An Exploratory Study of Pro-Eating Disorder Online Media Use: Implications for Professional Counselors

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This exploratory study examined the relationship between eating disorders and the use of pro-eating disorder online media among undergraduate college students (N = 138). The results showed the level of participant awareness (42.8%, n = 59) of pro-eating disorder online media and the frequency of access and use (44.1%, n = 26) of pro-eating disorder online media. The findings also indicated that participants who enjoyed accessing pro-eating disorder online media were statistically more likely to engage in webpage interaction. Findings also suggested that certain disordered eating behaviors were correlated, such as extreme exercise and laxative or diuretic use. Practice implications for counselors working with clients who have eating disorders and use pro-eating disorder online media are discussed.

Keywords: online media, counselling, eating disorders

Eating disorders are complex mental health diagnoses that can result in death if left untreated (Le Grange, Swanson, Crow, & Merikangas, 2012; Reza khodabakhsh & Kiani, 2014). Individuals with and without a diagnosable eating disorder can utilize the internet to learn behaviors that encourage a significant and unhealthy reduction of weight, and as result, the use of pro-eating disorder online media can lead to deleterious consequences to an individual's physical health (Jett, LaPorte, & Wanchisn, 2010).

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM–5*; American Psychiatric Association [APA], 2013) describes eating disorders as "persistent disturbances" related to eating behaviors that ultimately result in significant physical or psychosocial impairment (APA, 2013). Among the disorders discussed in the *DSM-5*, the most

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commonly known and researched eating disorders are anorexia nervosa, bulimia nervosa, and binge eating disorder (APA, 2013). At least 30 million people in the United States have been diagnosed with an eating disorder, or struggle with some form of disordered eating (Hudson, Hiripi, Pope, & Kessler, 2007; Le Grange et al., 2012).

Researchers report high incidence rates of 10% of every 1,000 individuals, of anorexia nervosa, bulimia nervosa, and binge eating disorder in adolescents and young adults (Smink, van Hoeken, & Hoek, 2012). This incidence rate aligns with findings that show that the age of onset for anorexia nervosa and bulimia nervosa is between the ages of 19 to 25 (Hudson et al., 2007). The National Eating Disorder Association (NEDA, 2018) documented that over the last 13 years eating disorders have increased in prevalence from 7.9% to 25% in males and 23.4% to 32.6% in females. With the increases in prevalence, the NEDA (2018) reported that fully diagnosable eating disorders most commonly occur between the ages of 18 and 21. This age demographic is representative of the majority of the college student population according to the U.S. Department of Education (2013). Due to the risks associated with disordered eating, age of onset for these disorders is a cause for concern for the mental, physical, and behavioral health of adolescents and young adults.

Emerging Adults and Eating Disorders

Eating disorders are gradually being recognized as a cause of mortality in young individuals who often have developed both physical and psychological comorbid illnesses; however, this acknowledgement has yet to create a firm understanding of the behaviors that result in eating disorder related mortality (Arcelus, Mitchell, Wales, & Nielsen, 2011). One study found that young adults are at a high risk of disordered eating patterns (Quick & Byrd-Bredbenner, 2013). Another study of college students found that 16% of participants reported disturbed body image and dysfunctional eating behaviors (Reza khodabakhsh & Kiani, 2014). Some researchers have reported that percentages of eating disorder prevalence could be as high as between 8% and 17% in college aged young adults (Eisenberg, Nicklett, Roeder, & Kirz, 2011). Because eating disorders most commonly affect emerging adults it is imperative for professional counselors to understand the etiology of eating disorders to provide effective treatment. However, etiology of eating disorders is widely disputed. Eating disorders are believed to occur through societal, familial, and environmental influences, genetic factors and biology, psychological components (such as perfectionism, impulsivity, and stress reactivity), and body image dissatisfaction (Theis, Wolf, Fiedler, Backenstrass, & Kordy, 2012; Rikani et al., 2013). Societal and environmental influences, in the 21st century, can be attained from our technological environment, including online media.

Media Influence on Eating Disorders

The use of the internet and access of online media in the emerging adult population is

currently on the rise. A recent survey found that 97% of adults between the ages of 18 and 29 in the United States use the internet regularly (Pew Research Center, 2018a). In addition, the use of social media (i.e., webpages that allow for community participation and sharing of content) has risen from 68% in 2008 to 88% in 2018 among individuals aged 18 to 29 (Pew Research Center, 2018b). Utilizing the internet to facilitate disordered eating is a major concern due to the deleterious consequences that can occur through pro-eating disorder online media (Jett et al., 2010). The rise in internet use and the availability of pro-eating disorder webpages are cause for concern because these forums or groups (a) identify eating disordered behavior as a choice rather than a mental illness and (b) provide members with encouragement for following "rules" for obtaining and maintaining eating disordered behaviors. This form of encouragement can create or exacerbate an eating disorder, increase or induce social isolation, and introduce behaviors that are comorbid with depressive disorders, anxiety disorders, substance use disorders, and emotional mood dysregulation (Fitzsimmons-Craft et al., 2012; NEDA, 2018).

Researchers have found that pro-eating disorder webpages promote an eating disorder lifestyle by glorifying and idealizing the illness as a positive way to maintain the *thin ideal*, which is the idea that thinness and/or emaciation is a desirable body type while weight gain and body fat are viewed as shameful (Fitzsimmons-Craft et al., 2012; NEDA, 2018). The NEDA reported that exposure to this genre of social media can increase body dissatisfaction and the internalization of the thin ideal in young women since these communities instruct the participant to gain and maintain disordered eating patterns (NEDA, 2018). Pro-eating disorder online media is easy to access by using any search engine to search for simple words or phrases, such as "thin and beautiful," or the coined term "thinspiration" (Borzekowski, Schenk, Wilson, & Peebles, 2010). Since these webpages are easily available, they can be extremely dangerous for those accessing them, and can provide individuals with ideas and techniques to adopt or increase harmful eating behaviors.

It is imperative for professional counselors to ascertain the developmental process of learned behaviors, especially due to the fact that eating disorder behaviors are often learned behaviors. Behaviors are developed or gained through environmental experiences, social relationships, childhood experiences, and culture (Crain, 2011). The impact of learned behaviors occurring through our environment, which is more often than not dominated by the use of the internet, has changed significantly from when famous behaviorists such as Skinner or Pavlov were conducting their research (Crain, 2011).

There is limited research on pro-eating disorder online media; however, it is a growing area of study. One study found to date by Jett and colleagues (2010), examined the impact of pro-eating disorder media on disordered eating behaviors. Participants were female college students with a healthy body mass index who had no previous incidents of disordered eating. The researchers found that participant exposure to pro-eating disorder webpages contributed to adverse impacts on their eating patterns (e.g. the participants incorporated techniques that were learned from accessing pro-eating disorder online media and had significant emotional responses to the webpage content) as well as reduced caloric intake (a reduction of 2400 calories per week on average with a reduction range of

300 to almost 8000 calories restricted per week after access and use of pro-eating disorder media), for several weeks after the study's conclusion. Another study reported that pro-eating disorder online media impacted eating behaviors as well as body image satisfaction (Harper, Sperry, & Thompson, 2008). Harper, Sperry, and Thompson's (2008) study on pro-eating disorder online media viewership among 134 undergraduate women found that individuals who accessed pro-eating disorder media had a higher appearance dissatisfaction than the control group. Additionally, individuals that accessed pro-eating disorder media had higher instances of caloric restriction than the control group. These findings suggest that pro-eating disorder media can have an impact on body image dissatisfaction and instances of disordered eating behaviors.

A recent meta-analysis of 9 studies on the influence of pro-eating disorder media on body image and eating pathology found that 3 out of 9 studies indicated that individuals that used pro-eating disorder media experienced negative affect after use (Rodgers, Lowy, Halperin & Franko, 2015). The authors also found that in 5 out the 9 studies participants sought to be thin and in 3 out of 9 studies participants reported utilizing purging behaviors (Rodgers et al., 2015). Finally, the authors reported that one study indicated that participants that used pro-ana (otherwise known as pro-anorexia) webpages experienced reduced instances of self-induced vomiting (Rodgers et al., 2015). Another group of researchers found mixed results, similar to the results by Rodgers et al. (2015) about the reduction of purging when using pro-eating disorder online media. Yom-Tov et al. (2016) found that not all participants that access pro-eating disorder online media are searching for equal content or experiences. It was reported that participants who used pro-eating disorder online media expressed optimism as a common theme that has not been previously discussed (Yom-Tov et al., 2016). It is also significant to report that while these participants discussed a positive outlook, they also identified significant instances of depression, self-harm, and suicide attempts.

With this information in mind, it is important to indicate the specific nature of content that is provided within pro-eating disorder webpages. Harshbarger et al. (2009) reported over the types of "tips and tricks" that can be used by individuals that access pro-eating disorder online media easily. Activities such as significant calorie restriction was evidenced by users discussing only eating one apple per day as well as the use of distractions when a participant feels hunger pains. This study indicates that the content that can be accessed through pro-eating disorder online media can significantly impact an individuals health and vitality if not addressed.

The Current Study

Eating disorders negatively impact mental and physical health. The use of pro-eating disorder online media can encourage behaviors associated with eating disorders or support individuals with disordered eating patterns. To be able to effectively address eating disorders, professional counselors need a comprehensive understanding about how learned eating behaviors and their relationship with pro-eating disorder online media affects

emerging adults. The purpose of the current study was to explore the relationship between eating disorder behaviors and pro-eating disorder online media. We sought to answer the following research questions: (a) What are undergraduate college students' knowledge and awareness of pro-eating disorder online media? (b) How often are undergraduate college students accessing and using these online media sources? (c) Is there a relationship between visiting pro-eating disorder webpages and symptoms related to eating disorders?

Method

Participants

The sample comprised of 138 undergraduate students at a small sized public university in the southern region of the United States. The percentages of men and women participants were 10.8% (*n* = 15) and 88.5% (*n* = 123) respectively. The average age of students was 23.6 (*SD* = 7.05) with the ages ranging from 18 years to 64 years old. The ethnic composition of participants was 41.7% Caucasian/Non-Hispanic (*n* = 58), 38.8% Hispanic/Latino/Latina (*n* = 54), 2.2% Mexican or Mexican American (*n* = 3), 5.0% African/African American/Black/Caribbean (*n* = 6), 4.3% Asian/Pacific Islander (*n* = 7), and 7.2% multiracial (*n* = 10).

Measure

Currently no found standardized assessments to date exists that measure online pro-eating disorder webpages; therefore, we developed the *Pro-Eating Disorder Online Media Presence Relationship on Learned Behavior Survey* (see Appendix A). The survey included questions directly related to the use and awareness of pro-eating disorder websites. Questions regarding participants' engagement in eating disorder behaviors reflect symptom criteria for eating disorders outlined in the *DSM-5* (APA, 2013, pp. 338-350). We followed the stages of survey development as reported by Rea and Parker (2005) to determine our sample size, survey design, implementation of the survey, coding the data, and analyzing the data to complete our data collection.

The purpose of this survey was to analyze responses for any relationship between use and knowledge of these websites and eating disordered behaviors. The demographic section of the survey was separated from the survey analysis to ensure anonymity and that the data collected was confidential. Nine of the questions could be answered with a "yes" or "no" response (e.g., "Do you know what pro-eating disorder webpages [Pro-Ana and Pro-Mia sites] are?") and five of the questions had multiple options ("If yes, how did you learn about these webpages [check all that apply: Online research, friends, family members, other webpages, news/other media]") that participants could select to indicate how they found pro-eating disorder online media, even if there was more than one answer. For four of the questions, participants could fill in the blank, with examples provided to indicate that participants should use numerals to answer questions that required a

measureable value. There were three questions that were presented in a rating scale. These three rating scale questions aimed to explore if participants interact with the pro-eating disorder online media communities (with response choices ranging from "I never participate" to "I always participate"), if they plan to keep using these communities (with response choices ranging from "definitely yes" to "definitely not"), and if they enjoy using these communities (with response choices ranging from "definitely yes" to "definitely not").

Procedure

Upon IRB approval, the authors invited undergraduate college students to participate in this study via email communication from their undergraduate college professors. Faculty members were informed about the study and were asked to distribute the survey to their undergraduate students. Participants were included if they were at least 18 years of age, and currently enrolled students. There were no penalties for nonparticipation and as an incentive students could elect to enter into a raffle for a $50 Amazon gift card. Once the surveys were distributed, we sent two reminder emails to faculty members to gain maximum participation. We concluded data collection after the second reminder email was sent. Follow data collection, data was transferred, stored, and analyzed using SPSS software on a secure laptop.

Data Analysis

Statistical power analysis. We determined that the minimum target sample size necessary to complete this study was 115 undergraduate students based on a student population of 9,340. We calculated this through the use of a large population sample size equation provided by G*Power, a statistical analysis program (Bruin, 2006). We attained a sample size of 139 surveys with 138 surveys completed entirely.

Preliminary analyses. The survey was initially dispersed to 415 undergraduate professors to send out through email communication to students enrolled in their courses. Out of the 9,340 undergraduates that could have responded, 396 opened the survey. Out of the 396 surveys that were opened 139 surveys were completed; one of these surveys was discarded due to participant incompletion within the allotted amount of time. In instances when there was missing data, the participant information was omitted from analysis. Open-ended responses regarding timeframe were recoded into years or minutes for consistency.

Primary analysis. Due to the exploratory nature of this study, descriptive statistics were analyzed by using frequencies and histograms to visualize the obtained data. We also used Pearson correlations to examine the relationship between specific variables. Analysis consisted of comparing results from the following two variables in this correlational study:

learned behaviors and the relationship between the behaviors and online pro-eating disorder webpages.

Results

Knowledge and Awareness

Out of 138 participants 59 (42.8%) knew what pro-eating disorder online webpages are and 78 (56.1%) did not. Out of the 59 participants who knew what pro-eating disorder online webpages are, 16 (11.5% of total participants) learned about them through their own personal online research, 15 (10.8% of total participants) learned through friends, two (1.4% of total participants) learned about them through family, 23 (16.5% of total participants) learned through other webpages, and 27 (19.4% of total participants) learned through their news sources. Tables 1 and 2 provide descriptive statistics on the knowledge and awareness of webpages in this study.

Among the 59 participants who responded to the questions about knowledge and awareness of pro-eating disorder online webpages, 13% ($n = 18$) of the participants knew about these webpages between three and four years and 10.8% ($n = 15$) of the participants knew about these webpages for two years. While 7.9% ($n = 11$) reported that they were aware of pro-eating disorder online media for a year and 5% ($n = 7$) indicated that they knew of these webpages for less than a year. The minority of participants reported that the new about the webpages between five and six years (3.6%, $n = 5$) and seven to 10 years (2.1%, $n = 3$).

TABLE 1

Awareness of Pro-Eating Disorder Media

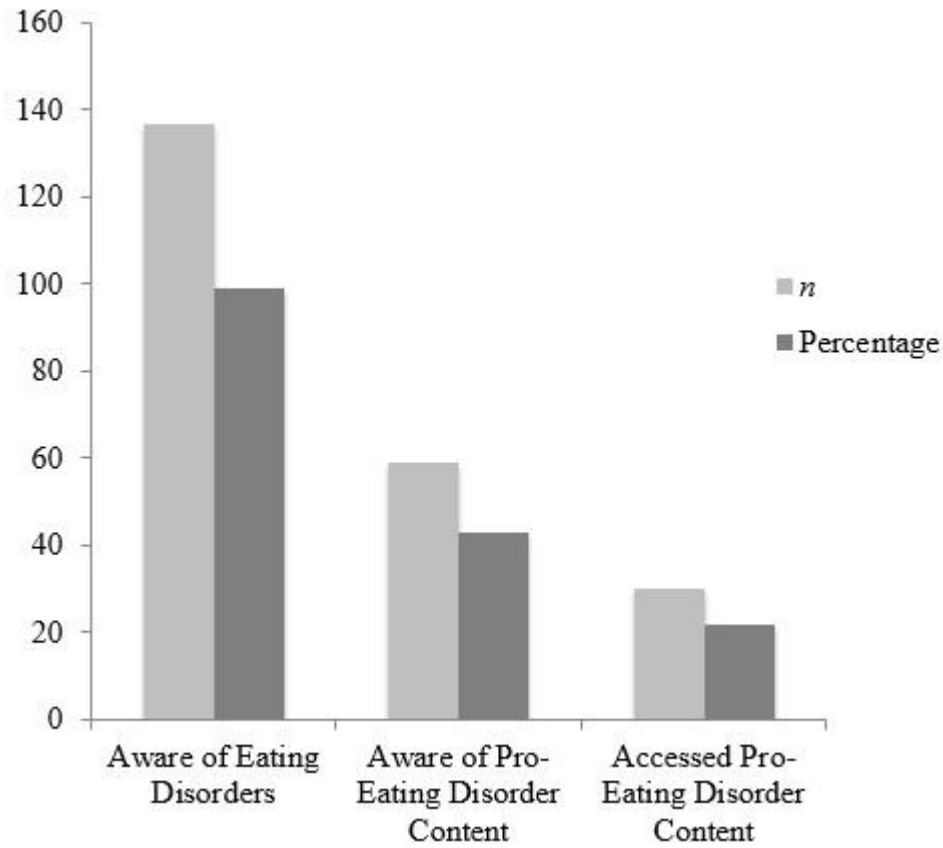| Sampling Procedure	n	Percentage	
Aware of eating disorder	137	99.27	
Aware of pro-eating disorder content	59	42.80	
Accessed pro-eating disorder content	30	21.89	

Note: N = 138.

FIGURE 1
Awareness of Pro-Eating Disorder Media

Figure 1. Awareness of Pro-Eating Disorder Media

TABLE 2

Descriptive Statistics on Knowledge and Awareness Sample

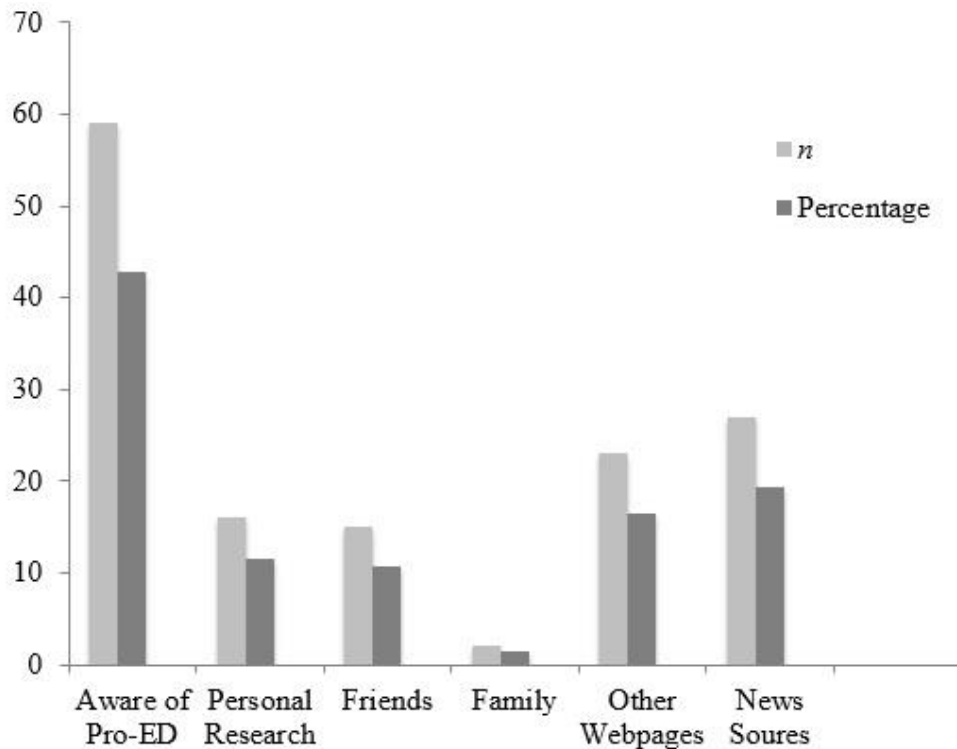| Characteristics	*n*	Percentage
Aware of pro-eating disorder content	59	42.8
Personal research	16	11.5
Friends	15	10.8
Family	2	1.4
Other webpages	23	16.5
News sources	27	19.4

Note: N = 138.

FIGURE 2
Descriptive Statistics on Knowledge and Awareness Sample

Figure 2. Descriptive Statistics on Knowledge and Awareness Sample

Access and Use

Out of the 59 participants who knew about pro-eating disorder online webpages, 26 participants (44.1%) reported on how often they were accessing the webpages. There were 24 participants that reported on how long they spent on the webpages when they visited them with the 25% ($n = 6$) of the respondents reported to viewing the webpages for 30 min. Supplementary, 16.7 % ($n = 4$) of participants engaged in these webpages for 1 hr while an additional 16.7% ($n = 4$) spent at least 10 min accessing pro-eating disorder online media. Only 12.5% ($n = 3$) spent 5 min on these webpages while another 12.5% ($n = 3$) spent 20 min on pro-eating disorder online media. Finally, 8.3% ($n = 2$) of the participants accessed pro-eating disorder online media for 2 hr while an additional 8.3% ($n = 2$) only accessed these webpages for 15 min.

We also sought to determine which pro-eating disorder media webpages the participants were using. The participants who responded to the type of webpages that they were accessing had the ability to choose more than one option as the avenue in which they access pro-eating disorder online media. Out of 59 participants, those who responded indicated that 5% ($n = 7$) reported that they used private pro-eating disorder online media forums, 11.5% ($n = 16$) used Instagram, 11.5% ($n = 16$) used Tumblr, 3.6% ($n = 5$) used

non-specific pro-eating disorder online media, and an additional 3.6% (n = 5) reported that they used other means to access pro-eating disorder online media.

To further identify if there was a relationship between these webpages and symptoms of eating disorders, the participants were asked if they interact (i.e., participate in or with pro-eating disorder online media community members) with the webpages that they visit. Out of the 30 participants who chose to responded, 83.3% (n = 25) indicated that they never participated while 16.7% (n = 5) reported that they seldom participated. When asked if the participants planned to keep using pro-eating disorder online media, 50% (n = 15) reported that they definitely would not continue accessing these webpages while 23.3% (n = 7) participants reported that they might continue accessing these webpages and 20% (n = 6) would probably not continue accessing these webpages. Only 3.3% of the participants (n = 1) indicated that the definitely would continue using pro-eating disorder online media while 3.3% (n = 1) reported that they probably would continue using these webpages.

Relationship Between Behaviors and Beliefs

There was not a statistically significant relationship between eating disorder behaviors and time and frequency of accessing pro-eating disorder online media (r = .14, n = 26, p = .49). The correlations between the behaviors and beliefs regarding webpages are depicted in Table 3. There was a statistically significant relationship between participants who reported that they would continue to use the pro-eating disorder online media and diuretic use (r = .40, n = 30, p = .03). In addition, participants who reported that they enjoyed the webpages were statistically significantly more likely to engage in webpage interaction (r = .45, n = 30, p = .01). Participating in extreme exercise before accessing webpages was statistically significantly correlated to using laxatives or diuretics after accessing the webpages (r = 0.21, n = 30, p = .01). Finally, cutting back on calories was also statistically significantly correlated to using laxatives or diuretics after accessing webpages (r = 0.36, n = 30, p = .04).

TABLE 3

Pearson Correlations on Behaviors and Beliefs of Webpages

	1	2	3	4	5	6	7	8	9
1. Before; use diuretics									
2. Before; use extreme exercise	.57								
3. Before; use laxatives	.70	.60							
4. During; learn how to hide binge	-.02	.13	.18*						
5. After; use laxatives/diuretics	.40	.21*	.57	-.03					
6. Cut back on calories	-.03	-.23	-.05	.27	-.38*				
7. Interact with webpages	.24	.22	.09	-.22	.15	-.33			
8. Keep using webpages	-.40*	-.12	-.13	.11	-.13	.33	-.29		
9. Enjoy Webpages	-.44*	-.28	-.28	.19	-.29	.47	-.45*	.76	

Note. * Correlation is significant at the 0.05 level (2-tailed).

Discussion

The results of this exploratory study indicate that nearly 43% ($n = 59$) of an undergraduate college student population was aware of pro-eating disorder online media and how it impacted them. Research has shown that as little as 90 min on pro-eating disorder media has the ability to adversely impact an individual's eating habits for up to three weeks (Jett et al., 2010). In addition, the more frequently these webpages are used, the longer time clients may spend viewing the material or content (Jett et al., 2010). The likelihood for harmful consequences demonstrates the urgency to understand how prolonged exposure can influence detrimental eating behaviors. Using pro-eating disorder media may increase an individual's eating disordered behavior, and thus the risk for the physical consequences related to eating disorders, including cardiac and pulmonary failure, hypokalemia, dehydration, bone density loss, and electrolyte imbalances (Mahan et al., 2012). It can also increase the risk for emotional consequences such as anxiety, depression, substance use, and emotion dysregulation (Kaye, 2008; Mahan et al., 2012).

The data from the current study also indicates a statistically significant correlation between enjoying pro-eating disorder media and participating in the online community support. This may be because individuals who interact in communities on pro-eating disorder media endorse eating disorder behavior development as a weight loss strategy rather than a mental health diagnosis (Dimitropoulos et al., 2015). Twenty-three percent of the

participants utilized Instagram and Tumblr, which are two forms of microblogs, to gain access to pro-eating disorder media content. Both Instagram and Tumblr are free to use and allow participants to follow users, share information, and vide information easily (Li & Du, 2014). This form of social media is also a user-friendly and a virtually worldwide support system with few restrictions (Li & Du, 2014). The access and ease of use of pro-eating disorder online media allows for participants to connect with one another and give and receive support when situations arise, for example when they are experiencing hunger but do not wish to eat or if a media image of an emaciated body is discovered. As a result, more images can be shared as motivation, which can lead an individual to compare his or her realized inadequacies (Fitzsimmons-Craft et al., 2012). There is also significant representation within Western media that depicts and glorifies the *thin ideal* and significantly thin body types (Anschutz et al., 2011; Fitzsimmons-Craft et al., 2012). The ease of exposure to media sources that depict emaciated figures allows for the ability for individuals to compare their body types to those they see constantly online, on television, and through other media sources (Anschutz et al., 2011). This social comparison, while important for development and life experiences, can be detrimental when physical and body weight comparisons lead to body dissatisfaction (Fitzsimmons-Craft et al., 2012; Leahey, Crowther, & Mickelson, 2007).

Research has indicated that there is a pressure from Western society to achieve a gaunt body type that is supported by a sociocultural model of disordered eating (Fitzsimmons-Craft et al., 2012). This model explains that there is a link between body dissatisfaction and the *thin ideal* internalization. While research has not been able to specifically identify what the relationship between *thin ideal* internalization and body dissatisfaction is, Fitzsimmons-Craft (2012) described that body dissatisfaction could occur when the *thin ideal* has not been actualized within an individual that has internalized this viewpoint supported through the United States media. Thus, there is a concern of emerging adults seeking pro-eating disorder online media to find support and effective tools for weight loss.

Not only are clients who are spending more time online using pro-eating disorder websites more likely to be exposed to the *thin ideal,* they also may be experiencing instant gratification using pro-eating disorder media, which could occur when the client easily finds motivation for binging or purging behaviors, and ideas on how to restrict a meal. This can be especially dangerous, as two studies indicated that instant gratification from social media (a form of online media) use had the possibility to lead to a loss of self-control and impulsivity, which could greatly increase engagement in harmful eating disorder behaviors (Meade, 2013; Panek, 2013)

It appears that participants who engaged in disordered eating behaviors learned how to maintain some behaviors through the use of pro-eating disorder online media. Some of these behaviors, which could have severe consequences if behaviors are long term, include laxative use, diuretic use, and extreme exercise. This is a concern because individuals who partake in several disordered eating behaviors versus one behavior have a higher likelihood of having a poor prognosis. In addition, the majority of participants who

engaged in the access and use of pro-eating disorder online media reported experiencing feelings of guilt and shame about their weight following use of these webpages, as well as a desire to be thinner, a need for emotional support, significant reduction of caloric intake, and the participation in purging behaviors such as extreme exercise. These findings align with findings from other studies on pro-eating disorder media that the use of these webpages can have psychological and behavioral consequences that cause significant impairment (Jett et al., 2010; Rouleau & von Ranson, 2011).

Implications for Professional Counselors

The results of this study provide some information on the access and use of pro-eating disorder online media. It is important that counselors are aware of this trend, as research shows that individuals in developmental stages ranging from adolescence to emerging adulthood are at higher risk for an eating disorder diagnosis (Smink et al., 2012; Wilson, Peebles, Hardy, & Litt, 2006). Professional counselors have the ability to engage clients and inquire about their online use, as well as provide them with information regarding the risks involved. Questions such as, "What would you lose if you discontinued binging/restricting food? How do your thoughts/ideas of self impact your eating behaviors? What to do you think/do before you restrict your food? How are accessing these webpages helping you?" can be asked during the initial assessment, and then later during treatment as needed. The format of an online screening tool may be more approachable for clients who spend a lot of time engaged in online content. By using this type of assessment, counselors may be able to identify students who use pro-eating disorder online media before their behaviors become life threatening (Wilfley, Agas, & Taylor, 2013). For example, a new or referred client could complete an online screening via the counseling practices' webpage and then have the option to either make contact with a counselor or have a counselor contact him or her to initiate the therapeutic relationship.

Professional counselors can use cognitive and behavioral approaches to specifically address the use of pro-eating disorder online media. For example, counselors can collaborate with clients to identify other webpages they can access that are reinforcing, comforting, or distracting (Yager & O'dea, 2008). This approach is similar to the behavioral approach used with other eating disordered behaviors, and the counselor can help the client establish delay the access and use of pro-eating disorder online media until the behavior can be extinguished permanently (Smart, 2010). Research shows cognitive skills are also effective in reducing unwanted behavior, therefore counselors can help the client reconstruct the thoughts that lead to the access and use of these webpages, and help them reframe those thoughts to stop using those sites.

Dialectical behavior therapy (DBT) may also be useful for counselors to help emerging adults reduce the use of pro-eating disorder webpages. DBT is a flexible treatment approach, and though traditional DBT includes group and individual sessions, counselors can adapt the treatment to fit the needs of the setting (Federici & Wisniewski, 2013). Preliminary research shows support for the use of DBT with individuals who struggle

with disordered eating (Federici & Wisniewski, 2013). In DBT the client and the counselor can work together to incorporate new skills, including mindfulness practice, while simultaneously using behavioral problem solving to address pro-eating disorder media use and harmful eating behaviors.

Finally, counselors can provide community outreach and education, at the local, regional, state, and national level, on the negative effects that eating disorders and related behaviors can have physically, emotionally, and behaviorally. There are several organizations that provide resources about eating disorder symptoms, disordered eating behaviors, and how to recognize signs and symptoms of eating disorders intrapersonally and interpersonally. These organizations also provide resources for therapy and rehabilitative treatment. Professional counselors, and the family members of their clients, can contact these organizations for additional help and to learn about how pro-eating disorder online media can impact the health and wellness of an individual. Some of these organizations include: National Association of Anorexia Nervosa and Associated Disorders (http://www.anad.org/), NEDA (https://www.nationaleatingdisorders.org/) and Mirror Mirror (https://mirror-mirror.org/). This information can help individuals and professional counselors understand how pro-eating disorder online media can be harmful. These resources can also allow professional counselors to offer appropriate screening tools, resources, types of treatment, therapy and treatment outreach, and support to individuals and clients who need it.

Limitations and Future Research

There were a few limitations in this study. The survey was conducted with one group of students at one southern university, which limits the generalizability of the study. There are also cultural components that may not be present in other regions of the United States, which also impacts the generalizability of this study. Future studies might include a larger sample size from several universities nationwide. Another limitation within this study is the use of descriptive statistics rather than any other form of statistical analysis. Future studies could perform quantitative analyses to determine how particular variables, or behaviors, predict other behaviors or symptoms, as well as the measure of effect that occurred between participants. There also is a concern with social desirability bias and if any participants may have been concerned about responding honestly to questions, or have responded differently to make themselves appear more favorably to the researcher. Due to the confidential nature of the survey, we were unaware of the validity of the responses. Since the survey was taken online if there were any questions on the meaning of intent of the survey question, the participant would have to decide on his or her best judgment on how to answer the question. With the inability to contact each participant and obtain how he or she interpreted the question, we were left to interpret the data provided by the participants.

There is limited information on the impact of these webpages on the undergraduate population. Due to this limitation it is pertinent to continue this area of research to

document the patterns of awareness and to discuss and discover the future implications of pro-eating disorder online media across all genders and ages. Further research could compare the use of behaviors between people who did access the webpages and those that did not. Finally, there is a strong need for eating disorder behaviors to be researched across genders. Currently, there is little documentation on the male perspective and how eating disorders behaviors impact men and how those behaviors originate (Borzekowski et al., 2010). Wooldridge, Mok, and Chiu (2013) also reported that there appears to be an underrepresentation of the male perspective in eating disorder research. Since pro-eating disorder online media can impact all age groups, genders, and populations there is immense availability for further research to occur on the relationship between learned behaviors and pro-eating disorder online media.

Conclusions

Since there is limited research on this topic, this study provides some information on the knowledge and use of this content. This study documented the knowledge, use, and awareness of pro-eating disorder online media in a sample of predominantly female undergraduate college students. The results of the survey indicate that nearly half of the participants were aware of pro-eating disorder content and the multiple media platforms that they could access the data from. While the data surrounding the relationships between learned behaviors and the access and use of the pro-eating disorder content was not statistically significant, the information gathered in this study is important, as it increases our knowledge and awareness about the availability and use surrounding these webpages. Further research will help counselors best meet the needs of their clients who struggle with disordered eating, which may significantly increase positive treatment outcomes for numerous individuals.

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Appendix A

Pro-Eating Disorder Online Media Presence Relationship on Learned Behavior Survey

What is your age (in years)? _____

What is your gender?
___Male
___Female

What ethnicity do you self-identify as?
__African/African American/Black/Caribbean
__Asian/Pacific Islander
__Caucasian (Non-Hispanic)
__Hispanic/Latino/Latina
__American Indian/Alaskan Native
__Mexican/Mexican American
__Multiracial

I am a:
__Freshman
__Sophomore
__Junior
__Senior

My current college GPA is: _____

The following definitions will be used for this survey:

Anorexia Nervosa: is described as severe calorie restriction due to an extreme

fear of gaining weight.

Bulimia Nervosa: can be defined as periods of eating large quantities of food

then taking measures to remove the food from the body.

Binge Eating Disorder: can be defined as continuous periods of eating large

quantities of food without taking measures to remove food from the

body.

Binge/Binging: is eating large quantities of food.

Purge/Purging: is vomiting, laxative misuse, or diuretic misuse.

Extreme Exercise: is strenuous physical activity for a duration longer than 90 minutes.

Laxatives: is a substance that is used to increase bowel movements.

Diuretics: is a substance that is used to increase the excretion of water from the body.

Severe Calorie Restriction: can be defined as cutting back calories to induce significant weight loss or the reduction of 400 – 800 calories per day.

Large Quantities of Food: means eating more food than what most individuals would eat on a similar occasion.

Normal Diet: what one would eat on a daily basis when not trying to gain or lose weight.

1. Are you familiar with the previously mentioned eating disorders?
   ___Yes
   ___No

2. Have you ever been diagnosed with an eating disorder?
   ___Yes
   ___No

3. If yes, which of the following?
   ___Anorexia Nervosa
   ___Bulimia Nervosa
   ___Binge Eating Disorder
   ___Other: _____

4. Do you know what pro-eating disorder webpages (Pro-Ana and Pro-Mia sites), forums, tumblrs, thinspiration, instagram pages are?
   ___Yes

___No

5. If yes, how did you learn about these webpages?
___Online research

___Friends

___Family members

___Other webpages

___News/Other Media

6. If yes, how long have you known about them (Examples: If you have known about these   webpages for two and a half years, write it as 2 ½ years. If you have known about these webpages for three months, write 3 months.)? _____

7. Have you ever visited any of these webpages?
___Yes

___No

8. If yes, which webpages do you visit?
___Private forums

___Instagram

___Tumblrs

___Non-specific pro-eating disorder webpages

___Other: _____

9. If yes, how often do you access these webpages (Examples: A few times a week, Daily, Every few hours, Every hour)? _____

10. If you are accessing these webpages, how much time do you spend visiting the webpage (Examples: 30 minutes, 1 ½ hours, 2 hours)? _____

11. Have you used these webpages to get ideas on how to change your diet?
___Yes

___No

12. Before accessing these webpages did you (check all that apply):
[ ] binge
[ ] use laxatives
[ ] purge

[ ] use extreme exercise to lose weight
[ ] reduce the amount of food normally eaten
[ ] feel guilt or shame when you ate

13. When you were accessing these webpages did you (check all that apply):
[ ] learn how to reduce your food intake
[ ] learn how to hide how to binge from your friends and family
[ ] learn how to purge without your friends and family knowing
[ ] start participating in any techniques the authors provided
[ ] receive emotional support from the communities

14. Have you cut back on the calories that you would normally eat since viewing these webpages?
____Yes

____No

15. If yes, how many calories have you cut from your normal diet?
_____

16. After you access these webpages do you (check all that apply):
[ ] purge
[ ] binge
[ ] exercise for long periods of time (More than 90 minutes)
[ ] use laxatives/diuretics
[ ] feel guilty about your weight
[ ] want to be thinner
[ ] restrict your calories
[ ] want to lose a significant amount of your body weight

17. Do you interact or provide information to others on these pro-eating disorder webpages?
a. I never participate
b. I seldom participate
c. I participate often
d. I participate daily
e. I always participate

18. Do you plan to keep using these webpages?
a. Definitely yes
b. Probably yes
c. Maybe
d. Probably not
e. Definitely not

19. Do you enjoy using these webpages?
a. Definitely yes
b. Probably yes
c. Maybe
d. Probably not
e. Definitely not