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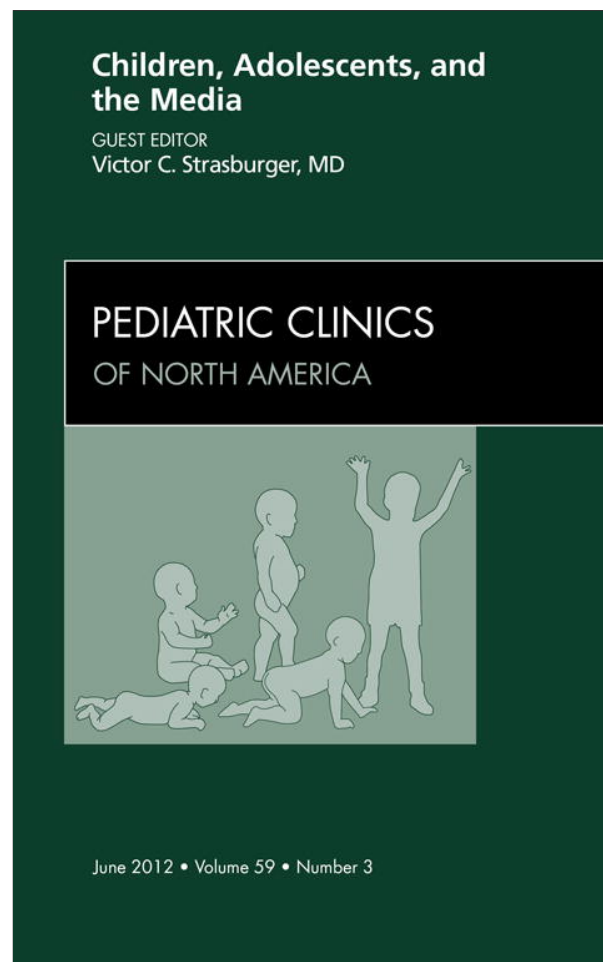
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Body Image, Eating Disorders, and the Relationship to Adolescent Media Use

Carson A. Benowitz-Fredericks, BA, Kaylor Garcia, BA,
Meredith Massey, EdM, Brintha Vasagar, MD, MPH,
Dina L.G. Borzekowski, EdD*

KEYWORDS

• Anorexia • Bulimia • Internet • Television • Weight concerns • Body dissatisfaction

KEY POINTS

- Historically and currently, media messages around body shape and size emphasize the importance of being below-average weight for women and hypermuscular for men.
- The media messages around physical appearance are not realistic for most and lead to body dissatisfaction for adolescents.
- Interventions designed to mitigate the influence of negative media messages on adolescents' body image are presented; however, most have shown limited success.

Although in flux throughout life, an individual's body image begins to solidify in early adolescence.¹ The construct of body image is multidimensional, and includes cognitive, affective, evaluative, and behavioral aspects of physical appearance.^{1,2} Evaluative or attitudinal body image changes with life experiences as individuals assimilate sociocultural body ideals and determines their own physical self-satisfaction.^{1,2}

The development of body image is of particular interest, because extreme physical and cognitive changes occur during this period. During puberty, children gain 50% of their adult body weight, and girls experience an increase in body fat and widening of the hips.^{3,4} With Western culture favoring a thin physique, these changes can pull girls farther from the ideal body shape. Puberty does the opposite for boys; adolescent boys experience changes that bring them closer to the cultural ideal of a large, muscular man.^{4,5} These gender differences arise at 13 to 15 years of age, with girls experiencing increased body dissatisfaction and boys experiencing decreased body dissatisfaction.⁶

Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health, 624 North Broadway, #745, Baltimore, MD 21205, USA

* Corresponding author.

E-mail address: dborzeko@jhsph.edu

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Cognitively, adolescence is also accompanied by increased awareness of societal norms and values surrounding physical appearance and relationships.^{3,7,8} Concurrently, the circulation of gonadal hormones can increase sexual interest and place further importance on body image.³ Adolescent dating behaviors and notions of physical desirability are heavily guided by peers, families, and media.^{1,4,8} Adolescent girls often derive self-esteem from their physical appearance. In this context, thinness is important. Adolescent girls associate thinness with beauty, popularity, and successful dating relationships.^{7,8} Adolescent boys also rate female thinness as an important factor in determining attractiveness and dateability. This scrutiny often leads to feelings of inadequacy in body shape, and increased interaction between genders has been positively associated with body dissatisfaction.⁸

Based on a biopsychosocial model, body dissatisfaction, or negative evaluation of one's own body compared with an ideal body, is modulated by multiple factors.^{3,7} From a biologic standpoint, increased body mass index has been correlated with increased body dissatisfaction, although this varies by gender.^{1,9} Race may also play a role, with studies showing that Caucasian adolescents report more body dissatisfaction than African American adolescents.³ Psychological factors include low self-esteem, which is one of the strongest risk factors for body dissatisfaction. Adolescents who create strict evaluative criteria for success and strive for perfection may never realize their body ideal, and may remain perpetually dissatisfied with their bodies.⁹

Sociocultural factors related to body image can promote unrealistic standards of physical appearance, which are unattainable for most adolescents.⁹ Socially, peers are an important influence. Weight-related teasing and encouragement to lose weight may contribute to body dissatisfaction.^{9,10} Additionally, girls who compare their bodies with those of peers are more likely to report negative body image.¹⁰ Parents, too, have a strong influence. Negative body image is correlated to parental complaints about their own weight and mothers' comments about their daughters' weights.¹⁰ In girls, a drive for thinness, or the willingness to alter one's body to meet the social ideal of physical attractiveness, was correlated with parental encouragement to lose weight and the mothers' dieting behaviors.

Most adolescents who develop body dissatisfaction do not experience clinical manifestations, but, in some, eating disorders may develop.^{3,11} Aspects of body image, such as low self-esteem and self-oriented perfectionism, lead adolescents to pursue unattainable physical appearances and have been suggested as prerequisites for the development of eating disorders.^{7,12} Some adolescents develop dichotomous thinking patterns that can lead to eating disorders. Individuals with this type of thinking believe that higher-order goals, such as happiness, are unattainable without first reaching lower-order goals, such as losing weight. This type of thinking places increased emphasis on the relentless pursuit of unrealistic body ideals in an effort to achieve happiness and wellness.¹²

Using *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition) (DSM-IV) criteria, the lifetime prevalence estimates of anorexia nervosa, bulimia nervosa, and binge eating disorder in women in Europe and the United States are 0.9%, 1.5%, and 3.5%, respectively; men in the same study had prevalence estimates of 0.3%, 0.5%, and 3.5%.¹³ In Australia, cross-sectional surveys have shown that the prevalence of disordered eating behaviors, such as bingeing, purging, and strict dieting, more than doubled between 1995 and 2005; this increase was attributed to increased public preoccupation with weight.¹⁴ Prevalence figures, however, are difficult to compare because they vary greatly among countries and studies because of sociocultural differences in baseline values and variations in study methods.¹⁵ For example, the

lifetime prevalence of anorexia nervosa is 1.2% in Sweden, but only between 0.5% and 1% in the United States.^{15,16} These rates may also underestimate disordered eating, because subthreshold disordered eating is not included in these values.¹⁵

The incidence of eating disorders is difficult to measure, because it is often limited to those who seek medical treatment. In Europe, the incidence of anorexia cases increased from the 1950s through the 1970s and stabilized thereafter. However, whether this is because of true changes in incidence within the population or simply fluctuations in the reporting of cases is unclear.^{16–18} Although the incidence of bulimia in the United Kingdom between 1988 and 1993 increased threefold before finally peaking in 1996 and declining until 2000, British media coverage of Princess Diana's struggle with bulimia during the 1990s is hypothesized to have led to a rise in reported cases of bulimia despite no actual increase in incidence within the population.¹⁸ Studies in the United States also show an increase in incidence of bulimia over the 20th century, but the trend for anorexia continues to be debated without any clear or reliable pattern.¹³

By 13 years of age, eating disorders become more common in girls. By 15 years of age, girls are three times more likely to display disordered eating than boys.⁷ This finding may be because adolescent girls tend to have more negative body images than adolescent boys. Both anorexia nervosa and bulimia nervosa have a peak incidence at 16 to 17 years of age.⁹

MEDIA MESSAGES ABOUT APPEARANCE

Magazines

Throughout history, women's magazines have emphasized the importance of appearance. In contrast to men's magazines, women's magazines constantly offer weight loss messages and equate beauty with positive life outcomes.¹⁹ Often these magazines present incompatible messages. For instance, in *Seventeen*, models featured in both articles and advertisements have extremely slim body types, whereas the text often advises readers to think outside of standard conceptions of beauty ideals.²⁰ One study of magazine covers found that 61% offered conflicting headlines, such as "Trim Your Thighs in 3 Weeks" and "Ice Cream Extravaganza." However, magazines vary; in one study, fashion magazines (eg, *Glamour*) averaged 14.8 articles over 6 months on weight reduction compared with 11.2 and 5.7 articles in traditional (eg, *Good Housekeeping*) and modern (eg, *New Woman*) magazines, respectively.¹⁹

Messages about body image also differ depending on the magazine's target audience. Among cover models featured on *Ebony*, a magazine targeting African American readers, 76.4% were average weight, and just 5.7% were underweight.²¹ Analyses of magazines targeting gay and lesbian readers have found messages about hypermuscularity in the gay men's magazines and more diverse body representations in the lesbian magazines.^{22,23} In *Men's Health* and *Men's Fitness*, nearly all (>95%) of the featured models had extremely low levels of body fat and most (>78%) were considered very muscular.²⁴

On-Screen Media: TV and Movies

In a study of cartoons over 9 decades, researchers found that body weight and physical attractiveness were inversely related. Female characters were much more likely to be physically attractive than male characters. Overweight characters were three times as likely to be characterized as less smart and less competent than their underweight and normal weight counterparts. Attractive characters were happier and more prosocial.²⁵

In television programs for preadolescents, lead characters tend to be underweight. Story lines and character interactions frequently focus on an idealized female body shape. Non-ideal-shaped preadolescent girls are often cast as Goths or bullies.²⁶ In

programs for adolescent audiences, the highest percentage of characters fall into the normal weight range, followed by those on the thinner side. Heavysset or obese characters are rare or nonexistent. However, 40% of African American female characters are above-average weight compared with 12.7% of Caucasian women.²⁷

In soap operas and situation comedies (sitcoms), programming genres frequently watched by young audiences, characters tend to be thinner than the average population.^{28,29} This finding is especially pronounced in soap operas, with half of the characters of low to low-average weight.²⁹ A third of female characters on sitcoms, compared with 25% of the general population, are of below-average weight. Additionally, these women receive more positive comments about their appearance and are involved in more romantic relationships than heavier characters.²⁸ Although overweight men in sitcoms do not receive negative comments about their appearance, they were more likely to make self-deprecating statements.³⁰ African American women, who are underrepresented in most television genres, appear more frequently in music videos; here, they are typically underweight and extremely sexualized.³¹

In children's movies, there is an average of 8.7 body image-related messages. In a 2004 content analysis of children's books and videos, approximately 60% of the videos focused on female thinness whereas 32% of videos emphasized male muscularity.³² Disney animated movies portrayed almost half of villains as overweight compared with 10% of heroes. These differences were especially pronounced among female characters, because male characters had more homogenous bodies.³³ Action movies typically emphasize hypermuscularity for boys and men. Approximately three-fourths of characters tend to be muscular, and these muscular characters have more appealing traits and are involved in more romantic partnerships.³⁴

New Media: Video Games and the Internet

Video game representations, at least during game play, seem to offer more realistic body image messages for both genders. For women, female characters closely resembled the proportions of average fit women, with breast size being the only significant difference.³⁵ Male characters were blockier and not well defined, with less emphasis on muscularity than is found in other media sources.³⁶

A new analysis of YouTube has found that videos with fat-stigmatizing content (in the videos, titles, or commentary) are often produced by or geared toward Caucasian men. Women constituted only 7.7% of antagonists but one-third of victims. Men were 11.5 times more likely to be aggressors than women, but only 1.7 times more likely to be victims. These trends seem more severe than those seen in other media.³⁷

The Internet contains easily accessible Web sites focusing on anorexia and bulimia, known as e-Ana and e-Mia Web sites. Interactive features allow users to interact and support each other through poetry and artwork, building a social system for these teens who otherwise struggle to relate to peers. Although 30% of sites had accessories like food calculators to aid visitors in managing weight, more common messages are about strategies to continue the pro-eating disorder (pro-ED) thinking and behaviors. However, approximately 38% of these sites provide information and links to help users recover from the eating disorders.³⁸

THE RELATIONSHIP AMONG MEDIA USE, BODY IMAGE PERCEPTIONS, AND EATING DISORDERS

Correlational Studies

As global obesity rates rise, researchers have observed that greater media use during childhood and adolescence is associated with higher weight status and poorer fitness

in adulthood.³⁹ However, evidence exists of a media-use relationship on other end of the scale. Exposure to certain media seems to be significantly associated with body dissatisfaction, vulnerability to heightened weight-control, and dieting disorders.

A large longitudinal study following more than 2500 girls in middle and high school from Minnesota showed that heavy readers of magazines were twice as likely to engage in disordered weight-control behaviors.⁴⁰ A Spanish study following 2862 girls and women for 18 months, ranging in age from 12 to 21 years, showed doubled odds for incident eating disorders among those who frequently read girls' magazines and listened to radio programs.⁴¹ A significant positive correlation between hours spent watching music videos and importance of appearance and weight concerns was found when looking at a population of ninth-grade girls from California.⁴² A longitudinal study of lower-middle and middle income communities in Midwestern states found that among preteen girls, greater overall television viewing time predicted thinner shapes 1 year later.⁴³ Of particular potential potency are pro-ED Web sites (eg, pro-ana, pro-mia). One study found that users of pro-ED sites seem to have higher levels of body dissatisfaction and eating disturbances.⁴⁴ Another assessment of 1291 users of pro-ED sites found that heavier use of the Web sites was associated with higher scores on measures of eating disorders, more extreme weight loss behaviors, and a greater likelihood of hospitalization.⁴⁵

In terms of general media exposures, boys and girls may be affected differently. A cross-sectional study of 828 adolescents showed that both messages encouraging muscularity and those promoting thinness predicted compulsive exercise in boys, whereas girls were only susceptible to messages about thinness.⁴⁶ In a survey of 353 undergraduates from a large Western state college in the United States, women experienced more symptoms of disordered eating than did men. The researchers also found that media, perfectionism, and self-esteem were related to women's eating disorders, whereas only media and perfectionism related to the men's.⁴⁷ Additional specialized channels have been identified, including video gaming magazines, which were associated with a drive for muscularity in White (but not African American) boys.⁴⁸ Gay and bisexual adolescents and college-aged boys may be more vulnerable to media influence on body image, whereas lesbian and bisexual girls may be less so.^{49,50}

Not all media effects are detrimental, however. In a sample of 11,606 boys and girls, desire to resemble media figures was associated with higher physical activity levels.⁵¹ Moreover, a forthcoming study on identification with media figures showed that women exposed to a favorite celebrity or a thin model with whom they perceived similarity felt better, not worse, about their bodies.⁵²

Experimental Studies

A meta-analysis of 25 experimental studies showed that, especially for girls younger than 19 years, viewing images of thin models produced a more negative body image.⁵³ An experiment involving 145 college women showed that exposure to thin-ideal magazine images not only lowered self-esteem but increased symptoms of eating disorders.⁵⁴ Compared with fashion-site controls, controlled exposure to a mock pro-ED Web site induced lower social self-esteem and appearance self-efficacy, and a greater negative affect in exposed women. In addition, those in the exposure group perceived themselves as heavier and were more compelled to exercise and think about their weight.⁵⁵ Pro-ED sites proved to be a potent pill; female college students exposed to the sites for 1.5 hours showed a 1-week postexposure decline in caloric intake from 12,167 to 9697 calories, and reported making use of techniques described on the Web sites.⁵⁶

The experimental literature hints at differential vulnerabilities. In one study, subjects already identified as either restrained or unrestrained eaters were exposed to advertisements featuring thin models or nonfigures. Exposure to the model images led to reports of more favorable self-image and social self-esteem in restrained eaters, whereas unrestrained eaters reported lower appearance self-esteem score.⁵⁷ In a 15-month longitudinal experiment, girls who had higher levels of body dissatisfaction and less social support at baseline, when subjected to increased exposure to fashion magazines, exhibited a significantly greater likelihood of further body dissatisfaction, dieting, and bulimic symptoms at experiment's end compared with those less vulnerable. Meanwhile, the study population as a whole showed no effect from level of magazine exposure.⁵⁸ Likewise, exposure to appearance-centric commercials triggered more body image changes and thoughts of dietary restraint in patients with eating disorders but had no effect on those without.⁵⁹

POTENTIAL EXPLANATIONS OF THE RELATIONSHIP AMONG MEDIA USE, BODY IMAGE, AND EATING DISORDERS

The strong influence of media on adolescents occurs not only directly but also indirectly through creation and reinforcement of social norms at all levels of society. Although the effects of negative or unrealistic media images differ between groups (eg, girls vs boys),^{60–62} no group seems to be entirely immune. In fact, media images are so pervasive that they can be said to affect the whole of society, with the most vulnerable members of any particular group exhibiting the most negative effects of media influence.⁶³

Understanding of media influence on body image and eating disorders relies largely on sociocultural modeling. Media effectively transmits and reinforces certain sociocultural messages, including a thin-ideal body image for girls, hypermuscularity for boys, strict gender role reinforcement, and primacy of appearance as a factor for success.^{64–66} Although these messages are spread through various social mechanisms, media has been the main subject of research because of its pervasiveness and power at all levels of society.

Media effects seem to be cumulative in that, in most cases, greater exposure to overt messages regarding appearance predicts internalization of these social ideals.^{67,68} After repeated exposure to media content, viewers may internalize media portrayals of unrealistic ideals. In this way, the ideal image becomes normative.^{65,67,69} Social comparison theory, in which individuals develop a self-evaluation in comparison with others, has also been used to explain media influence in this area. Typically, adolescents make an “upward” comparison between themselves and ultrathin or hypermuscular media models, resulting in feelings of body dissatisfaction, lower self-esteem, and unhealthy eating behaviors.^{66,70,71}

The relationship between media influence and body image usually involves small to medium effect sizes.^{72,73} The relationship is complicated by a variety of moderating and mediating factors. Mediators of media effect include internalization of the thin-ideal, social comparison, and activation of the thin-ideal schema.⁷⁴ Other factors, such as social support from peers and family and age, also have been shown to have a significant impact. Recently, weight/shape-related self-ideal discrepancy and self-concept clarity have been proposed as additional mechanisms involved in the relationship between media and body image.^{69,75}

Family and peers can alter the relationship between media messages and body dissatisfaction. Family influences, early in childhood and into adolescence, set the stage for susceptibility to body dissatisfaction and eating disorders.^{76,77} Parents and

siblings transmit and reinforce social messages, and act as role models for body image attitudes and eating behavior. Although mothers and fathers have a different influence on girls versus boys, positive family relationships seem to somewhat insulate both genders from negative messages.^{76,78} Entering adolescence, peers become more significant in shaping body image and eating patterns. According to the presumed influence model, media effects on adolescents may be greater because adolescents perceive their family and peers to also be influenced by media messages.^{79–82}

Personal characteristics may also affect adolescents' body satisfaction and susceptibility to the influence of media images, although more research is needed in this area. Individuals whose self-schemas included a divergence between their actual body type and their ideal body type are more susceptible to body dissatisfaction and the influence of negative media messages.⁸³ Experimental studies have found that only "high internalizers" showed a large increase in body dissatisfaction after viewing ultrathin models.⁸³ Additionally, factors such as attributional style or perceived control may be directly or indirectly linked to body dissatisfaction.⁸²

WAYS TO IMPROVE THE RELATIONSHIP AMONG MEDIA USE, BODY IMAGE, AND EATING DISORDERS

A variety of intervention and prevention models designed to mitigate the influence of negative media messages on body image and eating behavior have been investigated, but most have shown limited success. A 2002 meta-analysis of prevention programs conducted in several industrialized countries found that programs that included media literacy and advocacy components were more successful than the other types of programs identified.⁸⁴ Media literacy and media education can be used to teach girls and women to become more active, critical consumers of appearance-related media to prevent the development of body dissatisfaction and disturbed eating behaviors. Media literacy interventions have been shown to decrease social comparison and internalization of the thin-ideal.⁸⁵ Additionally, exposure to healthy, normal-sized media figures can counteract negative messages. Viewing images of average-sized models has been shown to lower body-focused anxiety in women.^{83,85}

However, short-term interventions may not be adequate to counteract the overall influence of predominant media messages. Because girls, especially, internalize negative attitudes about women's bodies at a young age, and because of the persistence of these internalized images despite counterimages, a complete shift away from the normative use of unrealistic-looking models and actors may be necessary to reform the internalized images of a healthy ideal body in the minds of the next generation of children and adolescents.⁶⁵ Some media campaigns, such as the Dove "Real Beauty" campaign, which uses real women in advertisements for beauty products, have proven successful for both advertisers and consumers.⁸⁶ Magazines such as *New Moon Girls*, which promote healthy body image and healthy active lifestyles for girls, have also been cited as examples of ways to counteract negative media messages.⁷⁹

However, most media outlets are not motivated to move away from what they have found to be a successful paradigm. Advocates argue that because media will not self-regulate, it is necessary to implement policies and legislation designed to reduce or mitigate child and adolescent exposure to potentially harmful media messages.^{87,88} This type of intervention, although it may ultimately be the most effective, is difficult to enact because of resistance from big media corporations. Any policy would have to balance the free-market interests of media corporations against the public health

benefits. Despite some self-enforcement of content standards and government agency programming requirements, little top-down support exists for implementing or enforcing policies that would regulate or mandate media content.^{87,88}

Popular with both parents and public health advocates, rating systems can function to alert audiences about potentially sensitive content while not interfering with the autonomy of media producers.⁸⁹ Movies, television, music, and video games all have some form of rating system, and these are usually based on age appropriateness and content. However, despite the popularity of the idea, actual rating systems as implemented are not effective because of inefficient implementation and lack of use.⁸⁹ Despite the challenges, advocates suggest the implementation of a two-pronged approach to content regulation. Policies that would restrict the portrayal of negative body images and eating attitudes and behaviors would include eliminating overly thin women or hypermuscular men. Concurrently, policies mandating the promotion of positive images would include healthy body sizes and healthy eating behaviors and attitudes.⁷⁹ Although no single intervention or prevention model has been completely successful, it is clear that vulnerability to body dissatisfaction and eating disorders in adolescence clearly occurs on multiple social fronts. For this reason, interventions that mitigate the effects of potentially harmful media messages must also occur at multiple social levels.

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