



Pro-Anorexia Websites: Content, Impact, and Explanations of Popularity

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Abstract

The increasing prevalence of anorexia nervosa is a major concern in contemporary society. Anorexia has been linked to forms of media such as television, and examined in relation to Internet-based methods of treatment. However, research about Internet sites actively promoting anorexia, known as 'pro-ana sites', is minimal. This literature review amassed articles about pro-ana sites, using psychology databases such as Medline and PsycINFO. The sites' content was analyzed for components such as drug recommendations, 'thinspiration,' chat-rooms, site-creator information, and disclaimers. Patterns in content were also examined, and possible explanations for the sites' popularity offered. An analytical overview of all the sites included in this review suggested that they were more effective in fulfilling the users' need for a sense of community than they were in establishing any kind of comprehensive 'pro-ana' philosophy. Future research can explore the techniques by which these sites exploit that need for community, and apply them to online forms of treatment.

Introduction

A pressing concern in contemporary medicine is the ever-increasing problem of anorexia nervosa. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), a diagnosis of anorexia nervosa is contingent on a person displaying all four of the following characteristics: 1) Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected). 2) Intense fear of gaining weight or becoming fat, even though underweight. 3) Disturbance in the way in which 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. 4) Amenorrhea, or, the absence of at least three consecutive menstrual cycles, in postmenarchal females. A woman is also considered to have amenorrhea if her periods occur *only* following estrogen administration (American Psychiatric Association, 1994).

Based on this definition, Hoek and van Hoeken's 2003 study, "Review of the prevalence and incidence of eating disorders" found the incidence of anorexia nervosa in Western nations to be 8 cases per 100,000 people per year. Yet the researchers believe the current DSM-IV diagnostic definition to be too stringent, and as a result, the actual incidence of the disease is underestimated. Researchers have investigated a number of different explanations for the incidence of anorexia, such as biological and social causes. A significant amount of research investigating the causes of anorexia in Western countries has focused on cultural factors. These cultural factors often include sources of media such as film, advertisements, and television.

Research has begun to concentrate on the pervasiveness of anorexia in non-Western countries as well. A study entitled, "Eating behaviors and attitudes following prolonged television exposure among ethnic Fijian adolescent girls" (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002) studied a population of Fijian adolescent girls in 1995, within weeks of the introduction of television, for key indicators of eating disorders. Then, in 1998, after the women had been exposed to Western television for three years, they were again evaluated for key indicators of eating disorders. The study found that the indicators of disordered eating were significantly more prevalent in 1998, after exposure to Western television. Furthermore, many of the participants stated a desire to reshape their bodies to look more like characters on Western television. Studies such as this attest to the way that cultural mediums like television can unite previously disparate parts of the world in terms of shared body-image ideals.

A medium perhaps even more globally influential than television is the Internet. According to the 2007 Internet World Statistics, 18.9 % of the world's population is online. Young people are particularly likely to use the Internet, according to the 2006 survey showing that 83% of North American 18-29 year-olds (the largest demographic listed) are Internet users (Webmaster, 2007). Because of its popularity, and the abundance of health-related information it offers, the Internet must be understood as having a large influence on contemporary medicine. Anorexia nervosa and the Internet have been linked in a substantial amount of research exploring the relationship between anorexia nervosa and online recovery therapy (Walstrom, M. K., 2000; Hsiung, R.C., 2002). However, the research on the Internet's many pro-anorexia (pro-ana) sites is still in its infancy.

The media has been quick to condemn pro-ana sites. CNN's Entertainment division "Showbiz Tonight," describes them as "scary sites that glamorize eating disorders" (CNN.com, 2007). In October of 2001, the "Oprah Winfrey Show" aired a program discussing the sites as forces that "encourage dangerous behavior relating to eating disorders" (Winfrey, 2001). Yet the publicity does not come with substantial information on the sites' content.

In her 2006 paper, "Pro-anorexia websites and their implications for users, practitioners, and researchers," Stephanie Tierney asserts that the sites have gained popularity because they foster a sense of community and belonging among people suffering from anorexia. She suggests that professionals should visit these sites to gain a better understanding of the mindset of the anorectic (anorexic person). She concludes by recommending that studies be done as to the web-sites' impact on anorectics, the role they play in maintaining the disorder, an explanation for their popularity, and the reasons that individuals access the sites.

The idea that the appeal of pro-anorexia sites lies in a sense of community demands further scrutiny. Tierney's findings suggest that the field of anorexia research would benefit from a comprehensive study analyzing causes for and effects of pro-ana sites. The purpose of this study is to review the existing literature on pro-ana sites and 1) come up with an overview of the sites' content, 2) analyze their impact on viewers, and 3) synthesize the many different explanations for

their popularity. The implications of the study will not only give a more comprehensive picture of the content of pro-ana sites, but also shed light on the Internet's potential for harm.

Method

To find sources, the researcher searched psychology databases such as PsycINFO and Medline using the key words 'pro-anorexia sites' and 'pro-ana sites.' PsycINFO yielded six relevant articles, and Medline yielded five relevant articles. When a study was found that dealt with the content, impact, or explanations of pro-ana sites, the researcher clicked on "search related articles" and found others. The researcher also checked the bibliography of relevant studies to find other helpful articles. In total, there were 21 relevant articles found, 15 of which were empirical and could be the focus of a review. After reading all the studies, a list of site components most frequently mentioned was compiled. These components included drug recommendations, motivational images or messages, also known as 'thinspiration,' chat rooms or support groups, information about the site creator, and a disclaimer. The researcher then reviewed the studies a second time, quantitatively coding to see how many of the studies explicitly mentioned each of these components.

Results

Most of the studies in the literature evaluate pro-ana forums for similar themes and components. These components included drug recommendations, motivational images or messages, chat rooms or support groups, information about the page's creator, and a disclaimer page notifying web browsers of the site's content, usually with warnings of potentially dangerous material (See Table A1).

The studies had vastly different scopes. The 2003 study by Chesley, Alberts, Klein, and Krepe looked at the greatest quantity of pro-ana sites (100) of all the studies included in the review, while the studies by Bardone-Cone and Cass (2006, 2007) looked at no actual pro-ana sites, and only one simulated site. Likewise, Wilson, Peebles, Hardy, and Litt (2006) did not look at any pro-ana sites, but instead gave surveys to others who had visited pro-ana web pages. The other studies included in the review looked at between twelve and sixty-five pro-ana sites.

Eight studies found pro-ana sites that included drug recommendations (Abbate Daga, Gramaglia, Piero, & Fassino, 2006; Chesley et al., 2003; Csipke & Horene, 2007; Lapinski, 2006; Mulveen & Hepworth, 2006; Norris et al., 2006; Williams & Reid, 2007; Wilson et al., 2006). Although some studies specified exactly how many websites they found endorsing particular drugs (Abbate Daga et al., 2006; Chesley et al., 2003; Norris et al., 2006), the others simply mention the presence of such endorsements, or cite quotations of site participants as they tout certain drugs.

Every study except for that by Mulveen and Hepworth in 2006 explicitly mentioned the use of motivational images or messages known as "thinspiration." It is important to note that simply because the authors do not explicitly point out the presence of thinspiration that it wasn't abundantly present in the pro-ana sites. Thinspiration often took the form of photographs of models or actresses, some of which had been doctored to make them look even more emaciated. Other forms of thinspiration included mantras such as "nothing tastes as good as thin feels." Similarly, every study except that by Abbate Daga and colleagues (2006) mentioned the existence of chat rooms or support groups on the pro-ana sites under examination; yet simply because the authors do not make a point of identifying their existence, it does not mean that they did not find chat rooms on the sites at which they looked.

The studies that mentioned information about the sites' creators included those by Dias, 2003; Chesley and colleagues, 2003; and Fox, Ward, and O'Rourke, 2005. The latter two studies also specified that of the sites they looked at, 64% and 67% (respectively) included information about the creator.

Finally, eight of the 15 studies included in the review specified finding disclaimer pages on the sites. Only the 2006 study by Norris and colleagues specified the percentage of sites with disclaimers, noting that they were present on 58% of the sites examined in their study. The other seven (Bardone-Cone & Cass, 2006; Bardone-Cone & Cass, 2007; Csipke & Horene, 2007; Dias, 2003; Fox, Ward, & O'Rourke, 2005 ; Lapinski, 2006; Williams & Reid, 2007) merely mentioned the existence of disclaimers on the pro-ana sites.

There were common threads not only in the components for which the researchers searched, but also in the methods they used to search for them (See Table AII). Six of the 15 studies employed passive observation (Davies & Lipsey, 2003; Dias, 2003; Fox et al., 2005; Giles, 2006; Mulveen & Hepworth, 2006; Williams & Reid, 2007). Four of the studies used public Internet searches (Abbate Daga et al., 2006; Chesley et al., 2003.; Csipke & Horene, 2007; Norris et al., 2006;). These search engines varied from study to study; Abbate Daga and colleagues (2006) used a generic Google search engine, while Norris and colleagues (2006) used Medline and PubMed. The other two studies did not specify the names of the search engines used.

Content

Of the content components generally explored in this review, the most common elements were support groups and thinspiration, each of which were present in 93% of the studies. Sixty percent of the studies found pro-ana sites that advocated drug use to aid in weight loss. Less common, though still referenced in 53.3% of studies were disclaimers warning web-surfers about the potential dangers of the sites' content. Many of these disclaimers specified that they were not for individuals without an eating disorder, and had no wish to spread anorexia, bulimia, or any other eating disorder. All studies except one acknowledge in some way that the sites claim not to want to 'convert' people to eating disorders. Rather, they are allegedly for those who already have eating disorders. The exception, however, is Abbate Daga and colleagues, whose 2006 study "Eating disorders and the Internet: Cure and curse" states that the content of pro-ana sites "idealize anorexia, describing it as a desirable lifestyle...encouraging people to begin starving or binge-purging" (p. 68). Finally, the least common component of content was creator information, which was mentioned in only 33% of the studies. However, it is important to note that just because a component was not specifically mentioned, this does not mean that it was not present.

In addition to the elements of pro-anorexia website content considered in Table AI there were other trends noted in the studies, such as themes of control, strength, and perfection, and even similar sub-sections. For example, Chesley and colleagues' 2003 findings that pro-ana sites almost all contained a section of 'tips and tricks' with techniques to lose weight and to hide eating disorders and nutritional information, were backed up by every study considered. Many studies found calorie charts and BMI⁶ calculators as well (Csipke & Horene, 2007, Brotsky & Giles 2007). Also common were passages making eating disorders (particularly anorexia) seem like a religion, such as the 'ana creed' or 'ana commandments' (Bardone-Cone & Cass, 2006; Chesley et al., 2003; Csipke & Horene, 2007). Some sites found not only thinspiration, but also reverse-thinspiration (pictures of obese women) 'distraction pictures' (not specified) and 'food porn' (pictures of appetizing-looking food as an attempt to sate the desire to eat) used to trigger site

⁶ BMI stands for Body Mass Index, a measure of body fat based on height and weight.

users (Lapinski, 2006). The term ‘trigger’ is used among anorectics to mean ‘motivate toward anorexic behaviors.’ Also, each study in the review made some mention of a debate or conflict between content portraying anorexia as a disease and content portraying anorexia as a lifestyle.

Interestingly, Chesley and colleagues (2003) remarked that pro-ana websites were generally much better organized and more comprehensive than pro-recovery sites. Dias’s study (2003) supported the impressive organization of pro-ana sites and also commented that the users of such sites were “quite articulate and seemingly aware of their circumstances” (p. 38). Norris and colleagues (2006) also noted the intellectual caliber of the content, saying that 75% of the content on pro-ana websites had a reading level above eighth grade (more advanced than the New York Times).

Explanations for Popularity

Explanations for why users were drawn to pro-ana sites varied. According to some, the sites served as a hobby (Lapinski, 2006); others said that the pro-anorexia movement in general was a way of “eschewing the fast-food loving, alcohol swilling, materialistic nature of contemporary Western Society” (Tierney, 2006, p.182). Still others find pro-ana sites to be a coping mechanism to deal with the emotional stress of going through an eating disorder (Mulveen & Hepworth, 2006). Emma Rich (2006) explains the popularity by asserting that outsiders perceive anorexia as an “irrational and self-inflicted” (p. 301) disorder, so those with eating disorders must seek sympathy elsewhere.

The 2007 study by Williams and Reid had particularly interesting results in terms of analyzing the use of pro-ana sites. They found that the pro-anorexia sites were popular because in its initial stages, anorexia gives desired results, such as feelings of control, a thinner body, sense of achievement, and for some people, the desire for self destruction. The study also recommends looking at eating disorders and the pro-ana movement as an addiction, and suggests that the popularity of the pro-ana sites is a response to “health, as an absolute good value in place of religion” (p.151) confusion about what constitutes proper nutrition, and the conflicting messages of the media about obesity.

In spite of the variety of explanations posited, three main trends become clear. Nearly all the studies stated that people accessed the sites to get advice on how to lose weight, or, if they are eating-disordered, how to maintain or ‘improve’ their disorder. Seventeen of the studies attributed the sites’ popularity to the sense of community that they created for site users. Five of the studies found that the sites were popular because they gave the users a sense of identity.

Impact

Although many of the studies speculated on the impact of viewing pro-ana sites on users, the three most conclusive studies were those by Bardone-Cone and Cass, both as a pilot study in 2006 and a larger study in 2007, Wilson and colleagues (2006), and Csipke and Horene (2007).

In the 2006 Bardone-Cone and Cass pilot experiment, only the women who viewed the pro-ana site experienced a decrease in self-esteem or appearance self-efficacy. The women who viewed the control sites, which consisted of one site advertising women’s clothing using average-sized models and another site about interior decorating, showed no change. After only one viewing of the sample pro-ana site, the women showed an increase in their perceived weight status and decrease in their perceived attractiveness. Women who had viewed the control websites showed no change in perceived weight status, or perceived attractiveness to the opposite sex. The pilot study concluded that viewing pro-anorexia websites has a negative effect on young women’s self-perception. The experiment was expanded a year later, with even more conclusive

results. Study participants who saw the pro-ana site rather than the control sites were more likely to experience greater negative affect, lower social self-esteem, lower appearance self-efficacy, and reported themselves as heavier than the women in the control groups (despite no significant differences in pre-website perception of weight or BMI). They were also more likely to exercise and think about weight that day or the next, and more likely to compare themselves with the website images of women than those in the female-fashion site control group. The study cites these results as “systematic evidence that viewing a pro-anorexia website has significant negative consequences” (p. 545).

In Csipke and Horene’s 2007 study, participants answered questionnaires about the impact of pro-ana sites. Twenty-six percent of participants said that websites offered them practical advice that helped them maintain disordered eating behaviors. Forty-three percent reported said that the site helped them in terms of emotional support. 2.6% responded they were receiving both practical tips in maintaining the disorder and emotional support. 19.2% said the websites harmed them, leading the study to conclude that visiting the sites led to a trend of worsening body image. Csipke and Horene’s 2007 results also showed, however, that people who actively participated in the sites felt less lonely than people who passively observed. Active participants also reported participation on the pro-ana sites helpful for improving emotional well-being.

In the 2006 study by Wilson and colleagues eating disorder patients and their parents answered questionnaires about the impact of pro-ana sites. While most of the parents were ignorant of their children’s use of these sites, 96% of patients who visited the sites reported that they learned a new weight-loss or purging technique. Moreover, 69.2% reported using a new weight loss or purging technique, and 34.6% reported using a new diet aid, as a result of going on the website. Wilson and colleagues noted that users of pro-ana sites reported longer durations of illness and less time in school as a result of health issues.

Ethics

Because of the highly personal and sensitive nature of the websites, most studies showed a high regard for ethical standards. For instance, Dias (2003) accessed only information from pro-ana websites that is available to the public, and refrained from directly interacting with participants in any way. Likewise, in the study by Fox and colleagues (2005), the project research officer announced her presence on the site. Mulveen & Hepworth (2006) also announced their presence and sent a detailed description of their study to the site owner. Similarly, Williams and Reid (2007) not only obtained permission from the site owner, but also ensured that none of the passages they quoted in their study could be traced back to their original authors. Not all researchers were as concerned with ethics, however. Norris and colleagues (2006) reasoned that because the Internet is public domain, his study is exempt from ethics board review. Brotsky and Giles (2007), while acknowledging that their covert study did contravene ethical research principles, still felt that they were right in conducting their study, saying “Traditionally, when ethical guidelines are breached, it is necessary for researchers to defend their behavior in relation to the importance of the research. In this instance, was deception justified? We believe that it was...” (p. 96). Because this is such a new field of research, it would behoove the psychological community to come up with standard ethical practices in studies involving the Internet.

Discussion

In order to make these websites less harmful to vulnerable individuals, it is crucial to discover exactly how they harm viewers. Although it would be easy to take the media’s stance that the websites are harmful because they explicitly urge young women to develop anorexia, this

view is oversimplified and fallacious. The studies included in this review show that, beyond not explicitly recommending anorexia, the majority of sites have disclaimers *warning* viewers of potential danger. Therefore, their capacity for harm is clearly less direct than simple exhortations to anorexia. By understanding the reasons for the sites' popularity, we can take steps to make them less popular. Similarly, by understanding the tactics by which the sites cause harm, we can begin to counter these tactics.

The explanation that users go to pro-ana sites in order to gain practical information about how to go about losing weight or behaving in an eating disordered manner is borne out by the data in Table AI. The large amount of information on weight-loss (such as drug recommendations) attests to the demand for specific advice on how to continue with an eating disorder. Furthermore, the most common components of pro-ana websites are motivational images and forums; the former feeds into the need for motivation, while the latter feeds into the need for practical information. The social nature of forums suggests also that it is not purely for practical information that people visit the sites.

The key finding from this review is that personal, not ideological, ties bond the pro-ana community. Of the three main explanations for the popularity of eating disorders, the statement that they are popular because they provide a sense of community is the most frequently discussed. Studies debate what constitutes a community, how the Internet creates a feeling of community, and how the community defines itself. A major pillar of community is the sense that the web page is a safe space where participants are able to speak freely and discuss their concerns and preoccupations free from judgment (Dias, 2003; Mulveen & Hepworth, 2006; Wilson et al., 2006). In addition to offering freedom of self-expression, pro-ana sites offer a sense of friendship to a group of people who most likely lack strong social connections in daily life. Csipke and Horene (2007) note that anorexics are at a social disadvantage because most social gatherings involve food and drink. Therefore, it is likely that they would lack a peer group, and try to fill that need on a pro-ana site. Davies and Lipsey (2003) also support the statement that people with eating disorders seek one another on pro-ana sites to find a strong peer group. Abbate Daga and colleagues (2006), in rather pejorative terms, also make this point, saying that individuals with eating disorders "seek acceptance on the Internet in order to foster the illusion of having a social life" (70). Indeed, on pro-ana sites, acceptance is given in the form of frequent signs of love and support (Brotsky & Giles, 2007; Wilson et al., 2006). However, equally as effective as the care shown between participants of pro-ana sites is the sense of persecution. A major reason that the group is so close is that pro-ana sites are constantly under threat of being closed down by members of the public enraged at the idea of such harmful content being so easily accessible. Therefore, the pro-ana site users are united against those who threaten the security of their community, such as 'haters' (people who disagree with their movement) or 'wannabes,' (people who casually use pro-ana sites for dieting tips). The pro-ana site users feel that these 'wannabes' give them negative press coverage that jeopardizes the existence of the sites (Giles, 2006). This sense of 'us vs. them' acts as a powerful bonding agent for the pro-ana online community.

It is not only the presence of 'outsiders' looking for tips that puts the pro-ana sites in jeopardy. The content is widely regarded as controversial. Perhaps the most controversial content on pro-ana sites is the ongoing debate over whether anorexia (and on some sites, any eating disorder) is a lifestyle or a disease. In his 2006 article, Giles questioned the difference between 'ana,' which usually refers to the concept of anorexia as a chosen lifestyle, and 'anorexia,' which usually refers to the concept of a medical condition, saying that it may not even be possible to say that ana is the same discursive object as anorexia. In the "Anti-Recovery Model" by Fox and

colleagues (2005), the authors find that 'pro-ana' refers to an ethos about managing a dangerous disease with safety, and trying to support those who are suffering. They also notice a divide between this view and that of outsiders on the site, who look at pro-ana as an effective way to diet. Other concepts of pro-ana emphasize that it is a choice that they control, rather than an affliction that controls them. This notion of choice is pivotal in transforming mental illness into an empowering way to view experiences of weight loss (Mulveen & Hepworth, 2006). Based on the web pages included in their study, Williams and Reid (2007) define 'ana' as "a lifestyle choice: an extreme method of weight loss that deliberately uses similar techniques as those used by individuals with anorexia nervosa" (p. 150). This definition is in line with a statement written by a pro-ana site creator, which reads:

To me self-direction implies health. Not stubbornness or willfulness, mind you- anyone disordered (obsessed) can appear very strong in will when it is mere stubbornness born from obsession and fear- but the ability to examine something from all angles...and consciously choose one's own course. Self-direction and self-government are markers of independence and psychological health (Mulveen & Hepworth 2006).

One participant on the site likened the pro-ana movement to homosexuality, saying that although there was a time when homosexuality was classified as a psychological disorder, now it is accepted as a chosen lifestyle. Although this assertion of choice is contentious, it illustrates the point that pro-ana supporters advocate the idea that anorexia is not a disorder. The variety of viewpoints evident in these studies shows several of the site users' conceptions of anorexia, but there are many others.

The findings of Williams and Reid (2007) also demonstrate the concept of pro-ana meaning anorexia as a chosen lifestyle. The web page in their study defined 'pro-ana' as "short for proactive volitional anorexia. It refers to actively embracing the concept of anorexia as a lifestyle choice rather than an illness" (p. 142). Their 2007 study showed that 14.8% of pro-ana webpage users claimed to be ana by choice. Contrastingly, Csipke and colleagues (2007) do not define the pro-ana movement using this element of choice. Instead, they view it as willingness to accept that an individual has an eating disorder, without urging them to seek treatment. Contradicting Williams and Reid (2007), their 2007 study notes that only 7% of participants viewed anorexia as a lifestyle in the sense of choice. Others clarified that while it may indeed be a lifestyle, it is not a volitional one. Discovering whether there is a coherent, unified philosophy regarding the difference between ana and anorexia is imperative. If the sites endorse a coherent philosophy, not only would this shared belief system create an ideological bond amongst the viewers, but it would suggest that countering tactics would be similar to those effective in victims of brainwashing. However, the contradictory views found in Williams and Reid (2007) and Csipke and colleagues (2007) suggest that there is no agreed-upon belief system unifying the site viewers. This lack of consensus implies that their bond is personal rather than ideological. Efforts to undo this bond must be developed based on this understanding.

A common element of sites investigated by the studies in this review was information about the site's creator. Such information further reveals the variety of interpretations of the pro-ana movement. While one creator may release a statement proclaiming the site a haven for 'rexies' to support each other in their chosen lifestyles, another may call their site a support group for those dealing with anorexia but not ready to recover. While the media may try to lump pro-ana sites together into one entity and generalize the intent of one site onto all the others, an examination of the site creator's profiles precludes such oversimplification. Information about the creator, his or her intention in setting up the site, and his or her conception of 'anorexia' and 'pro-ana'

reveals the disparity that exists with respect to the ‘pro-ana’ movement. In her 2002 article, Eleanor Taylor quotes one of the creators of a ‘pro-ana site’ as she declares:

You may already know the difference between us rexies and anorexics! If you want sympathy for your “disease”, you are anorexic. If you want respect and admiration for your lifestyle of choice, you are a rexie...Anorexics die. Rexies don’t (p. 138).

Taylor’s quotation suggests that ‘rexie’ and ‘ana’ are interchangeable names for the philosophy of anorexia as a chosen lifestyle. However, all the aforementioned studies stated that there *are* site participants who do not view anorexia as a choice, but in the more conventional mode of a disease. Thus, among the site-users there is no consistent definition of what it means to be ‘pro-ana’. Notions differ between websites, and even among participants of the same website. In their covert study, Brotsky and Giles (2007) asked whether anorexia was a lifestyle, disorder, disease, or all three, and they received a range of responses on every view, and combinations thereof. Giles (2006) takes the inconsistency of concepts as further support that the group is defined not by a coherent ‘pro-ana philosophy’ but rather by a sense of kinship and community. These studies further support this researcher’s conclusion that the bond between pro-ana site users is personal, not ideological.

In sum, while researchers and non-site users have come to a consensus that ‘pro-ana’ refers to a belief that anorexia is a sustainable lifestyle choice, the site-users themselves are more ambiguous on the definition. This suggests that community-forming and interpersonal relations are higher priorities for the site users than forming a coherent philosophy. They crave a judgment-free arena to talk about their condition with others who will listen, even if they aren’t precisely clear on whether or not they are using words to mean the same thing. The lack of a unifying philosophy in pro-ana sites shows that the sites’ harmfulness lies not in the capacity to indoctrinate viewers, but in their ability to provide a sense of belonging, community, and friendship. While such a sense may seem innocuous, it is dangerous because it serves as positive reinforcement for eating disorders. Furthermore, it is dangerous for viewers to develop relationships based on eating disorders because relationships can play a major role in identity formation.

The pro-anorexia movement is also harmful because viewers of the sites may incorporate eating disorders into their identities. The work of Emma Rich (2006) elaborates on this concern, asserting that because eating disorders govern a person’s relationships and self-concept (both major components of identity formation), they are particularly likely to comprise a major part of a person’s identity. In Brotsky and Giles’s (2007) covert study, one participant stated “If I’m not ana, then IDK [I don’t know] what I am” (p.105). Recognizing the large extent to which the eating disorder defines a person’s identity, Brotsky and Giles (2007) suggest that the pro-ana movement is a way for a person to acknowledge this ED-identity while maintaining self-esteem. Williams and Reid (2007) support this idea, and explain why pro-ana often comes with aversion to recovery, stating that for anorexic people, giving up their disease means giving up their identity and trying to create a whole new sense of self. The fact that involvement with pro-ana websites bolsters an ED-identity, combined with the danger of camaraderie rooted in pro-ana sites makes these sites deeply harmful, more so than they would be were they mere exhortations to eating disorders.

Limitations and Future Directions

With the exception of Mulveen and Hepworth, (2006) and Lapinski (2006), the studies mentioned no regard for inter-rater reliability. Another limitation is that the field is so new that most of the existing research consists of pilot studies or other descriptive pieces. Also, the

ambiguous nature of the term 'pro-ana' means that it is very difficult to make sure that everyone is referring to the same idea, or evaluating the same thing. Indeed, most of the studies included in the review not only used differing methodologies, but were looking at different topics altogether. Still, each added a bit that resulted in a coherent overall picture. Finally, as with all online research, Internet samples will under-represent poor and minority groups.

In terms of future directions, this review points to the conclusion that the draw of pro-ana sites is the sense of community that they provide. Future research could put pressure on this statement by comparing pro-ana sites to other social communities online. For instance, a study could contrast a pro-ana community with a non-psychologically-based Internet society such as a fan club or book group. They could evaluate what shared components these sites shared, and what elements of a website foster a sense of inclusiveness. By identifying site components that create a sense of belonging for the users, researchers could learn how to improve recovery sites so that they also cultivate a sense of belonging.

One could also do a study on the differences between people who are pro-ana and those who are anorexic and their sense of agency. A study on identity formation and eating disorders would be particularly helpful. Knowing that those with eating disorders tend to allow their condition to determine their identity, it becomes important to learn how to urge recovery without making a person feel that he or she would be leaving behind his or her identity. Given the confusingly disparate body of literature, future research pursuing a standardization of Internet literature is advisable.

Conclusion

Indeed, while pro-ana sites consist of content that gives anorexics practical information, a sense of belonging, and a clear identity, the impact of the sites is negative affect, lowered self-esteem, and the perpetuation of eating disorders. Therefore, as beneficial as the Internet can be, its harmful effects cannot be ignored. Although the television is not an inherently harmful invention, Becker and colleague's 2002 study found that the introduction of Western television in Fiji resulted in an increase of the prevalence of key indicators of eating disorders, presumably because of the advent of Western ideals of beauty and thinness. Likewise, the Internet is just as globally influential as television. Online, the images of unrealistically thin body ideals that permeate Western advertising and other media forms are now equally accessible all over the world. With them also come a slew of groups aimed to create a sense of community to deal with the very body-image concerns that the Internet and media have created. The increasing problem of body image problems and eating disorder issues around the world makes it imperative for studies such as this one to acknowledge the possible negative sides of our media as it expands into new areas. Even something as seemingly beneficial as a peer group can result in the dissemination of harmful and dangerous messages in an environment as un-chaperoned and anonymous as the Internet.

Grace Overbeke is a senior Theater and English major at Wesleyan University. She originally wrote this piece for a seminar on eating disorders with Professor Ruth Striegel-Moore, and would like to acknowledge Professor Striegel-Moore for all her help. She also would like to thank Stephanie Ross, Laura Geronimo, Christian Hoyos, Lauren Sonnabend, and the dedicated staff of Mind Matters for all their time and effort. Correspondence may be addressed to goverbeke@wesleyan.edu.

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APPENDIX

TABLE AI: Content of Pro-Ana websites

Study	Sample Recom-	Drug Images/mes- mendations	Motivational Sages	Chat Rooms/ Support Groups	Creator Disclaimer Information	
Abbate Daga et al. (2006)	47 pro-ana websites	Yes, 47%*	Yes, 26%	NM	NM	NM
Bardone-Cone & Cass (2006)	24 participants 1 simulated pro-ana site	NM	Yes	Yes	NM	Yes
Bardone-Cone & Cass (2007)	235 participants 1 artificial pro-ana site	NM	Yes	Yes	NM	Yes
Brotsky & Giles (2007)	12 pro-ana website	NM	Yes	Yes	NM	NM
Chesly et al. (2003)	100 pro-ana websites	Yes, 58%	Yes, 94%	Yes, 49%	Yes, 64%	NM
Csipke & Horene (2007)	≥ 2 pro-ana sites (52 people avg. age 22)	Yes	Yes	Yes	NM	Yes
Davies & Lipsey (2003)	65 pro-ana websites	NM	Yes	Yes	NM	NM
Dias (2003)	27 pro-ana websites	NM	Yes	Yes	Yes	Yes
Fox et al. (2005)	1 pro-ana site (Anagrrl)	Yes	Yes	Yes	Yes	Yes
Giles (2006)	20 pro-ana websites	NM	Yes	Yes	NM	NM
Lapinski (2006)	19 pro-ana websites	Yes	Yes	Yes	Yes	Yes
Mulyeen & Hepworth (2006)	16 pro-ana websites	Yes	NM	Yes	NM	NM
Norris et al. (2006)	12 pro-ana websites	Yes, 67%	Yes, 92%	Yes, 50%	Yes, 67%	Yes, 58%
Williams & Reid (2007)	176 participants 2 pro-ana sites	Yes	Yes	Yes	NM	Yes
Wilson et al. (2006)	182 people (76 patients and 106 parents)	Yes	Yes	Yes	NM	NM
TOTAL	15 studies	9/15= 60%	14/15= 93.3%	14/15= 93.3%	5/15= 33%	8/15= 53.3%

Note: NM- not mentioned

*Data specifies that 47% of the sites examined have “dangerous suggestions” which may, but do not necessarily, refer to weight-loss drug recommendations.

TABLE AII
Methods used to Study Pro-Ana Sites

Study	Methods
1. Abbate Daga et al. (2006)	Google search and content analysis of pro-ED sites.
2. Bardone-Cone & Cass (2006)	Experiment-participants randomly assigned to view either a simulated pro-ana site, or one of two control sites: a simulated site on female fashion (using average-sized models) or a site about home decoration. They filled out questionnaires that were analyzed using PANAS, SSES, and SES.
3. Bardone-Cone & Cass (2007)	Experiment-participants randomly assigned to view either a simulated pro-ana site, or one of two control sites: a simulated site on female fashion (using average-sized models) or a site about home decoration. They filled out questionnaires that were analyzed using PANAS, SSES, ApSE, EAT-26, SATAQ-3, EDEQ, BMI, and MPS.
4. Brotsky & Giles (2007)	Covert Participation
5. Chesley et al. (2003)	Internet search with public search engine
6. Csipke & Horene (2007)	Internet based research and self-report surveys (mixture of PAWS and EAT-26)
7. Davies & Lipsey (2003)	Passive Observation
8. Dias (2003)	Passive observation and descriptive analysis
9. Fox et al. (2005)	Passive observation and participation (non-covert)
10. Giles (2006)	Passive explorations and MCA
11. Lapinski (2006)**	Coded forums using EPPM model
12. Mulveen & Hepworth (2006)**	Observed passively, analyzed using IPA (Interpretive Phenomenological Analysis)
13. Norris et al. (2006)	Internet search using Medline and PubMed, and grounded theory approach generating themes
14. Williams & Reid (2007)	Observed passively, analyzed using grounded theory
15. Willson et al. (2006)	Anonymous questionnaire

**Study took measures to insure inter-rater reliability.