Body Image and Media Use Among Adolescents

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This article reviews the literature on body image and media use among adolescents. We begin by defining body image and how it is constructed, especially among young people. We then offer information on when one’s body image perception is askew with one’s perception of personal ideal, which can result in disordered eating, including obesity, anorexia, and bulimia. Next, we describe the research literature on media use and its relationship to adolescents’ body image perceptions and discuss content analyses and correlational, experimental, and qualitative studies. Lastly, we recommend, beyond conducting further and improved research studies, interventions and policies that may have an impact on body image and media use.

Defining body image

What is body image and, more importantly for this discussion, what role does it play as youth progress through adolescence? The words “body” and “image” actually conflict. “Body” is definite and more objective: “the physical structure of an organism.” Most responses of the body are predictable, such as reactions to cold, pain, pleasure, and hunger. “Image,” conversely, is subjective, comprising “mental representation, idea, or conception [1]. Images derive from perceptions that are influenced by personal and cultural factors. Merging the meaning of these
terms leads to “body image” as the “internal representation of [one’s] own outer appearance” [2], which reflects physical and perceptual dimensions [3]. Recent research has established consensus that body image is a multidimensional construct that is influenced by biologic, psychologic, and social factors [3–6].

Body image is related highly to an individual’s self-esteem and self-concept, as well as to other key aspects of human development, including sexuality, familial relationships, and identity [7]. Body image also has been established as a key aspect of self-worth and mental health across the life span [4,7,8]. Poor body image and lower self-esteem result in dissatisfaction with oneself. If these body-related concerns are intense enough, they may catalyze behaviors that are aimed at changing one’s physique to reduce discontent [9]. In its extremes, this discontent manifests as disordered eating patterns or pathways toward depression [10,11].

Adolescents’ construction of body image

Multiple factors impact the construction of body image; the strong association between body image and self-esteem has a unique importance for adolescents. Adolescence represents a critical transition period during which adolescents face physical, cognitive, and social changes as they enter and progress through puberty and reach adulthood. Changes in these diverse realms do not occur independent of, but in constant interaction with, one another. Physiologic changes include accelerated physical growth, the maturation of primary sex characteristics, and the development of secondary sex characteristics. Although growth is a regular and regulated process, puberty marks a significant and rapid change of pace, with a conscious participant as a “fascinated, charmed or horrified spectator” [12]. Physical changes converge with feelings of sexual tension and physical attraction, uncertainties about social relationships, and the reorganization of cognitive structures, all of which contribute to body image being a “plastic, constantly changing concept, continuously modified by bodily growth, trauma or decline, and significantly influenced by the ever-changing interaction with the social environment” [13]. Adolescents’ construction of their closely-linked body image and self-concept can be particularly challenging because of the diverse, rapid, and significant changes that are heightened during this period.

Because body image is self-evaluative, it is influenced by the “goodness of fit” between self-evaluation of one’s body, one’s expectations for the physical self, and the perceived evaluations of others [14]. This “goodness of fit” may be difficult to achieve, however, because of the discrepancies between the adolescent bodies and what is portrayed as ideal for women and men. Given increased obesity for adolescent girls and women, the gap between the average and the ideal has expanded; models used to weigh about 8% less than the average woman, they now weigh 23% less [15]. Adolescent boys face a similar dilemma. Typical growth for boys is characterized by quick gains in height, but not
necessarily in muscle or weight. This is in striking contrast to the ideal body image for men, which has become increasingly muscular [16]. This trend for the male body ideal can be observed among male print and television models and the more successful actors. Therefore, female and male adolescents face immense challenges as they construct their body image and address physical and psychological changes while navigating cultural images that often are unattainable.

Variations between normal and ideal body size can result in body dissatisfaction. In a recent U.S. study, almost half of the surveyed women had negative evaluations of their own overall appearance and were dissatisfied with their weight and lower and mid-torso [17]. This trend is particularly marked for female adolescents, a population which is characterized as in a state of “normative discontent” because negative body image is so pervasive [17,18]. By middle school, 20% to 50% of girls in the United States say that they feel too fat [19] and 20% to 40% of girls feel overweight [20]. One study found that 40% of adolescent girls believed that they were overweight, even though most of these girls fell in the normal weight range [21]. Although past studies have examined adolescent boys as they compare with adolescent girls, recent research has analyzed men as an independent group and identified a significant increase in body image concerns among men [22–24]. Although past studies asserted body dissatisfaction in boys at a range of 50% to 70%, which surpassed the rate for girls [23], a recent meta-analysis on body image in boys found that boys demonstrate less overall body concern than girls [22]. As girls tend to focus on getting thinner, boys generally want to get bigger through increased muscle or fat, although studies do not differentiate between the two when discussing dissatisfaction or concerns [22].

Body dissatisfaction among adolescents is not uniform across this development period, nor youth of different genders or from different cultures. Past research demonstrated that body image undergoes changes during adolescence, with body satisfaction scores at a given age not correlated significantly with scores at other ages over a 5-year period [5]. Numerous studies have confirmed that although girls’ body image worsens as they progress through adolescence, boys’ body image improves [25,26]. Recent data indicate that this shift between the sexes occurs between ages 13 and 15, most likely as a result of cognitive changes that enable self-evaluation or to increased attention to body shape that is accompanied by the significant physical changes in puberty [26–28]. In this same study, adolescents’ satisfaction with weight did not follow the same trajectory; girls and boys were dissatisfied with their weight with equal frequency at 13, 15, and 18 years of age [26].

A growing body of research now demonstrates that body image, personal dissatisfaction with body, and perceptions of weight and attractiveness vary significantly by racial and ethnic groups within the United States and in other countries [29–32]. In the United States, African American adolescent girls have a higher tolerance for increased adiposity compared with their white peers [29]. College-aged Asian American women are more dissatisfied with their body shape than white women of the same age [33].
Exploring the results of negative body image

The overwhelming dissatisfaction with body shape and weight that is experienced by adolescents is not solely a cognitive perception or observation, but often is linked to one of two extremes in weight-related disorders: obesity and disordered eating. Obesity is more prevalent than the eating disorders, anorexia nervosa and bulimia nervosa; however, all of these disorders lead to significant negative effects on the individual’s physical and psychologic health and often impact their socioeconomic opportunities during childhood and adolescence and into adulthood.

Another recent phenomenon, which is not explored in great detail in this article, is the use of cosmetic surgery to alter one’s appearance. In 2003, there were 8.3 million procedures (surgical and nonsurgical) done, with 322,975 and 61,646 liposuction procedures done on women and men, respectively [34]. In the same year, 280,401 breast enlargement procedures were done on women, a 177% increase since 1997 [34]. More than the popular rhinoplasty surgery of previous decades, young adults are having all types of cosmetic surgery to alter their appearances. From 2002 to 2003, the number of girls who were 18 years of age and younger who got breast implants increased almost 400%, from 3872 to 11,326 cases [35].

**Obesity**

As recognized by the World Health Organization (WHO), obesity and over-weight are increasing in adult and child populations worldwide to the point that obesity is now an epidemic [36]. Recent data show that the prevalence of at risk for overweight among adolescents 12 to 19 years old was 30.9% in 1999 to 2002, with significantly higher prevalence for non-Hispanic blacks (36.8%) and Mexican Americans (38.9%), as compared with non-Hispanic whites (27.9%). The prevalence of obesity in the same age group is 16.1%, with difference by racial/ethnic group following a similar trend—greater overweight for non-Hispanic blacks (21.1%) and Mexican Americans (22.5%) than for non-Hispanic whites (14.3%) [37]. Recent estimates in Australia suggest that approximately 6% of boys and girls are obese and between 16% and 20% of boys and girls are overweight [38]. The United Kingdom, like the United States and Australia, also shows evidence of increasing obesity, with higher prevalence among socially-deprived children [39–41]. Obesity is not limited to developed countries. The estimated number of obese adults increased from 200 million to 300 million in only 5 years, from 1995 to 2000. In developing countries, it is estimated that more than 115 million people suffer from obesity-related problems [42].

Obesity in childhood and adolescence can have serious health consequences, in the short-, intermediate- and long-term. Although most complications of childhood obesity do not become apparent until adulthood, some children suffer short-term consequences. Severely overweight children and adolescents are more
likely to have orthopedic problems, intracranial hypertension, pulmonary-related sleep disorders, gallstones, insulin resistance and hyperandrogenemia, and menstrual abnormalities [43–49]. Childhood and adolescent obesity has more serious intermediate consequences during adolescence and young adulthood. Obese boys and girls are nine to 10 times more likely to develop high blood pressure as young adults than nonobese children [50]; overweight adolescents are 8.5 times more likely to have hypertension as adults than nonoverweight adolescents [51]. Adolescent obesity also is associated with negative effects on total cholesterol and low-density lipoprotein cholesterol in adulthood, particularly for boys [50]. A new finding is particularly disconcerting; in 1994, one third of newly-diagnosed diabetics between 10 and 19 years of age were type II diabetics. More than 90% of these patients were obese and 40% were severely obese [52].

Childhood obesity has been identified as an independent risk factor for adult obesity. Research suggests that childhood obesity is related to adult morbidity, including elevated risk of heart disease for men and women, colon cancer and gout for men, and arthritis, hip fracture, menstrual problems, and gestational hypertension for women [53]. An association exists between childhood obesity and adult mortality that is due to coronary heart disease and all-cause mortality, with elevated risks of 2.0 and 1.5, respectively [54]. A recent study also demonstrated that adolescent overweight, independent of adult body-mass index (BMI), was a more powerful predictor than adult overweight of certain types of risk in men aged 68 to 73 years, with a relative risk of 1.8 for all-cause adult mortality and 2.3 for adult mortality [53].

The impact of obesity extends beyond physical health consequences. Studies show decreased high school performance in overweight adolescents and one half of college acceptance rates to elite universities when compared with normal weight adolescents with similar test scores [55]. A longitudinal study of 16- to 24-year-olds found that overweight women completed 0.3 years less schooling and had lower household incomes and higher poverty rates [56]. Obese children from certain groups tend to have lower levels of self-esteem; a recent longitudinal study demonstrated decreased self-esteem with increased body fat [57]. Increased BMI also is associated with a greater number of depressive symptoms in adolescent girls [58].

Society also experiences obesity-related costs. Estimates show that obesity is responsible for 10% of health care expenditures in the United States [59]. A recent study examined hospital discharge records to estimate the economic burden of obesity in youth; obesity-associated annual hospital costs increased from $35 million in 1979–1981 to $127 million in 1997–1999 [60]. Obesity is the second leading cause of death in the United States, adding 300,000 deaths annually, compared with 434,000 deaths that are due to smoking [61,62].

Anorexia, bulimia, and eating disorder not otherwise specified

Eating disorders are no longer a condition of “the daughters of well-to-do, educated and successful families” [63], as they originally were characterized, and
have been found to affect all socioeconomic and major ethnic groups [64]. This finding follows from the reality that eating disorders are prevalent in diverse individuals and from the recognition that eating disorders have multiple determinants that are rooted in biologic, psychologic, and social issues. The definition of eating disorders also has expanded, as evidenced in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, which includes anorexia nervosa (characterized by restrictive eating patterns and significant weight loss) and bulimia nervosa (characterized by binge-purge cycles), as well as eating disorder not otherwise specified (ENDOS; eating disorders that do not meet the criteria for any specific eating disorder) [65].

The prevalence of eating disorders has increased over the last 50 years [66]. Internationally, anorexia nervosa involves 0.5% to 1% of girls and women in late adolescence and early adulthood and bulimia nervosa affects 1% to 3% of adolescent and young adult girls/women. Studies on eating disorders frequently look at girls or, when they have looked at boys, have grouped all adolescents together. Recent reviews are now focusing explicitly on adolescent boys. Anorexia has been considered to be uncommon in boys, with a female/male ratio of 10:1. A community sample that was drawn from the WHO found a much lower female/male ratio of 2:1, when including partial syndrome [67]. In the same WHO sample, there was a 2.9:1 female/male ratio for bulimia nervosa when including partial syndrome. Overall, it is estimated that boys account for 5% to 15% of cases anorexia and bulimia nervosa [64]. Certain studies also found that homosexual or bisexual orientation is a specific risk factor for eating disorders in adolescent boys and men, particularly for bulimia nervosa, although other studies have refuted these findings [68].

ENDOS is encountered much more commonly than anorexia or bulimia nervosa. A recent Australian study found that 12% of adolescent girls had distorted body image and an overwhelming 77% wanted to lose weight. In the same sample, 33% had disordered eating behaviors, 57% had unhealthy dieting practices, and 51% had attempted to lose weight in the past month [69]. A cross-sectional, school-based study in the United States examined similar issues in boys and girls in grades 5 through 12. A greater proportion of girls (45%) than boys (20%) reported dieting at some point, and a greater percentage of girls than boys also had disordered eating, with 13% and 7%, respectively [70].

Eating disorders often occur in conjunction with other problems, such as anxiety disorders, depression, and substance abuse. Women who have eating disorders experience serious morbidity and high mortality, particularly as a result of anorexia nervosa. Morbidity concerns include myocardial impairment, osteoporosis, and amenorrhea, which often linger in the rehabilitation phase and following recovery. Mortality results from malnutrition and cardiac failure, as well as suicide. Eating disorders, like obesity, also represent a significant burden to society. Anorexia nervosa is the third most common chronic illness in the United States [71]. In Australia, eating disorders are the seventh major cause of mental disorders and treatment for anorexia nervosa represents the second highest cost to the private hospital sector [72].
Influences on body image and disordered eating

Although media often is portrayed as the sole culprit in adolescent formation of body image and eating attitudes and behavior, research has demonstrated that family and peers also are main sources of influence [73]. Research in this area has focused primarily on girls; however, recent studies have examined the impact of media, parents, and friends on boys’ perceptions of body image.

The family acts as a primary socialization agent by transmitting certain messages to adolescents, often differentially according to gender [74]. Family members may provide the first set of external criteria against which girls evaluate themselves as women [75]. Teasing and criticism at a young age can mediate the relationship between weight status and self-concept [76]. Adolescent girls’ descriptions of parental relationships as more conflictual were associated with increased dieting and poorer body image, and girls who had eating disorders often perceived their families as less warm and cohesive and more conflictual [77,78].

Strong evidence exists regarding the influence of mothers as role models and transmitters and reinforcers of social messages around body image and eating for their adolescent daughters [79]. Another body of research confirms that mother–daughter relationships that are characterized by poor attachment patterns and low warmth are associated with greater levels of eating disorders [33]. Less work has been done on the influence of fathers and siblings on their adolescent daughters’ and sisters’ body image and eating attitudes and behaviors. One study found that fathers influence their daughters’ body dissatisfaction, but not their eating practices [79]. Another study showed some evidence that sisters may play the same role as mothers in affecting the girls’ body image and eating patterns [80]. One recent small study examined the role of parents, friends, and the media on body image and body change methods in adolescent boys [24]. Mothers exerted a stronger influence on the body image of their adolescent sons than other family members, peers, or the media. Given that most messages from mothers are positive, this may explain why boys tend to have higher levels of body satisfaction. Fathers and brothers, however, have a larger impact on boys’ body change methods, such as exercise.

Peers also are important socialization agents in shaping body image and eating patterns, particularly because adolescence marks a period when girls and boys begin to spend less time with parents and more time with friends. Studies show that body image plays a much greater role in peer relationships and adaptation to the social environment than previously believed [81]. Girls who compare their appearance with that of their female peers have a greater risk of body dissatisfaction and body change methods, such as dieting. This influence increases as girls get older; same-sex peers have a greater influence than mothers on the eating attitudes and behaviors of older adolescent girls [80]. Two recent studies on high school girls, one in Canada and one in Australia, confirmed that peer pressure significantly relates to body image concerns, eating behaviors, and dieting manifestation [82,83]. A study on adolescent boys found trends that paralleled the influence of mothers, fathers, and brothers, based on the gender of the peer.
Although the positive comments of female friends influence the body satisfaction of boys, the perceptions of their male friends has a greater impact on boys’ body change methods [24].

Even after considering these important interpersonal factors, media’s influence on adolescent body image, eating attitudes, and behaviors persists and continues to dominate, especially in the public’s attention. Media’s effect on adolescent girls is strikingly strong, with media considered to be “the loudest and most aggressive purveyors of images and narratives of ideal slender beauty” [84]. As with all research on body image and eating patterns, much less is known about the effect of media on boys. A recent study found that media affects the body satisfaction of boys, and that its most sizeable effect on this population is its encouragement of exercise and other body change methods [24].

Media can have a direct influence on its audiences and it can affect audiences indirectly by altering one’s perceptions of social norms. A recently proposed and presented model, the “Presumed Influence Model,” suggests that young people perceive that media messages are received by and influence their peers. This heightens media’s effect on the individual (Gunther et al, submitted for publication, 2005). Applying this model to body image and media, one can imagine an adolescent’s attitudes and behaviors concerning weight control being impacted by the messages that she observes through media and through the belief that many of her peers are seeing these same messages. Research that confirms the presumed influence model’s role in body image has not been conducted; however, relevant studies suggest that adolescents’ perceptions of others’ opinions interact with the relationship between media use and self-appraisals [85].

Media use by adolescents

The typical adolescent lives in a media-rich environment. Although adolescents watch less television than their younger peers, their media consumption—or screen time—often is greater, because adolescents use a variety of media with great frequency. Traditional and new media technologies appeal to adolescents, with ownership and use being pervasive among youth [86]. Even in developing countries, young people own and use print media, radio, and television on a regular basis (Borzekowski and Hill, submitted for publication, 2005).

Teen magazines, either in print or online, are extremely popular with adolescent boys and girls. Twelve- to 19-year-olds spend approximately $175 billion annually on magazines [87]; approximately 60% of 15- to 18-year-olds report that they read magazines daily [88]. Seventeen remains the most popular teen magazine; however adult-to-teen crossovers, like Teen People, CosmoGirl!, Elle Girl, and Teen Vogue have notable circulation among adolescent girls. In contrast to the homogenous magazines that reach young women, there is great diversity in the magazines that are read by adolescent boys. Boys read magazines that appeal to niche markets, such as electronic gaming (GamePro), sports (Sports Illustrated), music (Spin, Vibe), and cars (Road and Track) [89].
Many teen magazines have companion web sites, that often serve as a communication platform and additional resource between print issues [90]. The more interactive features of the Internet can enhance the magazine reading experience; online magazines offer visitors unlimited access so that they can contribute to online polls, gather additional information, or express their opinions and experiences on online message boards [90].

Young people enjoy and use the Internet more so than members of any other age group [91]. Although the primary reason why adolescents log on to the Internet is social (e-mailing, instant messaging), approximately two thirds have gone online to get health information, either for personal or academic reasons [92]. In the United States, the average adolescent is on the Internet daily, and 74% of households with children have access to the Internet [93].

A recent phenomenon: the Internet, body image, and disordered eating

Messages about body weight and appearance, long prevalent in the mass media, also have begun to be disseminated through the Internet. Although there are many sites that convey positive health messages to young people, such as those that encourage healthy diets and physical activity (eg, www.kidshealth.org, www.teenhealthfx.com, www.cdc.gov), several web sites contain health-related information that can be harmful. A disturbing new phenomenon is the emergence of sites that portray disordered eating in a positive light. Classified as “pro-ana” (proanorexia), “pro-mia” (probulimia), or a combination of both, these sites characterize anorexia and bulimia as a lifestyle choice, not a clinical disease over which individuals may have little control [94]. The sites present themselves as a environment where likeminded individuals can share information and boost their motivation. Many sites acknowledge that individuals who have eating disorders may be harmed by the offered online content; some sites provide explicit messages to this effect. These messages vary substantially; however, some may be construed as posing a personal challenge to individuals [94]. For instance, one reads “I am not responsible for your actions...leave if you can’t handle it” [94]. These messages are, at best, ineffective and, at worst, harmful by encouraging some adolescents to enter the website as a personal challenge.

The general attitude and environment that are projected by pro-ana and pro-mia sites is “one of superiority, empowerment and pride” [94] where young women encourage one another to engage in anorexic and bulimic behaviors to demonstrate self-control and reject weak societal values. One pro-ana site highlights this approach in a striking manner, claiming that “anorexics” seek sympathy and die, whereas “rexies” gain respect through their lifestyle choice. A position paper that was released by the National Eating Disorder Association identifies proanorexia and probulimia web sites as promoting damaging behaviors among people who are seriously ill, while providing dangerous support to dissuade these individuals from seeking treatments [95].
Typical features of pro-ana and pro-mia sites include bulletin boards and chat rooms for discussions and sharing of experiences, as well as photo galleries, where very thin models are featured as “thinspiration” [94,96]. Andrist [96] did a content analysis of messages that were posted on a pro-ana website and identified two groups of visitors to the site: young, overweight women who wanted to lose weight and young women who had eating disorders and other mental health problems, including drug addiction, depression, cutting, and attempted suicide.

Most pro-ana and pro-mia sites are unmonitored and do not offer medical assistance; instead, they adhere to denial of the need for recovery or help. When messages seem dire, however, others respond by encouraging the person in need to seek help [96]. Given these sites’ negative portrayal of anorexics and bulimics who cannot control their condition, it is likely that seeking help signifies an even greater failure for those who are seeking help. The imbalanced dynamic of self-control and independence within the sites and the seriousness of disordered eating is evidenced further in the following—a significant minority of sites are left unattended because the controller can no longer attend to the site. One site was being maintained from a hospital bed [94,96].

Research that explores the relationship between media use and body image

Content analyses

Women who exemplify society’s beauty ideal, from Playboy centerfolds to Miss America contestants and winners to magazine cover models, often have BMIs that are well below normal [97–99]. For women, the current body ideal features a very slender body with large breasts, often attained through the use of cosmetic surgery (Fig. 1). Whereas the ideal female has become progressively thinner over the last 30 years, the male ideal has become increasingly dense and muscular. Playgirl centerfolds, mega-movie stars, and even G.I. Joe action figures often have unattainable physiques; depicted chests, arms, and legs could only promote the use of anabolic-androgenic steroids among young men who wish to resemble these archetypes (Fig. 2) [16,100].

Television strongly conveys the body ideal message. Content analyses of programming indicate that there are few characters who are overweight; female characters usually are thin [101–103]. In sharp contrast to actual prevalence rates, 33% and 60% of female television characters are below or average weight, respectively, and only 7% seem to have above average weights [103]. Male characters are likely to make positive comments about the weight, shape, and bodies of thinner female characters [103]. Commercial breaks offer no haven, because many advertisements depict slender models promoting the use of appearance-enhancing items [104]. Young viewers are encouraged to buy new and improved products that will make their hair shinier, teeth brighter, and skin glow more (but not too much). Commercials for these appearance-enhancing items are juxtaposed next to advertisements that promote foods which may be
Fig. 1. (A, B) Fashion advertising that targets adolescent girls. These models typify the female body ideal.

Fig. 2. Action figures from the Star Wars movie series. Luke Skywalker (left) and Hans Solo (right) are shown in their earlier lean and more contemporary buff versions.
questionable. A recent television advertising campaign by the empire McDonalds suggests that eating at their fast-food restaurant can be part of a healthy lifestyle, complete with “wholesome, high-quality food menu options” [105]. Instead of ordering the well-known quarter pounder with cheese (510 calories, 25 g of fat), customers may order the California Cobb salad with grilled chicken and Newman’s Own Cobb dressing for a “healthy” 390 calories and 20 g of fat [105]. A content analysis that focused on television that is popular with African American audiences found that there were more overweight characters featured on the programs and a greater number of food commercials within the programs, compared with that watched by general audiences [106].

A growing phenomenon that should be monitored is the great increase in reality television shows, based primarily on competitions that feature appearance and body image issues. In shows such as NBC’s The Biggest Loser, ABC’s Extreme Makeover, and FOX’s The Swan, “real” people compete and change their appearances, sometimes through drastic cosmetic surgery. As a first step in examining the impact of these reality shows, content analyses should be performed to understand better the messages that are conveyed through these programs.

Correlational studies: cross-sectional and longitudinal research

Studies from the United States, Britain, and New Zealand offer evidence that increased media use, especially more hours of television per day, is associated with greater BMI and greater risk of obesity among children and adolescents [107,108]. The likely explanation of this association is not that children are more sedentary when they use media [109], but rather that they are persuaded to consume fast foods; soft drinks; and high-calorie, high-fat, low-nutritional value snacks because of repeated exposure to persuasive commercial messages [110].

On the other end of this scale, a simple bivariate relationship; girls who read beauty and fashion magazines frequently and compare themselves with the slender models, are more likely to limit their intake to 1200 or less calories per day, and have greater “body dissatisfaction” and “drive for thinness” [111]. Among young gay and heterosexual men, those who read muscle and fitness magazines often have higher levels of body dissatisfaction [112]. Frequent magazine readers, usually adolescent girls, also are more likely to engage in anorexic and bulimic behaviors, such as taking appetite control or weight-loss pills [113]. Controlling for participants’ body size, as well as parent and peer pressures to lose weight, path analyses show that sociocultural influences significantly add to the prediction of body dissatisfaction [114]. Longitudinal studies also show that girls who wish to look like women on television, in movies, and magazines are likely to have a higher risk of using vomiting or laxatives for weight control [115]. Research suggests that several factors contribute to harmful attitudes and behaviors, but exposure and desire to resemble media ideals are significant factors that must be considered [114,115]. Conclusive directionality of this relationship remains unknown, however. One study found
that adolescent girls who increased their eating disorder symptomatology also increased their exposure to television and fashion magazines over a 16-month period [116].

Positive effects have also been observed within the results of correlational studies on media use and body image. Adolescents who have greater exposure to, and interest in, sports media are more likely to participate in physical activities [117]. Those who wish to look like television, movie, and magazine celebrities are more likely to spend more hours per week engaging in a physical activity [118].

**Experimental studies**

To conduct an experiment to see if increased exposure to media would result in higher BMI would not be feasible (no Human Research Committee would approve such a study plan); however, recent experimental work has considered the reverse. One study focused specifically on reducing television, videotape, and video game use among elementary school children. Boys and girls in the intervention group demonstrated decreased television viewing, number of meals eaten in front of the television, and decreased body fatness measures [119].

Experiments that examined the impact of media exposure on body image showed inconsistent findings regarding the association between media use and its immediate effect on one’s self-perceptions. A meta-analysis of 25 studies found a small, but significant, effect, where body image was judged more negative after viewing thin images of models among young female participants [84]. A recent study of young men who were exposed to ideal male models were more depressed and had higher levels of muscle dissatisfaction compared with those who were exposed to neutral male models [120].

A longitudinal experiment showed that after a successful manipulation, those adolescent girls who had increased exposure to fashion magazines were not more likely to demonstrate thin-ideal internalization, body dissatisfaction, dieting, negative affect, or bulimic symptoms compared with those who had less exposure. Participants who were more vulnerable at the beginning of this 15-month experiment were affected negatively, however. Girls who had higher levels of body dissatisfaction and less social support at baseline were significantly more likely to have increased body dissatisfaction, dieting, and bulimic symptoms at the conclusion of the experiment compared with those who were less vulnerable at baseline [121].

**Qualitative research**

A handful of qualitative studies has considered the relationship between media use and body perceptions [85,122–124]. In one Australian study, researchers systematically analyzed discussions that were held by adolescent girls to inform how media effects and body image contribute to the construction of self-image [122]. The girls suggested that a variety of cultural influences affect their desire to
be thin, but media was offered most frequently and strongly as the source of the thin ideal. Many of the participants’ comments were strikingly sophisticated and perceptive; however, the complex processes that lead to their attitudes were not understood completely. One girl remarked “The media portrays the image of girls, how we want to be, like skinny or whatever, and I don’t know it just kind of takes over our mind, we don’t think properly...we forget other things like we don’t think about inside, like personality and the inner self” [122]. In another Australian qualitative study, girls associated the media’s portrayal of the “thin ideal” with pressure to be thin [124]. A U.S. study in which white and minority girls were interviewed found that white girls see media ideal images as important because their peers, and especially boys, are affected by the images. In contrast, minority girls were less affected by the media because they believed that significant others did not subscribe to these images [85].

Across studies, the strongest media impact appears among those who are most vulnerable; from cross-sectional to experimental designs, the groups who are most affected by thin-ideal media images are those who already are at risk for weight concerns and eating disorders. Adolescents who already feel pressure from family and peers to be thin may be more susceptible to the social comparison process that is promoted by print and video images of body-ideal men and women [121,125].

**Recommendations**

**More research**

As presented through various methodologies and studies, statistically significant relationships—although small in magnitude—exist between adolescents’ media use and body image attitudes and behaviors. The body of research, although growing, is not complete. As Irving [126] suggested, further work in this area should explore how media’s influence: (1) interacts with individual factors, (2) affects those who are most vulnerable, and (3) interrelates with other socio-cultural factors to have an effect on body image and eating attitudes. The authors recommend, beyond the conduct of more research, that interventions and policy be used to lessen media’s impact on the risk for obesity and disordered eating [126].

**Interventions**

To alter the impact of media on adolescent’s body image, numerous prevention programs have been developed and implemented. To date, there is limited evidence to show that such programs are effective [127]. Furthermore, some studies demonstrated that some prevention programs actually increase problem behaviors [128,129]. A meta-analysis of randomized clinical trials focused on eating disorder prevention programs in adolescence by groups in various industrialized countries, including Australia, Canada, Norway, the United Kingdom, and the
United States [130]. This meta-analysis identified four types of interventions: psychoeducation; class discussion of eating attitudes and behaviors, eating disorders and general adolescent issues; media literacy and advocacy skills; and programs that focused on promoting self-esteem, with no direct focus on eating attitudes, behaviors, or disorders. This review suggested that programs that include a media literacy and advocacy approach will be more successful [130]. In one such study, fourth-, fifth-, and sixth-grade girls learned to recognize deceptive media techniques, critically analyze media messages, and evaluate people in ways other than by appearance. At follow-up, girls in the intervention group, compared with those in the control group, decreased their levels of body distortion and increased their awareness of body stereotypes [131]. Another study analyzed the media-related attitudes and behaviors of fifth- and sixth-grade girls before and following six 90-minute media literacy and advocacy sessions. The researchers observed a significant positive influence on media-related attitudes and behaviors and a modest effect on body-related knowledge and attitudes [70].

The meta-analysis’ findings are bolstered by two subsequent studies that showed success with reducing eating disorders through well-designed, media-based intervention programs [130]. The first examined the effect of school-based media literacy versus self-esteem programs for reducing eating disorder risk factors on eighth-grade boys and girls in the United States. The male and female adolescents who participated in the adapted version of the GO GIRLS! Program for media literacy showed reduced levels of weight concern when compared with the self-esteem and control groups [132,133]. The second study involved an Internet-delivered eating disorder prevention program for tenth-grade girls and their parents; this was the first educational intervention to allow parents to address individual and familial risk factors. Student participants in the Student Bodies intervention demonstrated significantly reduced eating restraint and greater increases in knowledge in comparison with the control group, although these differences did not remain at the 3-month follow-up. Parent participants showed significant decreases in critical attitudes toward shape and weight; however, the results are questionable because many parents in the intervention group did not comply fully with the intervention [134]. Another recent study did not focus on eating disorders, but instead looked at dieting. After being exposed to videos that showed dieting prevention messages, approximately one third of the seventh- and eighth-grade female participants in Australia felt less likely to go on a diet. Higher dieting, body dissatisfaction and negative effect, however, were associated with lower persuasive ratings of the video messages. This demonstrated the importance of implementing the intervention before the onset of dieting behavior [135].

Obesity-prevention programs are becoming more common as obesity becomes more pervasive among youth. Three recent meta-analyses of obesity examined prevention programs; one focused specifically on the importance of physical activity in overweight and obesity [136–139]. The reviews highlight the role of increased physical activity and decreased sedentary behavior in the prevention of obesity; two specifically mentioned the positive impact of limiting television to
reduce excess weight gain [136,137]. Two key studies looked at the combined effects of long-term dietary education and physical activity interventions on obesity [56,139]. One study examined the effect of a behavioral choice intervention, “Planet Health,” which promotes physical activity and aims to modify dietary intake and reduce sedentary behaviors, with a focus on reduced television watching. Among the sixth- to eighth-grade participants, the girls demonstrated lower obesity when compared with controls at the 2-year follow-up, although there was no significant difference for boys. Change in television watching was the only variable that mediated the intervention effect, although decreased viewing was associated with reduced obesity prevalence only for girls [56]. A second combined intervention study provided a school-based health promotion course to 5- to 7-year-old children and their parents that was based on nutrition education and emphasized keeping active and decreasing television viewing. The only statistically significant change at the 1-year follow-up was reduced fat mass in the intervention group [139].

The paucity of studies on obesity-prevention programs demonstrates the need for further research, with a focus on reducing obesity without increasing weight concerns and eating disorders. Two of the researchers who were cited above (Mueller and Robinson) are carrying out follow-up studies, which should provide important evidence on the relationship between weight concerns and media use.

Finally, one recent article promotes the integration of intervention programs for eating disorders and obesity [140]. The investigators propose this union because of the overlap of the two disorders as part of “a spectrum of food- and weight-related problems that are symptoms of a cultural context that inhibits the development of healthy patterns of eating and physical activity and discourages a healthy respect for diverse body weights and shapes” [140]. They also propose that integrated intervention programs could address personal, sociocultural and behavioral factors using a media literacy/advocacy approach. They promote this approach due to media’s instructive role, its demonstrated promise in changing health-relevant attitudes, its easy integration into the curriculum, its pervasiveness in Western society, and its entertainment qualities. The investigators recognize the differences between eating disorders and obesity, as well as the philosophical differences and sociopolitical obstacles that such efforts encounter, and recommend that the integration of the two might be most appropriate for primary prevention or as a component in secondary or tertiary prevention programs. They conclude that such integration is important given the high prevalence and potential seriousness of disordered eating and obesity, the overlap between the conditions, the potentially harmful consequences of addressing only one of these conditions, and limited time, financial, and human resources [140].

Policy

Although the time and funding investment that intervention programs require usually is substantial, their impact usually is limited to a small target population. How is it possible to improve body image and lessen the negative impact of
media on larger numbers of youth? One possible vehicle involves policies and legislation, particularly those that are related to governmental regulatory groups. Such policies are difficult to formulate because the free market rights of media corporations can conflict with the public health of the diverse populations to whom they appeal. In previous decades, government policy regarding media usually was modified when children were involved; however, this no longer seems to be the case, at least in the United States [141,142]. Given the laissez-faire trend of current federal agencies, a call-for-action is even more critical.

Industry guidelines and legislation do exist for some media. Since 1992, television networks have had voluntary standards to limit the portrayal of violence [143]. In 1997, the Federal Communication Commission implemented requirements for educational and informational programming for children [144]; but observance of these rules has been questionable and no television station has lost its license for noncompliance [145]. Another mechanism, the use of ratings systems, is favored strongly by parents and public health organizations [93,146,147]. The movie ratings system was established by the Motion Picture Association of America in 1968, and around 3 decades later, in 1996, the television industry developed a similar system. In this same year, the Television Communications Act mandated that new television sets be manufactured with a micro computer chip (the V-chip) that could read these ratings [147]. Although age-based ratings have been supplemented with content-based ratings, the system works poorly [143]. Producers are inconsistent in program ratings and parents self-report that they do not use the ratings and V-chip system, even when it is available [93,142,148]. The video and computer game and music industries also have developed ratings, both of which resemble, but are not identical to, those for movies and television. The gaming industry ratings system is based on age [149] and the music industry considers the explicitness of the lyrics [150].

One public health area that is noticeably absent from current industry guidelines, policies, and rating systems concerns body image and disordered eating. Although it may be challenging to develop a rating system around these issues, policies that are targeted at the mass media could take one of two forms: restrictions on negative body image and eating attitudes and behaviors, or the general promotion of positive body image and eating attitudes and behaviors. The first set of policies aims to restrict the portrayal of stereotypical body image (eg, overly thin women and very muscular men) and the presentation of unhealthy eating attitudes and behaviors (eg, dieting). The second group of policies focuses on promoting healthy body image through the depiction of healthy-weight men and women and targets the prevention of disordered eating and body change methods by increasing awareness of their existence and the dangers that they represent. These two types of policies are not exclusive, but represent the ideal components in a continuum of restricting current, negative practices and replacing them with positive alternatives, in an effort to make media part of the solution for adolescents.

Even if official policies do not materialize, it is possible and essential to make media more accountable, whether this impetus emerges from subscribers and
viewers, contributors (eg, writers and artists), institutions (eg, nongovernmental agencies), or the media companies themselves. One example of a government-driven initiative to encourage the restriction of stereotypical body image is the Body Image Seminar that was held by the British government following the release of the report, *Eating Disorders, Body Image & The Media* [151]. At the seminar, editors from leading women’s and teen magazines announced the adoption of a voluntary code to prohibit the publication of pictures of ultra-thin models and celebrities [152]. VANS, Inc., a company that designs active-casual footwear, clothing and accessories for the youth market, provides a strong example of company-driven efforts to promote positive body image in its customers. VANS’ philosophy is to use real athletes instead of models to represent the company’s roots in action sports (S.B. Stanger, personal communication, 2004). As a result, this company’s advertisements portray healthy-looking youth, rather than the emaciated models that are featured in other advertisements (Fig. 3).

Fig. 3. VANS, Inc. has a commitment to using “average-looking” models in their advertising.
Research should continue to monitor the relationship between media and body image, but interventions and policy are two measures that can be used to lessen media’s negative impact. Teaching media literacy and advocacy skills to youth are successful in altering body image and eating disorders. The growing literature in this area suggests that to counteract youth’s unhealthy attitudes and behaviors regarding food and weight, integrated programs that address obesity and eating disorders are recommended. Although interventions typically focus on smaller target populations, policy has the opportunity to impact audiences on a wider scale. Rather than censor media, the public ought to be made more aware of and praise the mass media that feature and promote positive, healthy body images.

References


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