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The Effects of a Pro-Eating Disorder Website across Different Races

Lucrecia Ann Lawer

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The Effects of a Pro-Eating Disorder Website across Different Races

BY
Lucrecia Ann Lawer

THESIS
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
Master of Arts in Clinical Psychology

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

2014

YEAR

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The Effects of a Pro-Eating Disorder Website across Different Races

Lucrecia Lawer

Eastern Illinois University
The Effects of Pro-Eating Disorder Websites

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Abstract

This study sought to examine the effects of viewing a Pro-Eating disorder website and how the effects of this website vary across women of different races, what impact the website's racial content has, and what impact the ethnic identity of the participant has on the negative effects of viewing the website. In order to examine the effect of website content, two different Pro-Eating disorder websites were used - one containing images of Black women and one with images of Caucasian women. 93 Black and Caucasian female undergraduate students were recruited to participate in the research study, and the women viewed one of two Pro-Eating disorder websites – one website containing photos of Caucasian women and one website containing images of Black minority women – and were asked to complete surveys to examine their positive and negative affect before and after viewing the website. Additional surveys administered included the Stunkard Body Image Scale, the Multigroup Ethnic Identity Measure, and the Rosenberg Self-Esteem Scale to examine further effects of viewing the websites. Results indicated that there was not a significant difference between the scores on the PANAS negative affect scores of the Black women participants and Caucasian participants when viewing the different websites, nor was there a significant difference between the scores on the Stunkard body image scale scores of the Black women participants or the Caucasian women participants. However, the results of a T-Test for independent samples also indicated that the self-esteem of women is affected by the race of the women portrayed on Pro-Eating Disorder website images.
Acknowledgements

I would like to express my appreciation for my committee chair, Dr. Brito, for her guidance, advice, and insight in this project. I would also like to acknowledge the other members of my committee, Dr. Wesley Allan and Dr. Lyndsay Jenkins, for their time and effort towards helping me complete this project.
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Little differences between Caucasian and Black populations of women have been found in terms of likelihood to develop an eating disorder; and, when eating disorders do develop within these populations, they tend to have similar characteristics (Anderson & Hay, 1985). However, although little variance has been found in eating disorders between Black and Caucasian women, their perceptions of their weight and body do vary. Caucasian women are more likely to identify themselves as being overweight more often than Black women, and believe that the ‘ideal’ body shape for their ethnicity is smaller than that chosen by Black women (Perez & Joiner, 2002). Consequently, Black women have been found to expect a lesser increase in overall life satisfaction levels as a result of weight loss than Caucasian women (Atlas, Smith, Hohlstein, McCarthy, & Kroll, 2002).

Still, both groups of women have been found to be concerned about their weight, and employ a number of weight loss strategies, albeit different ones. Tyler, Allan, and Alcozer (1997) found that in a group of 40 Black African American women surveyed, the majority preferred weight loss methods that included working out independently and decreasing the frequency of eating high calorie foods over methods such as skipping meals and using laxatives; however, the study did not include Caucasian women. When the two groups have been directly compared, weight control or weight loss strategies differences have emerged. For instance, results of a study examining weight control behaviors in women indicated that 54.5% of both Black and Caucasian used independent exercise activities (such as walking or jogging) two or more times a week as a means of weight control, but that Caucasian women were more likely to prefer more social activities, such as tennis and swimming. Furthermore, 50% of Caucasian women
identified with using weight management techniques such as calorie restricted diet plans, liquid diets, and visits to dieticians to control weight compared to 39.4% of Black women (Walcott-McQuigg, 2005). This preference for more varied and active weight management strategies among Caucasian women is clearly different than the more independent preferences of Black women.

Another source that women turn to for weight loss advice and motivation is the internet. A subset of women specifically seeks out websites that promote unhealthy weight loss strategies. ‘Pro’ websites promote the behaviors of Anorexia Nervosa (i.e., Pro-Ana websites) and/or Bulimia Nervosa (i.e., Pro-Mia websites) and serve as online communities for those with disordered eating tendencies to discuss and share their lives with one another. These websites are typically developed by teenaged girls and young women between the ages of 13 and 25 years, and the website viewers and creators are traditionally Caucasian (Bardone-Cone & Cass, 2007). One common aspect of these websites is a ‘tip and tricks’ section; it commonly consists of tricks for losing weight and for hiding disordered eating patterns from loved ones. These websites are also often known to contain ‘thinspiration’ material, or images/videos of women who look skinny, and who typically will have protruding hip, rib, and collarbones. Because these websites are, more often than not, developed by Caucasian women, the content is almost exclusively directed towards Caucasian women, as is their target audience. Similar websites for Black women to our knowledge simply do not exist, and, thus it is impossible to gauge what impact they would have on women viewers of other ethnicities or races.
Borzekowski, Schenk, Peebles, and Wilson’s (2010) analysis of these Pro-Ana and Pro-Mia websites found that 83% of the websites they analyzed contained information on “how to engage in eating disorder behaviors,” whereas only 38% of the websites contained information or links relating to eating disorder treatment and information. These findings support the belief that these websites are typically meant to encourage disordered eating in their users. However, the processes for the development of disordered eating among Caucasian and Black women may well take on different patterns (Petersons, Rojhani, & Steinhaus, 2000); therefore, the accuracy with which these websites might affect non-Caucasian women is unclear.

Viewing Pro-Eating disorder websites has been shown to have negative consequences for Caucasian women. This is because 28.9% of these websites contain information on how to restrict calorie intake, and 11.1% contain information on how to deceive family members and friends and hide disordered eating patterns from others (Harshbarger, Ahlers-Schmidt, Mayans, Mayans, & Hawkins, 2009). Harshbarger et al. (2009) argue that these websites are a danger to their users because they teach viewers how to maintain eating disorders in secrecy while providing a community of women who offer support and encouragement. However, Harshbarger et al. (2009), as well as other researchers, have only examined the effects of these websites on Caucasians; it remains unclear if women of other ethnicities and races would respond or be impacted in the same manner as Caucasian women.

Finally, Bardone-Cone and Cass (2006) showed the dangers of these websites, beyond the promotion and maintenance of disordered eating, by demonstrating that Caucasian women who viewed a Pro-Anorexia website had decreased levels of self-
esteem and appearance self-efficacy after viewing the website for just 25 minutes. Furthermore, the women's self-perceived levels of attractiveness dropped, and they became more likely to see themselves as being overweight. Whether similar effects would be seen among Black women is unclear. Although Black women have been shown to be more comfortable with larger body sizes (Perez & Joiner, 2002), it might be that viewing images of other Black women who are extremely thin might alter that perception and lead to decreases in perceived self-esteem and self-perceived attractiveness.

As stated earlier, the viewership of 'Pro-Ana' (Pro-Anorexia) and 'Pro-Mia' (Pro-Bulimia) websites primarily consists of Caucasian young women as opposed to more diverse groups of individuals. As a result, research has primarily only focused on how these websites affect Caucasian women and it is uncertain if websites that promote eating disorders would have the same impact on Black women. Consequently, the purpose of this study is to examine the impact of these Pro-Ana and Pro-Mia websites on both Black and Caucasian women. An experimental design is proposed where Black women will view Pro-Ana/Pro-Mia websites with either Black or Caucasian content and Caucasian women will also view Pro-Ana/Pro-Mia websites with either Black or Caucasian content. The impact of viewing these websites on the women’s affective states, body image, perceived attractiveness, and self-esteem will be examined.

The Prevalence of Eating Disorders among Black and Caucasian Women

Understanding differences in the presence of eating disorders among Black and Caucasian women is important from both a clinical and sociocultural perspective. The DSM-4-TR (2000) reports Anorexia Nervosa prevalence rates of .05% of women, and 1-
3% prevalence rates for Bulimia Nervosa across all ethnicities. However, as the presence of Pro-Ana and Pro-Mia websites and online communities has grown exponentially during recent years, many have come to believe that the prevalence rates of those diagnosed with an eating disorder have increased as well. In addition, it has been shown that prevalence rates of Anorexia Nervosa and Bulimia Nervosa, while similar to each other, have both changed over time.

For example, a national sample of 5,191 adults and 1,170 adolescents were used to study the prevalence of eating disorders in the Black Community in a study by Taylor, Caldwell, Baser, Faison, and Jackson (2007). All participants identified themselves as being either Black African American or Caribbean Blacks, with adults ranging from 18-94 years and the adolescents from 13 to 17 years. A Composite International Diagnostic Interview was used to measure eating disorders in the participants. No significant differences in prevalence rates among the two ethnic groups was found – both groups who participated in this study had estimated lifetime prevalence rates between 1 and 5%. However, those most at risk for developing an eating disorder were between the ages of 12 and 30 years, indicating that the primary age group of Black women at risk for developing an eating disorder is the same for Caucasian women.

However, several studies have directly compared the prevalence rates of eating disorders in Black and Caucasian female populations. For example, Anderson and Hay (1985) recruited 8 Black and 120 Caucasian participants with diagnosed eating disorders in their experiment to compare racial and socioeconomic influences on the development of Anorexia Nervosa and Bulimia Nervosa. They hypothesized that Black inpatient clients with eating disorders would not vary significantly from Caucasian clients in terms
of socioeconomic status but that they would vary significantly from a control group of Black participants without eating disorders. All participants were either inpatient or outpatient clients receiving treatment for Anorexia Nervosa or Bulimia Nervosa. Results indicated that the five Black participants with an Anorexia Nervosa diagnosis had no differences with the Caucasian participants in terms of social class or education, nor did they differ significantly from the Black control group. These results indicate that Anorexia and Bulimia Nervosa have similar characteristics in both Black and Caucasian populations. However, the generalizability of the findings is very limited given the extremely small sample of Black participants studied.

It has been difficult to get an accurate estimate of the prevalence of eating disorders among Black women due to their lack of inclusion in studies and national samples. However, differences in rates of eating disorders have been documented. For instance, Striegel-Moore, Dohm, Kraemer, Taylor, Daniels, Crawford, and Schreiber's (2003) epidemiological study of 985 Caucasian and 1061 Black women, as part of the 10-year National Heart, Lung, and Blood Institute (NHLBI) Growth and Health Study, found that eating disorders, especially anorexia nervosa is more common among Caucasian women than among Black women (1.5% of Caucasians compared to no Black women), as is Bulimia Nervosa (2.3% of Caucasians and .4% of Black African Americans). The authors also noted that health professionals need to be much more aware of the possibility of eating disorders in women, given that the treatment rates for both racial groups were very low.

Research has also looked at comorbidity of eating disorders within the Black and Caucasian ethnic groups. Information from 1,713 participants who had been hospitalized
for eating disorders was recruited in a study by Calderon, Stoep, Collett, Garrison, and Toth (2007) to study the characteristics of different youth hospitalized with these disorders. All participants had an Anorexia Nervosa, Bulimia Nervosa, or Eating Disorder-NOS diagnosis, and 92% were female with 78% being Caucasian, and 2% Black. Black participants were found to be less likely to have private insurance to pay for their treatment, which was comorbid with being more likely to have a second diagnosis of depression and/or a disruptive behavior disorder. Meanwhile, Caucasian participants were more likely to have private insurance to cover care, and were thus also potentially less likely to have a comorbid diagnosis of depression. Consequently, even if the prevalence rates of eating disorders are the same between Caucasian and Black women; Black women may be more likely to have a comorbid disorder such as depression or anxiety. As a result, eating disorders for Black clients may potentially be more difficult to treat (Calderon et al., 2007).

Racial differences in the drive for thinness were examined by Streigel-Moore, Schreiber, Pike, Wilfley, and Rodin (1994) using 311 Black and 302 Caucasian preadolescent girls with a mean age of 10.12 years. Black girls reported a significantly higher drive for thinness and were more likely to be called ‘fat’ or criticized about their weight. However, that the Black and Caucasian girls did not differ on the level of satisfaction with their appearance and amount of self-esteem. Further Analysis by Streigel-Moore et al. (1994) showed that the more overweight the participant was, the higher desire for thinness she would have, and that this was true for both races. Parental education was shown to be a predictor of drive for thinness for Caucasian girls – the children of well-educated parents had a lower drive to be thin than the children of poorly
educated parents. Finally, satisfaction with appearance was a significant predictor for thinness in participants of both races. These findings seem to suggest that, although the prevalence of eating disorders may differ among Black and Caucasian women (e.g., Striegel-Moore et al., 2003), their weight impacted self-perceptions may not differ greatly. However, it remains unclear if Black women encounter the same risk factors for developing eating disorders as Caucasian women.

Factors Affecting Eating Disorders among Black and Caucasian Women

Just as eating disorders have varying etiologies in Caucasian women, the same may well apply for women of color. Contemporary theories regarding the development of disordered eating include sociocultural, environmental, and genetic factors. These same factors may be similarly applicable to women of racial and ethnic minority groups as well; however, the effective impact of those factors may vary among Caucasian and Black women. For instance, sociocultural factors, including the pervasive media images that embrace a rather narrow conception of beauty, may be particularly disturbing for some women more than others. Black women, who tend to be furthest from the popular, dominant, ideal of beauty encountered in media may suffer the psychological effects of low self-esteem, poor body image, and eating disorders, more than Caucasian women, when extensively exposed to media. Encounters with Pro-Ana or Pro-Mia websites may have similarly negative effects. Acculturation factors may also put Black women at further risk for the development of disordered eating. Osvold and Sodowsky (2011) found that African-American and Native-American women who were more accepting of White American culture (acculturated) showed significantly more symptoms of anorexia and bulimia than did those who were less accepting. Thus, these more ‘acculturated’
Black women might also be similarly more impacted by the viewing of Pro-Ana and Pro-Mia websites.

Although prevalence rates for eating disorders among Caucasians and Blacks are thought to be fairly similar, the causes of eating disorders and the factors that affect them could be very different. The development of eating disorders may be attributed to a number of personal characteristics and environmental factors according to Petersons, Rojhani, and Steinhaus (2000). They examined the effect of ethnic identity on attitudes, feelings, and behaviors towards food and recruited 613 undergraduate students – 395 Caucasian and 218 Black African American - from ten different universities across six states in the US. Basic demographic information such as age, sex, ethnic group, and year in school was collected in addition to information about the participant’s height and weight. A body mass index (BMI) was then computed for each participant to categorize their health as underweight, of average/normal weight, or overweight. The women then completed the Eating Disorder Inventory 2 (EDI 2), an 11 subscale inventory used to identify the eating behaviors and attitudes that are common with the Anorexia Nervosa and Bulimia Nervosa eating disorders, and a Multi-Group Ethnic Identity Scale, a 24 item questionnaire that measures the degree to which a young adult identifies with their ethnic group. Results indicated that the Black African American participants had (on average) higher BMIs than the Caucasian participants; however, the Caucasian participants had significantly higher scores on the subscales of the EDI questionnaire assessing drive for thinness, body dissatisfaction, and bulimia. The MGEI scale results indicated that the Black African American women had higher scores, implying higher levels of ethnic pride and feelings of belonging. These findings, again, support the work of others (e.g., Perez
they indicate that although Black women tend to have higher BMIs, they are less likely to perceive themselves as overweight.

The concept of ethnic pride and feelings of belonging between Caucasian and Black women were also studied by Shuttlesworth and Zotter (2011), who hypothesized that Black African American women would show higher levels of ethnic identity and that they would display more binge eating behaviors and less anorexic/bulimic behaviors compared to Caucasian women. They also hypothesized that the amount of ethnic identity would moderate the manifestation of disordered eating in the Black African American women, and that the Caucasian participants would exhibit more bulimic and anorexic behaviors and lower levels of ethnic identity. To test these hypotheses, 88 undergraduate women were recruited from a historically Black public university (with 99% of students in attendance being minorities) 213 were recruited from a predominantly white public university with 86% Caucasian students. Out of the total 301 participants, 119 were Black African American. Each participant completed a general demographics questionnaire in addition to a Multi-Group Ethnic Identity Measure (MEIM), a Binge Eating Scale (BES), an Eating Attitudes scale (EAT-26), and the Bulimia Test-Revised (BULIT-R). These scales were completed in order to assess binge eating pathologies, identification to their ethnic group, general disordered eating pathology, and bulimic symptomatology. As in Peterson et al. (2000), Shuttlesworth and Zotter (2011) found that Black African American participants demonstrated higher levels of ethnic identity than the Caucasian participants. Additionally, a multiple regression showed the effect of ethnic identity on binge eating was not consistent for the two ethnicities: high levels of ethnic identity significantly related to higher amounts of binge eating pathology for
Caucasian participants, but higher levels of ethnic identity related to lower amounts of binge eating pathology for Black African American participants. A second multiple regression test indicated that the effect of ethnic identity on eating pathology differs between the ethnic groups as well; Caucasian women were found to be at a higher risk for eating pathology, especially Anorexia. The regression test also indicated that the Black African American participants had less eating pathology and that the strength to which they identify with their ethnicity predicts this pathology. A third multiple regression test showed that lower levels of ethnic identity related to higher levels of bulimic tendencies/pathology, but that the strength to which one identifies with their ethnicity “did not significantly moderate the relation between ethnic group membership and bulimic pathology” for Caucasian participants. This research is in agreement with previous findings by Pettersons et al. (2000) that the amount of ethnic pride or belonging a Black African American woman has in her culture may moderate how likely one is to develop an eating disorder. It also supports Osvold and Sodowsky (2011) findings that African-American women who are more accepting of White American culture (acculturated) show more symptoms of some eating disorders than did those who are less accepting.

Atlas, Smith, Hohlstein, McCarthy, and Kroll (2002) compared the differences in eating disorder behaviors and risk factors between Caucasian and Black African American college women. They studied 500 undergraduate women (300 Caucasian and 200 Black African American) who came from a myriad of financial and family backgrounds and had a mean age of 24.73 years. Each participant completed a bulimia test (the BULIT), a survey measuring the degree of Bulimia symptomatology that uses
criteria from both the DSM-III and the DSM-III-R. Participants also completed the Three-Factor Eating Questionnaire (TFEQ), a survey that reflects eating behavior patterns, and an Eating Expecting Inventory (EEI), a measure to assess cognitive expectations for eating. Finally, a Thinness and Restricting Inventory was done to assess the expectations the participant would have as a result of restricting food intake. Black African American women scored lower on the cognitive restraint and disinhibition subscales of the TFEQ and also had lower (on average) BULIT scores. These results imply that in this sample Black African American women have lower risk for developing eating disorder symptoms as well as lower expectations of life improvement as a result of thinness, supporting other research that has been presented.

Fernandes, Crow, Thuras, and Peterson (2010) investigated the characteristics of those with eating disorders who seek treatments and the differences between Blacks and Caucasians who do so. A large sample of 1,885 participants who had received eating disorder treatment at the University of Minnesota between the years of 1979 and 1985 was recruited. Of the participants, 1,648 were Caucasian and 32 identified themselves as Black African American. All participants completed the Eating Disorders Questionnaire that included questions about demographics, eating behaviors, weight history, weight control problems, and other areas of their lives. The researchers showed that 75% of the Black participants met criteria for an Eating Disorder Not Otherwise Specified 22% met criteria for bulimia, and 3% for partial Bulimia Nervosa diagnostic criteria. In comparison, 63% of Caucasian participants met diagnostic criteria for an Eating Disorder NOS, 9.5% for Anorexia Nervosa, and 9.3% for partial Anorexia Nervosa. Additionally, Black participants expressed more body dissatisfaction and less fear of weight gain than
Caucasian participants. Body Mass Index (BMI) was positively correlated to the amount of body dissatisfaction for both races, although the Black participants expressed more body dissatisfaction regardless of their BMI than Caucasian participants.

Previous research found that there is essentially little difference in the prevalence rates between Black and Caucasian women. Whereas Black women typically feel a stronger sense of ethnic pride, are less likely to see an increase in overall life satisfaction due to weight loss, and are more likely to have comorbid diagnoses with eating disorders, this research shows that they are just as susceptible to an eating disorder diagnosis as a Caucasian woman.

**Body Image and Risk Factors for Eating Disorders**

Perez and Joiner (2002) studied body image dissatisfaction and disordered eating among Black and Caucasian women by recruiting ninety-six women from an undergraduate university, 62% being Caucasian and 38% Black. In groups of 20, the women completed several questionnaires such as the Stunkard Body Image Scale (Stunkard, Sorenson & Schulsinger, 1983) and the Eating Disorder Inventory (Garner, Olmsted, & Polivy, 1983). The Body Image scale contained a series of drawings of body shapes/weights where participants indicated what image they believed best represented their body, and what image they believed to be the ideal for their ethnic group. The Eating Disorder Inventory is a 64-item self-report scale of eating disorder behaviors and thought patterns. Bulimia and ethnicity body size were correlated showing that if the participant indicated smaller ideal body type for their ethnicity the more bulimic symptoms were reported. Furthermore, those who perceived themselves as being overweight endorsed more bulimic symptoms than those who identified themselves as
being underweight. However, body image did not differ between ethnicity—the two ethnic groups of women did not differ significantly on self-perceived body image. Still, the Black women did report larger ideal body types for their ethnicity, and the Caucasian women indicated a larger difference between the ‘ideal’ body type and the one they identified themselves as having. Caucasian women reported themselves as being overweight more often than the Black women and also reported more bulimic symptoms. These results are supportive of those found by both Streigel-Moore et al. (1994) and Anderson and Hay’s (1985), indicating that prevalence rates among the two ethnic groups is considered consistently the same among the two ethnic groups. Still, given the previously indicated power of sociocultural factors influencing the etiology of disordered eating in Black and Caucasian women, it remains unclear how exposure to the powerful images accessible in a Pro-Eating disorder website might impact perceived body image comfort.

Pro-Anorexia (Pro-Ana) and Pro-Bulimia (Pro-Mia) Website Content

Although eating disorder diagnoses occur in as little as 1% of the female population in the United States, many researchers argue and warn against the rise in popularity of ‘Pro-Ana’ and ‘Pro-Mia’ websites, blogs, and forums. ‘Pro-Ana’ and ‘Pro-Mia’ website are simply defined as websites that provide content about eating disorders; this content can be conveyed through text, images, audio, or video, and encourages knowledge, attitudes, and behaviors to either achieve or maintain low body weights; in this way, they support the progression and maintenance of eating disorders. Having become increasingly common and easy to find in recent years, Pro-Ana/Mia websites can easily be found on Facebook, Twitter, Tumblr, and most other social media and blog
platforms. Given this increasing popularity of these sites promoting disordered eating, it becomes important to note the types of information they contain and their possible impact on susceptible young women. Several content analyses have, in fact, been conducted.

Norris, Boydell, Katzman, and Pinhas (2006) found Pro-Anorexia websites using three different search engines, a total of 20 of which met inclusion criteria for analysis. Out of these websites, only 58% contained disclaimers about the information provided. Additionally, the majority (67%) contained “tips and tricks” for pro-Ana behaviors. Furthermore, the most common themes in the websites “included control, success, and perfection.” The conclusion from this research is that awareness of Pro-Anorexia websites should be made, as they support Anorexia Nervosa behaviors. Additional research by Bardone-Cone and Cass (2007) has shown that Pro-Ana websites are usually developed by females with the typical viewer being a female between the ages of 13 and 25 years old.

Another website review of Pro-Anorexia and Pro-Bulimia communities by Lipczynska (2007) used six popular and easily accessible websites, as determined by the frequency of visitors. These websites viewed were found to contain photos of ‘skinny’ or ‘anorexic’ celebrities and models, tips on how to stay ‘true’ or ‘loyal’ to Ana, and inspirational quotes. However, researchers also found that some websites also include a section dedicated to outlining the dangers of eating disorder behaviors, although only one of the websites addressed Anorexia Nervosa and Bulimia Nervosa as serious health disorders while the others had the clear intent of helping their users continue with their maladaptive eating behaviors. Furthermore, only one website did not contain the “thinspiration” section that was common in all the others. This research provides the
same information as that by Boydell and colleagues (2006) – that the websites traditionally contain information on how to maintain (or “be loyal”) to Anorexia or Bulimia disordered eating behaviors.

A content analysis of a popular aspect of many Pro-Anorexia websites, the “tips and tricks” section, was completed by Harshbarger, Ahlers-Schmidt, Mayans, Mayans, and Hawkins (2009) with the objective of gaining a better understanding of the information shared on these platforms and to examine them more thoroughly. Nine Pro-Anorexia websites - found using three of the top (most frequently used) online search engines – were used. A total of 1,520 separate pieces of advice were available in the “tips and tricks” sections of these websites, with the average being 168.89 per site. The most common theme found in the “tips and tricks” sections of these sites was that of calorie and diet restriction, with 28.4% and that second most common theme was distractions (13.9%), or ways to distract/keep oneself from eating when hungry; while deception/ways to trick others was third at 11.1%. The researchers for this study argue that knowing these tips and tricks can allow for better education of clinicians which would make it more difficult for clients to hide their illness from others. Additionally, this research concurs with the findings by Boydell and colleagues (2006) by once again showing how Ana and Mia users ‘support’ each other by providing tips on how to ‘succeed’ in the Ana and Mia ways of life.

Pro-Anorexia groups specifically in social media websites as opposed to on blog/personal website platforms were examined by Juarascio, Shoaib, and Timko (2010). A fake profile for a young woman was created on two popular social media websites in 2008, Facebook and Myspace. Searches on these websites containing words such as pro-
Ana, pro-Mia, anorexia, and bulimia were done to find groups related to these issues. Results identified 23 Myspace and 34 Facebook Pro-Ana groups as well as 4 Anti-Anorexia sub-groups that were used for comparison. The Myspace and Facebook groups were chosen because they had the most members and the most frequent activity. When the content analysis was conducted two main themes were found, social support and eating disorder specific content. Social support content was defined as content in which social support, rather than the eating disorder, was the main focus. Examples of eating disorder specific content include posting typical food intake for a day, advice giving, and discussion about thinspiration. Thus, these Pro-Ana websites did not just provide information for maintaining disordered eating habits; their social support function may serve a more powerful role in attempting to “normalize” these behaviors.

Given that members of pro-Ana and pro-Mia websites encourage one another to be thin and partake in eating disorder behaviors, and that some of these communities maintain an anti-recovery stance, Haas, Irr, Jennings, and Wagner (2010) explored “naturally occurring pro-Ana messages” that were collected from different forum interactions and personal websites from different pro-Ana participants. These messages were collected through sampling popular websites like Myspace, Xanga, and Livejournal in addition to using specific Pro-Ana websites that were found via Google and Yahoo. A total of 1200 messages were used, and participants were primarily Caucasian women between the ages of 13 and 26 years. Results of the Analyses indicated four dominate themes in the messages including constructing an Ana personality - self-loathing Ana, advising Ana, and group Ana encouragement.
The first theme of constructing an “Ana” identity is used by website participants to help one another form a ‘positive’ identity in the Ana community, where they ‘stay true to Ana’ by maintaining the traditional behaviors of Ana patients and share their eating habits with one another. This type of theme additionally allows for each participant to have an ‘audience for Ana’, or groups to whom they can confess, share, and disclose (Haas et al, 2010). The second theme found, self-loathing Ana, is highly prevalent among Pro-Ana community members and includes both loathing of the physical body and the inability to love themselves and have appropriate self-esteem. The third theme, Advising Ana, represents how participants rely on the advice of other group members on how to achieve perfection or thinness. This can include dieting advice and advice for dealing with non-anorexic friends and family in different situations. The final prominent theme, Group Ana Encouragement represents encouragement between members to adhere to the self-discipline required to live the pro-Ana lifestyle. This theme includes positive messages used to motivate and encourage the forum/community as a whole and encourage trust between. The researchers argue that these themes combined represent an emerging new type of online support group of enabling behaviors that are seen in the Pro-Ana environment, supporting the idea that the websites can have a negative impact on Caucasian women.

Borzekowski, Schenk, Peebles, and Wilson (2010) analyzed the content of Pro-Ana and Pro-Mia websites with the objective of identifying messages that users are exposed to using 180 different active (i.e., websites with current posts) Pro-Ana/Mia websites. Website logistics, themes, and the tips/tricks to losing weight provided on the sites were all considered. Over 80% of these websites provided Pro-Ana based content,
whereas 64% additionally provided Pro-Mia content. Furthermore, 85% of the websites contained “thinspiration” material, or photos and videos meant to inspire weight loss. Additionally, 83% of websites contained information on “how to engage in eating disorder behaviors”. In contrast, only 38% of the websites contained information or links relating to eating disorder recovery treatments and information. The results of this content analysis is that Pro-eating disorder websites traditionally contain material that is meant to encourage and support the eating disorders of their users as opposed to helping those with disordered eating tendencies or an eating disorder diagnosis receive or seek recovery.

The mission statements of 14 Pro-Ana websites were examined to look at how website members conceptualize the function of self-starvation by Strife and Rickard (2011). The researchers state how these websites often include certain components such as “training for initiating and maintaining anorexia, practices for rapid weight loss, competitions for dieting, tips to avoid detection, and motivational images to inspire commitment to weight loss”. They concluded that there are two primary conceptualizations or views of anorexia on Pro-Ana websites - that Anorexia Nervosa is a choice or lifestyle, and that Anorexia Nervosa is a life-threatening disease. The majority (8 of the 14) recognized Anorexia Nervosa as a life-threatening disease. The remaining six websites view Anorexia Nervosa as a choice and preferred to use empowering phrases/wording instead of Anorexia Nervosa, such as calling it a ‘way of life’ and claiming that they are not ‘victims’ but proactive people wanting to make a choice in their lives by partaking in their eating habits. The researchers note that this is the primary
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difference between these two types of websites, and that this empowering wording seems
to serve as an attempt to show their control over the disease.

These content analyses provided ample information about the types of content
that is available on these websites: Pro-Ana and Mia websites concentrate on tips and
advice for members on how to consume less food and ‘remain’ loyal to the disordered
eating habits of Anorexia and Bulimia Nervosa. Additionally, many of these websites are
focused on images of thin women or celebrities and images with mantras all to inspire
members to refrain from indulging in ‘forbidden’ foods.

The Impact of Pro-Mia and Pro-Ana on Women

Although Pro-Ana and Pro-Mia websites have been in existence for over a
decade, the impact that they can have on the women who view them has only recently
come to light. Although it may be easy for one to assume that a woman has the power to
keep herself from being swayed by these websites and the messages they are sending,
recent studies have begun to make it known just how big of an impact these websites can
have on the self-esteem, self-perception, and self-beliefs of the viewers. However,
whether that impact is consistent across Caucasian and Black women is woefully
understudied.

Much like any social networking website or online forum, members of Pro-Ana
communities interact with one another in many ways. Unfortunately, this interaction can
include bullying behaviors that can negatively affect the self-esteem of other viewers.
Brotsky and Giles (2007) observed these interactions in the Pro-Ana online community
with a particular interest in the psychological support members provide to one another
and the beliefs members have towards eating disorders as well as towards treatment and
recovery. A researcher constructed an online persona known as ‘SB’ to gain membership to 12 different Pro-Anorexia websites. Several weeks were spent on different Pro-Ana websites to identify characteristics of a typical Pro-Ana community member, such as highest, lowest, current, and long/short term goal weights. ‘SB’ then participated in the 12 Pro-Ana websites for a period of two months by being included in chat rooms, instant messenger, and bulletin board messages with over 356 individuals. Three major concerns were found in each community such as support, group identities, and negative attributions. Support entails establishing connections with other members and establishing norms as a group. Some group members were generally welcoming to SB as a new pro-Ana member, and were willing to provide assistance to her. However, others were less accepting of the new member and were rude (using phrases like “dumb bitch please die”) until the member was considered to have “proven their worth” or loyalty to the site, at which time members become incredibly loyal towards her. This behavior implies that community support is not integral to all Pro-Anorexia websites and that each member acts differently. In some cases, even once SB was no longer considered to be new, she remained met with hostility and skepticism by several members. The theme of group identities includes group acceptance or rejection, confrontation in the community, and the personification of ‘Ana’. Acceptance in many of the Pro-Ana communities is conditional because of varying opinions between members, which can cause members to feel isolated, alienated, and alone even among their ‘support group.’ This is an interesting study showing how members of Ana/Mia communities can turn on one another, and how members can be left feeling isolated and alone.
Riley, Rodham, and Gavin (2009) explored the role that people talking about their bodies has on the development and maintenance of an eating disorder using two types of anorexia-focused websites; one maintaining the Pro-Anorexia standpoint, the other a website with the intention of helping people recover from anorexia. 5 Pro-Anorexia and 5 recovery websites that were open to the public were selected from major search engines Yahoo and Google, and those that were the most active (based on the number of posts made by users) were chosen for the study (Riley, Rodham, and Gavin, 2009). In addition to creating an environment for Anorexia Nervosa clients to be supported en route to recovery, the recovery website contained a strict set of rules for its' members including no posting numbers (such as weight or pounds lost), offering tips, or discussion of medical concerns. It was also a very large website, with over 35,000 members. In contrast, the Pro-Ana website had 2,000 active members and did not discourage them from discussing weight or weight loss tips. Data were collected over a three day period (Riley, Rodham, and Gavin, 2009). During these three days, 46 different users made posts to the recovery website while 24 posters posted to the Pro-Ana site. The users were all women living predominantly in the United States, the United Kingdom, or Australia (Riley, Rodham, and Gavin, 2009). The way people described their bodies varied greatly depending on the site they used. Members of the Pro-Ana website typically described themselves of low body weight, or of being low at one time. However, on the recovery website members used words like “small” to paint a picture of what their bodies may look like to others. In terms of discussion about food and weight loss, the Pro-Ana websites contained more disparaging humor, whereas recovery posts had more despair (“I cannot do this anymore”).
Bartalone-Cone and Cass (2006) examined the cognitive consequences of exposure to a Pro-Anorexia website in 24 female undergraduate students. Participants had a mean age of 18.67 years and the majority (83.3%) were Caucasian. Each participant completed a set of questionnaires, viewed a Pro-Ana website for 25 minutes, and then completed a set of post-website questions. Nine women were randomly assigned to view Pro-Ana website, 6 viewed a comparison website focusing on female fashion using average models, and 9 viewed a neutral website on home decor. Positive and negative affect were assessed using the Positive and Negative Schedule Scales and self-esteem was assessed using the State-Self-Esteem scale. Women who viewed the Pro-Anorexia website had decreased levels of self-esteem, appearance self-efficacy, and their perceived levels of their own attractiveness. They were also more likely to see themselves as being overweight. However, these findings did not hold true for the women who viewed the other two comparison websites. As a result, the data suggests that viewing Pro-Anorexia websites can have negative cognitive effects on college-aged Caucasian women as defined by lowered self-esteem and self-perception.

Bartalone-Cone and Cass (2007) completed another study examining the effects of viewing these websites using 235 female undergraduate students recruited from a university psychology course. The mean age of the participants 18.37 and 88% were Caucasian. Each participant was told they were participating in a study on the different perceptions of internet websites and was randomly assigned to view either a pro-anorexia website or two other choices - a fashion website using models of a normal weight, or one focusing on home décor. Each participant completed a questionnaire prior to viewing the website. The website was viewed for 25 minutes before finishing another questionnaire.
Researchers used the positive and negative affect schedule to assess positive and negative affect pre and post website viewing, as well as the State Self Esteem Scale to measure the self-esteem of the participants in terms of their academic performance, social evaluation, and appearance pre and post website viewing. Each participant was also asked to describe their weight before and after viewing the website they were assigned to, and completed an eating attitudes test pre-website to “assess attitudes and behaviors associated with eating disorders”. Students who viewed the Pro-Anorexia website had greater negative affect, lower social self-esteem, and lower appearance self-efficacy after viewing the website than those who viewed the others. Additionally, Pro-Ana website viewers described their weight as heavier, reported a higher likeliness of thinking about their weight, and engaged in more image comparison. The researchers argue that these results show that Pro-Anorexia websites are a cause for concern, as these results concur with those of their original study in 2006. However, both of these studies only had significant results for the Caucasian participants, and it is unknown if the same results would occur if other ethnicities were to view these sites and have the same results on their affect, self-esteem, and appearance self-efficacy.

This potential relationship was studied by Custers and Van den Bulck (2009) using 13, 15, and 17 year-old students. Seven hundred and eleven students from Flanders, Belgium participated in the survey, nearly half (54.9%) women. The questionnaire they used measured several factors including attitude towards Pro-Ana websites, their prevalence of visiting such websites, drive for thinness, perfectionism tendencies, body mass index, and their perception of their appearance. Results indicated that 12.6% of the girls surveyed had visited such websites and that only 5.9% of the boys had. Furthermore,
a significant correlation was found between viewing said sites and predictors of Anorexia Nervosa, suggesting a "potential for negative impact of exposure to pro-Ana sites." This research supports the findings by Bardone-Cone and Cass (2006) and Bardone-Cone and Cass (2007) while also implying that viewing pro-Anorexia websites has the potential to also negatively affect women of other ethnicities and nationalities besides Caucasian Americans.

Juarez, Soto, and Pritchard (2012) also studied the impact of Pro-Anorexia websites using three-hundred undergraduate psychology students were surveyed, using both men and women. 76.8% of the participants were Caucasian, 1.9% were Black, and 55.9% were female. Each responded to a questionnaire that assessed their internalization of media and pro-anorexia content, peer influence, and drive for masculinity or thinness. Results showed a positive correlation between internalizing Pro-Anorexia website content and drive to be thin in women, but a negative correlation with a drive for masculinity in men. Additionally, internalizing Pro-Anorexia website content was found to be related with a drive for thinness in women, implying that those who view Pro-Ana websites may be more likely to have a higher drive to lose weight than those who do not. However, given that Black women are typically more accepting of larger body types and weights, this may not be predictive of the impact these websites have on them.

**Research Questions**

This study examined the potential differences between Caucasian and Black women and how viewing Pro-Anorexia and Pro-Bulimia websites impacted them. Five scales were used to examine this impact: (1) the Positive and Negative Affect Scale, which measures affective states (Watson, et al, 1988), (2) the Rosenberg Self-Esteem
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Scale (Rosenberg, 1989), (3) the Stunkard Body Image Scale (Stunkard, Sorenson & Schulsinger, 1983), (4) the Eating Disorder Questionnaire-6 (Fairburn, 1987), and (5) the Multigroup Ethnic Identity Measure (Phinney, 1992). Additional measures of mainstream acculturative states and weight management issues were also assessed. Two main research questions were addressed.

(1) How does the race of the participants and website content combine to affect women?

It was hypothesized that when participants viewed websites containing non-racially matching content, they would be similarly affected at a very low level. However, it was hypothesized that for Caucasian participants, the website containing images that matched their race (i.e., the website containing images of Caucasian women) would have a larger impact in terms of decreasing levels of self-esteem and positive affect in the participants than the website containing images of Black women; whereas, for Black female participants the result of viewing the different websites would not differ as greatly between the websites.

This hypothesis is supported by the research of Bardone-Cone and Cass (2007). Examining the effects of viewing Pro-Eating disorder websites on women, it was found that Caucasian women who viewed the Pro-Anorexia website had decreased levels of self-esteem, appearance self-efficacy, and their perceived levels of their own attractiveness. They were also more likely to see themselves as being overweight. However, these findings did not hold true for the women who viewed the other two comparison websites. Additionally, Osvold and Sodowsky's (2011) findings that acculturation factors may also put Black women at further risk for the development of disordered eating was taken into consideration. Osvold and Sodowsky (2011) found that
Black African-American women who were more accepting of White American culture had more symptoms of eating disorders than did those who were less accepting. Thus, a measure of ethnic identity was included in this study to examine if this variable might affect the impact of viewing the Pro-Ana and Pro-Mia websites on the participants.

(2) How are Black women, varying in ethnic identity, affected by viewing race matching and non-race matching Pro-Eating disorder websites?

It was hypothesized that Black women with a higher level of ethnic identity would be less impacted by mass media or the non-matching website (i.e., the website containing images of Caucasian women), compared to the race matching websites (i.e., the website containing images of Black women).

This hypothesis is supported by the results of a study by Petersons et. al, (2000) who concluded Black African American participants had higher scores on the MEIM scale, implying higher levels of ethnic pride and feelings of belonging. Additionally, Black African American participants had lower scores on the Eating Disorder Inventory 2, used to identify the eating behaviors and attitudes that are common with the Anorexia Nervosa and Bulimia Nervosa, despite having higher BMIs. These findings indicate that although Black women tend to have higher BMIs, they are less likely to perceive themselves as overweight if they are identified as having ethnic pride.

This hypothesis is also supported by Shuttlesworth and Zotter (2011) who found that Black African American participants demonstrated higher levels of ethnic identity than the Caucasian participants in their study, and that these higher levels of ethnic identity related to lower amounts of binge eating pathology. Further results indicated that the Black African American participants had less eating pathology as predicted by the
strength by which they identified with their ethnicity. Finally, Osvold and Sodowsky (2011) found that African-American women who were more accepting of White American culture (acculturated) showed significantly more symptoms of anorexia and bulimia than did those who were less accepting. These studies support that if a Black woman feels that she have a strong ethnic identity, she may be less susceptible to the development of eating disorder behaviors. These studies also indicate that the acceptance/acculturation to White American culture is correlated with a likeliness to develop eating disorders.

Method

Participants

Participants for this study consisted of female undergraduate students from Eastern Illinois University. Both Caucasian and Black women were recruited for participation, primarily from PSY 1879 (Introduction to Psychology) psychology sections via the Department’s Research Participation Program (i.e., the SONA research pool). To maximize participation, several relevant recognized student organizations (RSOs) were also be contacted, such as the Black Students’ Union, the Office of Minority Affairs, and the Black sorority organizations on campus.

A total of 93 students participated in this study and data from 83 participants were used for analysis. Data from 10 participants were excluded from analysis due to the participants having met the exclusion criteria of a previous eating disorder diagnosis, or because the participant identified their races as neither Caucasian nor Black.

Out of the 83 participants who met inclusion criteria, the age range was 18 to 22 years old with a mean of 19.07 years. All of the participants were female. Fifty-five of
the participants (66%) identified their race as being Caucasian and 28 of the participants (34%) of the participants identified themselves as Black. Fifty-eight of the participants (70%) of the participants were college freshmen and 17 participants (20%) were college sophomores.

With the exception of the participants who met exclusion criteria as determined through a brief questionnaire at the start of the survey, participants were randomly assigned to view either the Caucasian or Black Pro-Anorexia website.

Materials

Materials used included three different websites that were created specifically for this study as well as questionnaires to measure participants’ perceptions and reactions to the websites.

Websites. The first website created was a Pro-Eating disorder website with images of only Caucasian women; the second website was a Pro-Eating disorder website with images of only Black women. In addition to photographs of women, each website also contain several common images containing ‘thinspiration’ quotes and messages, and both websites contained the same ‘thinspiration’ photos. Examples of thinspiration quotes include sayings like “nothing tastes as good as skinny feels” or “being hungry will be worth it”, and photos include images of women with their ribcages and pelvic bones showing. The websites were created using Tumblr online blog creation site, a popular host for real Pro-Eating disorder blogs. The websites were modeled after existing Pro-Eating disorder websites in terms of layout, organization, and content. Please see www.aandme.tumblr.com for the White pro-Ana site and www.Blackpa.tumblr.com for the Black pro-Ana site.
Additionally, a neutral website was created for students who met exclusion criteria of a previous eating disorder diagnosis. This website was created to allow for those students to still participate in the study without being negatively affected by the images seen on the Pro-Anorexia websites. The neutral website contained images of women with varying healthy body shapes and sizes, as opposed to images of unhealthy women. Please see www.fashionprojectblr.tumblr.com for the neutral site.

**Questionnaires.** The PANAS (Watson, et al., 1988) was used to measure the effect of the participants before and after viewing the websites. This scale contains 20 words with a 1 to 5 scale used to represent how much the participant feels each word represents their current moods. Adding half of the words provides a positive affect score, and adding the other half produces a score to represent negative affect. There is no overall score for the PANAS that looks at both Positive and Negative affect together. Items on the Positive and Negative Affect Scale (PANAS) were scored as to instructions provided on the full version of the questionnaire. In order to calculate a Positive Affect score, items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19 were added together. The minimum score possible is 10, with the maximum of 50. Higher scores represent higher levels of positive affect, with the mean score being 29.7 with a standard deviation of 7.9. To calculate negative affect, items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20 were added. This group of questions has the same minimum and maximum scores as that for positive affect, but has a mean of 14.8 and a standard deviation of 5.4. The PANAS is a reliable and valid measurement and is included in Appendix A.

The Rosenberg Self-Esteem Scale was used to measure self-esteem (Rosenberg, 1989). The scale contains 10 statements, and the participant answers how they feel each
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statement represents their feelings about their self-esteem using strongly disagree, disagree, agree, or strongly agree options. Each statement is scored using a value of 0, 1, 2, or 3, with total scores ranging from 0 to 30. Items on the Rosenberg Self-Esteem scale were scored as follows. For items 1, 2, 4, 6, an 7, 'strongly agree' was calculated as being worth 3 points, 'agree' worth 2, 'disagree' worth 1, and 'strongly disagree' worth 0. Items 3, 5, 8, 9, and 10 were reversed scored. These numbers for all items are added to calculate the final self-esteem score. Scores ranging from 0-15 suggest low self-esteem and scores 15-25 are suggestive of self-esteem within the normal range. The RSES holds strong test-retest reliability and construct validity. It is included in Appendix B.

The Stunkard Body Image Scale, or the SBIS, is used to assess body image perceptions (Stunkard et al., 1983). In the SBIS, perceived body image is assessed by showing the participant a scaled item with female body silhouettes of varying girth and asking them to select the one that most represents their body. The Stunkard Body Image scale was scored by taking note of the number that they feel best represents their body image. The SBIS is included in Appendix C.

A modified version of the Eating Disorder Examination Questionnaire (EDE-Q 6.0) was given to participants in order to assess risk for the development of an eating disorder. The EDE-Q was modified by making it shorter so that the research participants would not lose interest in the question or answer falsely during the study, as the EDE-Q is a long questionnaire. The EDE-Q 6.0 contains 4 sections, but only two were administered to participants of this study. These sections were selected because they were the ones that best addressed the goals of the proposed study. Regardless of only several sections of the EDE-Q being distributed, the scoring remains the same – responses for the
questions of each section are added and averaged to create an overall score for that section. Means and standard deviations for each section are provided in the test manual. Scoring the modified EDE-Q involved adding the questions for each section and averaging them to create an overall score for that section. Specifically, questions 1-5 were averaged to create a score regarding food restraint, and questions 8, 12, 22, 24, and 24 were averaged to get a score regarding concern over weight. Additionally, questions 6, 8, 10, 11, 23, 26, 27, and 28 were added to a represent a score about shape concern. When sampled on 243 women, the ‘restraint’ group has a mean of 1.25 and a standard deviation of 1.32, ‘weight concern’ has a mean of 1.59 with a standard deviation of 1.37, and ‘shape concern’ has a mean of 2.15 and a standard deviation of 1.60. The EDE-Q 6.0 is included in Appendix D.

The Multigroup Ethnic Identity Measure, or the MEIM, (Phinney, 1992) was also given to participants in order to measure the process of ethnic identity in the participants. The MEIM is a 12 item questionnaire. The MEIM was scored by calculating the mean of all 12 items, with higher averages indicating higher amounts of ethnic identity. Information regarding the means or standard deviations for these calculations have not provided by the publishers. The MEIM is included in Appendix E.

Additionally, a website quiz was developed to keep the participants focused on the content of the websites while viewing the websites, and keep them from getting distracted or losing interest. The quiz asked questions about the websites and contained questions such as how many photos, quotes, etc were on the website, Additional questions asked about the people in the photos on the websites, general tone, and clothing
items featured. They were used by the participants immediately after viewing the website. The quiz is included in Appendix F.

Finally, an additional questionnaire was developed to gather demographic information about the participants such as their age, geographic background, and year in school (see Appendix G).

The surveys were given to the participants using Electronic administration via the Qualtrics Survey Research Software.

**Design**

The design of this study was a 2 x 2 independent groups factorial quasi experiment. The first independent variable was participants' race; one level was White-Caucasian and the other level was Black African American, as self-identified by the participants. The second independent variable was the racial content of the websites; the first level of this variable was Black African-American content, and the second level was White-Caucasian content. The dependent variables were the score of the PANAS positive affect scale, the score of the PANAS negative affective scale, the answers to the Rosenberg self-esteem, and the SBIS, as well as the answers to the EDE-Q 6.0 and certain questions from the demographics survey such as identified ethnicity, such as age.

**Procedures**

Students met at a research lab in small groups of up to six at a time. The students had the ability to register for a data collection session online (using the SONA website) up to two weeks in advance and select a time available that was convenient for them. Once all participants had arrived to the session, they were escorted into the room and asked to choose a computer cubicle available to sit at and wait to begin.
The researcher thanked the participants for coming to the data collection session and told them that the study would take roughly 30 minutes to complete. The researcher then explained that the participants would be answering some questions about themselves, viewing a website for 10 minutes, and then answering more questions about themselves and what they saw on the website. The researcher then emphasized to the participants that it was important for them to pay close attention to the websites while looking at them because they would be given a brief quiz about the content of the websites after viewing them so they would know that paying attention to the websites was an essential part of the study.

Each participant then proceeded to read an Informed Consent statement. If they choose to participate, their consent was recorded and they then proceeded to the experimental conditions. Each participant first completed the PANAS scale and then was randomly selected to receive either the Black or Caucasian content website for viewing. Those meeting exclusion criteria were automatically directed to the neutral website. The participants were told to stop proceeding through the survey once they arrived at the survey page containing the link to the website so that they could all begin viewing a website at the same time. This was done to ensure the accuracy of the 10 minute timing. Once each participant reached the survey page containing a link, the researcher told the group of participants to click the link and not to leave the website until they were told to do so. The researcher then began the timer and remained near the participants to ensure that they were paying attention to the website content and not getting distracted by other things in the room (cell phones, etc).
Once the ten minutes had passed the researcher told the participants that they could continue on to complete the rest of the survey at their own pace. The participants then continued to the website survey. However, ultimately the quizzes were not graded or scored. After the quiz was completed, the PANAS (for the second time), the RSES, the EDQ, MEIM, and the SBIS were completed by each participant, in random orders, and the demographic and behaviors questionnaire were completed last. Once all of the participants were finished with each survey, they were debriefed, asked if they had any questions pertaining to the study, and then thanked for their participation before being excused from the room.

Results

The first research question asked whether the race of the participants and the website content they viewed would combine to affect them. It was hypothesized that when the participants saw the non-racially matching websites, they would be affected at a low level. It was also hypothesized that the different websites would have greater, varying effects on the Caucasian participants than on the Black participants.

In order for this question to be answered, two-way Analyses of Variance was conducted on the differences between the pre and post scores of the PANAS, the Stunkard, and the Rosenberg scales. The MEIM scale was used as a covariate to account for the ethnic identity of the participant.

For the PANAS negative affect difference scores, the main effect of race was not significant $F(1, 82) = .53, p = .47, \eta^2 = .00$. The negative affect scores were not significantly lower for the Black women ($M = 2.72, SE = 1.01$) compared to the Caucasian participants ($M = 1.74, SE = .90$). The main effect of website content was not
significant $F(1,82) = .66, p = .42, \eta^2 = .00$. Viewing the Black-content website ($M = 2.78, SE = .77$) did not lead to higher scores on the negative affect scale than viewing the Caucasian-content website ($M = 1.67, SE = 1.12$). The interaction between race and website-race content was also not significant $F(1,82) = .59, p = .45, \eta^2 = .008$. The impact of viewing the Black and Caucasian-race websites did not differ significantly between the Black and Caucasian women across the websites.

The main effect of race on the PANAS positive affect scores was not significant $F(1,82) = .26, p = .62, \eta^2 = .00$. The positive affect scores were not significantly lower for the Black women ($M = 5.17, SE = 1.40$) compared to the Caucasian participants ($M = 6.11, SE = 1.24$). The main effect of website content was not significant $F(1,82) = .13, p = .72, \eta^2 = .00$. Viewing the Black-content website ($M = 5.3, SE = 1.06$) did not lead to lower scores on positive affect than viewing the Caucasian-content website ($M = 5.98, SE = 1.54$). The interaction between race and website-race content was also not significant $F(1,82) = .001, p = .97, \eta^2 = .00$. The impact of viewing the Black and Caucasian-race websites did not differ significantly between the Black and Caucasian women across the websites.

The main effect of race on the Stunkard body image scale was not significant $F(1,82) = .007, p = .95, \eta^2 = .00$. The Stunkard scores were not significantly lower for the Black women ($M = 4.12, SE = .23$) compared to the Caucasian participants ($M = 4.15, SE = .21$). The main effect of website content was not significant $F(1,82) = .52, p = .47, \eta^2 = .00$. Viewing the Black-content website ($M = 4.02, SE = .18$) did not lead to significantly lower scores on the Stunkard scale than viewing the Caucasian-content website ($M = 4.25, SE = .26$). The interaction between race and website-race content was also not significant.
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\[ F(1,82) = .53, \; p = .82, \; \eta^2 = .001. \] The impact of viewing the Black and Caucasian-race websites did not differ significantly between the Black and Caucasian women across websites.

The main effect of race on the Rosenberg self-esteem scale was not significant \[ F(1,82) = .15, \; p = .70, \; \eta^2 = .00. \] The self-esteem scores were not significantly lower for the Black women \((M = 21.22, \; SE = .72)\) compared to the Caucasian participants \((M = 21.59, \; SE = .64)\). Alternatively, the main effect of website content was significant \[ F(1,82) = 5.61, \; p = .02, \; \eta^2 = .068, \] indicating that scores were significantly lower when viewing the Pro-Ana website containing Black-content website \((M = 20.26, \; SE = .55)\) compared to viewing the Pro-Anorexia website with Caucasian-content \((M = 22.54, \; SE = .79)\).

However, the interaction between race and website-race content was not significant \[ F(1,82) = .07, \; p = .80, \; \eta^2 = .00. \] The impact of viewing the Black and Caucasian-race websites on self-esteem did not differ significantly between the Black and Caucasian women across the websites.

The second research question of this study asked how Black women varying in ethnic identity are affected by viewing Pro-Anorexia websites that contain race-matching versus non-race-matching content. It was hypothesized that the Black female participants who scored higher on the MEIM scale (indicating higher ethnic identity) would be less affected by the Pro-Anorexia website containing Caucasian images, but would be affected more by the Pro-Anorexia website containing images of Black women.

In order for this question to be answered, independent samples \(T\)-tests were conducted on the Stunkard and Rosenberg self-esteem scales using the MEIM as the independent variable. Only data from the Black female participants were used. For the
purposes of analysis, any participant with a score on the MEIM less than 3.33 was classified as having a ‘low’ score (indicating lower ethnic identity) whereas scores equal to or higher than 3.33 were classified as ‘high’ scores (indicating higher levels of ethnic identity).

For the Rosenberg self-esteem scale, participants who viewed the race matching website (i.e., the website containing content featuring Black women), the $t$-test was not significant $t(25) = 1.38, p = .18$, $\alpha = .05$. Participants with high ethnic identity ($M = 19.18, S = 4.35$) did not have significantly lower self-esteem than participants with low ethnic identity ($M = 21.44, S = 4.03$) of ethnic identity. Participants who viewed the website that did not contain race matching photos (i.e., the website containing content featuring Caucasian women), the $t$-test was not significant $t(26) = .21, p = .84$, $\alpha = .05$. Participants with high ethnic identity ($M = 19.88, S = 3.72$) did not have significantly lower self-esteem than participants with low ethnic identity ($M = 20.18, S = 3.79$) of ethnic identity.

For the Stunkard body image scale, participants who viewed the race matching website (i.e., the website containing content featuring Black women), the $t$-test was not significant $t(24) = 1.44, p = .16$, $\alpha = .05$. Participants with high ethnic identity ($M = 3.60, S = 1.07$) did not have significantly lower body image perception than participants with low ethnic identity ($M = 4.43, S = 1.63$) of ethnic identity. Participants who viewed the website that did not contain race matching photos (i.e., the website containing content featuring Caucasian women), the $t$-test was not significant $t(26) = 1.18, p = .25$, $\alpha = .05$. Participants with high ethnic identity ($M = 4.06, S = .90$) did not have significantly lower self-esteem than participants with low ethnic identity ($M = 4.54, S = 1.29$).
Exploratory Correlations

The Pearson correlation between the amount that a participant thinks about their weight and the body type they see themselves as having was mild but statistically significant, $r = .33, n = 82, p = .003$. However, there was no correlation between the age a participant started dieting and the body shape/size they identified themselves as having on the Stunkard figure rating scale, $r = .06, n = 41, p = .73$. Alternatively, how often a person thinks about their weight was positively correlated with their self-esteem score on the Rosenberg Self-Esteem scale, $r = .34, n = 83, p = .002$.

How often a person thinks about their weight was most strongly correlated with the eating behaviors they exhibit, as measured by the EDE-Q, $r = .80, n = 83, p = .000$. The correlation between the frequency that a participant diets and their EDE-Q score was not statistically significant, $r = .21, n = 45, p = .16$, nor was the correlation between the age a person starts dieting and their EDE-Q scores $r = .12, n = 41, p = .12$.

Discussion

Based on previous research, there were two main hypotheses for this study. First, it was hypothesized that for Caucasian participants, viewing the Pro-Eating disorder website containing images that match their race (i.e., the website containing images of Caucasian women) would have a larger impact in terms of decreasing levels of self-esteem and positive affect than the website containing images of Black women. For Black female participants, the result of viewing the different websites were not expected to be as variable. It was also hypothesized that the Black female participants who scored higher on the MEIM scale (indicating higher ethnic identity) would be less affected by the Pro-Anorexia website containing Caucasian images (i.e. race non-matching content),
but would be affected more by the Pro-Anorexia website containing images of Black women (race matching content).

The first hypothesis was not supported. Results indicated that there was not a significant difference between the scores on the PANAS negative affect scores of the Black women participants and Caucasian participants when viewing the different websites, nor was there a significant difference between the scores on the Stunkard body image scale scores of the Black women participants or the Caucasian women participants.

Additional analyses using t-tests for independent means on how ethnic identity affected the relationship between participant race and website racial content were also not statistically significant. The only significant findings showed that there was a significant difference between the scores on the Rosenberg self-esteem scale of the Black Pro-Anorexia website and the Caucasian Pro-Anorexia website.

The result that viewing Pro-Anorexia websites containing images of Black women led to lower self-esteem scores compared to viewing Pro-Eating disorder websites containing images of Caucasian women was surprising. It indicated that the self-esteem of women is affected by the race of the women portrayed on the Pro-Eating disorder website images. Considering the primarily Caucasian audience for Pro-Eating disorder websites, the websites traditionally contain images of Caucasian women. Why would photos of Black women have a different effect on self-esteem than photos of Caucasian women? Previous research (Perez and Joiner, 2002) has indicated that Black women traditionally view a larger body shape as the 'ideal' when compared to Caucasian women, that Black women typically have higher BMIs, and that Black women are more accepting of larger body shapes/BMIs, so the fact that emaciated Black women are less
accepted in society as being “the norm” (compared to Caucasian women) could play a role in why imagery of emaciated Black women is more likely to have a different effect on the participants.

Correlation analyses revealed a mild correlation between the age a participant started dieting and the perception they have about their bodies, a correlation between how often a participant thinks about their weight and their overall amount of self-esteem, and a correlation between thinking about weight and eating disorder behaviors such as feeling concerned over your weight/body shape and partaking in restrictive eating behaviors.

Adolescence is a time riddled with body insecurity for many young girls, and this provides a potential explanation for many of these findings given that the average age for the participants was 19 years old. For example, dieting at a young age is often linked with continued body insecurity and low self-esteem, so it is understandable that there would be a correlation between a participant thinking about their weight more and having lower self-esteem or feeling worse about herself. Similarly, for many women, thinking about their weight increases the chance that they will want to lose weight, so a correlation between weight concern and restricting eating certain foods with the use of dieting is predictable and not surprising.

The correlations involving the Stunkard figure rating scale indicated a mild correlation between the age a woman started dieting and the perception they have about their bodies. Correlations on the Rosenberg self-esteem scale revealed a mild, predictive relationship between how often a participant thinks about their weight and their overall amount of self-esteem. Finally, the EDE-Q scale showed a mild correlation between thinking about weight and eating disorder behaviors and a mild correlation between the
frequency of dieting and eating disorders. These findings support the work of Perez and Joiner (2002), who concluded that individuals who see themselves as being heavier who think about their weight more engage in more bulimic eating disorder symptomology. This focus on weight helps explain why certain participants were affected differently by viewing the Pro-Anorexia website content.

Several things must be taken into account when drawing conclusions from this study. Primarily, obtaining the necessary amount of minority participants proved difficult. Although recruitment occurred in a handful of ways, the minimum of 40 Black female minority participants was not met. As a result, if these research questions were to be addressed again obtaining more minority participants would be critical to structurally sound analyses.

Limitations

There are many ways that this study could be restructured for these research questions to be addressed. For example, additional, more careful screening for previous diagnoses of eating disorders and other comorbid diagnoses would be beneficial in protecting the mental wellbeing of the participants participating in viewing the potentially troubling Pro-Eating disorder imagery in the websites. It may also be beneficial to include more scales in the study. For example, additional questions asking the participants about their positive and negative affect/mood after viewing the website may be beneficial, as would making the Stunkard figure rating scale done pre and post website viewing to compare any potential changes. Furthermore, since it is unknown why one website was more ‘effective’ at lowering the self-esteem of the participants more than the other, exploring the statistically significant results of the Rosenberg self-esteem scale by
including additional measures for self-esteem may be beneficial towards explaining this phenomenon.

Most women who view Pro-Eating disorder websites view the content several times and are often frequent visitors, and they will view the websites as they go through different life stressors such as school, holidays, conflicts with family, etc. As a result, a limit of this study was that the participants only viewed the website once and were only able to do so for a ten minute period. The lack of statistically significant results regarding changes to the Stunkard, MEIM, and PANAS scores may be explained by this. As a result, including additional parts to the study where the participants are asked to view the website content more than once, and for varying lengths of time or at different periods throughout the year as they encounter different stressors, would be beneficial.

Additionally, as it was expected that the ethnic identity of the Black participants would mediate the relationship between their race and the website they view, including additional measures of ethnic identity would be beneficial in exploring the role of ethnic identity further.

This study sought to examine the effects of viewing Pro-Eating disorder websites and the effects that the websites have on women across varying races. Results indicated that Pro-Eating disorder websites may not affect women differently across different races, but that attention should be paid to these online communities due to their effects on the wellbeing, health, and negative effects on women and adolescents who have access to them.
The Effects of Pro-Eating Disorder Websites

References


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The Effects of Pro-Eating Disorder Websites


Appendix A

PANAS Questionnaire

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you feel this way right now, that is, at the present moment OR indicate the extent you have felt this way over the past week (circle the instructions you followed when taking this measure)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Slightly or Not at All</td>
<td>A Little</td>
<td>Moderately</td>
<td>Quite a Bit</td>
<td>Extremely</td>
</tr>
</tbody>
</table>

1. Interested 11. Irritable
2. Distressed 12. Alert
3. Excited 13. Ashamed
5. Strong 15. Nervous
7. Scared 17. Attentive
8. Hostile 18. Jittery
9. Enthusiastic 19. Active

Scoring Instructions:

*Positive Affect Score*: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect. Mean Scores: Momentary = 29.7 (SD = 7.9); Weekly = 33.3 (SD = 7.2)

*Negative Affect Score*: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect. Mean Score: Momentary = 14.8 (SD = 5.4); Weekly = 17.4 (SD = 6.2)

Appendix B

The Rosenberg Self-esteem scale

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I am a person of worth, at least on an equal plane with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I feel that I have a number of good qualities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. All in all, I am inclined to feel that I am a failure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I feel I do not have much to be proud of.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I take a positive attitude toward myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. On the whole, I am satisfied with myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I wish I could have more respect for myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I certainly feel useless at times.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. At times I think I am no good at all.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

The Stunkard Figure Rating Scale
## Appendix D

### Eating Disorder Examination Questionnaire (EDE-Q-6.0)

Please select the appropriate answer. Only concentrate on the last 28 days.

<table>
<thead>
<tr>
<th>On how many of the past 28 days .....</th>
<th>No days</th>
<th>1-5 days</th>
<th>6-12 days</th>
<th>13-15 days</th>
<th>16-22 days</th>
<th>23-27 days</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you had a definite desire to have a totally flat stomach?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you had a definite fear of losing control over eating?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you had a definite fear that you might gain weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you felt fat?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Have you had a strong desire to lose weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Please select the appropriate number for each statement. Only focus on the last 28 days.
<table>
<thead>
<tr>
<th>Over the past 28 days .....</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Markedly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has your weight influenced how you think about (judge) yourself as a person?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Has your shape influenced how you think about (judge) yourself as a person?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How dissatisfied have you been with your weight?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How dissatisfied have you been with your shape?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix E

The Multigroup Ethnic Identity Measure (MEIM)

Please fill in: In terms of ethnic group, I consider myself to be ______________________

Use the numbers below to indicate how much you agree or disagree with each statement.

(5) Strongly agree (4) Agree (3) Neutral (2) Disagree (1) Strongly disagree

1- I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.

2- I am active in organizations or social groups that include mostly members of my own ethnic group.

3- I have a clear sense of my ethnic background and what it means for me.

4- I think a lot about how my life will be affected by my ethnic group membership.

5- I am happy that I am a member of the group I belong to.

6- I have a strong sense of belonging to my own ethnic group.

7- I understand pretty well what my ethnic group membership means to me.

8- In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.

9- I have a lot of pride in my ethnic group.

10- I participate in cultural practices of my own group, such as special food, music, or customs.

11- I feel a strong attachment towards my own ethnic group.

12- I feel good about my cultural or ethnic background.

13- My ethnicity is
   (1) Asian or Asian American, including Chinese, Japanese, and others
   (2) Black or African American
   (3) Hispanic or Latino, including Mexican American, Central American, and others
   (4) White, Caucasian, Anglo, European American; not Hispanic
   (5) American Indian/Native American
   (6) Mixed; Parents are from two different groups
   (7) Other (write in): ________________________________
14- My father's ethnicity is (use numbers above)
15- My mother's ethnicity is (use numbers above)
Appendix F

Website Quiz

1. How many images were on the website?
   - 0-5
   - 6-10
   - 11-15
   - 16-20
   - 21-25
   - 26-30
   - More than 30

2. What race were the people in the photos? ____________

3. Were there any spelling errors on any of the images? ____________

4. Write down a phrase that was written in one of the images

   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

5. What were some of the foods featured in the food pyramid?

   ___________________________________________________________________
   ___________________________________________________________________

6. What are some common themes in these images?

   ___________________________________________________________________
Appendix G

Experiences and Demographic Questionnaire

(For the following question, put a vertical mark ( | ) on the horizontal line to indicate your experiences or respond.)

1. How often do you think about your weight?
   Never -------------------------------------------- All the time

2. Is there a history of eating disorders in your family?
   Yes______
   No______
   Not sure ______

4. Are other members of your family overweight?
   Yes______
   No______

5. Do you perceive yourself as being overweight?
   Yes______
   No______

6. Have you ever been on a diet?
   Yes______
   No______

7. About how often have you tried to diet in the past?
   ____ I’ll try to diet or try a new diet every few weeks
   ____ about every six months
   ____ once a year or so (for new year’s resolutions, etc)
   ____ never

8. How old were you when you dieted for the first time? ________

9. What is your age? ________

10. What year are you at Eastern Illinois University?
    ____ Freshman
        ____ Sophomore
        ____ Junior
        ____ Senior

11. Are you Hispanic?
    Yes
    No
12. With which of the following racial categories do you MOST clearly identify?
   Asian
   Black
   White/Caucasian

13. Please tell us about your cultural background: