

I Will Not Eat! A Review of the Online Pro-Ana Movement

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Eating disorders are a persistent concern in the psychiatric community given their often elusive causes and high mortality rates (Crow et al., 2009; Polivy & Herman, 2002); In a longitudinal assessment (years 1979-1997) by Crow et al. (2009), mortality rates were 4.0% for anorexia nervosa and 3.9% for bulimia nervosa. Pro-eating disorder websites have been studied in recent years for their impact on body image and eating disorder pathology among viewers. This paper is a review of current literature about pro-eating disorder websites, which provide nutritional information, images of thinspiration (a portmanteau of the words thin and inspiration), and message boards for social interaction, all with the goal of promoting eating disorders. The content and emerging themes of pro-eating disorder websites are discussed in this paper order to understand the context of the interaction between website and viewer. Next, the social interaction that takes place on these sites is examined in order to understand the nature of social support and social exclusion existing on these sites. Finally, studies that have investigated the effects of pro-eating disorder viewership on affect, body image, and eating behavior are discussed.

Introduction

Pro-eating disorder websites host communities of individuals who engage in disordered eating and use the internet to discuss their activities (Wilson, Peebles, Hardy, & Litt, 2006). Csipke and Horne (2007) conceptualize two definitions of the term pro-eating disorder in the context of internet communities. The first defines the term as a willingness to accept that an individual has an eating disorder without seeking to encourage that individual to find treatment, and may imply an aim to motivate or enable continuation of disordered eating behavior. The second definition characterizes the term as the understanding of eating disorders as lifestyles rather than disorders. Both conceptions of the term will be examined throughout this paper.

Eating disorders are a pressing concern in the mental health community. In a sample of 10,123 adolescents it was found that 0.3% suffered from anorexia nervosa (AN) and 0.9% suffered from bulimia nervosa (BN); (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). According to Crow et al. (2009), mortality rates were 4.0% for anorexia nervosa, 3.9% for bulimia nervosa (data was collected between 1979 and 1997 at an eating disorder clinic with assistance from the National Death Index). In addition to their high mortality rates, eating disorders are difficult to treat and represent a biopsychoso-

cial illness whose causes are often elusive (Polivy & Herman, 2002). According to the current Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-V; American Psychiatric Association, 2013), AN is characterized by a refusal to maintain a weight that is 85% or more of what is expected, disturbance in the way one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation or denial of the seriousness of the current low body weight, and amenorrhea. There are two distinct types of AN: restricting type and purging type. Restricting-type patients are characterized by their insistence on eating very little, whereas purging-type patients regularly engage in binge eating and purging. It is important to note that AN purging type is distinct from BN, though vomiting and the use of laxatives are common to both; the distinction lies in the context in which purging takes place—whether it is during an episode or anorexia or bulimia (Anorexia and Bulimia Nervosa, n.d).

The Diagnostic and Statistical Manual of Mental Disorders (5th ed., DSM-5; American Psychiatric Association, 2013), defines the diagnostic criteria for BN as regularly eating more food in a given period of time than a person normally would and a concurrent loss of control over eating. In addition, compensatory efforts such as purging or fasting are employed to counteract the effects of binge eating and self-evaluation is overly dependent on body weight and shape. The binge eating and inappropriate compensatory behavior both occur, on average, at least twice a week for three months. BN has two distinct subtypes: purging and non-purging type. Purging type patients

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regularly engage in self-induced vomiting or the misuse of laxative, diuretics, or enemas. Non-purging type patients fast or over-exercise to compensate for binge eating, but they do not engage in the same compensatory efforts as purging type patients.

Binge Eating Disorder (BED) is similar to BN in that binge eating is at the core of the disorder; however, individuals with BED make no inappropriate compensatory efforts to counteract the high caloric intake. As a result, this disorder is sometimes associated with obesity. Because the focus of this paper will be on websites that promote weight loss through inappropriate or unhealthy means, BED will not be discussed in relation to online communities.

The lifetime prevalence rates of AN and BN are 0.3% and 0.9%, respectively (Swanson, 2011). Among adolescents the 12-month prevalence rates are 0.2% for AN and 0.6% for BN and the median ages of onset are 12.3 and 12.4 years, respectively (Swanson et al., 2011). Eating disorders stem from myriad causes and it is impossible to identify one event or condition that leads an individual to develop an eating disorder. Influences that may shape the development of an eating disorder include sociocultural factors (e.g., media and peer influences; Nasser, 2010; Paxton, Schutz, Wertheim, & Muir, 1999), body dissatisfaction and concern about weight (Killen et al., 1996), and cognitive and biological factors (Fairburn, 2001). This paper will examine the role of community within the context of pro-anorexia (pro-ana) and pro-bulimia (pro-mia) websites in the reinforcement of disordered eating habits.

Pro-eating disorder websites are available to anyone with internet access and are often hosted by large and well-known domains. A study of 711 children and adolescents in 7th, 9th, and 11th grade found that 12.6% ($n = 90$) of the girls and 5.9% ($n = 42$) of the boys had visited pro-anorexia websites (Custers & Van den Bulck, 2009). A separate survey of 76 patients who had been treated for eating disorders in an outpatient clinic showed that 35.5% had visited pro-eating disorder sites (Wilson et al., 2006). Csipke and Horne (2007) found that among a group of 151 individuals with eating disorders, 54 (36%) initially found the websites via the internet or search engines as opposed to find-

ing them through the media or by word of mouth.

There is evidence that searching for pro-eating disorder content is a popular phenomenon, with over 100,000 monthly searches on Google.com for each of the search terms “pro-ana,” “thinspo,” and “thinspiration” (Lewis & Arbuthnott, 2012). Interestingly, the term “pro mia” is less frequently searched, with less than 100,000 searches per month. Though the reasons for this are unclear, it is possible that the “ana” identity is viewed as more desirable than the “mia” identity. One limitation of this study is that it measured the frequency of searches, which does not account for a single user searching multiple times for pro-ana terms. Since several searches likely reflect the same individuals conducting multiple searches, the number of people searching for pro-eating disorder content is unknown.

Website Content

In order to understand how pro-eating disorder websites influence an individual’s eating behavior and self-concept, it is first necessary to examine what these websites offer. Pro-eating disorder websites offer content that ranges from images to information on weight loss to interactive features. Each of these types of content will be examined in this section of the paper.

Images

Pro-eating disorder websites offer a variety of content on the topic of weight loss. One notable type of content is the use of images. The occurrence of eating disorders has been linked to a thin ideal body type associated with Western culture (Nasser, 2010). Eating disorders have been found to be more prevalent in Western than in non-Western countries (prevalence rates ranged from 0.3% to 7.3% in female subjects in Western countries compared to 0.46% to 3.2% in female subjects from non-Western countries) while disordered attitudes about eating appear to be increasing in non-Western countries (Makino, Tsuboi, & Dennerstein, 2004). Social class (as characterized by education and wealth) has also been implicated in the rising prevalence of anorexia nervosa (Darmon, 2009), possibly because thinness and frailty are equated with high social status and differentiation from lower classes (Brumberg, 1988). In a culture where

nutrition and wealth are abundant, the slim body type becomes idealized and is over-represented in the media. However, exposure to the media is so widespread that Polivy and Herman (2002) argue that if such exposure were the sole cause of eating disorders, then it would be difficult to explain why anyone in cultures that are not deprived would not be eating-disordered. While it is undeniable that images of thin models and actresses portray unrealistic representations of the human body, they cannot be sole factors in contributing to the number of eating disordered individuals.

Thinspiration consists of words and images intended to promote weight loss. According to Lapinski (2006), thinspiration can be conceptualized to comprise three categories: triggers, reverse triggers, and distractors. Triggers are designed with the intention of motivating or reinforcing eating disordered behaviors; triggering content may include models, actresses, or women suffering from eating disorders who have achieved a very thin body type. In a systematic study of content on 180 active pro-eating disorder websites, it was found that 85% contained thinspiration material. Known fashion models were most frequently shown (66% of sites included at least one photograph of a model), followed by celebrities (57%), non-celebrities (44%), and athletes (12%; Borzekowski, Schenk, Wilson, & Peebles, 2010).

When “real” women post pictures of themselves (particularly “before” and “after” images) they are simultaneously seeking recognition for their weight-loss achievement while serving as inspiration for other women. “Real” is the descriptor given to these women, who may also be referred to as “normal” on the websites in order to distinguish them from models, dancers, or celebrities (Borzekowski et al., 2010). In the “before” pictures, women are typically either normal or overweight and the “after” pictures show dramatic weight loss. There are several desirable markers that indicate the idealized level of weight loss, including visible collarbones, hipbones, and a “high gap.” A sub-type of thinspiration, or “bonespiration” (abbreviated as “bonespo”), has emerged to promote the desirability of a skeletal appearance. “Bone pics” are pictures of emaciated women and digitally manipulated pictures of models to make them look skeletal (Bardone-Cone & Cass, 2007).

In contrast to triggering images that celebrate a thin figure, images of overweight women are often presented as thinspiration content in order to serve as a reverse trigger. Thus thinspiration not only promotes the idealized thin body type, but also publicizes the feared heavy body type that readers try to avoid (Dalley & Buunk, 2009). In a study involving 134 female participants, it was found that frequent dieting is primarily motivated by a desire to avoid an overweight identity, rather than by a desire to acquire the favorable thin identity (Dalley, Buunk, & Umit, 2009). Though frequent dieting may be considered clinically distinct from AN, this is a significant finding that may lead to a new way of conceiving of extreme weight loss since it appears to represent a flight from the unfavorable as opposed to a race toward the favorable. While the desire to avoid an overweight identity may be powerful, reverse triggers appear to be in the minority of thinspiration content. Lastly, distractors offer methods of reducing or ignoring the hunger impulse. Distraction content includes pictures of “food porn,” or images of decadent food shown to induce satiation. Another common distractor is content urging an individual to exercise or drink water to reduce hunger (Lapinski, 2006).

Tips and Tricks

“Tips and tricks” are strategies intended to promote weight loss. In a survey of 20 pro-eating disorder websites, Norris et al. (2006) found that 67% of these websites contained “tips and tricks” material. Wilson et al. (2006) found that among 76 individuals diagnosed with an eating disorder who visited pro-eating disorder websites, 96% reported learning new weight loss or purging techniques from these sites. Tricks typically included methods of hiding weight loss and techniques for creative calorie avoidance. For example, so-called “negative calorie” foods, which are believed to require more energy to digest than is supplied by the nutrition, are often promoted as a way of satiating hunger while burning calories. It appears that pseudoscience and “guesswork nutrition” are mixed indiscriminately with true nutritional facts (Martin, 2005, p. 157).

According to a content study of pro-eating disorder websites, more than 70% (n = 126) offered

dieting strategies, including specific dietary regimens and advice on fasting; 68% (n = 122) listed “safe” foods or charts with low-calorie food; 50% (n = 90) offered tips on purging or the use of laxatives or diet pills; and 43% (n = 77) offered advice on how to hide an eating disorder from others (Borzekowski et al., 2010). The study identified certain portions of text that characterize the extremes of severity and intricacy of these tips. On the seemingly harmless end of the spectrum is an example such as: “Sit up straight. You’ll burn at least ten percent more calories sitting upright than reclining.” On the severe end is: “TO PURGE: You can start off with two fingers or a Toothbrush — 3 fingers if nothing is happening. Next, rub the back of your throat; you should feel sort of a Buttonish thing at the back. Well, you need to push it!” (Borzekowski, 2010).

While “tips and tricks” are principally associated with advice of how to lose weight, pro-eating disorder websites frequently offer other tips on how to conceal weight loss from concerned family, friends, or medical professionals. Findings of a content analysis of pro-eating disorder websites that illustrate this phenomenon include: “Wear nail polish to hide the discolouring [sic] in your nails for lack of nutrients” and “Do anything you can to make yourself weigh more [before a doctor’s visit]” (Harshbarger, Ahlers-Schmidt, Mayans, Mayans, & Hawkins, 2009).

Website Features

Interactive features have been found on 79% (n = 142) of pro-eating disorder websites (Borzekowski et al., 2010). Interactive tools vary by website and might include discussion boards, message boards, personalized diet or exercise-related tools, or ways of posting comments or artwork. Tumblr allows users to “reblog” another user’s comment or photo, thus propagating the original post and exponentially increasing its influence. Interactive features enable users to share their progress as measured by weight loss, measurements, or days fasting, and to engage in member-against-member competition (McCabe, 2009). Interactive features aid in sustaining communities that function similarly to cliques, which are characterized by shared interests, exclusion, and competition within the group, and have been shown

to have a negative impact on body image and disordered eating (Paxton et al., 1999; Wilson et al., 2006).

Another feature of many pro-eating disorder websites are disclaimers. Norris et al. (2006) observed that warnings and/or disclaimers before entry into the web pages were posted on 58% (n = 7) of the websites. These disclaimers included asking non-eating disordered persons to leave the website, acknowledging that the website supported the pro-ana movement and prohibiting persons under the age of 18 to enter without parental consent. This prohibition is not enforceable, however, and teenagers are able to access the sites. For their study on the examination of pro-anorexia website exposure and moderating effects among female undergraduates, Bardone-Cone and Cass (2007) created a prototypical disclaimer based on an extensive search of pro-eating disorder websites. The disclaimer read:

This is a pro-Ana site. If you are recovering from an eating disorder or hate the fact that pro-Anas exist, I suggest you leave! Now!!! This site is for those who feel that Anorexia is a life-style, and that we should have a choice to leave Ana or take comfort in that which defines us. WARNING!!! SOME MATERIAL MAY BE TRIGGERING.

Some disclaimers are written within the context of anorexia as a medical illness, as opposed to a lifestyle. The moderator of one website posted:

If you’ve come here to “learn” to be anorexic or bulimic, then you really need to leave. Eating disorders are painful, life-destroying creatures that are not worth their cost. They are not cool or glamorous. They are not a quick fix. They are not a diet. They are a living, breathing hell. But once you’re in, you’re in. You’re in until it either kills you or destroys your life so much that you have to break free. So stay out. Stay back. Stay sane (Strife & Rickard, 2011).

Emerging Themes

Eating Disorders as a Lifestyle Choice

Many themes have emerged as common among pro-ana disorder websites. A central theme appears to be the concept of eating disordered behavior as a

lifestyle rather than an illness that requires treatment. While the theme of lifestyle choice seems apparent to visitors who are not pro-ana, only 20% of pro-eating disorder sites explicitly state the opinion that pro-anas view eating disorders as a lifestyle choice (Borzekowski et al., 2010). The discrepancy between public perception and stated intention of site moderators in the portrayal of eating disorders as a lifestyle choice may lie in the definition of the phrase, “lifestyle.”

Csipke and Horne (2007) described two perceptions of the word “lifestyle” in this context. The first understanding of the word describes a lifestyle as a chosen manner of living one’s life and entails embracing a set of values that characterize the lifestyle—perhaps even promoting them. According to the second perception, an eating disorder is not adopted by choice. Rather, it is a lifestyle in the sense of “a way of life” that pervades every aspect of the person’s thoughts, perception and action.

While the promotion of eating disorders as a lifestyle choice is prominent among pro-eating disorder websites, it is not espoused uniformly by all sites. A study by Csipke and Horne (2007) found that 54% of pro-ana website users recruited through a mental health charity in the United Kingdom (n = 80) viewed anorexia and bulimia as clinical disorders; however, a significant number of respondents validated the concept of eating disorders as a lifestyle adopted by choice

It is likely that website creators conceptualize the phrase “lifestyle choice” differently from mental health professionals. In a grounded theory study of pro-eating disorder websites, Norris et al. (2006) found that only one website (out of a sample of twelve) viewed AN as a lifestyle choice, whereas almost one half of the website creators viewed their website as a means of supporting individuals with eating disorders. The type of support offered by these sites varies widely, and may range from connecting individuals to treatment options to promoting eating disordered behaviors.

Offline Isolation and Online Community

Issues involving isolation and community are prominent on pro-eating disorder websites. Norris et al. (2006) observed that “befriending the eating disorder leads to isolation from others,” and that pro-ana website users attempt to fill that void through inter-

action with other eating-disordered individuals. Users describe the need for isolation on 60% of the sites, as exemplified by one user’s comment: “obese fatties around that want me to be just like them” (Borzekowski, 2010). When an individual becomes isolated, he or she may find that the disorder creates conflict with other individuals. Tierney (2006) found that outpourings of anger or frustration towards “outsiders” (e.g., parents or doctors) were common and that outsiders were regarded as unaware of the nature and benefits pro-anas associated with their behavior. Results of two studies suggest that the sense of social isolation increases as an eating disorder progresses, thus necessitating higher levels of interaction with other users as the disorder becomes more severe (Serpell & Treasure, 2002; Serpell, Treasure, Teasdale, & Sullivan, 1999). One user described her sense of isolation:

Unless you have a friend with ana, outsiders are not going to understand. Boyfriends are not so great to confide in, [because] if they really love you, they won’t accept your starving for perfection; same goes with true friends (Gavin, Rodham, & Poyer, 2008, p. 330).

Discussion boards provide users with a space in which their identity is supported, accepted, and understood – something users believe cannot be achieved offline. One user posted: “I am so glad that I can come here and vent to you guys because you are so supportive and you never make me feel bad about myself” (Gavin et al., 2008, p. 329).

Pro-ana communities may serve a limited therapeutic role for individuals who are not ready for therapy or who feel rejected by the medical community by providing the opportunity for individuals to express themselves in a supportive, anonymous setting (Pettersson & Rosenvinge, 2002; Wilson et al., 2006). Juarascio et al. (2010) found that pro-ana groups on Facebook and MySpace contained positive social interactions between participants. Csipke and Horne (2007) suggest that social support is available on these sites and that visiting the sites can have a positive effect by drawing visitors out of isolation. However, there is a distinction to be made between two types of visitors: passive and active. Passive users do not interact with others during their usage of these sites, whereas active users utilize the sites’ in-

teractive tools to connect with others. The findings of Csipke and Horne (2007)'s study suggest that active participation on pro-eating disorder websites and seeking the support and friendship of other visitors can have a positive perceived impact on individuals as they experience greater social support.

Csipke and Horne (2007) do not suggest that active users are immune to the dangers of pro-eating disorder websites. They argue that the harmful information shared during these interactions counteracts the positive gains from social support. Active users may be vulnerable to a different set of dangers than passive users because active users are more likely to utilize the social support to motivate each other to engage in pro-eating disorder behavior. While it is clear that active users and passive users experience the sites differently, it is unclear which factor leads individuals to become more symptomatic: isolation (passive users) or motivation to become eating disordered (active users).

Issues of social isolation are frequently raised on social networking sites (Juarascio, Shoaib, & Timko, 2010). Posters request advice about family and relationship problems, which sometimes, but not always, surrounded eating disorder issues; posed questions and entered into discussions of sexuality; and shared life problems. One user shared her problem that simultaneously involves a romantic relationship and her eating disorder: "Sometimes I really want to tell my [boyfriend] about this because secretly I want him to be supportive but I know he would never understand (Gavin et al., 2008)." Upon joining a new group, individuals may introduce themselves with statistics that describe their weight, age, and height. For example, one member introduced herself to the group through the following post:
Name: [removed]. Height: 5'3, high weight: 160 (I was pregnant), low weight: 85, current weight: 98, goal weight: I'll never be content w/ any number to be honest (Juarascio et al., 2010, p. 7).

Other introductions to the group included information such as relationship status, years with an eating disorder, and reason for joining the group. In contrast with the unemotional tone of introduction and disclosure, statements of support and friendship

tended to be highly emotional. Examples included members requesting friendship due to feelings of extreme loneliness and isolation, advice or feedback about relationships, and emotional support. For example, when one member mentioned having to attend a holiday party, another member responded, "You can do it!! Just think of the end results! It's been hard for me. Holidays are hard, so much food thrown in your face all the time! You are strong!" (Juarascio et al., 2010, p. 7). It was common to offer to communicate outside of the social networking site, such as on the phone, via email, or chat.

Despite the positive gains from social interaction, discussion boards provide information that often runs counter to recovery, including sharing tips and tricks to hide disordered eating behaviors from health care professionals, family, and friends, thereby staving off hospitalization and professional support. Though social support may be gained online, isolation from offline sources of social support (family, friends, community, etc.) will inevitably increase as the disease progresses (Gavin et al., 2008).

Claims to Authenticity

Antagonism toward "wannarexics" seems to be common among pro-ana groups (Boero & Pascoe, 2012). The term describes individuals who are perceived to emulate eating disorders and visit pro-ana websites hoping to adopt the attitudes, behaviors, and weight loss results they promote. The antagonism directed at wannarexics may represent the struggle between online exclusivity and offline isolation. In their study, Borzekowski et al. (2010) found that 32% (n = 57) of the sites had an overt tone or statement directed to "wannabes." Both polite and antagonistic statements were identified. One polite statement was, "If you are looking to become anorexic or become bulimic by being here then please leave." One example of a harsh statement was:

IF YOU WANT TO LOSE WEIGHT, GO ON A DIET FATTY. ONE IS EITHER ANA/MIA, OR NOT. IT IS A GIFT AND YOU CANNOT DECIDE TO HAVE AN EATING DISORDER. SO IF YOU ARE LOOKING FOR A WAY TO LOSE WEIGHT, S-S-S-

SORRY, JUNIOR!! MOVE ON, TRY JENNY CRAIG (Borzekowski et al., 2010, p. 1528).

Requests for tip giving may be met with reluctance or antagonism. When one poster in a MySpace group requested tips on how to purge, another member responded:

Ugh don't even try to do it. I went through trying and failing to be able to throw up for a couple months. Yeah I can do it now but sometimes it happens even when I don't want. I hate doing it but I can't stop. Its' [sic] not worth starting and it's not cool that you are asking for this kind of advice here. It sounds like you don't even really have an eating disorder (Juarascio et al., 2010, p. 8).

Group members routinely challenge wannarexics on their lack of knowledge around weight-loss strategies. Boero and Pascoe (2012) suggest that users may demand the self-representation be authentic in order to maintain a sense of community. Authenticity is assured through a series of group rituals, such as weigh-ins and posting pictures, which allow users total claim to a pro-ana identity while depriving others of it. The relationship between isolation offline and exclusivity online is a topic that merits further study.

When users fail to participate in group activities they are met with scorn and suspicion from other members. Posting pictures that show dramatic weight loss are an important part of proving an authentic pro-ana identity and the use of celebrity thinspiration instead of a self-portrait invites criticism. One member posted:

You can always pick the wannabes, the ones with only skinny celebs in their pictures and a whole ton of pro-ana crap on their MySpace. I bet if you asked them why they don't have any pictures it would be because they "just like started being ana like 5 weeks ago" (Boero & Pascoe, 2012).

Sometimes users attempt to smoke out interlopers by issuing alerts:

...there is deffy one person on this site, who you can just tell has NOT got an ED. I know, you cant tell over the web, but you can by her

comments & her stupid posts on the subjects etc. A number of people on my msn who visit this site have also spoken about her on numours(sp) occasions, so I know for a fact, I am not the only one who has noticed this...(Giles, 2006).

The antagonism toward wannarexics suggests that the community boundaries on these sites are closely monitored and protected. Giles (2006) notes that if anorexia is about attempting the unachievable, then it is not surprising that anorexics set such high standards for admittance to their community. It seems that these statements have important implications for the maintenance of the ana identity and possibly serve to compensate for offline isolation.

Implications for Eating-Disordered Behavior

The danger in these tips and tricks that appear on these websites is not only the content of their message, but also in their prominence on pro-eating disorder websites. Cultivation theory, developed by communication scholar George Gerbner, posits that when messages are pervasive and repeated, individuals with higher exposure levels are more likely to accept the conveyed messages as normative (Borzekowski et al., 2010; Gerbner, 1998; Heath and Bryant, 2000). Thus individuals who frequent these websites may come to view methods of extreme dieting and exercise as normal behavior rather than symptomatic of an eating disorder.

Research suggests that even modest exposure to pro-eating disorder websites may encourage significant changes in caloric intake and increased disordered eating behaviors, and that even greater exposures to these websites by at-risk females may contribute to the development of eating disorders (Jett, Laporte, & Wanchisn, 2010). In this study, undergraduate females with no history of eating disorders and a BMI greater than 18 were assigned to one of three conditions. The exclusion of women with eating disorders makes this study unique among others studying the effects of pro-ana viewership.

The first condition was exposed to pro-eating disorder websites for a total of 90 minutes, the second condition to health and exercise websites, and the third condition to tourist websites. All partici-

pants were asked to keep food diaries prior to and following exposure to one of the three types of websites. The pro-eating disorder websites were chosen because they included the Ana Creed, tips and tricks on how to be anorexic or bulimic, and thinspiration. Eighty-four percent ($n = 21$) in the pro-eating disorder condition reduced their weekly caloric intake by an average of 2470 calories. In contrast the participants in the other conditions did not reduce their caloric intake by a significant amount. Even though 84% of subjects in the pro-eating disorder group reduced their caloric intake, only 56% perceived that the websites influenced them to reduce their food intake (Jett et al., 2010). This discrepancy speaks to a lack of insight regarding influences on body image and eating habits. The age of participants represents a weakness of this study since pro-ED viewership begins up to a decade earlier (Custers, 2009). Using a younger sample might yield a more relevant understanding of the effects of pro-ana viewership. In addition, keeping food diaries may have cued participants into the true nature of the study and sensitized participants to their food intake, which may partially explain the decreased caloric intake among the sample that was primed to weight-loss through viewing pro-ana websites. Lastly, the long term effects were not studied which may represent an ethical problem. Researchers followed up with participants three weeks after exposure in order to assess eating disordered behavior and attitudes as a result of the study (and found none). However, it remains unclear if viewing pro-ana content even for a short period of time has lasting effects.

A prospective study found that viewing pro-anorexia websites led to greater negative affect, lower self-esteem, and lower satisfaction with appearance as well as an increased likelihood of identifying oneself as heavy, of exercising, of thinking about one's weight, and of engaging in image comparison (Bardone-Cone & Cass, 2007). Fourteen percent ($n = 33$) of this study's participants had a score of 20 or above on the Eating Attitudes Test (EAT-26), which suggests the presence of an eating disorder. Lastly, individuals who frequent pro-eating disorder websites report higher levels of body dissatisfaction and eating disturbances (Harper, Sperry, & Thompson, 2008). This does not suggest a causal relationship between

pro-eating disorder websites and body dissatisfaction and eating disturbances, rather it suggest a correlation.

Competition among users and social comparison features prominently in pro-ana communities (Rouleau & von Ranson, 2011). Competition in the area of extreme weight loss can be conceptualized by the work of Albert Bandura, whose social cognitive theory proposes that modeled behaviors are more likely to be imitated when message receivers can relate to the model and perceive rewards with the communicated behavior (Bandura, 1989). With this model in mind, it is easy to see how copying other users' behavior leads to a culture of "one-upmanship" that fosters competition. Csipke and Horne (2007) found that 19% ($n = 29$) of pro-eating disorder website users reported that the sites were harmful because of their promotion of competition and disordered eating among users. Thus individuals who view others' extreme weight loss as achievable and desirable are more likely than others to adopt the behaviors modeled by their online peers. It appears that competition and self-comparison among members of an online group may be a motivating factor in the maintenance of eating disordered behaviors.

Discussion

The pro-ana community seems to struggle with many internal conflicts and contradictions that may be considered from a psychodynamic perspective. These internal conflicts and contradictions allow for the conceptualization of eating disorders as a spectrum disorder with poor body image at one end and clinical AN at the other (Patton, 1988). In the pro-ana community there is a marked struggle between online exclusivity and offline isolation. It appears that the construction of an authentic class of anas is formed in reaction to low levels of social support offline. While a user may feel alone and detached from her offline community, she may be valued by others for her contributions to an online community where she finds high levels of social support from other users. In order to be accepted online, a user must prove his or her ana identity or be cast out as a wannabe. There does not appear to be a space for users who are in the beginning stages of the disease or who have not fully adopted the missions and goals of a website. Pro-

ana websites provide more than a collection of tips and tricks and thinspiration –they also provide a validation arena for exploration of the pro-ana identity.

Another struggle within the pro-ana community is whether to consider the eating disorder a “gift.” The conception of anorexia as a gift reinforces the exclusion of wannabes by telling them they can never adopt the ana identity and thus do not belong. The confusion about anorexia as a boon or damnation is felt not only at the community level but also at an individual level. Within this struggle the question of control arises: does a user enjoy the gift of an eating disorder at will or does the eating disorder control and trap the user? Are authentic anas able to use and dispose of the pro-ana identity or are they trapped within it? While users may feel they can control their bodies through anorectic behaviors, they may also feel that anorexia has seized control of their identities, bodies, thoughts, feelings, and actions.

Lastly, there is confusion about where the pro-ana identity lies. An individual may be pro-ana or she may be controlled by a pro-ana influence. Some website users refer to anorexia as a personified being (called Ana), who is portrayed as controlling, demanding, and perfectionistic, and is frequently distinct from an individual’s view of the self. Separating oneself from Ana may be a defense that allows an individual to preserve her identity while accommodating the influence of the disease.

Alternatively the pro-ana identity may be so internalized that there is no separation between oneself and Ana. The fact that Ana and Mia are female names gives rise to the conception of Ana and Mia as female influences that may be friends, enemies, or both simultaneously. The pro-ana community experiences many sources of internal conflict that are an extension of conflicts experienced on an individual level by users with anorexia.

Conclusion

While the nature of pro-eating disorder websites has been elucidated over the past decade, there remains the problem of how to counteract the risk to users of accessing these websites. In response to public pressure, some internet platforms have shut down pro-eating disorder websites. While this tem-

porarily thwarts access to these websites, it is not a permanent solution. For example, in the early 2000s Yahoo! and MSN shut down several pro-eating disorder websites at the urging of media, clinicians, and professional organizations (Hammersley & Treseder, 2007). However the websites reemerged on other platforms or behind the guise of “pro-recovery” websites, which frequently offered the same content found on pro-eating disorder websites (Lewis & Arbutnott, 2012). In addition, there is the question: is shutting pro-eating disorder websites in the best interest of public health? Lewis and Arbutnott (2012) note that searches on “suicide methods” yield both relevant content and a sidebar with contact information for a crisis hotline, which may be an effective intervention to suicide ideation. Thus one possible strategy would involve offering eating disorder treatment information in addition to the pro-eating disorder websites when a user searches for certain keywords, such as “pro-ana” or “thinspiration.”

For their study on users’ opinions of pro-eating disorder websites Csipke and Horne (2007) recruited participants online. The majority of respondents (84%, $n = 127$) reported having an eating disorder. Their study found that a large group of participants (41%, $n = 61$) visited pro-eating disorder websites several times a day, and sixteen participants (11%) visited them at least once a day. Only nine participants reported having visited a pro-eating disorder website only once. If an individual enjoys the community found on websites, then he or she may benefit from websites that genuinely support recovery and do not allow pro-ana content. This is a potential avenue of treatment to be considered by clinicians as well as a topic to be studied by researchers who wish to understand the effects of pro-recovery websites on formerly eating-disordered individuals.

Future studies should seek to identify moderators that strengthen the effects of pro-ana viewership. Studies should also investigate at what point over the course of an eating disorder an individual is most likely to first access pro-ana sites. The answers to both of these questions could lead to a more nuanced understanding of the relationship between pro-ana viewership and the maintenance of an eating disorder, which could have implications

for primary interventions as well as a more accurate portrait of an individual's eating disorder etiology.

While this paper reviewed studies on the role of pro-eating disorder websites in relation to the sustainment of eating disorders, the role of these sites at the beginning of a disorder has yet to be elucidated. While it is unlikely that viewing pro-eating disorder websites would be the sole cause of an eating disorder, it would be worthwhile to investigate their role among individuals who have yet to develop an eating disorder, but are tentatively experimenting with eating disordered behavior. Understanding the role of pro-ana viewership at different stages of an eating disorder will enhance treatment of eating disorders, as well as provide new avenues of research.

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