

# Adolescent Eating Disorder Risk and the Online World

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## KEYWORDS

• Internet • Online • Eating disorders • Body image

## KEY POINTS

- Internet and social media are important to consider as contexts contributing to the promotion and maintenance of eating disorders.
- The online space contains high levels of appearance pressures, but also hosts extreme content, promoting eating disorder behaviors that may be harmful.
- Clinicians should explore their patients' use of Internet and broaden their knowledge of useful online resources that may be helpful to clients or their families.

The media has been proposed to constitute an important source of sociocultural appearance pressures, and the detrimental effects of exposure to unrealistic and unrepresentative body types, and messages regarding the importance of achieving a thin and toned appearance have been highlighted.<sup>1</sup> The pressure to achieve such unrealistic ideals is increased by the fact that the bodies portrayed in the media are highly unrepresentative of the general population and are accompanied by a discourse that exaggerates the extent to which body weight and shape are controllable through diet and exercise, as well as a food environment that is conducive to overeating.<sup>2</sup> The reciprocal relationships between media use and eating disorder risk have been well documented over the past 2 decades in relation to traditional forms of media, primarily print and television content.<sup>1</sup> However, over the past years, the proportion of media content that is viewed online rather than via these traditional types of media has increased, particularly among youth who are at the highest risk of eating disorders.<sup>3</sup>

In recent years, Internet usage has increased exponentially, with 93% of teenagers now possessing Internet access at home.<sup>4</sup> Youth are the highest Internet and social media users, with up to 89% of 18 to 29 year olds using a social network site, largely through their mobile phones.<sup>5</sup> In response to this, an emerging body of literature has started to document the relationships between Internet and social media use and eating disorder risk.

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Disclosure Statement: None.

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Child Adolesc Psychiatr Clin N Am ■ (2017) ■-■

<https://doi.org/10.1016/j.chc.2017.11.011>

1056-4993/17/© 2017 Published by Elsevier Inc.

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**GENERAL INTERNET USE AND EATING DISORDER RISK*****Internet and Social Media in the Context of Eating Disorders***

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Many theoretic frameworks have been used to ground investigations of the relationship between sociocultural influences, such as traditional media and eating disorders, including sociocultural theory, social learning theory, self-objectification theory, social identity theory, and uses and gratifications theory. These theories focus on examining the ways that media serves to increase the exposure to harmful appearance ideal, reinforces the centrality and importance of appearance, and models unhealthy appearance-altering behaviors and practices. Social identity theory additionally highlights how the salience of appearance or eating-related behaviors as a condition for group membership may serve to promote eating disorders.

Online forms of media, including social media, have attributes that make them particularly relevant to eating disorders. The first is their highly visual nature. Most online content comprises images rather than text, which makes it saturated in appearance-related content. Furthermore, youth may use types of social media that are particularly picture oriented and that encourage them to spend time curating the images of themselves that appear online, and examining images of their peers or celebrities. The second is its capacity to tailor itself to a person's interests, building on previous content through targeted advertising, search histories, and so forth, leading to an online environment that becomes increasingly person specific the more time that is spent online. For example, a large number of Web sites will have advertisements that are selectively produced based on a person's past search history, meaning that someone who has looked for dieting or weight loss-related content will be likely to view advertisements for weight-loss products.<sup>6</sup> Similarly, a content analysis of advertisements on popular Web sites targeting teenagers highlighted the high proportion of cosmetic and beauty products being promoted.<sup>7</sup> The third aspect is the interactive nature of the online world. In this way, and particularly with social media, the online world combines aspects of traditional media influence as related to eating disorders but also interpersonal influences, including peer relationships, teasing, and such. Finally, the Internet provides the opportunity for access to a wider variety of social groups than the offline world, particularly for youth. Furthermore, through facilitating the coming together of people with marginal interests, the Internet provides a space for groups with attitudes and opinions that are on the more extreme ends of the spectrum. One example of this is pro-eating disorder communities, which is discussed in greater detail later.

Two of the broader characteristics of the Internet that are also relevant are the lack of capacity to moderate Internet content as well as its principal use for commercial purposes. One illustration of the consequences of this is the proliferation of weight-loss products, applications (apps), and methods being sold on the Internet. Most of these products or apps are not empirically based or supported,<sup>8,9</sup> making it unclear whether they can be helpful in any way. Furthermore, for individuals at risk of eating disorders, such products or mobile apps may promote behaviors such as calorie counting that can precipitate or maintain eating disorder behaviors.

In this way, the Internet presents many relevant aspects to the development and maintenance of eating disorders. Given this, the relationship between eating disorders and Internet and social media has received increased research attention. In later discussion, the authors provide a synthetic review of the empirical studies examining this relationship. Overall, the literature provides support for such a relationship with small effect sizes. It is important to remember, however, that social media use occurs in addition to exposure to traditional media and its detrimental effects on body image (**Box 1**).

**Box 1****Internet characteristics relevant to eating disorders**

- Highly visual: Little text, mostly images, with some of the most-popular apps being entirely photograph based
- User-influenced: Content tailored to each user based on previous online activity and interest. Capacity to become an increasingly appearance and diet-saturated environment
- Interactive medium that combines media influences and peer feedback
- Capacity to bring together individuals with marginal interests and facilitate the normalization behaviors such as eating disorder symptoms
- Lack of moderation and supervision
- Presence of commercial interests, including the diet, beauty, and fitness industries

***Empirical Evidence***

Many correlational and experimental studies have provided support for the relationship between Internet use and higher levels of disordered eating, and eating disorder symptoms, in addition to a small number of longitudinal studies. Earlier studies focused on identifying a relationship between general Internet use and eating disorder symptoms and provided evidence for this association in samples of adults,<sup>10,11</sup> undergraduates,<sup>12</sup> and adolescents.<sup>13,14</sup> Furthermore, in one of the few existing longitudinal studies, Facebook use was a prospective predictor of increased eating disorder symptoms.<sup>15</sup> More recently, however, it has emerged that engagement in online platforms that promote engagement in photograph-based activities are most related to eating disorder risk factors. Among female adolescents, those who used appearance-related forms of Internet and social media displayed the highest levels of eating disorder risk factors.<sup>16</sup> Similarly, among female adolescents, those who spent more time editing their images for social media reported higher levels of body dissatisfaction and dieting.<sup>17,18</sup> Among young women, use of the photograph features specifically on Facebook was found to be associated with drive for thinness and body image concerns, whereas general Facebook use was not.<sup>19</sup> Among adolescent girls, selfie taking and a preoccupation with curating an online self is correlated with risk for developing eating disorders.<sup>17</sup>

In this way, involvement with photograph-related activities on the Internet seems to be particularly related to eating disorder risk. Although the mechanisms accounting for this still warrant further investigation, it is likely that appearance comparisons play an important role. Support for this comes from studies identifying appearance comparison as a mediating factor in the relationships between Facebook exposure and body image concerns.<sup>20</sup> In addition to social comparison, however, the feedback received from peers on social media may play an important role. For example, undergraduates who received negative feedback on their online profiles reported higher levels of eating disorder abnormality.<sup>21</sup> Thus, there is emerging evidence that receiving negative feedback on social media may increase eating disorder symptoms.

Much of the content on the Internet serves to promote individuals, brands, and products. To date, little research has investigated how targeted advertising to individuals with existing body image and eating concerns might maintain or exacerbate eating disorder symptoms. Very recent research has provided initial evidence that apps and programs promoted in the context of fitness and weight loss are indeed unhelpful to individuals at risk of eating disorders. Among college students who reported using fitness tracking apps, calorie counting and fitness tracking were associated with eating disorder behaviors.<sup>22</sup>

In sum, greater Internet and social media use has been shown to be associated with eating disorder behaviors, particularly greater use of photograph-based apps and among individuals who are most invested in their online self-presentation.

### EATING DISORDER–SPECIFIC CONTENT

In addition to examining the relationship between Internet and social media use and eating disorder risk, research attention has been directed toward understanding the ways in which content specific to eating disorders exists online, and how it is related to the eating disorder outcomes.

#### *Pro-Eating Disorder Content*

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As described above, one of the ways in which the Internet is relevant to eating disorders is through the coming together of individuals with minority beliefs. One such example is pro-eating disorder content and communities that use the Internet as a means of expressing their belief in the fact that eating disorders are a life choice as opposed to a form of mental illness, and seek to support individuals in the maintenance and often concealment of their eating disorder.<sup>23</sup> The typical content includes pictures of very thin individuals, “thinspirations” (sometimes digitally modified so as to appear even more emaciated).<sup>24</sup> They also frequently present advice or “tips” for maintaining disordered eating symptoms, including extremely unhealthy weight-loss methods or techniques for concealing symptoms from family and friends.<sup>24</sup> Furthermore, they often include some means of interactive communication (notice board, blog, or instant messaging) through which members communicate and provide each other with encouragement and support.

Content analyses of the interactions on pro-eating disorder Web sites have highlighted the importance of shared deception and concealment for fear of stigma or imposed treatment and the way in which this reinforces the separation between the group of members and the outside world.<sup>25</sup>

A small body of research has provided support for the relationship between use of pro-eating disorder Web sites and eating disorder symptoms.<sup>26,27</sup> For example, in interviews by Schroeder<sup>28</sup> with women undergoing eating disorder treatment, participants reported that the tips and tricks on pro-eating disorder Web sites had worsened their eating disorder symptoms by prompting feelings of being “triggered” to act on eating disorder–related urges (eg, obsessions about nutritional information) and by teaching inappropriate, hazardous compensatory behaviors. In addition, a systematic review and meta-analysis of the findings of experimental studies investigating the effects of exposure to pro-eating disorder content found a consistent small to moderate size effect on eating disorder symptoms. Evidence points to the fact that such Web sites and online content are harmful and may constitute a serious barrier to treatment.<sup>29</sup>

Despite the focus on maintaining eating disorder symptoms of these communities, however, many studies have also found that the possibility of receiving social support was one of the main motivations for individuals to participate in these online communities.<sup>23,30</sup> Individuals suffering from eating disorders are known to experience a lack of social support in their interpersonal environment and report shame and stigma.<sup>22,31</sup> Given this, the Internet provides a safe space where their behaviors and attitudes will be received without judgment and where they can encounter others with similar experiences.

Given the evidence for the harmfulness of pro-eating disorder online content, efforts to limit the presence of such content have increased. Social media platforms such as

Pinterest and Tumblr have banned such groups from forming, and legislation has emerged at the international level banning pro-eating disorder Web sites.<sup>29</sup> Professional organizations such as ANAD (Anorexia Nervosa and Associated Disorders) have been involved in advocating for the removal of pro-eating disorder online content; however, unfortunately monitoring the online space is difficult.

### ***Pro-Recovery, Information, and Support Networks***

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Although the Internet does allow for individuals endorsing pro-eating disorder positions to come together, it also facilitates the creation of support groups. Several online pro-recovery groups for eating disorders do exist and have been shown to provide both information and emotional support.<sup>32</sup> Furthermore, online groups may fulfill needs, which face-to-face groups have more difficulty meeting, such as being available late at night, and may fill an important gap in available resources.<sup>33</sup> The creation of more supportive online content around treatment seeking is an important need, and clinicians should investigate innovative ways of using the Internet as a means of providing outreach and support.

### **RESOURCES AND FUTURE DIRECTIONS**

The evidence for the ways in which the Internet and social media may serve to promote and maintain eating disorder abnormality is increasing. However, the Internet also provides a means of providing access to information and resources regarding eating disorders. For example, using the Internet has been shown to be a successful means of disseminating mental health first aid for eating disorders.<sup>34</sup> Similarly, The Reach out And Recover Web site provides a useful screening tool for parents or friends who are concerned about a loved one's eating behaviors. In addition, it provides a printout summary and recommendations for referral that can be provided to a general practitioner (<http://www.reachoutandrecover.com.au>). Clinicians should investigate their client's use of Internet and social media and be able to direct them and their families to accurate and helpful online resources.

In addition, given the evidence for the lack of social support for individuals with eating disorders, strengthening the offline relationships of individuals who suffer from eating disorders may help satisfy their need for social support and, in turn, inhibit their desire to visit pro-eating disorder Web sites. Furthermore, increasing the number of social support resources online for individuals with eating disorders could also be a promising direction. In response to the documented effects of engagement in photograph-based online activities on eating disorder risk, programs targeting media literacy around social media have started to emerge and revealed promise among adolescents.<sup>35</sup> More research in this direction is warranted. Longitudinal studies examining social media use by younger children and subsequent development of eating disorders are indicated.

More broadly, it might also be helpful for clinicians to encourage clients to consider their relationship to social media and the Internet, and their reliance on it. It has been suggested that the constant solicitations of social media might also increase stress and anxiety.<sup>36</sup> In the context of eating disorders, it might also increase the frequency of appearance comparisons and other unhelpful behaviors. Therefore, some clients may also benefit from considering the value of limiting their time online. In the case of youth, parental mediation of Internet use has been shown to be helpful and increase positive Internet use.<sup>37</sup> Parents should be advised to monitor their children's online activities with specific attention to their children's choices of posted photographs and the extent to which they have been edited (**Box 2**).

**Box 2****Key findings and future directions concerning the Internet and eating disorders***Key findings*

- Greater Internet and social media use, particularly photograph-based apps, has been shown to be associated with eating disorder behaviors
- Individuals who are most invested in their online self-presentation may be most vulnerable
- Pro-eating disorder Web sites advocate for eating disorders as a lifestyle rather than a disorder
- Exposure to pro-eating disorder Web sites has been shown to be detrimental and increase eating disorder symptoms
- Pro-recovery content is rarer

*Directions*

- Clients' Internet and social media use should be taken into account as an influence for recovery or maintenance of eating disorder symptoms
- Clinicians should investigate innovative ways of using the Internet as a means of providing outreach and support
- Clinicians should learn to direct clients and their families to accurate and helpful online resources
- Clinicians should encourage clients to consider their relationship to social media, and in the case of minors, encourage parental mediation of online content

**SUMMARY**

The Internet has created a more visual and interactive media, such that youth are more likely to view images of a thin ideal and compare it to their own.

Social media has also given youth access to a much wider group of people and interests than they otherwise encounter, in a way that can support and promote eating disordered behaviors.

Professional organizations have advocated for the removal of pro-eating disorder online content, and several sites have taken action; still, monitoring the online space is difficult. The creation of more supportive online content around treatment seeking is an important need, and the effectiveness of such interventions should be measured. Clinicians should explore their patients' use of Internet and social media and consider its impact on treatment. In addition, clinicians should broaden their knowledge of useful online resources that may be helpful to clients or their families.

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