

The impact of excessive dieting on eating disorders in adolescent women: a literature review

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Abstract

Purpose – This paper aims to in the modern world, possessing an attractive appearance is often considered a highly valued attribute. As such, the perceptions and satisfaction with one's body are shaped by dominant cultural norms. Adolescents, women in particular, who are heavily influenced by media representations, may tend to have a distorted body image (BI), including adopting extreme dieting methods. This study reviews the adverse effects of excessive weight loss associated with this.

Design/methodology/approach – The authors searched journals and the internet for relevant literature using the keywords “eating disorders”, “body image” and “weight stigma”. In the case study field, they added papers that considered “nutrition” to identify the link between dieting behaviour and nutrition. From these reviews, the authors ultimately selected 190 articles that appeared to meet their research objectives. The papers cover a range of studies published between 1995 and 2023.

Findings – Among adolescent girls and young women in their early 20s, there is a social media-driven culture of being extremely thin and petite. Weight stigma puts more pressure on them and makes strange behaviours like pro-ana syndrome a part of the culture. The authors have seen that modern BI standards leave young women vulnerable to eating disorders caused by excessive dieting.

Originality/value – Adolescence is a time of continuous growth, so balanced nutrition is essential. However, biased societal standards of beauty can push adolescent girls who are sensitive to external gaze into excessive dieting and make eating disorders a culture. This review provides a perspective on the behaviours that should be pursued for a healthy BI.

Keywords Body image, Weight stigma, Eating disorders, Eating habits, Social media, Pro-ana syndrome

Paper type Literature review

Introduction

This review focuses on how the internalization of an unhealthy body image (BI) can lead to extreme weight loss attempts in adolescent females, with unbalanced nutrition negatively impacting their physical and mental health. In particular, we noted that excessive dieting behaviour has manifested into a culture of pro-ana syndrome among teenage girls. The commonly accepted age bracket for teenagers spans from 13 to 19 years old; nevertheless, interpretations of youth and adolescence may vary. According to the World Health Organization, adolescents are identified as individuals aged 10–19 years old. In modern culture, a healthy and beautiful body serves as a symbol of success, a strong work ethic and self-control. Furthermore, it is seen as an individual's productive resource and medium for



creating physical capital (Dawn, 2017; Dworkin and Wachs, 2009). The “pro-ana” in pro-ana syndrome refers to an individual who chooses an eating disorder as a lifestyle choice. They admire an abnormally thin body, so they hyper-manage their weight and control what they eat, believing it to be the ideal body (Juarascio *et al.*, 2010). Occasionally, eating disorders manifest as disordered eating behaviors, even among athletes requiring weight management. Athletes displaying eating disorders demonstrated actions such as binge eating (21.2%), purging (5.8%), laxative use (1.9%) and engaging in excessive exercise (over 1 h) (34.6%), with some experiencing weight loss exceeding 20 pounds in the past 6 months (13.5%). Elevated levels of depression, anxiety and stress were also observed in the cohort exhibiting these disordered eating behaviors (Kalpana and Khanna, 2023). As this review focuses on disordered eating behaviours in adolescent females, we examined the association with BI. In this regard, interest in BI has increased significantly over the past 50 years (Grogan, 2008). The concept of BI is known to consist of two components: body size and perceptions and attitudes towards the body, which can differ significantly from the objective physical condition and when others judge one’s appearance (Kolka and Abayomi, 2012; Cash and Pruzinsky, 2003). Therefore, adolescent females, who are increasingly concerned about their appearance, are very concerned about how their bodies are perceived by the outside world. They already perceive their body as slim, but show a desire to be thinner. Adolescent girls are unhappy with their current body shape. And worrying about being thinner threatens young women’s health and nutritional status (Dixit *et al.*, 2011). Especially during adolescence, self-formation takes place and ways of thinking, such as preferences and standards of right and wrong, are established. Therefore, unique changes can take place during this time, which will shape your own patterns as an adult. The physical and psychological adjustments that adolescent females make to an endless array of social and behavioural aspects have many implications for their lives (Hetherington, 2000; Fisher *et al.*, 1995). And the standards of thinness that are standardized, favoured and emphasized in our society reinforce the BI expectations of adolescent girls and make them self-conscious about their BI (Boschi *et al.*, 2003). It is worth noting that most psychopathological disorders also occur in adolescence. Adolescence is a crucial period of self-formation and psychiatric brain development, as described above. However, the reorganization of the adolescent brain is often unspecific and in many cases reversible, that is, it is characterized by a high degree of change (Ing *et al.*, 2019). During this time, the repeated reinforcement of fixed images and standards does not help adolescents develop a self-directed BI and can sometimes be a source of stress. They may continue to be unhappy with their bodies as adults in their 20s and continue to abuse themselves for an unhealthy BI. In the following section, we will introduce social media and online communities and weight stigma that contribute to the perpetuation of these BIs, review how they can lead to disordered eating and conclude with a discussion of desirable behavioural changes.

Materials and methods

We searched the journals and the internet for related literature using the keywords “eating disorder”, “body image” and “weight stigma”. We then narrowed the search candidates by looking at the bibliographic list contained in the first literature. The focus was on journals with high citation records. Next, we also reviewed the literature of the type of report that appears to be relevant to our scope of study. A paper considering the use of social media in the field of case study was added to confirm the difference in BI according to the use of social media. Through this process, young women were selected as the central target group. Through this review, we selected 190 papers that ultimately appear to be relevant to our purpose. These papers cover various studies between 1995 and 2023. The literature review

flowchart for writing a review is presented in [Figure 1](#). In this literature review, PubMed, Scopus, ResearchGate and Google Scholar were searched as a chain of search terms for eating disorders, anorexia and BIs, and diet behaviour according to PRISMA flow guidelines. As an inclusion criterion, various types of articles were considered, including original research articles, review articles, internet articles, overview reports and series. We did not apply restrictions on publication dates or languages. The exclusion criteria were not accessible to the entire text, full text without raw data, inappropriate topics, university papers and papers, and not related to the main focus of the review. We first summarize weight stigma and eating disorders caused by the development of internet culture and social media and the immobilized BI of popular culture, and then address some essential results based on a literature review.

Results

Online communities and body image

Contemporary youth use social media and digital technologies to acquire life knowledge, shape attitudes and establish BI standards. These social media platforms function to fortify prevailing notions of ideal body standards within the cognitive framework of young individuals ([Perloff, 2014](#)). The academic interest in peer influence on body dissatisfaction, life satisfaction and eating disorder symptoms persists. Adolescent females, highly influenced by peers, use online communities, including social media, for a sense of belonging and potential competition. Consequently, online community use is linked to current and potential future life satisfaction ([Grabe et al., 2008](#)). Adolescent girls, tying self-worth to

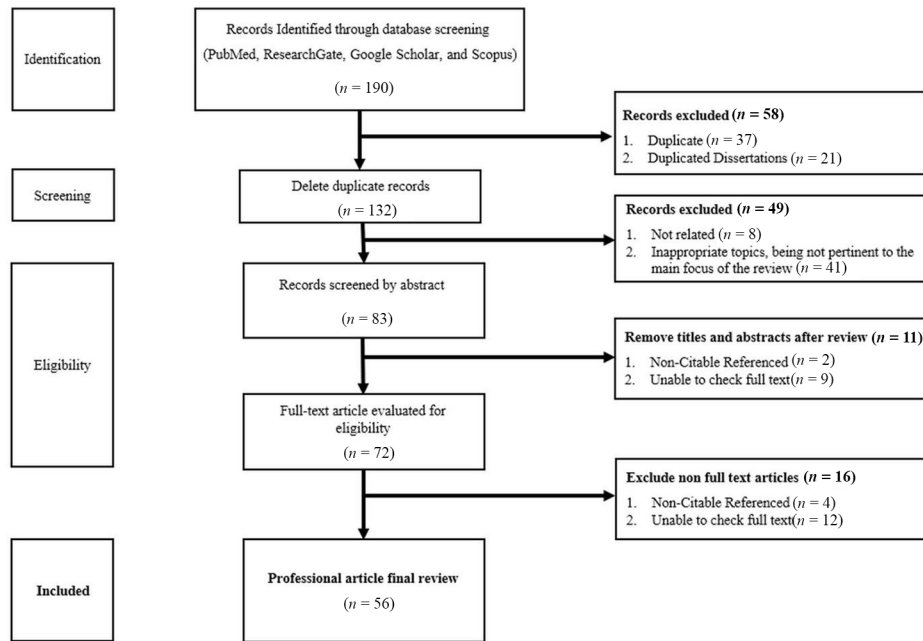


Figure 1.
PRISMA flow chart

Source: Authors' own creation. Search process for a literature review

others' approval, anticipate judgement by their community's standards, emphasizing peer groups' substantial impact on BI. Peers, seen as more relatable than celebrities due to their perceived realism, influence comparisons and self-characterization shaped by online images (Burnette *et al.*, 2017; Kleemans *et al.*, 2016; Carey *et al.*, 2014). Psychological research often faces criticism for centring on the individual as both the source and solution for obesity and eating disorders. This portrayal identifies individuals as responsible for refraining from behaviours to avoid obesity; failure to lose weight may lead to societal blame. Young women, perceiving their bodies as their responsibility, are especially vulnerable to eating disorders (Patti and Madison, 2016; Rothblum, 1999). Adolescent females' BI is a multifaceted psychological concept involving personal experiences and perceptions of physical appearance. Within this domain, others' subjective evaluations prompt cognitive, behavioural and emotional investments. Instances of body shame or distorted beliefs lead to an excessive emphasis on behavioural investment in appearance (Cash, 2004, Cash and Smolak, 2011; Menzel *et al.*, 2011). This drives them to seek community acknowledgement through the sharing of "before" and "after" weight loss pictures, gaining praise for slimmer bodies that fosters a sense of accomplishment and inspires others to maintain thinness (Johnson, 2014).

The impact of excessive dieting behaviour on eating disorders following media exposure

Obesity, a global epidemic, is closely tied to genetics, yet environmental factors, including physical activity and diet, also contribute (Karampola *et al.*, 2011; Must *et al.*, 1999). Obesity constitutes a health issue demanding societal intervention; nevertheless, the media has played a pivotal role in disseminating stereotypes associated with an idealized BI, prioritizing aesthetic norms over considerations of physical health. This phenomenon has engendered misconceptions regarding the nature of obesity (Bandura, 2009). In popular culture, heavier individuals are humorously portrayed and subject to aesthetic and medical criticism. Media typically portrays them as lazy, unmotivated, unhealthy, isolated, unattractive and morally deficient. Cinematic representations reinforce stereotypes, depicting overweight students facing ridicule or bullying. The notion that being overweight signifies unattractiveness and moral inferiority is culturally specific and negatively affects individuals, regardless of their weight (Joan and Kimberly, 2016). The impact of social media on BI and self-expression among adolescent and young adult women is significant. Younger and younger women are more susceptible to BI and distorted BI thinking due to their numerous role models online and their reliance on social media (Perloff, 2014). This internalization of distorted BI is a concern, as body dissatisfaction can lead to eating disorders (Smolak and Thompson, 2009). Figure 2 shows how frequent exposure to social media can lead to unrealistic beauty standards and disordered eating behaviours. The debated link between dieting behaviour, particularly in dissatisfied adolescent girls, and the onset of eating disorder symptoms involves the contentious role of the media, especially through social media's presentation of extremely thin body ideals. Some argue for media influence on the development of eating disorders, supported by the historical rise in disorders like bulimia and anorexia in Western countries since the early 20th century. Consequently, the media's impact on BI dissatisfaction and eating disorders is generally acknowledged as one of several risk factors for adverse outcomes (Ferguson *et al.*, 2014; Becker *et al.*, 2002). Media images correlate with body dissatisfaction, driving excessive dieting due to anxiety – a pervasive mental health concern commonly associated with abnormal eating behaviours, including anorexia and bulimia. Heightened hunger serves as a trigger for subconscious and neurobiological anxiety regulation in these eating disorders (Hussenoder *et al.*, 2021; Meier *et al.*, 2015; Guarda *et al.*, 2015). When a person is perceived as not meeting the beauty standards that society deems attractive, they can develop

Case. 1



Nicole, Age 22

Nicole used Instagram for what she calls "thinspo."
As a result of her social media usage, Nicole became anorexic.

Case. 2



Jane, Age 16

Jane is a sixteen-year-old female who developed anorexia after
she began following clean lifestyle influencers on Instagram.

Symptoms of eating disorders include

- Extreme and worsening preoccupation with body size, shape, and weight loss
- Obsession with food and fad diets
- Skipping meals or eating overly small or large portions
- Adopting specific food rituals that are not medically necessary
- Ongoing concern with counting calories, macronutrients, or other metrics
- Noticeable fluctuations in size or weight
- Missing a period or only being able to menstruate on oral contraceptives
- Experiencing gastrointestinal distress or other stomach problems
- Low levels of iron, blood pressure, blood sugar, and other vital metrics
- Sleep problems
- Dental issues with cavities, tooth pains, or enamel erosion
- Fine hair on the body
- Evidence of vomiting, laxative abuse, diet pills
- An ongoing obsession with "clean eating"
- Exercising compulsively and beyond normal limits

Figure 2.

The relationship
between social media
use and eating
disorder

Notes: Social media exposes individuals to more than unrealistic beauty, increasing the likelihood of eating disorders and associated body image disorders. Studies show that people in the top 25% of social media use are more than twice as susceptible to eating disorders

Source: Figure courtesy of Kerry Heath 2023

insecurities about their existence, especially if they are young and female. Tension-induced obsessive-compulsive disorder is also associated with distortions in body mass index (BI). Therefore, it is important to value and invest in a healthy body, exercise and proper weight control to develop a healthy and ideal BI (Pauzé *et al.*, 2021).

Behavioural factors that contribute to weight stigma

Weight stigma oversimplifies the intricate process, fixating solely on weight, prevalent in the USA and correlates with adverse health outcomes. Its primary detriment lies in its association with compromised health behaviours, hindering healthy eating and contributing to unhealthy weight patterns, particularly among adolescents with a strong connection to eating and weight control habits (Lee *et al.*, 2021). Extreme appetite control triggers disordered eating, encompassing both restriction and bingeing. Regardless of self-perceived weight, individuals may continually pursue weight loss as an achievement, potentially suggesting a genetic predisposition to obesity (Dawn, 2017; Gremillion, 2002). Society's negative perception of obesity, particularly among aspirational adolescents and young women, positions it as a potential precursor to later eating disorders. The behavioural susceptibility theory of obesity implicates eating behaviours in regulating food intake (Herle *et al.*, 2021). Adolescent eating behaviour, immersed in weight-concerned behaviours (weight stigma), often leads to complex eating disorders significantly impacting health (Villarejo, 2012). These disorders involve disordered behaviours like prolonged calorie restriction or binge eating. Consequently, preoccupation with a pathological BMI and weight stigma can precede eating disorder development in adolescents (Yilmaz *et al.*, 2019; Stice and Desjardins, 2018). Persistent childhood picky eating and overeating strongly correlate with an increased risk of anorexia later in life (Herle *et al.*, 2019). Societal standards dictating specific weights for attractiveness negatively impact the behavior of adolescent and young women. Even mild eating disorders exacerbated by weight stigma can lead to anorexia nervosa, affecting approximately 1% of the female population and recognized as a mental illness (Yeeles, 2017). Promoting acceptance for all body sizes, including being big and strong, is crucial for societal well-being, discouraging weight-based bullying (Carly, 2016).

Prevalence of pro-ana syndrome

The term “culture-bound syndrome” refers to specific syndromes unique to certain cultures. The rising prevalence of mid-20th-century eating disorders, coupled with a media trend emphasizing thinness in women, contributed to widespread body dissatisfaction in 50% of adolescent girls and young women (Sumathipala *et al.*, 2004; Grabe *et al.*, 2008). The emergence of “pro-ana syndrome” as a culture around eating disorders, with significant online influence on BI and eating behaviours, is noteworthy. Content on these websites promotes abnormal weight loss, emphasizing behaviours associated with thinness. A survey of 10,123 adolescents revealed 0.3% suffering from anorexia, underscoring the urgency of addressing eating disorders. Anorexia involves refusal to maintain a body weight of 85% or more of the ideal weight, excessive self-evaluation of weight or body shape and denial of underweight severity. Restricting and purging are two types of anorexia, involving minimal food intake or regular bingeing and purging to sustain a low body weight (Johnson, 2014). Pro-ana syndrome significantly influences reliance on weight and body shape. Online platforms offer information on very thin and petite BIs, impacting eating habits and self-concept, providing guidance on weight loss methods with interactive features. Pro-anas often pursue specific markers of weight loss, such as visible collarbones and hip bones, considered ideal. “Bone photography”, featuring skeletal images, is deemed beautiful in the pro-ana community, symbolizing allegiance to the pro-ana lifestyle (Bardone-Cone and Cass, 2007). Pro-aners downplay the negative aspects of their eating disorder, viewing pro-ana syndrome as a lifestyle choice or adopting a blinded perspective on anorexia (Carlo *et al.*, 2021; Hilton, 2018). Nonetheless, insights from an individual overcoming pro-ana syndrome shed light on navigating this phenomenon:

Don't even try. I've been trying for months not to throw up, and I can do that now, but sometimes I end up throwing up when I don't want to. I hate doing it, but sometimes I can't stop. This extreme dieting behaviour is not worth starting and it's not cool to ask for advice about it. The fact that you're even interested in this tells me that you don't actually have an eating disorder. (Juarascio *et al.*, 2010).

In a culture that sees itself as valuable only in certain ways (such as having a pretty body and face), individuals become objects of exchange by presenting themselves as valuable and sharing online how they look according to certain standards. However, this culture increases self-surveillance (Dawn, 2017) and causes many people to abandon ways of honouring themselves, making them unknowingly sick.

Discussion

People need to successfully change their behaviour or change themselves for self-care. Appropriate self-direction techniques should be selected to help people manage their own motivations and behaviours. For example, allowing individuals to self-diagnose to remind them of the need for behaviour change and self-care efforts (Knittle *et al.*, 2020). This is because, unfortunately, there are currently no dietary guidelines for adolescent eating disorders. This is despite the fact that the onset of eating disorders in adolescence is significant. Eating disorders, which are linked to mental health, are also linked to mortality. As of 2015, the average age of onset for eating disorders considered disorders of adolescence was 12.3 years old (Bryan *et al.*, 2019; Swanson, 2011; Hoek and Van Hoeken, 2003). The development of an eating disorder involves sociocultural factors such as media and peer influence (Nasser, 2010). Therefore, it is thought that mindfulness-based interventions that promote behavioural flexibility, such as freedom from external judgement and the ability to shape one's BI as desired, may reduce compulsive behaviours such as excessive dieting or

overeating. Mindfulness can be defined as focusing attention on the present moment. Taking time to focus on the present moment is essential for students, especially in adolescence, when instant gratification is so important. It can also be a way for them to measure their knowledge of eating habits and healthy diets that can make them feel good again. A behavioural therapy called mindful eating (ME) is an experiential practice that aims to make you more aware of food and eating – the tastes and smells, the thoughts and feelings you have while eating and craving food. More specifically, we found that spending more time on ME behaviours improved independent awareness and increased behavioural flexibility after consistent practice. Behavioural change is associated with behavioural flexibility and stress reduction (Janssen *et al.*, 2018). This flexibility creates the ability to shift and adjust strategies when faced with unexpected situations. Indeed, empirical studies have indicated a favourable association between the engagement in mindfulness practices and adolescents' self-reported perception of control (Moore and Malinowski, 2009; Oberle *et al.*, 2011). This sense of control reduced the anxious behaviour of trying to lose weight despite being healthy and sufficiently attractive. The point of improving health and well-being in this way is not only to address the issues that arise from individual behaviour, but also to help people manage their own motivations and behaviours with the skills they have available to them (Riegel *et al.*, 2017). In addition, given the important role of social media, schools, parents, and peers should have the potential to counteract all negative BI messages online, including on social media, as adolescents begin to use social media and many experience pubertal changes and become more aware of their bodies and appearance. It should also be recognized that appearance comparisons in popular culture, including social media, exacerbate adolescents' appearance and BI, and that society has a role to play in helping to counteract these negative messages (Papageorgiou *et al.*, 2022).

Conclusion

In contemporary society, possessing an appealing physical appearance can readily secure favour and positive regard, conferring advantages in social interactions and status. Nonetheless, the standardization of beauty norms may engender preconceived notions concerning BI, particularly among adolescent females who, influenced significantly by media portrayals and external evaluations, may perceive extreme dieting as a commendable attribute. Adopting unhealthy dietary practices and excessive weight management strategies in pursuit of a diminutive physique may result in deleterious health outcomes, heightened anxiety and stress. The enduring consequences of weight stigma can exert prolonged detrimental effects on the health of adolescent girls who have not yet completed their growth. Consequently, instilling motivation for proper nutrition and fostering self-control is imperative to empower them to emancipate themselves from rigid beauty standards. Moreover, collaborative efforts involving parents, educators, schools, communities and society at large are essential to mitigate stereotypical beauty messages, aiding adolescent girls in liberating themselves from distorted BI perceptions. There is a collective responsibility among individuals and society to eradicate pro-ana content.

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