross-sectional in nature, and consequently does not reveal directions of causality.

6.1.6 Appearance comparisons

Comparing one's appearance to the appearance of others is a common occurrence among adolescent girls (Schaefer & Salafia, 2014; Webb et al., 2014). Social Comparison Theory (Festinger, 1954)

proposes that people often compare themselves to others as a way to understand their own social standing. With regard to appearance-based comparisons, research finds a tendency for people to make upward comparisons, which are comparisons made with people who are perceived to be more attractive than the person making the comparisons (Leahey, Crowther, & Mickelson, 2007). For example, a recent study in Israel found that girls are more likely to make appearance comparisons with thin television characters, compared to larger characters (Te'eni-Harari & Eyal, 2015). Upward comparisons are likely to lead to adverse outcomes, such as body dissatisfaction, due to the discrepancy between a person's appearance and the appearance of the comparison target.

Cross-sectional studies in Australia, Portugal, Israel, and the US have found that adolescents who make more comparisons have poorer body image (McLean et al., 2013; S. H. Mitchell, Petrie, Greenleaf, & Martin, 2012; Te'eni-Harari & Eyal, 2015; Trindade & Ferreira, 2014; Webb et al., 2014). There is a dearth of longitudinal research exploring the relationship between appearance comparisons and body image in adolescents. Only one study has considered this prospectively in the past five years, and found that 12-year old Australian girls who engaged in a higher number of social comparisons, subsequently experienced poorer body image 14-months later (Rodgers et al., 2015).

Research has also demonstrated that the target of comparison is important. In an adolescent sample of 224 Australian 14 to 15 year old girls, Carey et al. (2014) found that comparisons with peers had a greater impact on body image concerns than celebrity or model comparisons. This has also been found in a sample of 227 young women aged 19 years in Australia (Fardouly & Vartanian, 2015). It is unclear why comparisons to peers appears to have such a detrimental impact on body image concerns, but researchers propose that it may be due to peer bodies appearing to be more attainable, and that they are less easily dismissed as manipulated representations in comparison to media images (Carey et al., 2014).

6.1.7 Internalisation

Internalisation is the extent to which a person cognitively 'buys into' socially and culturally defined ideals of attractiveness and takes them on board as their own personal standards for beauty and attractiveness. It is theorised that sociocultural sources of pressure such as the media, peers and parents influence body image through the process of 'internalisation', as explained by the Tripartite Model on page 40. However, very few prospective studies have looked at the relationship between these sociocultural sources and internalisation proposed by the model, particularly among adolescent samples. Nonetheless, recent research in the US and Belgium has continued to show that middle-

adolescent girls who have internalised the thin ideal standard of female beauty are also more likely to report engaging with sexually objectifying media (e.g., fashion magazines and music television; Vandenbosch & Eggermont, 2012) and report feeling pressure from friends to lose weight (Thompson et al., 2017).

In terms of the impact of internalisation on body image, there is both cross-sectional and prospective evidence. In addition to cross-sectional research in Australia and the US showing that high levels of internalisation are related to more body image concerns among girls aged 12 (Rodgers et al., 2014) and more disordered eating behaviours in 15 year old girls (Thompson et al., 2017), two recent studies have considered these relationships prospectively. Firstly, Rodgers et al. (2015) found high internalisation was predictive of high body dissatisfaction in 14 to 15 year old Australian girls 8 months later. Similarly, Dakanalis et al. (2015) found in an Italian sample that internalisation was predictive of self-objectification over a three year period.

Although the research base is growing with regard to how internalisation influences body image, there are still considerable gaps in current knowledge. Perhaps most noticeable in the literature to date is the lack of research concerning how internalisation is related to body image among adolescent girls in countries beyond the US, Europe and Australia.

6.1.8 Self-objectification

The degree to which girls self-objectify (i.e., see themselves as objects to be looked at) has been associated with body dissatisfaction in both cross-sectional and prospective research (Dakanalis et al., 2015; Murray, Rieger, & Byrne, 2015; Tiggemann & Slater, 2014). For example, a longitudinal study of 14-15 year-olds found that self-objectification was predictive of appearance anxiety and feelings of body shame one year later (Dakanalis et al., 2015).

The role of self-objectification on the body image of adolescent girls has been relatively under-researched compared to other influences but is deserving of greater research attention, especially with regard to how strategies to reduce self-objectification may be translated into body image interventions among adolescents.

6.2 Non-specific influences

In this section we review the evidence for a number of distal non-specific factors that are related to body image. Non-specific influencers include general psychological factors, such as mood, stress, anxiety and self-esteem. In addition to body image, these non-specific factors are associated with poor mental health more broadly.

6.2.1 Negative mood and emotions

There is now substantial cross-sectional and prospective evidence for the association between negative affect (i.e., negative mood and emotions) and disordered eating behaviours in Australia, the US and Portugal, including bulimic symptoms (Rodgers et al., 2014), binge-eating (Allen, Byrne, & McLean, 2012; Goldschmidt, Wall, Zhang, Loth, & Neumark-Sztainer, 2016) and dieting to lose weight (Mendes, Araújo, Lopes, & Ramos, 2014). This relationship has also been identified prospectively in non-western contexts (e.g., in China; Jackson and Chen (2014).

However, prospective research indicates that negative affect does not elevate the risk for body dissatisfaction (Allen et al., 2012; Fortes et al., 2016), which suggests that negative affect and body dissatisfaction may serve as independent risk factors for eating pathology. Indeed, several studies in high-income countries (Spain, US and Portugal) have found body dissatisfaction and negative affect to independently predict disordered eating behaviours over time (Ferreiro et al., 2012; Goldschmidt, Wall, Loth, & Neumark-Sztainer, 2015; Goldschmidt, Wall, Zhang, et al., 2016; Mendes et al., 2014), with some prospective studies in Australia finding body satisfaction to predict disordered eating via negative affect (Allen et al., 2012).

6.2.2 Stress and anxiety

Stress and anxiety are emerging as possible risk factors for adolescent girls' body dissatisfaction and disordered eating. In an Australian cross-sectional study, Murray et al. (2015) found that high body dissatisfaction was related to high stress levels, particularly peer stress and feelings of trying to 'fit in'. A longitudinal study of 161 14-year old Australian girls found higher stress levels to predict higher body dissatisfaction one year later (Murray, Rieger, & Byrne, 2013).

Similarly, research has identified associations between anxiety and body image. A cross-sectional study of more than 1000 Spanish teenagers found high body dissatisfaction to be correlated with high trait anxiety (Maganto, Garaigordobil, & Kortabarria, 2016). High levels of anxiety have also been

associated with eating disorder symptoms in third, sixth, and ninth grade girls in the US (Holm-Denoma, Hankin, & Young, 2014). A recent cross-sectional study of more than 1,300 US 10 to 14 year olds found that high anxiety was related to eating disorder symptoms, and this anxiety was associated with being a victim of bullying (Cook-Cottone et al., 2016).

New research has highlighted stress and anxiety as potential influencers with regard to adolescent girls' body image. To further understand the relationship between these constructs, longitudinal studies and research beyond high-income countries is required.

6.2.3 Self-esteem

The direction of the relationship between self-esteem and body dissatisfaction remains unclear. As has been previously highlighted, there is a close relationship between the two constructs, with a wealth of cross-sectional studies identifying an association among both younger and older adolescents (Mitchell et al., 2012; Murphy, Dooley, Menton, & Dolphin, 2016; Murray et al., 2015). One of the most comprehensive studies exploring the relationship between self-esteem and body image over a 13-year period found a reciprocal relationship throughout adolescence, with both constructs influencing one another over time (Wichstrøm & von Soest, 2016). However, the impact of body dissatisfaction on self-esteem was stronger than the converse relationship. Wojtowicz and Von Ranson (2012) also found low self-esteem to predict body image concerns over a 1-year period among 16-year-old Canadian girls. These findings suggest that interventions that target self-esteem may have an impact on body image, however, the weak prospective relationship between the two constructs over time found by Wichstrøm and von Soest (2016) suggests that interventions targeting more specific influences relating to body image may have greater potential for impact.

Researchers have begun to consider the mechanisms by which self-esteem may impact body image in adolescent girls. There is some evidence to suggest that adolescents with low self-esteem are more susceptible to internalising beauty ideals portrayed in the media. In Spain and Portugal, a cross-sectional study of 200 middle-adolescent girls indicated that girls with low self-esteem had higher internalisation (Francisco et al., 2015). A similar finding has been identified among Sri Lankan girls (Omori, Yamazaki, Aizawa, & Zoysa, 2016). In this large scale, cross-sectional study among more than 2000 Sri Lankan girls aged 12 to 18 years, internalisation and body image concerns were found to be highly correlated, but only among girls with low self-esteem. Lastly, a cross-sectional US study of adolescents aged 10 to 17 found that perceived pressure from the media to lose weight was associated with unhealthy weight loss-behaviours only among girls who had low self-esteem (Mayer-Brown,

Lawless, Fedele, Dumont-Driscoll, & Janicke, 2016). Taken together, these studies suggest that self-esteem may serve as a protective factor against some influences on body image concerns. However, longitudinal research is now required to further understand these relationships.

6.2.4 Peer relationships

There is some evidence to suggest that the quality of peer relationships can influence body satisfaction among girls. A cross-sectional study of 216 UK girls aged 13 to 16 found that those who reported poorer peer relationships also reported greater body dissatisfaction (Sharpe, Schober, Treasure, & Schmidt, 2014). Likewise, a large-scale ethnically diverse cross-sectional study comprising 5,147 adolescents in the US found that girls who reported relationship difficulties with their peers were more likely to report not being satisfied with how their body looks (Michael et al., 2014). A longitudinal study of 1,132 Norwegian adolescents found that those who self-reported better quality peer relationships at age 13 showed less increases in body dissatisfaction through later adolescence (Holsen, Jones, & Birkeland, 2012). One prospective Australian study followed 1,197 girls across two years (who were aged 12 years at baseline), and found that girls with higher initial levels of body dissatisfaction subsequently selected peers with similar levels of body dissatisfaction (Rayner, Schniering, Rapee, Taylor, & Hutchinson, 2013). This finding suggests that girls who are dissatisfied with their bodies may choose (consciously or unconsciously) friends who also have concerns, and consequently experience a higher prevalence of appearance conversations. In addition, appearance pressure from dating partners has prospectively been linked to disordered eating in an adolescent sample of 2,909 from China (Jackson & Chen, 2011).

6.2.5 Sport participation

Research exploring the impact of sport participation on body image has yielded mixed results. Cross-sectional research conducted in Spain, the US, and UK has identified higher levels of body dissatisfaction among girls who do not exercise and those who have lower fitness levels (Añez et al., 2016; Goodwin, Haycraft, & Meyer, 2016; Sheinbein, Petrie, Martin, & Greenleaf, 2016). Conversely, a cross-sectional study of more than 2,500 adolescents in Norway found body dissatisfaction to be higher among girls that played team sports compared to girls who didn't participate in sport, or those who engaged in individual sports (Dyremyhr, Diaz, & Meland, 2014). In a cross-sectional study of 453 girls aged 13 to 17 years found elite aesthetic athletes, who participate in sport that emphasizes thinness and associated improvements in performance, such as dance, gymnastics or figure skating, are at higher risk of developing an eating disorder than non-elite aesthetic athletes (Francisco et al., 2013).

Only one study examined the influence of sport participation on body image prospectively. This study used longitudinal data from over 1,000 American adolescents, and found that sport participation had a strong positive impact on body image for girls who initially had higher and more stable body dissatisfaction, compared with those girls who had relatively low levels of body dissatisfaction (Fay & Lerner, 2013). Due to the complexity and inconclusive results regarding the impact of sports participation on the body satisfaction of adolescent girls, it is important that more research is conducted in the area before any recommendations can be provided in relation to promoting exercise as a means to improve adolescent girls' body image.

6.2.6 Self-compassion

Self-compassion is defined as being open to experience, taking a non-judgemental and caring approach to oneself, and accepting that feelings of inadequacy and moments of suffering are intrinsic to human experience (Neff, 2003). Self-compassion is emerging as an area of interest for body image researchers given the potential role it may play in disrupting the pathways by which sociocultural variables may impact a person's body image. Cross-sectional studies among young adult populations have indicated higher levels of self-compassion are associated with less preoccupation with one's body, less concerns about weight, and greater body appreciation (Wasylikiw, MacKinnon, & MacLellan, 2012).

To our knowledge, only two studies have considered the role of self-compassion in relation to body image concerns among adolescents. Firstly, Mosewich, Kowalski, Sabiston, Sedgwick, and Tracy (2011) found that higher levels of self-compassion were related to lower levels of self-objectification among 13 to 16 year old athletes. More recently, Rodgers et al. (2017) found that higher levels of self-compassion were associated with higher levels of body satisfaction among 13 to 18 year olds in the US. These results are encouraging, but require replication adopting prospective research designs. Should these relationships be identified over time, this may be a promising area to target during interventions to promote positive body image and body appreciation.

6.2.7 Perfectionism

For many years, perfectionism has been considered a key risk factor for disordered eating (Shafran, Cooper, & Fairburn, 2002; Vohs et al., 2001). However, only recent research has investigated perfectionism in relation to body image concerns. In a cross-sectional sample of undergraduate students in Canada, Siegling and Delaney (2013) found that young women high in perfectionism were more likely to be invested in their appearance and have low body satisfaction, compared to women

low in perfectionism. Similar results have been identified in a cross-sectional study involving Malaysian Chinese adults (Choo & Chan, 2013). Fewer studies have been conducted among adolescent samples, but the results are similar. Indeed, perfectionism and body dissatisfaction were found to be positively correlated in a cross-sectional study conducted among an adolescent sample of 11 to 18 year old Portuguese girls, with greater levels of perfectionism associated with greater levels of body image concerns (Teixeira, Pereira, Marques, Saraiva, & Macedo, 2016).

A recent cross-sectional study conducted among young US women suggests that self-compassion may play an important role in the influence of perfectionism upon body image (Barnett & Sharp, 2016). Specifically, findings suggest that high perfectionism is related to low self-compassion, which in turn leads to high body image concerns. This study indicates that exploring and encouraging feelings of self-compassion during interventions may foster positive body image among adolescents and young women. However, prospective research is needed to substantiate our knowledge regarding the relationship between these variables.

Progress in the Field

- There is an even stronger evidence base that exposure to media, appearance comparisons, appearance conversations, and internalisation of the thin-ideal, have a negative impact on girls' body image.
- Research is beginning to explore, and has identified the negative impact of, social media and networking sites on body image.
- Self-objectification and its impact on body image is a growing area of interest.
- Prospective research has identified the bi-directional relationship between self-esteem and body image.
- New research has identified self-compassion and perfectionism as potentially important influences on the development and maintenance of body image concerns.
- There is still a predominance of cross-sectional research, however, there is increasing prospective research supporting well-established risk factors for body image concerns.

Future Directions

- Research should consider the potential for positive and protective influences upon body image.
- Research is needed in middle- and low-income countries to explore how girls navigate local and foreign body ideals, and how these inconsistencies may influence their body image.
- A wider range of online and social media platforms (e.g., Instagram, YouTube, Vlogging) should be examined in relation to their influence on body image.
- The impact of fathers upon their daughters' body image should undergo further exploration in prospective research.
- More research is needed to understand the relationship between body image and self-objectification, perfectionism, and self-compassion.

7. Strategies to improve body image among adolescent girls

This section will review research progress over the past five years relating to strategies to promote body confidence among adolescent girls.

Strategies to improve body image:

- *School-based*
 - *Technology-based*
 - *Community-based*
 - *Social policy*
 - **Advocacy**
-

7.1 School-based programmes

School-based interventions, particularly those delivered in a classroom-based setting, continue to be a popular strategy to improve body image in adolescent girls. Schools provide an ideal environment for interventions as they have existing infrastructure in place to deliver lessons, community-wide reach, and the potential for task-shifting the delivery of interventions from highly skilled professionals to trained teachers. In addition, research shows that boys, as well as girls, benefit from body image programmes (Diedrichs, Atkinson & Garbett, under review; Diedrichs et al., 2015). Emerging research suggests that some interventions may be equally effective in co-educational classrooms compared to when they are delivered in single-gender classrooms (Dunstan, Paxton, & McLean, 2017), making the practicalities of intervention delivery convenient in terms of the gender composition of classrooms.

The importance of addressing body image in schools is increasingly recognised by schools and some governments (e.g., Australia), as well as by members of the general public. It is becoming increasingly common to address body image in schools in some US states. For example, in Minnesota, the number of secondary schools delivering lessons to promote body size acceptance has increased from 83.5% to 92.1% between 2008 and 2014 (Larson, Davey, Caspi, Kubik, & Nanney, 2017). Public opinion in the US is also favourable; 77% of a nationally representative sample of adults supported government policy for school curriculums to include content aimed at preventing eating disorders, which commonly includes body image content (Puhl, Neumark-Sztainer, Austin, Luedicke, & King, 2014). Meanwhile in the UK, the House of Commons Education Committee (2015) continues to advocate for personal, social, health and economic (PSHE) education to be compulsory in schools, with body image highlighted as being a core component of this.

7.1.1 Characteristics of successful school programmes

Recent research continues to support the findings of a systematic review published in 2013, which identified common characteristics across successful classroom-based body image programmes (Yager, Diedrichs, Ricciardelli, & Halliwell, 2013). Interventions that include media literacy activities, are multi-session, contain interactive components, and are delivered during early adolescence (e.g., 12-13 years) still show the most promising results in more recent studies (Diedrichs et al., under review; Diedrichs et al., 2015; Sánchez-Carracedo et al., 2016; Wade, Wilksch, Paxton, Byrne, & Austin, 2017; Watson et al., 2016). Given the volume of support for these intervention characteristics, they can be considered well-established common features of successful school-based interventions.

Studies evaluating classroom-based interventions have emerged in countries where previously body image intervention research was scarce. There have been published research trials carried out in Germany (Adametz et al., 2017), Taiwan (Yeh, Liou, & Chien, 2012), Spain (Mora et al., 2017; Sánchez-Carracedo et al., 2016), Malaysia (Ishak, Chin, Taib, & Shariff, 2016), Israel (Golan, Hagay, & Tamir, 2013), and South Korea (Lee et al., 2017). However, the quality of studies outside of the UK, Australia, and the US is often poor, relying on small sample sizes, lacking control groups or, where there is a control group, participants are often not randomly allocated to conditions. There is a continuing need to test whether well-established effective school body image programmes in the UK, US and Australia are equally acceptable and effective in other countries.

7.1.2 Effective school-based programmes

7.1.2.1 Cognitive dissonance-based programmes

Cognitive dissonance programmes, labelled under *The Body Project*, have the largest independent evidence base to support their effectiveness among girls and young adult women (Becker & Stice, 2017). Originally developed by Drs Eric Stice (Oregon Research Institute), Carolyn Becker (Trinity University), and colleagues in the US, cognitive dissonance approaches are effective when

delivered by specialist interventionists (e.g., body image researchers and psychologists) and trained peer leaders, teachers, and health professionals (Becker & Stice, 2017). They have been shown to be effective to among a range of audiences (i.e., sorority groups, university groups, dating couples, adolescents). Importantly for school-based delivery, recent research has found that cognitive

Cognitive dissonance programmes focus on reducing girls' internalisation of appearance ideals and improving body image. They are thought to work by encouraging participants to speak out against appearance ideals through role-play, group discussions, and letter writing.

dissonance approaches are effective in girls as young as 12 years (Halliwell & Diedrichs, 2014; Rohde et al., 2014).

It is important to note, however, that these interventions have only been trialled when delivered to small groups of girls outside of the classroom setting, and when delivered by providers who usually have at least 12-hours of training. There is no evidence currently for their effectiveness among adolescent boys, although recent research shows promise among young adult men (Brown & Keel, 2015; Jankowski et al., 2017).

The Body Project is an intervention for adolescent and university-aged girls. Run in small groups of 6-12, participants are prompted by trained facilitators to critique the thin-ideal standard of female beauty through discussions, role-play, and complete written exercises. One version consists of 4 one-hour weekly sessions and the second consists of 6 shorter (45-minute) sessions for schools that cannot run one-hour sessions. There is also an online version available. See: www.bodyprojectcollaborative.com

As with the 2012 report, cognitive dissonance based programmes continue to be one of the most widely disseminated programmes tackling body image and eating disorder prevention, due to successful partnerships between academic researchers, clinicians, and community stakeholders (e.g. National Eating Disorders Association, Eating Recovery Foundation, Dove/WAGGGS; Becker et al., 2017). Indeed, cognitive dissonance programmes are among the few body image programmes to have been disseminated and researched in multiple countries (Becker et al., 2017).

An online version of *The Body Project*, the *eBody Project*, is also available. In a controlled trial, where college women were randomised to receive the face-to-face version of the Body Project, the online version, or one of two control conditions (a video or a brochure), researchers found that both versions of the programme had positive effects for young women's body image (Stice, Durant, Rohde, & Shaw, 2014). However, when comparing the intervention groups, researchers found that the positive effects for the online version faded more quickly than the face-to-face condition (i.e., the effects were smaller for the online group at one- and two-year follow-up).

7.1.2.2 Media Smart

Media Smart is an 8-session classroom-based intervention for girls and boys. It focuses on developing media literacy, exploring gender stereotypes, and encouraging students to speak out against appearance pressures through activism and advocacy. *Media Smart* is designed for delivery to students in late primary school or early high school. There is also an online version available.

See: <http://www.flinders.edu.au/sabs/psychology/services/flinders-university-services-for-eating-disorders/mediasmart/>

Media Smart was identified in the 2012 report as a school-based intervention with a strong research base to support its effectiveness. Developed by Drs Simon Wilksch and Tracey Wade at Flinders University in Australia, research continues to support its effectiveness up to 30-months after the intervention is delivered (please note, this intervention is different to the school intervention produced by the Media Smart organisation in the UK). Recent studies have found participation in the programme reduces concern about weight and body shape in adolescent girls relative to an active control group (i.e., where students learnt about holistic health) up to 12-months following participation (Wilksch et al., 2015). The positive effects of *Media Smart* were also significantly stronger than an active control group, who received an eating disorder prevention intervention targeting internalisation and social comparisons. Specifically, adolescents who took part in *Media Smart* reported significantly lower eating concerns and perceived pressure to be thin at 6-months follow-up. This trial also found that girls who took part in *Media Smart* had half the rate of onset of clinically significant concerns about shape and weight than the control group at 12-month follow-up, suggesting that the intervention has clinical significance as well as addressing general population levels of concern.

However, it is worth noting that despite these positive effects, they have yet to be replicated when intervention delivery is task-shifted to more cost-effective providers (e.g., teachers). A small uncontrolled pilot study of *Media Smart* with teacher-led delivery found no effect on adolescent body image or related factors (Wilksch, 2015).

Most recently, *Media Smart* has been adapted into a nine-week online programme with positive results among young adult women. In a randomised controlled trial with young women in New Zealand and Australia, an online version of *Media Smart* was compared to *Student Bodies*, a well-established online eating disorder prevention programme, as well as a control group (Wilksch et al., in press). Women randomised to the *Media Smart* condition reported significantly lower internalisation than the *Student Bodies* or control groups immediately following exposure to the

programme. At 6-months follow up, women who had received *Media Smart* reported significantly higher quality of life specifically in relation to their mental health, and significantly lower depression scores than women who took received *Student Bodies* or the no-intervention control group women. At 12-months, women who received *Media Smart* online reported significantly fewer disordered eating behaviours than control group women.

7.1.2.3 Interventions targeting sociocultural risk factors

Beyond cognitive dissonance and media literacy interventions, there are a group of programmes based on *Happy Being Me*, an intervention originally developed by Drs Susan Paxton, Sian McClean and colleagues at La Trobe University in Australia, which target key sociocultural risk factors for poor body image, including peers and the media. There are a number of different versions of *Happy Being Me* developed and trialled. Each one, along with the research evidence to support their effectiveness, will be discussed in turn.

Interventions targeting sociocultural risk factors use a combination of media literacy and cognitive dissonance approaches, whilst also targeting appearance comparisons and conversations as potential threats to body satisfaction.

Happy Being Me

Happy Being Me is a school-based programme that aims to help young teens build a peer environment where they can feel positive about themselves and their bodies, and to help others around them feel less pressure to live up to media standards for appearance. The programme does this by targeting media literacy and appearance comparisons. The programme is for students in late primary school and early secondary school and consists of six 50-minute interactive sessions that are designed for classroom delivery by a trained facilitator or informed teacher. Recently, a version has been adapted to specifically target social media. See: <https://www.mindmatters.edu.au/tools-resources/programs-guide>

A number of research trials now support the effectiveness of *Happy Being Me*. This intervention was first trialled with 12-13 year old girls in Australia and resulted in reductions in internalisation, appearance-based comparisons, and appearance conversations, as well as improvements in body satisfaction and self-esteem, compared to a non-randomised control group, both immediately following the intervention and at 3-months follow-up (Richardson & Paxton, 2010). *Happy Being Me* was further trialled with a younger age group (10-11 years) in mixed-gender classrooms in the UK with similar results, although at 3-months follow-up only the positive change in body satisfaction was maintained (Bird, Halliwell, Diedrichs, & Harcourt, 2013). Reasons for lack of positive effects at three months may be due to the relatively small sample size in this study contributing to a lack of statistical

power to detect results, or it may be that for this trial the intervention was delivered in three sessions, instead of five, meaning stable change was not possible in such a short amount of time.

Happy Being Me has been adapted as a social media literacy intervention. A recent pilot study has shown promising results, with improvements seen in 13-year-old girls' body image and media literacy after taking part in the intervention (McLean, Wertheim, Masters, & Paxton, 2017).

A recent study examined if *Happy Being Me* could be effective when delivered in a co-educational secondary school setting as opposed to single-sex settings, for which it was originally developed (Dunstan et al., 2017). Through random allocation, the researchers compared the effects of *Happy Being Me* in Australia when delivered in single-sex classrooms to when it is delivered in co-educational

classrooms. There were no significant differences in intervention impact between co-educational and single-sex delivery conditions. In both conditions, improvements were observed (relative to a control condition) in girls' body satisfaction immediately after the intervention, and girls reported lower levels of internalisation, less appearance-based comparisons, and higher self-esteem six-months after receiving the intervention.

Due to the multifaceted nature of *Happy Being Me*, it is difficult to determine the specific aspects of the intervention that are crucial for its effectiveness. A recent study aimed to address this question by separating out the key messages of *Happy Being Me* (McLean, Wertheim, Marques, & Paxton, 2016). Using random allocation, school classes were assigned to receive the media literacy or the appearance comparison resources from *Happy Being Me*. Results provided strong support for the appearance comparison section having sustained impacts on body satisfaction and a number of related risk factors. For media literacy content, improvements were also observed in risk factors for body dissatisfaction, but these were not maintained at 3-month follow up. This study highlights the importance of breaking down effective interventions to identify the components that are driving the positive effects, which in this case, comprised the material addressing appearance comparisons.

The research evidence supporting the effectiveness of *Happy Being Me* is promising. However, the intervention has yet to be trialled when delivered by community members (i.e., teacher-delivery). This is an important next step in understanding the feasibility and scalability of *Happy Being Me* in a real world context.

Dove Confident Me

Dove Confident Me is a school-based intervention designed for delivery by teachers to secondary school students aged 11-14 years. This intervention targets unrealistic appearance ideals, professional and social media, celebrity culture, advertising, appearance-focused conversations, comparisons and body activism. It can be delivered in either one 90 minute workshop or five 45 minute workshops depending on time constraints to 8 to 16 year olds, with the 5-session version recommended for sustained effects. See: <http://selfesteem.dove.com>

Dove Confident Me was based on *Happy Being Me*. The original *Happy Being Me* intervention was adapted to be suitable for girls and boys, to include content on social media, and the materials were re-designed for teacher-led delivery. At present, two randomised controlled trials have been conducted to assess the efficacy and effectiveness of *Dove Confident Me*. It is noteworthy that both trials measured the effectiveness of the intervention when delivered by teachers, not specialist interventionists, to mixed-gender classrooms. This point is crucial, given that in order to disseminate school-based programmes at scale, they must be able to be effectively delivered by community members.

In the first trial, researchers trialled the 'single session' version of the programme with 11-13 year olds in the UK (Diedrichs et al., 2015). Schools were randomly assigned to one of three conditions; teacher-led delivery, researcher-led delivery, or lessons-as-usual control. Despite the intervention being very brief (90 minutes), immediate post intervention improvements were seen in girls with regards to body esteem, mood, disordered eating symptoms, and life engagement. Encouragingly, all of these positive changes were observed in the teacher-delivery condition, whereas researcher delivery only saw improvements for life engagement. These positive impacts were not maintained at follow-up 4-9 weeks later, providing further support that multi-session interventions are required to make sustained changes to girls' body image. Contrary to hypotheses, perceived pressures relating to appearance increased immediately following participation in *Dove Confident Me Single Session*, but this is likely to be due to the intervention identifying and challenging appearance pressures, therefore making them salient in the minds of the girls. These effects were not maintained at follow-up.

In the second trial, researchers evaluated the effectiveness of the five-session version of *Dove Confident Me*, again, with 11-13 year olds (Diedrichs et al., under review). This trial was comprised of two conditions; teacher-led delivery and lessons-as-usual control. The findings of the study indicated positive improvements on girls' body esteem that were sustained at 6-month follow-up. Further, delayed improvements were also identified among secondary outcomes, including self-esteem, life

engagement, and appearance-related teasing 12 months later. Due to these promising findings, researchers at the Centre for Appearance Research are currently evaluating whether the intervention has sustained impact beyond one year by collecting data at 2- and 3-year follow-up. Furthermore, a replication trial is currently being conducted to evaluate the 5-session version of *Confident Me* in Portugal by the University of Porto.

Overall, these two trials provide strong support for *Dove Confident Me* as an effective intervention for improving body image among adolescent girls. In addition, they demonstrate *Dove Confident Me* as an intervention that can be delivered effectively by non-specialised teachers. The results also demonstrate the longest sustained effects on body image observed in a programme delivered by teachers.

7.1.2.4 Whole-school strategies

The Body Confidence Campaign Toolkit for Schools was launched by the Be Real Campaign, founded by YMCA and Dove, in January 2017. Aimed at secondary schools, it is made up of guidance, materials and advice for schools on how to address body image, including staff training, school policies, classroom programmes, posters, and assembly presentation materials.

See: <https://www.berealcampaign.co.uk/schools/>

The *Body Confidence Campaign Toolkit for Schools* was launched in the UK in 2017 by the Be Real Campaign. It adopts a whole school approach to tackling low body confidence in 11 to 18 year olds. Rather than comprising schools lessons alone, this strategy aims to improve the knowledge and capabilities of all school staff to promote body confidence. Additionally, it involves students, parents, and community partners (i.e., school nurses, catering staff, faith organisations).

For teachers, the toolkit sets out clear guidelines regarding how to talk to adolescents about body confidence, with hints and tips of what to say and what not to say. It also provides examples of how body confidence messages may be incorporated into all aspects of the school curriculum (e.g., investigating how the media portrays the ‘ideal’ body shape in media studies, creating artwork representing appearance diversity in art). The campaign also recommends schools to undertake body image lessons as part of their PSHE curriculum, whereby schools are specifically guided towards using programmes supported by a strong evidence base, such as *Dove Confident Me*.

The toolkit also seeks to engage and empower students to take ownership of body confidence in their school. The toolkit encourages students to create leaflets or posters, write a piece for the school website, or take to social media to spread the message of what it means to be body confident.

For parents, the toolkit provides them with a brief list of things to do and things not to do, both to improve their own body image and that of their child. These include activities like celebrating diversity and trying not to talk about their own appearance, or the appearance of others. The materials then guides parents to the Dove Self Esteem Project's Website for Parents, should a parent wish to find out more.

Whilst suggesting promise, this initiative is yet to be formally evaluated. The cohesive involvement of teachers, students, parents, and wider support staff is encouraging. In addition, this should triangulate the information students receive from many aspects of their lives, from peers to parents to teachers, which is likely to engender the greatest change among adolescents. While theoretically this should have an impact on body image among adolescents, to date there is no strong evidence to indicate that whole school approaches are effective and more research is needed.

7.2 Technology-based interventions

Technology, including the internet, smart phones, and social media, may provide an effective and sustainable platform for the delivery of interventions that aim to improve body image and prevent eating disorders. However, very few technology-based body image interventions have been developed and well-evaluated among adolescent populations. A recent meta-analytic review identified 20 studies evaluating online interventions aimed at decreasing eating disorder symptoms (many of which addressed the issue of body image; Melioli et al., 2016). The interventions almost exclusively targeted young women who have expressed concerns with their body image and followed the principles of cognitive-behavioural therapy (an approach that focuses on how thoughts, beliefs, and attitudes affect feelings and behaviour). The review found that internet-based programmes can effectively reduce body image concerns, disordered eating, and related risk factors in non-clinical and high risk populations.

Some research suggests that online body image interventions may be less effective than face-to-face interventions with regard to achieving long-term sustained changes to body satisfaction. Two studies found that there were no immediate differences between online and face-to-face delivery of *The Body Project* with regard to body image and related factors (Serdar et al., 2014; Stice et al., 2014; Stice,

Rohde, Shaw, & Gau, 2017). However, differences in impact became evident when researchers considered sustained impact. Specifically, face-to-face interventions were more effective over time than online interventions (Stice et al., 2014). Why online interventions tend to be less effective than face-to-face interventions is unclear. Recent qualitative research suggests that **group support is considered important to users and that this may not always be present during online interventions** (Shaw, Rohde, & Stice, 2016). Ways to improve and include spaces for social support should be considered when developing online interventions.

7.2.1 Effective online programmes

Bodi-Mojo

Bodi-Mojo is an internet-based programme that promotes health behaviour change through technology and social engagement, offering a personalized experience by providing relevant information and feedback, goal-setting, specialized body image and related content, interactive games and quizzes, and videos that are specific to this adolescent age group. The programme promotes a holistic approach to body image and self-care, and the feedback provided to the participants (based on responses to quizzes) is designed to bring awareness to particular attitudes and behaviours that could potentially be problematic in each of the content areas. See: <http://www.bodimojo.com/>

Bodi-Mojo has been trialled in a classroom-based setting among 14-16 years olds in the US in one study (Franko, Cousineau, Rodgers, & Roehrig, 2013). Groups were randomly allocated to use *Bodi-Mojo* for four weeks in health class, whereas control groups had their health classes as usual. Girls that engaged in *Bodi-Mojo* reported significantly lower body dissatisfaction, less appearance-based comparisons, and improvements in body satisfaction, compared to the control groups. However, these effects were not maintained at 3-month follow-up. A lack of sustained results is again likely due to the low dose of the intervention. Ways to encourage sustained engagement with an internet-based intervention remains an important area for future research.

Student Bodies

Student Bodies is an 8-week online programme aimed at improving young women's relationship with food, disordered eating behaviours, and the way they feel about their bodies. *Student Bodies* has primarily been used amongst university students aged 18 to 25 since 1995. The programme includes activities such as self-monitoring logs and journal entries, which are reviewed by coaches and addressed in weekly, individualised feedback.

Research evidence for *Student Bodies*, an online eating disorder prevention programme for young adults, continues to grow. *Student Bodies* adopts a cognitive behavioural approach to eating disorder prevention and comprises 8 structured weeks of reading and homework, as well as a discussion board for emotional support. Saekow et al. (2015) trialled a ten-week version of *Student Bodies* with young women, and found it to be both acceptable and successful in reducing weight and shape concerns, eating-related psychopathology, and psychosocial impairment (Saekow et al., 2015). While the programme is a good example of an effective online body image intervention, it has not been evaluated or adapted for adolescent girls specifically.

Dove Self-Esteem Project Website for Parents

The Dove Self-Esteem Project Website for Parents is equipped with online articles, resources and tools concerning 5 different topics of body image and self-esteem; 'family, friends & relationships', 'respecting & looking after yourself', 'teasing & bullying', 'media & celebrities' and 'talking about appearance'. Also on this site is a downloadable PDF entitled 'Uniquely Me'. This is a guide for parents to build girls' body confidence, and contains advice, articles and activities, to help parents identify any self-esteem issues that may be affecting their daughter.
See <http://selfesteem.dove.com>

The *Dove Self Esteem Projects Website for Parents* is an online information hub that has been rigorously evaluated. It specifically targets adolescent girls' body image via an online intervention for their parents. A randomised controlled trial found that mothers briefly (30-60 minute) viewing the website resulted in improvements to mothers' self-esteem, weight esteem, and reduced negative affect, compared to control groups over a 12-month follow-up period (Diedrichs et al., 2016). Mothers also reported having significantly more conversations with their daughters about body image and were more likely to report that they had sought additional help for body image concerns since viewing the website. Improvements for daughters were identified at 6-week follow-up, as indicated by increased self-esteem and reduced negative affect, but these were not maintained at 12-month follow-up. Importantly, this study found that providing mothers with a tailored pathway via the website significantly improved the effectiveness of the website. However, studies have identified disagreement within mother-daughter dyads in relation to their opinion of the most important aspects of body image to learn about (Garbett & Diedrichs, 2016; McLaughlin, Belon, Smith, & Erickson, 2015). It may therefore be important to include the preferences of both mothers and daughters when tailoring content for the most effective results.

7.2.2 Other online approaches

Beyond online programmes that specifically aim to improve body image among girls and women, it is also important to consider the influence of more organic techniques, strategies, and trends online. For example, social media has increased the visibility of women who do not fit the dominant appearance ideal (Fischer & Scaraboto, 2013), which may ease pressure to conform to one uniform standard of beauty. One experimental study considered the impact of viewing self-compassion quotes on Instagram on the body image of young women (Slater, Varsani, & Diedrichs, 2017). The researchers found that exposure to self-compassion quotes resulted in greater body satisfaction and body appreciation in young women compared to a control group who viewed appearance-neutral images. More research is needed to understand the potentially positive impacts of social media, and how social media may offer a forum for body positive interventions, among adolescent girls.

7.3 Community-based programmes

Free Being Me

Free Being Me is a cognitive dissonance based intervention where girl guides and girl scouts learn that body confidence and self-esteem come from valuing their bodies, standing up to social pressures, and supporting others to be more body confident. Based on *The Body Project*, there are 5 sessions, each comprising 90 minutes, delivered once a week for 5 weeks. Scout/Guide leaders deliver these sessions to Guide/Scout groups (girls-only and boys-girls mixed), from ages 7-14. See: free-being-me.com

The *Free Being Me* programme has been implemented in 139 countries to over 3 million young people, due to joint efforts from The World Association of Girl Guides and Girl Scouts (WAGGGS) and the Dove Self-Esteem Project. A recent qualitative study of 51 of these countries found that leaders of the programme considered *Free Being Me* to be a valuable, timely, and effective intervention for improving girls' body image and enjoyable to deliver (Craddock et al, manuscript in preparation). While proven acceptable, further research is necessary to better understand the impact of Free Being Me on girls' body image.

7.4 New developments in body image interventions

7.4.1 Task-shifting

Task-shifting is way of increasing the scalability of an intervention. It involves shifting the delivery of interventions from highly skilled expert or clinical providers to a broader range of individuals with less

training and expertise in the area of body image and psychosocial interventions. In a school-based setting, this would comprise having the teachers deliver the programme, for example. In a community setting, peer leaders in Guides/Scouts may deliver a programme, as an example of task shifting. In recent years there has been a greater focus on the efficacy of task shifting.

There are a number of reasons why task-shifting interventions is important. Firstly, shifting the delivery to individuals with less training and fewer qualifications has potential to make an intervention more cost-effective, if the delivery can be shown to be comparable. Secondly, in terms of scalability of interventions, there are a limited number of specialist providers in the field, therefore dissemination without task-shifting is limited. Lastly, some qualitative research has suggested that students prefer the delivery of interventions by people already known to them, such as a teacher or a peer leader, as it increases comfort in the classroom, and it gives them a point of contact should issues arise further down the line (Garbett, Diedrichs, & Atkinson, manuscript in preparation).

Although previous evidence has suggested that the delivery of interventions by highly skilled interventionists (i.e., psychologists) is most effective (Stice, Shaw, & Marti, 2007), more recent research demonstrates that task shifting to less-specialised providers can produce positive results, provided brief (at least 90-120 minutes) training is provided (Diedrichs et al., 2015; Halliwell, Jarman, McNamara, Risdon, & Jankowski, 2015; Sharpe, Schober, Treasure, & Schmidt, 2013; Wilksch, 2015).

In a school setting, there has been one study comparing specialist delivery to teacher delivery within a randomised control trial (Diedrichs et al., 2015). The study found that teacher delivery of *Dove Confident Me: Single Session* had significantly more positive outcomes for girls than in the researcher delivery condition. This finding was despite

Several studies now show that body image interventions can be delivered effectively by teachers and peer leaders, provided adequate training is provided.

researchers being rated by research assistants as more competent and completing significantly more of the lesson content than teachers. This study provides the strongest evidence to date that teachers can effectively deliver body image content to their students, provided teacher training is provided.

Similar findings have been reported in other contexts. For example, in the US, *The Body Project*, an effective eating disorder prevention programme based on cognitive dissonance, has been shown to be effective when delivered to university students by trained clinicians or peer leaders (Stice et al., 2017).

7.4.2 Cost-effectiveness

In recent years, researchers across the fields of body image and eating disorder prevention have highlighted the need to consider the economic costs and savings of implementing body image intervention programmes (Austin, 2016; Halliwell et al., 2014). That is, quantifying how much policy makers can both expect to spend and subsequently save as a consequence of implementing a body image programme at scale. There have been several calls-to-action by academics to prioritise policy translation in research and to increase the potential for large-scale dissemination with government support. However, as yet, this has not been achieved.

More intense strategies with personal contact prove to be the most cost effective way to disseminate online body image interventions (Moessner, Minarik, Ozer & Bauer, 2016).

It is encouraging to find that task-shifting the delivery of face-to-face interventions to less-specialised providers is both feasible and effective. Using providers already embedded within a community may allow for greater and more cost effective delivery of developed interventions at scale. Progress examining how to best disseminate effective online interventions, however, remains unclear. One of the only studies to consider the cost effectiveness of disseminating an online body image intervention examined dissemination via schools (Moessner, Minarik, Özer, & Bauer, 2016). Five separate dissemination techniques from the cheapest method (sending advertisement materials to a school) to most expensive (holding presentations and workshops at schools) were compared. The study found that the most expensive strategy, which included a face-to-face presentation, was most effective (i.e., more students accessed the website) and it was also the most cost-effective method in terms of costs per page view.

7.4.3 Mindfulness and embodiment-based techniques

Mindfulness-based approaches to body image: Mindfulness is about paying attention in the present moment, without judgement. It is about attending to and acknowledging current experience as it is in the moment, recognising thoughts and feeling as just products of the mind that come and go, and adopting an attitude of curiosity, kindness, compassion, and acceptance towards one's own experiences. A mindfulness-based approach to body image uses these components of mindfulness to address thoughts and feelings adolescents might have about their body and appearance.

New approaches are currently being trialled for their potential effectiveness to improve body image in schools. These approaches are primarily concerned with fostering positive body image and self-compassion, as opposed to reducing negative body image.

Mindfulness has received increasing attention as a potentially useful therapeutic strategy to improve mental well-being. It involves the psychological process of bringing one's attention to experiences occurring in the present moment in a non-judgemental manner. If the individual becomes aware that their thoughts are drifting away, they are encouraged to notice this before bringing their attention back to the present moment, without reacting or judging themselves.

Adopting a mindfulness-based approach to body image in the classroom has shown promising results in a randomised controlled trial with single-sex classrooms of older adolescent girls, with six month follow-up data showing improvements in weight and shape concerns, eating behaviours, and sociocultural pressures compared to a control group (Atkinson & Wade, 2015). Indeed, results for mindfulness in this study were comparable to a dissonance-based approach, suggesting that mindfulness may be a promising area for interventionists to explore in the future. However, further research is necessary before mindfulness can be confidently recommended as an approach to improve body image in schools. Currently, a large scale trial is being run to compare the effectiveness of mindfulness-based interventions to dissonance-based and sociocultural interventions at the Centre for Appearance Research (CAR).

Researchers have suggested that participation in embodied practices such as yoga may also be an effective means to foster positive body image and reduce self-objectification (Cook-Cottone, 2016). However, currently few studies have been conducted. A small pilot study looked at the impact of practising yoga in physical education classes on the body image and self-objectification among older adolescents (Cox, Ullrich-French, Howe, & Cole, 2017). The study found that participation in 12-weeks of yoga based physical education reduced self-surveillance (a key component of self-objectification) in girls compared to girls who took part in normal physical education classes. Another recent study considered yoga participation to improve body image in younger children in the UK (Halliwell, Slater & Jarman, under review). This study found that although the body image in students that took part in yoga exercises improved, so did the body image of control students who had physical education lessons as usual. The lack of findings from this study may be due to students only receiving four lessons in yoga, as opposed to 12 in Cox et al. (2017) study. More research using a randomised controlled design are required.

7.5 Social policy and macro-level interventions

Societal wide macro-level interventions have increased in recent years to alleviate appearance pressures. Some Governments have become increasingly involved in setting standards for how advertisers can market their products. Governments in Israel and more recently in France have introduced legislation that models must have a body mass index of over 18.5, and there must be disclaimer labels when photo retouching and editing has occurred in advertisements. The US are following suit, with 'The Truth in Advertising Act of 2016' calling for the Federal Trade Commission to develop a regulatory framework for advertisements that use retouching to change a model's appearance. However, this has yet to be passed while further investigations into the issue continue.

Similar measures have been put in place regarding skin whitening product advertising. In India, the Advertising Standard Council set guidelines (however, not laws) that no advertisement produced in India can associate failure, depression, or negativity, with dark skin (Advertising Standards Council of India, 2014). In some African countries (such as Kenya, Nigeria, South Africa, Zimbabwe, Ivory Coast, and most recently, Ghana), governments have put a blanket ban on certain skin lightening products containing mercury and hydroquinone due to their damage to skin, however, these products still remain widely available in these countries (Gbetoh & Amyot, 2016).

Along with government initiatives, there are plenty of examples of businesses, advocacy groups, charities and ambassadors for positive body image that are collectively trying to either change how the media promotes body ideals or promote acceptance and diversity of different body types. In business, we have seen great strides made in diversifying models and making visible a broader range of women. From Mattel producing Barbie dolls of different skin tones and body shapes, to Beyoncé's label Ivy Park collections specifically being modelled by minority groups, increasingly companies are diversifying the women who represent them. Since July 2016, the Mayor of London, Sadiq Khan, implemented a ban on advertisements that promote unrealistic or unhealthy body shapes to be displayed in or around London transportation (Transport for London, 2017). However, there are no studies evaluating the effectiveness of these initiatives. Furthermore, some consumers have criticised companies for 'empowertising', 'femvertising', and for co-opting body image and feminist issues to make profit.

"Nobody should feel pressurised, while they travel on the Tube or bus, into unrealistic expectations surrounding their bodies and I want to send a clear message to the advertising industry about this."
– Mayor of London, 2016

There are also recent examples of body positive role models gaining popularity and celebrity status through their advocacy work. Body positive role models such Taryn Brumfitt, Megan Jayne Crabbe and Erin Treloar are just some of the women leading the way with this movement. Taryn Brumfitt, for example, posted an unconventional 'before and after' photo on social media, showing how much happier she was after she stopped being at war with her body. This photo, although intended for only her circle of friends, went viral, being seen by over 100 million people worldwide. Taryn has since produced a documentary about body positivity, which has been screened worldwide. Similarly, Megan Jayne Crabbe, a young woman from London, has gained a following of over 880,000 followers on Instagram for spreading her body positivity messages. She has also recently released a book, '*Body Positive Power*', which is currently a Number One Bestseller on Amazon UK. More generally, body positive hashtags are being increasingly used on social media, with #bodypositive, #loveyourbody and #effyourbeautystandards all having been used over 2.5 million times on Instagram alone.

These types of initiatives are also occurring in low- and middle-income countries. In India, the '*Dark is Beautiful*' campaign, started in 2009, challenges the belief that the value of people is determined by the fairness of their skin. In April 2017, the *Times of India* placed its own advertisement in the paper aimed at parents seeking a suitable partner for their daughter via a dating agency. The newspaper requested that within the description of their daughter, parents report on non-appearance related attributes (e.g., education, career) prior to any mention of her appearance-related aspects, such as skin colour.

Evidently, the costs, problems and consequences of having narrowly defined and unrealistic appearance ideals for girls and women are becoming more widely recognised within the general population.

7.5.1 Evaluation of macro-level interventions

Although the social policy and macro-level initiatives described above may be positive steps towards promoting body confidence and reducing body dissatisfaction among young girls and women, most of these approaches have not been systematically evaluated. It is therefore unclear as to whether they are effective in leading to measurable improvements in body image.

A few initiatives have received research attention with positive findings. In 2014, researchers in the US evaluated a national social marketing campaign on university campuses, *Fat Talk Free Week*, aimed at reducing appearance conversations and fat talk more specifically. Researchers found that girls aged

18-22 years spoke less negatively about their own bodies following exposure to the campaign (prior to the campaign, 50% of girls spoke negatively about their own appearance, compared to 34% after). After viewing the campaign, girls were also less likely to make social comparisons around appearance (Garnett et al., 2014). Similarly, a study evaluating the *Aerie Real* campaign (an advertising campaign for an underwear and fitness-wear brand using models that have not been digitally manipulated) found that young women who score high on appearance comparisons reported a smaller decrease in body satisfaction after viewing *Aerie Real* images, compared to similar girls who viewed digitally manipulated images from previous *Aerie* campaigns (Convertino, Rodgers, Franko, & Jodoin, 2016). This suggests that *Aerie*'s un-retouched images may be less harmful to body image than other retouched images.

The impact of disclaimer labels on advertisements has received some research attention. Disclaimer labels are notices on advertisements to disclose when digital manipulation has taken place. Studies in the US and Australia have shown that 'retouched' disclaimer labels have no benefit on women's body satisfaction (Ata, Thompson, & Small, 2013; Tiggemann, Slater, Bury, Hawkins, & Firth, 2013). If retouched disclaimer labels are specific (i.e., point out the body parts that have been retouched), research shows that they may have a negative impact on body satisfaction for some women (Bury, Tiggemann, & Slater, 2016; Tiggemann et al., 2013). In terms of the impact of 'retouch free' disclaimer labels, the research is inconclusive, with some research finding these can positively impact women's body satisfaction (Cornelis & Peter, 2017) and other research finding they have no beneficial impact (Tiggemann, Slater, & Smyth, 2014). All of the research exploring disclaimer labels has been conducted among university-aged samples of women. As yet, we do not know of their potential impact on adolescent girls. When asking consumers what they thought of disclaimer labels, researchers found adolescents were in favour of the use of disclaimer labels, more so than the adult sample (Paraskeva, Lewis-Smith, & Diedrichs, 2017). Evidently, however, there is limited empirical support for the effectiveness of disclaimer labels in improving body image.

Whilst these evaluations of macro-level approaches to tackling body image concerns are promising, they highlight the need for further research, not least, to ensure that well-meaning initiatives 'do no harm', but also due to the pace with which macro-level change can happen, particularly with the advent of social media (Bell, Rodgers, & Paxton, 2016). These macro-level approaches certainly demonstrate the potential to reach lots of adolescent girls and young women globally, however, it can be difficult to measure the impact of these campaigns in controlled research studies.

Progress in the Field

- There continues to be a growing evidence base for interventions targeting the sociocultural risk factors for poor body image (e.g., *Happy Being Me*, *Dove Confident Me*).
- Research has demonstrated the effectiveness of task-shifting the delivery of school-based interventions to teachers.
- Interventionists are increasingly making use of the internet as a platform to develop and disseminate body image interventions, but research indicates online interventions may be less effective than face-to-face interventions.
- Intervention research is beginning to move beyond passive control groups, to active control groups, sometimes comparing different types of programmes, or delivered in different formats or contexts.
- Mindfulness-based programmes to improve body image is a new area of intervention research.
- Some companies have instigated initiatives to increase appearance diversity and to address body image, however, some consumers have criticised companies for co-opting body image and feminist issues to sell products, while other consumers have responded positively.

Future Directions

- It is important to understand and harness the potential of modern technology, particularly social media, to improve body image among young girls.
- Despite parents having a large role to play in the development of their daughters' body image, very few intervention strategies focus on this population.
- Intervention evaluation has almost unanimously been conducted in high-income countries – there is a need to adapt and evaluate the effectiveness, feasibility and acceptability of interventions in low- and middle-income countries.
- There is a need to compare the influence of interventions on different age groups, to uncover which interventions are best suited to different ages throughout adolescents.
- Research should both explore the potential impact of current interventions upon positive body image, and develop interventions specifically targeting positive body image.
- Research is needed to better understand the impact of macro-level and social policy interventions.

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Appendices

Appendix 1: Search strategy for database search

Inclusion criteria: Published between 2012-2017; in English; study conducted with humans (i.e., not animals).

Exclusion criteria: Excluded if article published in *Body Image*, *International Journal of Eating Disorders* or *Eating Behaviours*.

The following search terms were used for the database *PsychInfo*. Articles were identified if they contained any term in the 'adolescent girls' column *and* any term in the 'body image' column.

Adolescent girls	Body image
Girls	Body image
Adolescen*	Body dissatis*
Teen*	Body esteem
Femal*	Body appreciat*
School	Body positive*
Child*	Body ideal
Transgender	Body size
Daughter*	Appearance
	Appearance invest*
	Appearance Importan*
	Shape concern
	Shape dissatis*
	Weight concern
	Weight dissatis*
*all possible endings	

The following search terms were used for the database PubMed. Articles were identified if they contained any term in the 'adolescent girls' column *and* any term in the 'body image' column. The terms did not differ between databases, although the truncation method (replacing word endings with a symbol) were adapted for *PubMed* due to the medical nature of this database identifying a large number of papers irrelevant to the study of adolescent girls' body image.

Adolescent girls	Body image
Girls	Body image
Adolescent/adolescents/adolescence	Body dissatis*
Teen/teenager/teenagers/teenage	Body esteem
Female/females	Body appreciation
School	Body positive/body positivity
Child/children/childrens	Body ideal
Transgender	Body size
Daughter/daughters	Appearance
	Appearance invest*
	Appearance Importan*
	Shape concern
	Shape dissatis*
	Weight concern
	Weight dissatis*
*all possible endings	
Bold text are changes made from original search	

Appendix 2: Research designs and measures

How is body image measured?

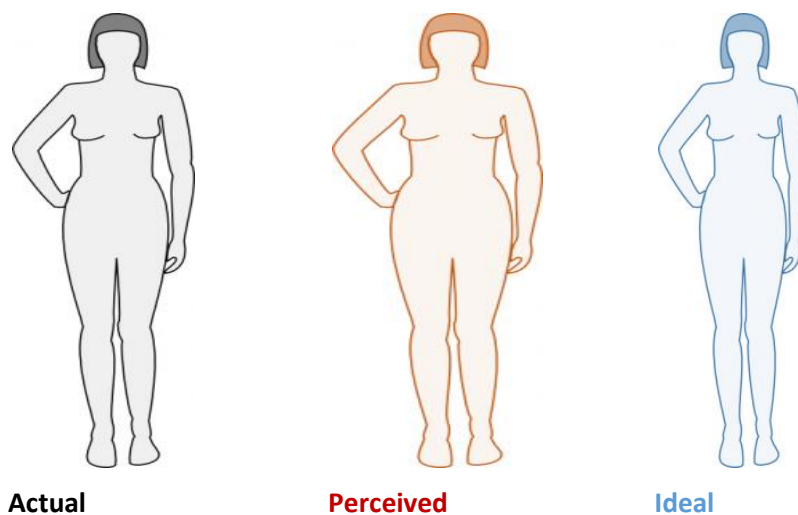
Due its multidimensional nature, when assessing body image it is important to consider affective, cognitive, behavioural, and perceptual measures. The most common form of measurement in body image research tends to be self-report questionnaire batteries that include validated affective, cognitive and behavioural measures.

Perceptual measures

A perceptual body size distortion occurs when there is a discrepancy between a person's *actual* body size and their *perceived* body size. Body size distortion is correlated with a number of negative outcomes (e.g., disordered eating) and some affective and cognitive measures of body image. It therefore provides one way to measure negative body image. There are various techniques for assessing body size distortion; including those that measure specific body sites and those that use whole body assessments (Gardner, 2011). These techniques can also be used to assess another aspect of body dissatisfaction by measuring the discrepancy between a person's *perceived* and *ideal* body size. Perceptual measures, with the exception of figure rating scales, tend to be used primarily in small-scale and clinically-oriented studies.

Body site techniques involve getting an individual to judge the width between two points of their body, and then making a comparison between these measurements to the actual objective width of that particular body site for that person. Body sites that tend to be measured include waist, stomach, hips, thighs, calves, chest and face. In recent years, computer-based methods have also been developed to allow individuals to adjust and distort discrete body parts of onscreen representations of their body to match their own perceptions. These techniques allow individuals to make more precise alterations to the width of particular body sites, and it allows researchers to record and observe body size distortion more accurately.

Whole-image techniques require the individual to view a real-life image of their whole body and to then alter its size until it matches how they perceive their body to look. Methods used for whole-image techniques include digital photography, psychophysical methods (e.g., figure drawing methods), and computer software. The latter technique morphs the size of realistic illustrations of a body from thin to obese and in doing so it allows individuals to choose their current, ideal, and acceptable body size more precisely than other techniques (Stewart, Allen, Han, & Williamson, 2009).



Cognitive measures

Cognitive aspects of body image include thoughts, beliefs, interpretations and attributions. Cognitive measures explore beliefs about appearance or appearance ideals, cognitive investment in appearance, and self-schemas regarding the level of importance that appearance plays in an individual's self-concept and feelings of self-worth. One example of a cognitive measure is an assessment of a person's satisfaction with specific body parts (e.g., *How satisfied are you with your hips?*; 1= very dissatisfied, 5= very satisfied).

Affective measures

These measures explore an individual's emotions in relation to their appearance beyond satisfaction or dissatisfaction with their body. Emotions experienced can include anxiety, distress and shame, and can be expressed towards particular body sites or body shape and weight in general. These emotions can also be contextual, whereby an adolescent girl may become self-conscious about her looks in specific places or situations (e.g., in front of friends or in public places like the beach). Shame is often experienced if a girl feels unable to meet the perceived cultural ideals of appearance.

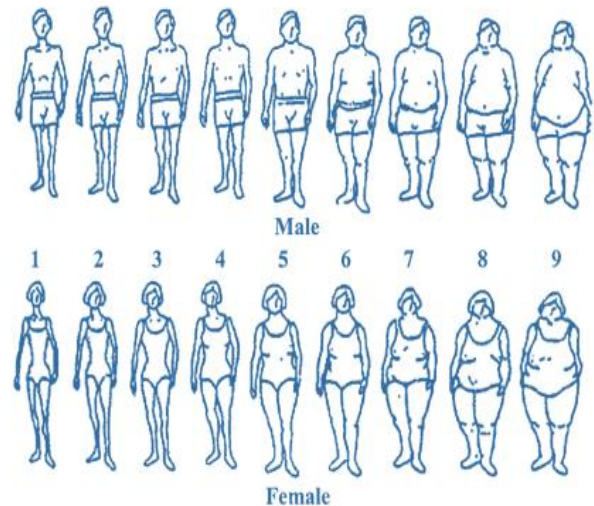
Behavioural measures

There are many behavioural expressions of body image and the use of self-reported behavioural measures is growing. Examples of behavioural manifestations of body image can include mirror checking and measuring body weight on a frequent basis, both of which may reflect levels of investment in appearance. On the other hand, avoidance of mirrors, weighing, and certain situations, can indicate an individual's anxiety in relation to their appearance.

Measurement Considerations

Figure vs. text-based

Figure rating scales usually consist of a series of silhouette bodies that represent different weights, shapes and sizes. Individuals are asked to select the figure that they feel best represents their current appearance and their ideal appearance. The size of the discrepancy between the two silhouette figures provides a measure of body satisfaction, with larger discrepancies indicating greater body dissatisfaction.



Stunkard Figure Rating Scale: An early version of a figure rating scale.

Figure rating scales are easy to administer and provide a simple assessment tool to use with adolescents. However, they have been criticised because they often do not represent the wide variety of actual and ideal body types and appearances that individuals may perceive to be desirable or relevant. This is particularly the case with figure-rating scales for men, which often fail to adequately capture variations in muscle tone and definition.

Text-based measures require respondents to indicate their degree of agreement or disagreement with a question or statement. For example, the statement *“I like what I see when I look in the mirror”* requires respondents to select their response on a 5-point Likert scale with 0 = never and 4 = always. This format allows researchers to sensitively compare participants’ responses across time and consequently identify any changes in body image. This tends to be the most common type of measure used in body image research.

Global vs. specific

Global measures explore an individual’s overall evaluation of their body, rather than focusing on particular body sites. An example statement may be *“Despite its flaws, I accept my body for what it is”*, to which the individual is required to indicate their level of agreement with the statement using a Likert response scale.

In contrast, specific measures examine the individual’s attitudes and feelings in relation to discrete

body sites (e.g., their waist or hips), rather than taking their whole appearance into account. An example statement may be *“I touch under my chin to make sure I don’t have a ‘double chin’”* to which the individual is required to indicate their level of agreement with the statement using a Likert scale.

Trait vs. state

Trait measures assess dispositional aspects of body image, and are used to determine how people “generally” feel most of the time, rather than short-term fluctuations in body image that might occur during a discrete moment in time. An example item would be *“Over the past 28 days, has your shape influenced how you think (judge) yourself as a person?”* to which the respondent would indicate their degree of agreement using a Likert scale with responses ranging from *“not at all”* to *“markedly”*. Most body image interventions aim to see change on trait measures of body image.

In contrast, state measures examine body image at a precise moment in time. State measures are particularly useful for exploring the instantaneous effects of an experiment or a brief intervention. An example item would be *“Right now, I feel with my physical appearance”*, with a response option ranging from *“extremely dissatisfied”* to *“extremely satisfied”*. State measures are commonly used in experimental studies that aim to observe the short-term effects of an experimental manipulation (e.g., exposure to a series of television advertisements) on body image.

Research designs

There are multiple research designs available to assess the development of, and changes in, body image over time, relevant influences and the impact of interventions that aim to improve body image. Each research design has its own set of strengths and weaknesses. This section provides a critical overview of four of the most common research designs used in the body image literature.

Experimental studies

Experimental studies typically involve randomly assigning participants to one of two conditions, then exposing one group of participants to stimuli and assessing any differences between the two groups on quantitative measures of body image after exposure. Studies examining the influence of the media on body image often use experimental designs. They typically involve systematically exposing participants to various forms of media and then comparing their body image to a matched group of participants who did not view the media stimuli. Similarly, evaluation studies that aim to assess the impact of discrete interventions (e.g., classroom-based activities, or watching a short video clip) on body image often utilise experimental designs. They typically involve measuring the body image of

two matched samples of participants, exposing one group to an intervention, and then subsequently measuring and comparing the body image of both groups.

Experimental designs are the only type of research design that can provide causal conclusions. They therefore allow us to learn things that we cannot determine from longitudinal, correlational, and prospective methods. There are, however, limitations with experimental methodologies. Firstly, it is sometimes not ethical or possible to manipulate some aspects of body image in an experimental setting. Additionally, the controlled nature of a laboratory environment or a randomised control trial does not necessarily reflect real-world settings. For example, when people view the media in real life settings, they do so with varying levels of attention (e.g., glancing at an advertisement while walking through a train station, or reading a magazine article in detail). Furthermore, seeing media in real-life is likely to be accompanied by varied reactions and discussion. Therefore, although they can provide causal explanations, experimental studies are often unable to capture the nuanced conditions of real life.

Correlational and cross-sectional studies

These studies typically involve a questionnaire design, whereby researchers correlate scores on measures of body image with other constructs of interest (e.g., self-reported exposure to media that frequently depicts the thin ideal of beauty, such as hours spent reading fashion magazines in the past week). Correlational studies are useful as they often require minimal resources and can be implemented at a single point in time. A limitation of correlational designs, however, is that causal inferences cannot be made. Therefore, although cross-sectional designs can establish that two variables are related and that an increase in one variable is associated with an increase in another, it is impossible to establish the direction of the relationship (e.g., does media exposure cause body dissatisfaction, or do girls who are dissatisfied seek out media depicting the thin ideal of beauty?). Consequently, it is important that correlational research designs are supplemented with experimental, longitudinal and prospective designs where possible.

Longitudinal and prospective studies

Longitudinal and prospective research designs involve repeated observations of the same variables using the same measures over distinct periods of time (e.g., measuring body image with a group of 8 year old girls and then measuring the same girls two and five years later). Longitudinal methodologies are extremely important for studies with adolescents as there are likely to be emotional, cognitive, and behavioural changes, in addition to developmental changes, that occur during adolescence and

can affect body image. Unlike cross-sectional studies, in which individuals with similar characteristics are compared at one point in time, longitudinal studies follow the same cohort and therefore any differences identified are more likely to be due to the observed variables of interest rather individual and/or cohort differences. However, longitudinal studies have been argued to be less powerful than experiments as they are unable to manipulate variables and therefore their ability to identify causal relationships is constrained somewhat. Furthermore, longitudinal studies often take long time periods of time to execute and can therefore be very resource and cost intensive.