REVIEW

The urgent matter of online pro-eating disorder content and children: clinical practice

Kathleen Custers

Abstract During the last decade, much concern has been expressed about online pro-eating disorder communities (e.g., pro-anorexia websites and blogs) which encourage their users to engage in disordered eating behavior. The aim of the current paper is to reemphasize the importance of pro-eating disorder communities in light of the recent changes in the media landscape. With the increase of social networking sites, pro-anorexia messages have transplanted to more volatile and constantly changing media, such as Snapchat, Twitter, Facebook, Instagram, Pinterest, and many others. Most parents, educators, and health professionals are unaware of the sheer scope and nature of such pro-anorexia messages in these new contexts. The current paper will provide a review of pro-eating disorder websites, overview the effects of such websites on young people's health, examine the emergence of these messages on social media platforms, and highlight a number of guidelines for clinicians and parents.

Conclusion: The dissemination of online pro-eating disorder content to different types of social networking sites is becoming an urgent issue.

What is Known:
• *Existing research on pro-eating disorder websites examines the prevalence and the content of these websites, and the effects of pro-eating disorder content on both clinical (eating disordered individuals) and non-clinical samples (non-eating disordered individuals).*
• *The scope and nature of such anorexia messages is unknown to most adults, and many people (including parents and medical professionals) are insufficiently aware of the ease with which young people access, navigate, and use a wide range of online platforms.*

What is New:
• *Pro-anorexia messages are no longer limited to websites that can be easily monitored, but instead have been transplanted to more volatile and constantly changing media such as Snapchat, Twitter, Facebook, Pinterest, and Tumblr which makes pro-eating disorder content much more easily accessible.*
• *This paper wants to emphasize the implications of the presence of pro-eating disorder content on websites and social media. A number of guidelines for parents and clinicians are provided.*

Abbreviations
Pro-AN   Pro-anorexia
Pro-ED   Pro-eating disorder

K. Custers (✉)
Leuven School for Mass Communication Research,
Katholieke Universiteit Leuven, Parkstraat 45, Box 3603,
3000 Leuven, Belgium
e-mail: kathleen.custers@soc.kuleuven.be

Introduction

The Internet has become a primary platform for health information [28]. The large number of available health related websites has made it much more difficult to discern trustworthy from untrustworthy information [9, 13]. This is

particularly true for information about eating disorders, where some sources seek to discourage unhealthy behaviors and other seek to promote them. As such, pro-anorexia (pro-AN) or, more generally, pro-eating disorder (pro-ED) websites are of great concern [22]. These sorts of websites disseminate information and tools in order to maintain and reinforce eating disorder behaviors [2, 10, 20]. A recent study found that searches for pro-ED content on Google were performed more than 13 million times a year by using key words such as *pro-ana*, *pro-anorexia*, *pro-ED*, *pro thinspo*, *thin*, and *pro-acceptance* [14]. The issue has increased in importance exponentially with the advent and popularity of social media. There are now Facebook pages, Twitter accounts, Instagram photos and galleries, and Pinterest pins and boards actively disseminating pro-ED messages.

Most site administrators of those pro-AN websites are female girls who most likely suffer from some form of eating disorder, whether self-diagnosed or not [22]. Content analytic studies have shown that pro-ED websites generally post a disclaimer or warning for visitors that the content might be stressful or dangerous [3, 21]. Pro-ED websites typically contain "thinspiration" messages which refer to (1) visual images such as photographs of extremely skinny young girls and women, often celebrities, to inspire weight loss, and (2) text which focuses on tips and tricks that assist in extreme weight loss such as purging and starving, exercising, burning calories, dieting, and how to hide your behavior from your parents and medical providers [3, 4, 21].

Most of the pro-ED websites have an interactive forum which visitors use to exchange and share weight loss tips, dietary plans, food diaries, and emotional support messages to encourage weight loss behaviors [3, 5, 7, 15, 25, 29]. Authors of pro-AN blogs or websites typically post their current weight and "goal weight" or the weight they hope to achieve through weight loss strategies. Some pro-AN websites contain religious metaphors such as the Ana Psalm and Creed. In addition, pro-AN websites often include the "thin commandments" which are statements that tell what to do and what not to do in order to lose weight [3, 5].

Health effects

Research has shown that pro-ED content appears to be more popular among girls who are vulnerable to body weight issues, and those who are self-diagnosed with, in treatment for, or recovering from an ED [26]. A common defense for pro-ED websites is that these sites serve as a coping mechanism or a tool for empowerment for individuals suffering from an ED [31]. Research has revealed that eating-disordered individuals report feeling more alienated from friends, and they also experience more loneliness and social isolation [14, 26]. They receive deficient social support within their offline relationships and may instead look for support in online communities

[12]. Pro-AN websites offer an interactive community (e.g., forums, chat rooms, and blog comments) in which AN sufferers exchange experiences and gain mutual emotional support (e.g., feelings of understanding and feelings of not being alone) without being socially stigmatized [5, 7, 15, 29, 31]. For this reason, it has been argued by some that pro-ED websites might be beneficial for eating-disordered individuals [5, 20, 31] and banning pro-ED websites would not be the right way to deal with this issue [31].

On the other hand, disclosing pro-AN thoughts and feelings within a pro-AN community and the resulting bond between the community members may strengthen ED identities that maintain and intensify ED behavior in eating-disordered individuals [5, 8, 16, 30]. A cross-sectional study of 182 individuals between the ages of 10 and 22 years who had been diagnosed with an ED revealed that 35.5 % visited pro-ED websites. Out of this 35.5 %, 96 % indicated learning new weight loss methods and about 69 % reported that they actually used these new methods as a result of visiting pro-ED websites [30]. In addition, Peebles et al. (2012) found a positive correlation between pro-ED website use and disordered eating behavior in 1291 adult pro-ED website users [22]. However, given the cross-sectional design of these studies, no causal inferences can be made.

A number of studies have shown that visiting pro-ED websites may be associated with negative outcomes for nonclinical samples too. A correlational study by Custers and Van den Bulck (2009) showed that in a sample of 711 secondary school children from the 7th, 9th, and 11th grade, 12.6 % of the girls has visited pro-AN websites [6]. Pro-AN website use was correlated with a higher drive for thinness, lower evaluations of their appearance, and higher levels of perfectionism, all correlates of eating disturbances. Another correlational study in 1575 female undergraduates showed that those respondents who reported viewing pro-ED websites scored higher on body dissatisfaction and eating disturbances compared to those respondents who did not report visiting ED websites [10]. However, it has to be noted that the findings of these two studies were not causal. An experimental study in 235 undergraduate women found that those being exposed to a pro-AN website for 25 min scored higher on negative effect, lower on social self-esteem, and lower on appearance self-efficacy than those who viewed a female fashion website (with average-sized models), or a home décor website. Also, they reported higher perceived weight status, a greater likelihood to exercise and to think about weight, and a lower likelihood to overeat [2].

Similar results were obtained by another experimental study in which healthy female college students were to complete a 7-day online food diary. The following week, the participants were randomly assigned to view either pro-ED websites, health-related websites, or tourist websites for 90 min. One week after exposure, participants completed another week of food diaries. In the pro-ED website condition,

84 % (21 out of 25) of the participants in the pro-ED website group showed a decrease in their caloric intake—a decrease of 2470 calories on average. Of these participants, 60 % reduced their calorie intake by at least 2500 calories, 33.3 % reduced their caloric intake by 4000 calories, and 8 % decreased their intake by 6000 calories or more. Participants in the other two groups did not significantly decrease their caloric intake. In addition, about 44 % of the participants in the pro-ED website group indicated that they would use the dieting strategies suggested on these websites. Three weeks after the study was completed, 24 % of the participants in the pro-ED website group mentioned differences in their current eating behavior compared to their eating habits before the study such as excluding carbohydrates, junk food, and fast foods and by consuming more vegetables and fruit. In addition, these participants also indicated that they used tips about weight loss strategies such as drinking more water, coffee, and green tea [11]. Some of the changes that were found 3 weeks later may be considered as healthy and recommended (e.g., eating more fruits and vegetables and excluding junk food), but the concern might be the motivation for these changes. It is possible that these changes were driven by fear of becoming overweight or the desire to become or stay thin.

Social media and implications for accessibility

Pro-AN and pro-ED movements have grown in number and size rapidly in cyberspace. Hundreds of pro-ED websites exist [4], and thousands or more links to pro-ED blogs and forums [28] are easily traced by young teens and children. Before the Internet, it was much more difficult to have access to "how-to" information for individuals who suffer from an ED. Tips and tricks were only available from a small number of people. With the emergence of social networking sites such as Facebook, Twitter, MySpace, Instagram, Snapchat, Tumblr, and so on, it is more likely that pro-ED messages may infiltrate these online platforms [12, 27] and become more easily accessible for many children and adolescents. A study which looked at the prevalence and content of pro-ED groups on social networking sites found that, in 2008, 17 to 421 pro-ED groups existed on Facebook and 33 to 500+ pro-ED groups existed on MySpace. This study found that, compared with the traditional pro-ED websites, pro-ED groups on social networking sites functioned more as social support systems, which encouraged group members to disclose their thoughts and emotions, whether eating-disorder-related or not. Thinspiration messages, pictures, quotes, food diaries, and weight information were also part of pro-ED groups on Facebook and MySpace, often with links to other online platforms, but to a lesser extent than the pro-ED website content [12].

It is clear that the pro-AN community keeps growing and reaches a much wider and broader public. Becoming "friends" or being "friended" by pro-ED communities on social networking sites makes pro-ED content much more easily accessible for young girls. In addition, a content analysis of anorexia-related content on YouTube found that out of 140 videos, 29.3 % were rated as pro-AN videos which exchange tips to lose weight drastically. About 56 % were rated as informative videos which focus on the health outcomes and recovery of AN patients, and 15 % were rated as other. Even though pro-AN content was not as common as informative content, proportionally, pro-AN videos were preferred three times more than informative videos.

Guidelines

For clinicians

As noted above, online communication may be especially appealing to many of these individuals. It is therefore important for clinicians to be aware of the existence of online pro-ED activity and the different types of online platforms through which pro-ED messages are increasingly disseminated [25]. Lewis and Arbuthnott (2014) proposed a number of recommendations regarding online pro-ED content for clinicians dealing with ED patients, which are similar to those for clinicians dealing with patients who suffer from non-suicidal self-injury. First, clinicians should familiarize themselves with online eating disorder activity and implement strategies that encourage change in their patients' online activities [5, 16]. Hence, clinicians need to know which websites and other online platforms are consulted by their patients. For that reason, clinicians should direct their patients to use an online media diary intended to list (1) the type of online websites they consult, (2) the frequency and duration of these activities, and (3) their thoughts and feelings prior, during, and following the online activity. Second, apart from this functional log, clinicians should include a more in-depth assessment to evaluate and identify potentially problematic online activity. However, because of the importance of online ED content for their patients' emotional support, clinicians should bear in mind that the initial step is to determine whether the patient is ready for change instead of directly forbidding problematic online activities. The final goal is to replace unhealthy online activities with healthy online and offline activities.

For young people, parents, and educators

Attempts should be made to make young people aware of the trustworthiness of online information about beauty and healthy lifestyles. It has been argued that health authorities ought to consider involving celebrities in ED recovery videos

because celebrities serve as role models for many young people [23].

Parents, educators, and health practitioners should be aware of the potential risk of online pro-ED content for healthy children and teenagers. First, a substantial amount of research has shown that children as young as 7 years old suffer from body dissatisfaction and engage in weight loss behaviors such as dieting and exercising [17–19]. For example, McVey and colleagues (2004) found that of 2279 girls between 10 and 14 years old, 10.5 % reported scores on the Children's Eating Attitude Test, which contains questions on dieting behaviors, bulimia/food preoccupations, and self-control with regard to food and weight, above the clinical threshold of 20. The number increased with age. Moreover, girls who scored 20 or more on the Children's Eating Attitude Test had a higher risk of using extreme weight loss methods such as vomiting and binge eating. Additionally, a study among 237 boys and 270 girls aged between 8 and 11 years old found that about 50 % of both boys and girls reported feeling scared of being overweight, wanting to be thinner, and having lost weight by dieting and exercising [18]. Thus, given the fact that (1) seeking out pro-AN content is more prevalent in individuals who are concerned about body weight issues; (2) children have internalized societal norms regarding an ideal body and use weight control strategies such as dieting, exercising, and, in some cases, more extreme weight loss methods, to lose weight; (3) pro-ED messages are increasingly ubiquitous on popular social networking sites; and (4) 8- to 18-year-olds spend on average 1 h and 29 min per day with online media [24], it is much more likely that children come across these sorts of pro-AN activity and learn and copy harmful eating behaviors they find on these websites. More importantly, pro-AN websites are not limited to disseminating images of extremely thin body images. These websites offer constant social support for extreme weight loss behavior. In that way, pro-AN websites portray extreme thinness not only as normative, but they associate it with a signal of success as well. Linking this modeled behavior with rewards makes it, in view of Bandura's social learning theory [1], more likely that children learn and imitate the behavior shown on pro-ED websites [3].

Moreover, parents should be aware of the mobility of the platforms through which pro-AN content can be disseminated. It is possible to access pro-ED content on portable devices such as smart phones, tablets, and laptops, which challenges parental supervision. In the days when the Internet was only available via desktop computers (e.g., by placing computers on a central place in the home), the child's online viewing behavior could be monitored to a certain extent. The ability to access pro-ED content on mobile devices makes it much harder to monitor the online behavior of children. It is thus crucial that parents, teachers, social workers, and clinicians are informed about the scope and nature of such anorexia messages and the extent to which those messages permeate popular social networking sites that most children and adolescents visit almost daily.

References

1. Bandura A (2002) Social cognitive theory of mass communication. In: Bryant J, Zillmann D (eds) Media effects: advances in theory and research. Lawrence Erlbaum, Hillsdale, pp 121–153
2. Bardone-Cone A, Cass K (2007) What does viewing a pro-anorexia website do? An experimental examination of website exposure and moderating effects. Int J Eat Disord 40:537–548
3. Borzekowski DLG, Schenk S, Wilson JL, Peebles R (2010) eAna and e-Mia: a content analysis of pro-eating disorder web sites. Am J Public Health 100:1526–1534. doi:10.2105/AJPH.2009.172700
4. Chesley EB, Alberts JD, Klein JD, Kreipe RE (2003) Pro or con: anorexia nervosa and the internet. J Adolesc Health 32:123–124
5. Csipke E, Horne O (2007) Pro-eating disorder websites: users' opinions. Eur Eat Disord Rev 15:196–206
6. Custers K, Van den Bulck J (2009) Viewership of pro-anorexia websites in seventh, ninth and eleventh graders. Eur Eat Disord Rev 17(3):214–219. doi:10.1002/erv.910
7. Dias K (2003) Theana sanctuary: Women's pro-anorexia narratives in cyberspace. J Int Women's Stud 4:31–45
8. Gavin J, Rodham K, Poyer H (2008) The presentation of "pro-anorexia" in online group interactions. Qual Health Res 18(3):325–333. doi:10.1177/1049732307311640
9. Greenberg L, D'Andrea G, Lorence D (2004) Setting the public agenda for online health search: a white paper and action agenda. J Med Internet Res 6–18. doi:10.2196/jmir.6.2.e18
10. Harper K, Sperry S, Thompson JK (2008) Viewership of pro-eating disorder websites: association with body image and eating disturbances. Int J Eat Disord 41:92–95. doi:10.1002/eat
11. Jett S, LaPorte DJ, Wanchisn J (2010) Impact of exposure to pro-eating disorder websites on eating behaviour in college women. Eur Eat Disord Rev 18(5):410–416. doi:10.1002/erv.1009
12. Juarascio AS, Shoaib A, Timko CA (2010) Pro-eating disorder communities on social networking sites: a content analysis. Eatidisord 18(5):393–407. doi:10.1080/10640266.2010.511918
13. Kunst H, Groot D, Latthe PM, Latthe M, Khan KS (2002) Accuracy of information on apparently credible websites: survey of five common health topics. BMJ 324:581–582
14. Levine MP (2012) Loneliness and eating disorders. J Psychol 146(1–2):243–257. doi:10.1080/00223980.2011.606435
15. Lewis SP, Arbuthnott AE (2012) Searching for thinspiration: the nature of internet searches for pro-eating disorder websites. Cyberpsychol Behav 15:200–204. doi:10.1089/cyber.2011.0453
16. Lewis SP, Arbuthnott AE (2014) Non-suicidal self-injury, eating disorders, and the Internet. In: Claes L, Muehlenkamp JJ (eds) Non-Suicidal Self-Injury in Eating Disorders. Springer, Berlin, pp 273–293
17. Lowes J, Tiggemann M (2003) Body dissatisfaction, dieting awareness and the impact of parental influence in young children. Brit J Health Psych 8(2):135–147

18. McCabe MP, Ricciardelli LA (2003) Body image and strategies to lose weight and increase muscle among boys and girls. Health Psychol 22(1):39–46. doi:10.1037/0278-6133.22.1.39

19. McVey G, Tweed S, Blackmore E (2004) Dieting among preadolescent and young adolescent females. Can Med Assoc J 170(10):1559–1561. doi:10.1503/cmaj.1031247

20. Mulveen R, Hepworth J (2006) An interpretative phenomenological analysis of participation in a pro-anorexia Internet site and its relationship with disordered eating. J Health Psychol 11:283–296. doi:10.1177/1359105306061187

21. Norris ML, Boydell KM, Pinhas L, Katzman DK (2006) Ana and the Internet: a review of pro-anorexia websites. Int J Eat Disord 39:443–447

22. Peebles R, Wilson JL, Litt IF, Hardy KK, Lock JD, Mann JR, Borzekowski DLG (2012) Disordered eating in a digital age: eating behaviors, health, and quality of life in users of websites with pro-eating disorder content. J Med Internet Res 14:e148. doi:10.2196/jmir.2023

23. Read B (2011) Britney, Beyoncé, and me—primary school girls' role models and constructions of the 'popular' girl. Gend Educ 23(1):1–13

24. Rideout VJ, FoehrUG, Roberts DF (2010) Generation M [superscript 2]: Media in the Lives of 8-to 18-Year-Olds. Henry J. Kaiser Family Foundation

25. Rouleau CR, Von Ranson KL (2010) Potential risk of pro-eating disorder websites. Clin Psychol Rev 31:525–531

26. Schutz HK, Paxton SJ (2007) Friendship quality, body dissatisfaction, dieting and disordered eating in adolescent girls. Brit J Clin Psychol 46(1):67–83. doi:10.1348/014466506X115993

27. Syed-Abdul S, Fernandez-Luque L, Jian WS et al (2013) Misleading health-related information promoted through video-based social media: anorexia on YouTube. J Med Internet Res 15:e30. doi:10.2196/jmir.2237

28. Tian Y, Robinson JD (2009) Incidental health information use on the Internet. Health Commun 24:41–29. doi:10.1080/10410230802606984

29. Tong ST, Heinemann-LaFave D, Jeon J, Kolodziej-Smith R, Warshay N (2013) The Use of pro-ana blogs for online social support. Eat Disord 21:408–422. doi:10.1080/10640266.2013.827538

30. Wilson JL, Peebles R, Hardy K, Litt IF (2006) Surfing for thinness: a pilot study of pro-eating disorder website usage in adolescents with eating disorders. Pediatrics 188:1635–1643. doi:10.1542/peds. 2006-1133

31. Yeshua-Katz D, Martins N (2013) Communicating stigma: the pro-ana paradox. Health Com 28:499–508. doi:10.1080/10410236.2012.699889