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Since the 1970s many more women in the United States have been pursuing careers outside the home and increasing gender diversity in the work force. Nevertheless, there are still significant gender imbalances in many occupations. For example, the National Center for Education Statistics (2002) found that only 22% of physical scientists and nine percent of engineers were female in the 1990’s. Despite this small representation, the labor force in the United States was comprised of 46% women at the same time. Similarly, Gabriel and Schmitz (2007) found that 78% of clerical and administrative positions were held by women whereas 54% of managerial positions were held by men in 2001. Because female-dominated fields, such as nursing and education, earn a smaller salary than male-dominated fields (Mendez & Crawford, 2002) it is important to find factors that influence women to pursue male-dominated fields. This will help parents and educational institutions provide environments that encourage women to explore more career opportunities. If women are encouraged to enter male-dominated fields, they will have access to more economic resources, have greater occupational opportunities, and will be able to pursue a larger variety of interests and talents. Therefore, it is imperative to research the factors related to women’s choices about pursuing male-dominated careers.

Past research has shown that there are two broad categories which contribute to women’s nontraditional gender career aspirations: internal factors or self-perceptions (e.g., academic abilities and gender role attitudes) and external factors such as the influence of others in their lives (Frome, Alfeld, Eccles & Barber, 2006; Kerr & Robinson Kurpius, 2004; Mau, 2003; O’Brien & Fassinger, 1993; Quimby & DeSantis, 2006; Sax & Bryant, 2006; Schmader, Johns & Barquis-sau, 2004; Singer, Cassin & Dobson, 2005; Umbach, Kinzie, Kuh, Palmer & Thomas, 2007). One internal factor that influences women’s career choices is their perception about the importance of having a flexible work schedule for family, influence of a mentor, parental modeling of traditional gender roles, and attachment to parents. A survey exploring these factors was distributed to 141 college women. Results indicated that women who were pursuing careers in a male-dominated field had significantly higher confidence and interest in math and science and also had parents who modeled less-traditional gender roles than women who were aspiring to enter traditional gender careers. However, because there were many factors which did not yield significant differences among the two career groups, future research should explore other influences, such as the learning environment, on women’s career choices.

Exploring Factors Contributing to Women’s Nontraditional Career Aspirations

This study sought to determine if women aspiring to enter traditional, or female-dominated, careers (e.g., nursing, social work, etc.) versus male-dominated careers (e.g., science, technology, mathematics, and engineering, etc.) would differ on 10 factors: interest and confidence in math and science, overall academic confidence, traditional gender role attitudes, importance of having a job with a flexible work schedule for family, influence of a mentor, parental modeling of traditional gender roles, and attachment to parents. A survey exploring these factors was distributed to 141 college women. Results indicated that women who were pursuing careers in a male-dominated field had significantly higher confidence and interest in math and science and also had parents who modeled less-traditional gender roles than women who were aspiring to enter traditional gender careers. However, because there were many factors which did not yield significant differences among the two career groups, future research should explore other influences, such as the learning environment, on women’s career choices.
in mathematics, science, and general academics (e.g., Frome et al., 2006; Mau, 2003; O’Brien & Fassinger, 1993; Sax & Bryant, 2006). Gender role attitudes and stereotypes further play a role in nontraditional gender career choices (O’Brien & Fassinger, 1993). Schmader et al., Johns, and Barquissau. (2004) found that even college women who majored in math and had traditional gender role attitudes were less likely to aspire to enter a career related to math than women without traditional gender role attitudes. They also found that women who believed men had greater academic abilities in mathematics than women tended to perform worse on a mathematics exam than women who did not hold these beliefs.

With regard to external factors, past research has found that parents influence women’s nontraditional gender career decisions. O’Brien and Fassinger (1993) looked at daughters’ attachment with mothers and found that having a moderate level of attachment while maintaining some independence impacts career development. Women with this attachment to their mothers were more likely to pursue math- and science-related careers. In addition, Betz and Fitzgerald (1987) found that women with parents who displayed traditional gender roles, such as the mother staying home with her children, were less likely to have nontraditional gender role attitudes.

A role model or mentor is another external factor that influences women’s career choices. Quimby and DeSantis (2006) discovered that for women who had confidence to excel in a male-dominated field, those who had any person they regarded as a role model were more influenced to pursue a male-dominated field than those without role models. In addition, group mentoring programs for adolescent girls have also been shown to help improve girls’ confidence in their ability to do well in school (Kerr & Robinson Kurpius, 2004). Because previous research has shown that confidence in academic abilities increases the chance that women will enter nontraditional gender careers (Mau, 2003), it is important for women to have opportunities to gain access to mentors who will help guide their career decisions.

All of the aforementioned studies have explored various factors related to women’s nontraditional gender career aspirations. The results show that internal and external factors are two broad categories that influence women’s career choices. With regard to internal factors, if women are more self-confident in math, science, and their overall academic capabilities, have more liberal gender role attitudes, and have less desire to have a family-flexible job, they are more likely to pursue a nontraditional gender career (Frome et al., 2006; Mau, 2003; O’Brien & Fassinger, 1993; Sax & Bryant, 2006; Schmader et al., 2004; Singer et al., 2005). With regard to external factors, women are more likely to make a decision to pursue a male-dominated career when they have a moderate attachment to their parents while also maintaining some independence (O’Brien & Fassinger, 1993). In addition, influential mentors in nontraditional careers can guide women towards such careers (Kerr & Robinson Kurpius, 2004; Quimby & DeSantis, 2006).

Although previous studies have examined factors related to women’s nontraditional gender career decisions, almost none of the studies have explored both internal and external factors at the same time. Most studies focused on one particular factor in relation to women’s career choices. While important, exploring only one internal or external factor alone does not provide a general understanding of how different factors influence women’s career decisions. Thus, this study sought to expand previous research by examining the influence of several of the internal and external factors on one group of college women in order to gain a broader understanding of how they relate to women’s nontraditional gender career aspirations.

Based on previous research, we hypothesized that the women who were currently pursuing male-dominated jobs would demonstrate self-perceptions of:

- Having more confidence in math and science.
- Demonstrating better academic abilities overall.
- Having more liberal gender attitudes.
- Putting less emphasis on the importance of raising a family and having a family-flexible job than women pursuing a female-dominated career.

With regard to external factors, we hypothesized that women who were pursuing a nontraditional gender career would:

- Have more people in their lives they consider influential role models.
- Have a current moderate level of attachment with their parents while still maintaining much independence.
- Have parents who model less-traditional gender role attitudes than do the parents of women pursuing a female-dominated career.

**Method**

**Participants**
Participants were 141 female students, ranging in age from 18 to 41 years with the majority (93%) between 18 and 25 years. Participants were enrolled in a small, private, midwestern, all-women’s college. Seventy-eight students were aspiring to work in a female-dominated field, 52 students were interested in working in a male-
dominated occupation, and 11 students were studying for a gender-neutral field. Lastly, the students’ grade point average ranged from 2.8 to 4.0 on a 4.0 scale ($M = 3.40$, $SD = 0.42$).

**Materials**
A 50-question survey (see Appendix) examining 10 factors was composed of questions influenced by the work from five studies (Frome et al., 2006; Mau, 2003; O’Brien & Fassinger, 1993; Quimby & DeSantis, 2006; Schmader et al., 2004). The first three questions asked about demographic data (age, current year in college, and marital status). There were three open-ended questions which asked the students’ area of study, the occupation they were currently pursuing, and their cumulative GPA in college. The rest of the survey consisted of statements pertaining to the internal and external factors that might influence women’s career aspirations. These were to be rated on a 5-point scale, 1 (strongly disagree) to 5 (strongly agree).

**Internal factors.** The first internal factor examined participants’ confidence in their ability to do well in mathematics courses and careers (e.g., “I feel confident that I can earn an A or a B grade in math courses”). The second internal factor asked participants to rate their interest in math and math-related careers (e.g., “Math is interesting”), and the third internal factor addressed the participants’ confidence in being able to do well in science courses and careers (e.g., “I would be good at a job that requires much knowledge and skill in science”). The fourth internal factor had three questions assessing the participants’ interest in science, their desire to pursue more information about science, and their interest in having a career related to science (e.g., “I am interested in a career that uses science much of the time”). In addition, the fifth internal factor examined the participant’s overall confidence in earning high grades in school (e.g., “Overall it is easy for me to earn high grades in school”). Internal Factor Six assessed the participants’ desire to be the primary caregiver to their children if they planned to have children, and their desire to have a job with a flexible time schedule in order to accommodate their families’ needs (e.g., “It is important to have a job that does not require me to be away from my family”). Internal Factor Seven addressed the participants’ agreement with traditional gender role attitudes regarding mathematics, science, English, art, raising children, and the availability of career opportunities for men versus women (e.g., “In general, men are better than women at science,” and “There are more career opportunities in science for men than for women”).

**External factors.** The survey examined three external factors. The first external factor was whether participants had a mentor and how influential their mentor was in their career decisions (e.g., “My mentor has been very influential to the career choices I have made”). The second external factor asked participants to rate how well their parent(s)/guardian(s) supported and influenced their career choices, how often they sought advice from their parents about career choices and personal issues, and how frequently they relied on their parent(s)/guardian(s) for financial support (e.g., “I often seek advice from my mother/father/guardian about my career choices”). The questions that pertained to the parent/guardian attachment did not ask participants to indicate whether they relied on their mothers, fathers or guardians specifically. Finally, the third external factor examined the extent to which the participants’ parent(s)/guardian(s) divided the share of work equally when caring for their families and enacting traditional gender roles for the participants’ particular cultures (e.g., “My mother/father/guardians enact what would be considered traditional gender roles in my culture”).

**Procedure**
Participants were selected from a list of academic departments by choosing every third department. The researchers chose classes from each selected department to survey based on their schedule availability. We then gave the participants consent information which indicated that their responses would be kept confidential and only group data would be reported. Before the surveys were handed out, we asked participants to answer the questions to the best of their abilities.

**Results**
Once data were collected, the scores for the items for each factor were averaged together to calculate a single overall score for each factor. Thus, each participant had an average score for each set of the internal and external factors. The scores of each participant were then sorted into three groups based on whether the occupation the participant was pursuing was male-dominated, female-dominated, or gender neutral.

The United States Bureau of Labor Statistics (2006) was used as a guide to determine which fields were male-dominated, female-dominated, or gender neutral in this study. If the occupation consisted of 60% or more male workers, we coded the occupation as male-dominated. If the occupation consisted of 60% or more female workers, we coded it as female-dominated. If the occupation consisted of nearly 50% males and 50% females (41-59% one gender or the other), we coded it as gender neutral. Because only a small sample of 11 students was pursuing gender-neutral occupations, this group of participants was removed from the data set.
The participants’ scores were then averaged within each occupation group. After sorting, independent t-test analyses compared the differences in means for the 10 factors of the female-dominated and male-dominated career groups.

The results of analyses on the self-perception factors, math confidence, math interest, science confidence, science interest, academic confidence, the importance of a family flexible job, and gender role attitudes, are shown in Figure 1. There was a significant difference between the groups in interest towards math; the female-dominated occupation group ($M = 2.73$, $SD = 0.91$) had a lower interest in the subject, $t(129) = -2.81$, $p < .01$ than the male-dominated occupation group ($M = 3.18$, $SD = 0.90$). A significant difference was also found between occupation groups in their interest in science, $t(129) = -4.26$, $p < .01$. Those in the female-dominated occupation group ($M = 3.69$, $SD = 0.83$) had a significantly lower interest in science than the male-dominated occupation group ($M = 4.32$, $SD = 0.82$).

Furthermore, confidence in one’s science abilities approached a significant difference between the two occupational career groups, $t(129) = -2.53$, $p = .012$. The male-dominated occupation group ($M = 4.32$, $SD = 0.82$) was somewhat more interested in science than the female-dominated occupation group ($M = 3.69$, $SD = 0.83$). Nevertheless, there were no significant differences between occupation groups in academic confidence, the importance of having a family-flexible job, or gender role attitudes.

The independent t-test results for the external factors influence of a mentor, attachment to guardians, and parental gender models are shown in Figure 2. There were no significant differences between occupation groups in whether members had an influential mentor in their lives, or in the level of attachment to guardians. There was, however, a significant difference in whether parents exhibited traditional gender roles, $t(129) = 4.10$, $p < .01$. Specifically, the female-dominated occupation group reported a significantly higher ($M = 3.73$, $SD = 0.79$) adherence to traditional gender roles by their parents than did those in the male-dominated occupation group ($M = 3.10$, $SD = 0.79$).

**Discussion**

There were significant differences in interest in math and science, thus supporting the hypotheses that women pursuing male-dominated career fields were more likely to have higher interests in these subjects than women entering female-dominated fields. These findings lend support to previous research conclusions that women who pursue male-dominated careers, specifically math- and science-related ones, typically have higher levels of confidence and interest in these areas than do women who pursue female-dominated careers (Mau, 2003; O’Brien & Fassinger, 1993; Sax & Bryant, 2006).
The hypothesis that participants who were planning to enter a female-dominated career were more likely to have parents who model traditional gender roles for their culture was also supported. Schmader et al. (2004) found that “parents’ endorsement of gender stereotypes is predictive of their children’s self-perceptions” (p. 837). Schmader et al. (2004) concluded from this that behaviors modeled by parents may influence the self-perceptions their children have about educational skills, such as math, and these self-perceptions influence career choices.

Despite the differences between both occupational groups, there were many results that did not support the hypotheses. Differences in overall academic confidence and traditional gender role attitudes among the two occupational groups were not significant. The all-women’s college environment may have played a key role in the reasons why there were no differences between the two groups for these factors. The college these women attended is part of the Women’s College Coalition, which focuses on raising gender equality through women’s education (http://www.womenscolleges.org). Umbach et al. (2007) also found that all-women’s colleges strive to create an environment that encourages students to spend large amounts of time studying. The participants in this study had a mean grade point average of 3.40 on a 4.0 scale, indicating that they put a strong emphasis on earning quality grades and thus have higher confidence in their overall academic abilities. Also, students pursuing a male-dominated or female-dominated career who have strong confidence in their academic abilities as well as less-traditional gender role attitudes may be more likely to attend colleges with this type of environment. Therefore, students pursuing male-dominated or female-dominated careers may have more confidence in their academic abilities and less traditional gender role attitudes based on their college environment rather than their occupational aspirations.

The manner in which attachment to parents and the influence of a mentor were defined in the survey may have also influenced why there were no significant differences between the two occupational groups in these factors. Many of the questions pertained to how influential the mentor was in a student’s career decisions. A student may feel that her mentor is influential in other aspects of her life and not necessarily her career aspirations. The same event may have occurred with the level of attachment to one’s parent(s)/guardian(s). A student may have felt, for example, that she relies on her parents for financial support but does not often seek advice from her parents on career choices or personal issues. Thus, both factors may have been interpreted differently for each student no matter her occupational group. This may explain why these nonsignificant differences contradicted previous research findings (O’Brien & Fassinger, 1993).

Furthermore, the hypothesis that women aspiring to work in male-dominated fields would rate the importance of having a career that is family flexible as less important was not supported, contradicting previous research (Frome et al., 2006). Again, a reason for the disparity of the study’s findings with previous research may be due to the environment of the college, or the type of students choosing to attend the college. A majority of the women sampled ranged in age from 18 to 24 and may have not been planning to begin a family any time soon. The women in this sample may have felt that no matter what career they choose when they did wish to have a family they would be able to balance their family time and work time appropriately.

An additional reason why the college environment served as a limitation in this study is that according to Umbach et al. (2007), women who attend an all-women’s college are more likely to pursue a nontraditional career than their counterparts. Undoubtedly, the college institution was an influential dynamic and the hypotheses were based on the general female population (i.e. women who attend coeducational schools, high-school girls, etc.). Because the sample of participants in this study were different from the sample of participants in previous research, that might explain why the results from this study are different.

Additionally, the way in which the factors were operationalized raises some challenges. For example, there were only two survey items addressing whether both parents model traditional gender roles. This creates difficulty in making conclusions about parents’ behaviors and how they relate to women’s career choices. Also, the questions pertaining to women’s gender role attitudes did not specifically relate to gender role attitudes about the workplace, which may have influenced the participants’ responses to these items.

Despite limitations, there were some potentially useful findings about factors that influence women’s career aspirations. If further research shows that interest and confidence in math and science play a significant role in a woman’s career choices, educational institutions could be encouraged to foster interest and confidence in these subjects. Moreover, parents could work to model egalitarian gender role behaviors in order to instill more varied occupational interests in their daughters.

Further examination of these influences could compare the responses from women attending coeducational institutions to the responses of the women in this study. Such a comparison would help determine the degree to which the college environment has an
impact on these factors in relation to women’s career aspirations. Future surveys should also measure each internal and external factor using the same number and kinds of questions. Despite the fact that this study found factors which contribute to women’s nontraditional career aspirations, there is much more work that needs to be done to determine how these factors influence a woman’s occupational journey in life.

References
APPENDIX

To what extent do you agree or disagree with the following statements?
Note: Response options; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

7. Overall, I am better at math than other people in my major.
8. I feel confident that I can earn an A or a B grade in math courses.
9. Math is interesting.
10. I want to pursue more information about math.
11. I am interested in a career that uses math much of the time.
12. I would be good at a job that required extensive math skills.
13. Overall, I am better at understanding science than other people in my major.
14. I feel confident that I can earn an A or a B grade in science courses.
15. Science is interesting.
16. I want to pursue more information about science.
17. I am interested in a career that uses science much of the time.
18. I would be good at a job that requires much knowledge and skill in science.
19. Overall, I earn high grades in school.
20. Overall, it is easy for me to earn high grades in school.
21. Overall, I earn higher grades in school than most people in my major.
22. If I have children, I plan to be the primary caregiver to my children.
23. I think it is important to have a job with a flexible work schedule that I can adjust to meet the needs of my family.
24. It is important to have a job that does not require me to be away from my family.
25. It is important to have a job that would allow me to be home when my children are out of school (like teaching).
26. It is important to have a job that makes it easy to take time off for family responsibilities.
27. I currently have a mentor in my life. If not, skip to question #33.
28. My mentor and I have a close relationship.
29. I often rely on my mentor for advice when pursuing a career.
30. My mentor has been very influential to the career choices I have made.
31. My mentor has influenced my interest in a career that requires good math skills.
32. My mentor has influenced my interest in a career that uses science much of the time.
33. I have at least one living mother/father/guardian. If not skip to question #42.
34. My mother/father/guardian provides a lot of support for the career I choose to pursue.
35. My mother/father/guardian's wishes have influenced the career I wish to pursue.
36. My mother/father/guardian's wishes have influenced my choice of majors at school.
37. I often seek advice from my mother/father/guardian about my career choices.
38. I often seek advice from my mother/father/guardian about my personal issues.
39. I rely on my mother/father/guardian to help support me financially.
40. My mother/father/guardians spend equal amounts of time caring for my family (if you only have one guardian, skip to the next question).
41. In general, my mother/father/guardians enact what would be considered traditional gender roles in my culture.
42. In general, men are better than women at math.
43. In general, men are better than women at science.
44. It is unusual if a woman is interested in math.
45. It is unusual if a woman is interested in science.
46. It is unusual if a man is interested in English.
47. It is unusual if a man is interested in art.
48. There are more career opportunities in science for men than for women.
49. There are more career opportunities related to math abilities for men than for women.
50. Overall, women are better at raising children than men.
Body Image Perceptions: Do Gender Differences Exist?

Despite the large volume of research on body image, few studies have directly compared body image perceptions of men and women. Do men and women experience body image dissatisfaction in the same ways? Do similar factors predict negative body image perceptions in men and women? Is body image dissatisfaction associated with the same consequences regardless of gender? This study investigated these questions. One hundred ninety-seven undergraduate students completed an online survey that assessed their body image experiences and self-perceptions (i.e., body esteem, body mass index, self-esteem, sociocultural and situational factors, and body image perceptions in sexual contexts). Data analysis compared the responses of male and female participants. Several gender differences were found; body dissatisfaction was more common and felt more strongly in women, yet men were also clearly affected by body dissatisfaction.

North American society puts a strong emphasis on physical appearance. People who are deemed attractive are often viewed more favorably than unattractive people. They are thought to be smarter, and more commendable than their less attractive peers. This assumption is called the halo effect (Thorndike, 1920); people who are rated highly on one dimension (attractiveness) are assumed to excel on others as well (intelligence). This is also referred to as the “what-is-beautiful-is-good” stereotype (Solomon, Zaichkowsky, & Polegato, 2005). In our society, attractiveness is associated with being thin for women, whereas a more muscular appearance is considered attractive for men. Appearance ideals are often unattainable for the average person, and may be becoming more difficult to meet as the population is becoming heavier (Statistics Canada, 2002). The disparity between “real” and “ideal” size is increasing.

How do people respond to this disparity? It appears that many individuals respond by feeling badly about their bodies and themselves, and subsequently they develop a negative body image. Body image is a subjective and multidimensional construct (Cash, Morrow, Hrabosky, & Perry, 2004). It encompasses an individual’s self-perceptions and attitudes about his or her physical appearance. The two main aspects of body-image attitudes are evaluation and investment. Evaluation refers to the evaluative thoughts and beliefs that one has about one’s body (Morrison, Kalin, & Morrison, 2004). Body image investment is the cognitive, behavioral, and emotional importance attributed to the body in self-evaluation (Cash & Pruzinsky, 2002). It is useful to view body image as a continuum, ranging from no body image disturbance to extreme body image disturbance (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Another way of conceptualizing how one feels about one’s body is called body esteem, which involves an individual’s self-evaluation of his or her physical appearance (Mendelson, White, & Mendelson, 2001).

It has been argued that mass media is a key factor in the development of body image dissatisfaction (Morrison et al., 2004; Morrison, Morrison, & Hopkins, 2003). According to sociocultural theory, the more often an individual is exposed to mass media containing idealistic representations of the body, the less favorable an individual’s body image evaluations will become. The sociocultural theory purports that mass media influences an individual’s perceptions of what the ideal body is, and bodies that do not match this ideal are therefore thought to be unattractive (Morrison et al., 2003). Thus, awareness and internalization of society’s appearance standards may contribute to body image dissatisfaction (Matz, Foster, Faith, & Wadden, 2002).

The sociocultural theory, however, does not explain why some people are affected by media messages, whereas others are not. Social comparison theory states that individuals are driven to evaluate themselves through the use of social comparison (Morrison et al., 2004).

Research suggests that scrutinizing one’s self in comparison to those who are less attractive positively

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affects self-perceptions. Conversely, comparing oneself to those who are more attractive negatively affects self-perceptions (Morrison et al., 2004). Therefore, to whom one compares oneself is an important determinant of one’s level of body image satisfaction. Furthermore, believing oneself to be acceptably attractive may be more adaptive than actually being considered attractive by others. How others perceive the individual’s attractiveness appears to be less important for an individual’s body esteem than how the individual perceives him- or herself (Noles, Cash, & Winstead, 1985). This suggests that people’s perceptions of their appearance are more relevant to how they feel about themselves and their bodies than how closely they actually resemble societal appearance ideals. A recent study (Johnstone et al., 2008) supports this notion. Lean participants more accurately assessed their body shape than did obese participants, but they were not more satisfied with their appearance. This suggests a cognitive-evaluative dysfunction, where individuals can accurately estimate their size or shape, but are still dissatisfied with their bodies (Cash & Brown, 1987; Gardner, 1996).

Unfortunately most people experience mild to moderate body image dissatisfaction (Thompson et al., 1999). People deal with body image dissatisfaction in a wide variety of ways. A common way of coping is to restrict the number of calories consumed. At any given time, 70% percent of women and 35% of men are dieting (Canadian Mental Health Association, 2003). Some individuals resort to extreme forms of caloric intake restriction or develop eating disorders (Stice, 2002). Other ways of coping include excessive exercise, cosmetic surgery, and using diet pills, steroids, or protein supplements.

Not only does body image dissatisfaction affect one’s behaviors, it also affects how one feels about oneself. It is associated with depression (Noles et al., 1985), low self-esteem (Mendelson et al., 2001), feelings of shame (McKinley & Hyde, 1996), body surveillance (McKinley & Hyde), diminished quality of life (Cash & Fleming, 2002), and anxious self-focus and avoidance of body exposure during sexual activity, which can lead to impaired sexual functioning (Cash, Maikkula, & Yamamiya, 2004).

Historically, research on body image dissatisfaction has portrayed it as an issue that exclusively or predominantly affects women. Recent research suggests that the past studies of body image among men were flawed. It was assumed, for example, that body image concerns among men (like those of women) stemmed from perceived excess weight. More recently, studies have been conducted with both men and women using a figure rating scale, where participants rated which figures they actually looked like, wanted to look like, and believed the opposite sex found most attractive. Men perceived themselves to be more overweight and more muscular than they actually were. They also believed that the male body women perceived to be the most attractive was significantly more muscular than the actual ideal male body that the women chose (Olivardia, Pope, Borowiecki, Gohane, 2004). Research demonstrated that women tended to overestimate their weight/figure size, and underestimate what they thought the male’s ideal female figure was (Fallon & Rozin, 1985). The research with figure rating scales suggests that men’s body image concerns stem from a perceived lack of muscle, whereas women’s stem primarily from perceived excess weight. These findings are consistent with media messages that emphasize a thin ideal for women (Morrison et al., 2003), while promoting a V-shaped figure for men, with emphasis on having a larger, more muscular upper body (Furnham, Badmin, & Snaede, 2002). Several studies corroborate perceived lack of muscle as being a more pivotal factor in male body image dissatisfaction than excess fat (Cañí & Thompson, 2004; Olivardia et al., 2004; Pope, Olivardia, Gruber, & Borowiecki, 1999).

This research calls into question the validity of previous studies; it appears that body image dissatisfaction was not actually the construct being measured, but rather weight dissatisfaction.

While it is now known that men are also affected by body image dissatisfaction, the literature continues to demonstrate that women suffer from higher rates of discontentment with their bodies and that this discontentment negatively impacts their lives, more so than male body image concerns affect men (Johnstone et al., 2008; Mendelson et al., 2001). Cash, Morrow et al., (2004) conducted a cross-sectional investigation of body image satisfaction among male and female college students across a 19-year period. They found that body image dissatisfaction rates of the female participants worsened and then improved over time. The researchers also found that male body image dissatisfaction rates were stable over time. This finding contradicts other studies which have shown that body image dissatisfaction is on the rise in men (Cash, 2002; Olivardia et al., 2004). It has been suggested that the ideal male body portrayed in the media is becoming as difficult for typical men to attain as the ideal female body is for typical women to attain. For example, Pope et al. (1999) found that action figures illustrated evolving ideals of male bodies. Toys like G.I. Joe are becoming more muscular and, when converted to human size, G.I. Joe’s body is as unattainable for boys as Barbie’s body is for girls. Similar to the research done with women, research has also found that body image dissatisfaction in men is associated with low self-esteem, depression, and eating pathology (Olivardia et al., 2004).
The current study will avoid issues with construct validity by using a battery of tests to assess body image concerns in men and women and including measures that assess male muscle satisfaction, as well as weight satisfaction. This is in line with suggestions by Olivardia et al. (2004) who suggest that existing research is limited because researchers only investigate one or two aspects of body image. They suggest a comprehensive assessment of body image by using a number of different measures, as well as investigating a larger sample of men.

**The Present Study**
While research demonstrates that men and women share some similarities with regard to body image perceptions and body image dissatisfaction, there are important gender differences. More research needs to be done in order to gain a comprehensive understanding of these differences. The present study expands on existing research because it involves a more comprehensive analysis of the similarities and differences in body image dissatisfaction in men and women. The present study compares the sexes across several measures of body image dissatisfaction. It not only explores whether body image dissatisfaction is experienced differently by women and men, but it also investigates whether these experiences impact the sexes differently. The present study also uses measures that were norm-referenced for both male and female participants, comparing body image perceptions of male and female undergraduate students. We explored body image perceptions using a battery of assessments to examine differences in risk factors for, manifestation of, and consequences of body image dissatisfaction in men and women.

**Hypotheses**
This study was designed to test six hypotheses. The first three are based on the finding that more women than men experience some degree of body image dissatisfaction, and women tend to have a higher degree of body image dissatisfaction than men (Mendelson et al., 2001).

Our first hypothesis was that men would have higher body esteem scores than women and therefore women would report a lower quality of life due to negative body image perceptions. Body image dissatisfaction is positively correlated with depression (Noles et al., 1985) and negatively correlated with self-esteem (Mendelson et al., 2001), both of which have a negative impact on quality of life. The fact that women suffer from higher levels of body image dissatisfaction (Johnstone et al., 2008) suggests that their quality of life would be more adversely affected by their body image perceptions.

The second hypothesis predicts that women would experience negative body image perceptions in more situations than men. Knowing that women experience body image dissatisfaction more frequently than men, it is likely that they also experience more cross-situational body image dysphoria.

The third hypothesis was that women would experience a higher frequency of negative body image experiences during sexual activity than men, but regardless of gender, lower body esteem scores would be correlated with negative body image perceptions during sex. Body image dissatisfaction correlates with anxious self-focus and avoidance of body exposure during sexual encounters (Cash, Maikkula, & Yamamiya, 2004). Thus we expected that women would experience more negative body image perceptions during sexual activity because they suffer from higher rates of discontentment with their bodies, but that this relationship would also be found in men who experience body image dissatisfaction.

The next two hypotheses are based on research findings suggesting that body image dissatisfaction is associated with low self-esteem (Mendelson et al. 2001), awareness of and internalization of society’s appearance standards (Matz et al., 2002), and body shame and body surveillance (McKinley & Hyde, 1996), as well as on Taylor’s (2003) theory that people can cope more effectively with stress when they feel that they can exert control over stressful events. Our fourth hypothesis was that self-esteem and body esteem would be negatively correlated for both men and women. The fifth hypothesis was that women would show higher rates of awareness and internalization of sociocultural appearance standards than men, as well as higher rates of body image shame and surveillance; whereas men would show higher control beliefs about their appearances.

The last hypothesis is based on research that suggests that the media emphasizes a thin ideal for women, but not for men (Morrison et al., 2003). Body image dissatisfaction is related to a perceived lack of muscle in men and to a perceived excess weight in women (Cafri & Thompson, 2004). Therefore, our fifth hypothesis asserted that underweight men would be less satisfied with their appearances than underweight women.

**Method**
Participants
The participants in this study were undergraduate students attending a large metropolitan university in Canada who were enrolled in Psychology 100 courses. Data were collected from 210 students, but data from 13 of the students were dropped from the study due to technical problems with the online survey, resulting in a final sample size of 197 participants. The partici-
pants ranged from 17 to 40 years of age (M = 19.30, SD = 3.14), and consisted of 98 men and 97 women. All participants spoke English as their first language. Participants were selected from the university’s research participation system, and each student received one credit towards a psychology class for completing the survey. All procedures were approved by the university’s Ethics Review Board.

**Measures**

All participants completed an online survey that consisted of an assessment battery of seven instruments and demographic information including participants’ age, sex, native language, and a self-report of height and weight. Stice and Bearman (2001) found that self-reports of height and weight correlate strongly with measurements taken by research assistants, with correlations ranging from .94 to .99, therefore we used self-reports. Height and weight were used to calculate body mass index (BMI; calculated by multiplying 703 times the total of a person’s weight in pounds divided by his or her height in inches squared). Completion of this survey took approximately 20-30 min.

**Body Exposure During Sexual Activities Questionnaire (BESAQ).** The BESAQ (Cash, Maikkula, & Yamamiya, 2004) is a self-report questionnaire that measures experiences of body image in sexual interactions. Participants rate their degree of agreement with 28 statements about how they feel and act during sexual interactions. Each item is answered on a 5-point Likert scale that ranges from 0 (never) to 4 (always or almost always). Participants’ final scores are determined by calculating the mean of the 28 questionnaire items. Higher scores indicate that the individual experiences more negative body image perceptions during sexual activity. The BESAQ is an internally consistent measure (Cronbach’s alpha = .95 for men and .96 for women). The BESAQ had a Cronbach’s coefficient value of .96 in this study.

**Body Image Quality of Life Inventory (BIQLI).** The BIQLI (Cash & Fleming, 2002) assesses the degree to which an individual’s body image affects his or her quality of life. Participants answer each item on a 7-point Likert scale. Participants rate their degree of agreement with 19 statements about how their body image affects them, ranging from -3 (very negative effect) to +3 (very positive effect). It is useful in determining how an individual’s body image perceptions affect a large variety of life domains (e.g., sense of self, social functioning, sexuality, emotional well-being, eating, exercise, grooming, etc.). A participant’s final score is the mean of their 19 ratings. A higher score indicates a higher quality of life. It is internally consistent with a Cronbach’s alpha of .95. The BIQLI had a Cronbach’s coefficient value of .94 in this study.

**The short form of the Situational Inventory of Body-Image Dysphoria (SIBID-S).** The SIBID-S (Cash, 2000) measures the negative body-image emotions that an individual has in specific situational contexts. This is a 20-item version of the original 48-item SIBID. The SIBID-S uses a 5-point Likert scale with choices ranging from 0 (never) to 4 (always or almost always). For each item, participants indicate how often they have the emotional experiences described in each statement. A higher score indicates more frequent cross-situational body image dissatisfaction. It has a Cronbach’s alpha of .96 and achieved a Cronbach’s alpha of .95 in the present study.

**Objectified Body Consciousness Scale (OBC).** The OBC (McKinley & Hyde, 1996) is a 24-item measure of the degree to which an individual objectifies his or her body. The OBC uses a 7-point Likert scale that ranges from 1 (strongly disagree) to 7 (strongly agree). It consists of three subscales: Body surveillance, Body shame, and Appearance control beliefs. Body surveillance refers to viewing one’s body as an outside observer. Body shame involves feeling shame when one’s body does not conform to cultural standards. Appearance control beliefs refer to the belief that one can control one’s appearance through effort. Cronbach’s alpha for undergraduate women is .89 for the surveillance subscale, .75 on the body shame subscale and .72 for control beliefs. For undergraduate men, Cronbach’s alpha is .79 on the surveillance subscale, .73 for the body shame subscale, and .64 for control beliefs. Higher scores on the subscales indicate higher levels of the subscale construct in question. Overall, the OBC had a Cronbach’s value of .80 in the present study.

**Rosenberg Self-Esteem Scale.** The Rosenberg Self-Esteem Scale (Rosenberg, 1965) consists of 10 items and uses a 4-point Likert scale for responses ranging from 1 (strongly agree) to 4 (strongly disagree). Lower scores indicate higher self-esteem. This measure has a Cronbach’s reliability coefficient of .84. It had a Cronbach’s alpha of .58 in the current study.

**Sociocultural Attitudes Towards Appearance Questionnaire–Revised version (SATAQ-R).** The SATAQ-R (Cusumano & Thompson, 1997) is a 21-item scale that measures the degree to which an individual recognizes and accepts society’s appearance standards. It uses a 5-point Likert scale that ranges from 1 (completely disagree) to 5 (completely agree). The SATAQ-R has both a male and a female version and consists of two subscales: awareness and internalization. The awareness subscale assesses the degree to which an individual is aware of society’s appearance standards, and the internalization subscale assesses the degree to which the individual adopts these beliefs as his or her own. A higher score
on either subscale indicates a higher level of awareness or internalization. Both subscales have high reliability scores. The awareness subscale has a Cronbach’s alpha of .83, and the internalization subscale has a Cronbach’s alpha of .89. Overall this measure had a Cronbach’s alpha of .88 in the present study.

**Body-Esteem Scale for Adolescents and Adults (BESAA).** The BESAA (Mendelson et al., 2001) is a 23-item self-report measure of body esteem. It uses 5-point Likert scale that ranges from 0 (never) to 4 (always). The BESAA consists of three subscales: Appearance, Weight, and Attribution. The Appearance subscale measures one’s general feelings about one’s appearance. It has a Cronbach’s alpha of .92, suggesting high internal consistency. The Weight subscale measures weight satisfaction. It also demonstrates high internal consistency with a Cronbach’s value of .94. The Attribution subscale measures one’s perceptions about others’ evaluations of one’s body and appearance and has a Cronbach’s alpha value of .81. Higher scores on a subscale indicate more positive body esteem on that subscale. Overall this scale had a Cronbach’s alpha of .92 in the current study.

**Results**

**Hypothesis 1**
The means and standard deviations for all variables are shown in Table 1. Independent *t* tests were conducted to test for differences between males and females. As predicted, men had higher scores than women on the three subscales of the BESAA indicating that men feel better about their bodies than women (see Table 1). However, it should be noted that while the sexes differed significantly on both the Appearance, *t*(195) = 2.59, *p* = .01, and Weight, *t*(195) = 2.78, *p* = .01, subscales, they did not differ significantly on the Attribution subscale. Contrary to the second part of this hypothesis, men and women did not significantly differ on the BIQUE. However, there was a trend toward significance, *t*(195) = 1.85, *p* = .07 (see Table 1).

**Hypothesis 2**
As expected, women reported negative body image perceptions during significantly more situations than men on the SIBID-S, *t*(195) = -4.40, *p* = .01 (see Table 1). Women scored higher (showing more dissatisfaction) than men on all questions except for questions 5, 14, and 20. On question 5 (When I am with attractive persons of the other sex), a *t* test revealed men (*M* = 1.74, *SD* = 1.20) and women (*M* = 1.99, *SD* = 1.15) did not significantly differ. On question 14 (When the topic of conversation pertains to physical appearance), men (*M* = 1.26, *SD* = 1.12) and women (*M* = 1.54, *SD* = 1.00) did not significantly differ either. Similarly, on question 20 (During certain recreational activities) men (*M* = 1.07, *SD* = 1.26) and women (*M* = 1.35, *SD* = 2.24) did not significantly differ.

**Hypothesis 3**
The prediction that body esteem scores on the BESAA and body image experiences during sexual activity scores on the BESAQ would be negatively correlated was supported (see Table 2). BESAQ scores demonstrated that women experience significantly more negative body image perceptions during sexual activity than men, *t*(195) = -3.47, *p* = .001. Although not significantly different, the negative relationship between BESAQ scores and BESAQ scores was stronger in men than women (see Table 2). A trend toward significance (*p* = .06) was demonstrated for the relationship between BESAQ scores and the Weight subscale of the BESAA.

**Hypothesis 4**
BESAQ and self-esteem scores were negatively correlated in both men and women (see Table 2). This indicates that participants with lower self-esteem also had lower body esteem.

**Hypothesis 5**
Women demonstrated higher rates of Internalization on the SATAQ-R, *t*(195) = -2.55, *p* = .01, but they did not show a significant difference from men on the Awareness subscale of this measure (see Table 1). Women also demonstrated higher rates of body shame, *t*(195) = -3.63, *p* = .01, and body surveillance, *t*(195) = -3.06, *p* = .01, on the OBC. There was no significant difference between men and women in scores on the Control beliefs subscale (see Table 1). Contrary to expectations, the correlation matrix for the OBC revealed that Control beliefs were not significantly related to any other variable in this study. This demonstrates that the degree to which participants’ believed they had control over their appearance did not affect how they felt about their appearance.

**Hypothesis 6**
Contrary to expectations, BMI scores were not correlated with body esteem (BESAA) scores for men or women (see Table 2).

**Discussion**
The present study demonstrated that much remains to be learned about the similarities and differences between men and women with regard to body image perceptions. The higher body esteem scores of the male participants supports the results of previous research (Johnstone et al., 2008; Mendelson et al., 2001).
### TABLE 1
Means and Standard Deviations of All Measures by Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>(a) Body-Esteem Scale for Adolescents and Adults (BESAA)</td>
<td></td>
</tr>
<tr>
<td>BESAA Appearance</td>
<td>2.33</td>
</tr>
<tr>
<td>BESAA Weight</td>
<td>2.31</td>
</tr>
<tr>
<td>BESAA Attribution</td>
<td>2.31</td>
</tr>
<tr>
<td>(b) Body Image Quality of Life Inventory (BIQLI)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.87</td>
</tr>
<tr>
<td>(c) Situational Inventory of Body Image Dysphoria (SIBID-S)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.79</td>
</tr>
<tr>
<td>(d) Body Exposure during Sexual Activity Questionnaire (BESAQ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.43</td>
</tr>
<tr>
<td>(e) Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-R)</td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td>37.38</td>
</tr>
<tr>
<td>Internalization</td>
<td>33.67</td>
</tr>
<tr>
<td>(f) Objectified Body Consciousness scale (OBC)</td>
<td></td>
</tr>
<tr>
<td>Surveillance</td>
<td>4.56</td>
</tr>
<tr>
<td>Shame</td>
<td>3.04</td>
</tr>
<tr>
<td>Control beliefs</td>
<td>4.51</td>
</tr>
</tbody>
</table>

### TABLE 2
Correlations of BESAQ, Self-Esteem and BMI Scores With BESAA Scores by Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>(a) Body Exposure during Sexual Activity Questionnaire (BESAQ)</td>
<td></td>
</tr>
<tr>
<td>BESAA Appearance</td>
<td>-.59**</td>
</tr>
<tr>
<td>BESAA Weight</td>
<td>-.49**</td>
</tr>
<tr>
<td>BESAA Attribution</td>
<td>-.30**</td>
</tr>
<tr>
<td>(b) Self-Esteem</td>
<td></td>
</tr>
<tr>
<td>BESAA Appearance</td>
<td>-.72**</td>
</tr>
<tr>
<td>BESAA Weight</td>
<td>-.27**</td>
</tr>
<tr>
<td>BESAA Attribution</td>
<td>-.39**</td>
</tr>
<tr>
<td>(c) Body Mass Index (BMI)</td>
<td></td>
</tr>
<tr>
<td>BESAA Appearance</td>
<td>-.08</td>
</tr>
<tr>
<td>BESAA Weight</td>
<td>-.02</td>
</tr>
<tr>
<td>BESAA Attribution</td>
<td>-.06</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.
Although I did not test for significance, in comparison to the normative data for the BESAA, the females’ BESAA scores in this study were higher, whereas the men’s scores were lower. The normative sample for the BESAA consisted of 12-25 year-old male and female respondents. Further investigation is warranted to determine whether the comparison of these BESAA scores reflects an improvement in females’ body image satisfaction and a decrease in satisfaction amongst men. Contrary to research indicating that body image dissatisfaction in men is related to perceived lack of muscle instead of perceived fatness (Cafri & Thompson, 2004; Olivardia et al., 2004; Pope et al., 1999), the results of this study demonstrate that body esteem scores in men are correlated with weight satisfaction. This corroborates a recent study by Johnstone et al. (2008) which found that although body image dissatisfaction in men is primarily affected by perceived muscle, it is also affected by perceived excess weight. Perhaps this is because of the more recent media emphasis on male weight.

Intuitively, one would think that a person with low body esteem would be more adversely affected than someone with higher body esteem scores; thus the fact that women do not have a lower quality of life due to body image dissatisfaction than men appears inconsistent with the finding that women tend to have lower body esteem scores than men. A possible explanation for the finding that women do not have a lower quality of life due to body image dissatisfaction is that men and women may be adversely affected by body image perceptions in different ways. However, there was a trend toward statistical significance, so further research needs to be done to determine whether a larger sample size would have detected a significant difference.

The finding that women experience negative body image perceptions in more situations than men is consistent with the reports that women tend to have lower body esteem scores than men. More situations may make women feel negatively about themselves and so they are, on average, more dissatisfied with their bodies than men. The particular situations in which men and women both experience negative body image perceptions deserves further investigation. In the present study, SIBID-S scores demonstrated that women experience significantly more negative body emotions across various situations than the men. However, there were no significant differences between men and women on the following three statements: “When I am with attractive persons of the other sex,” “when the topic of conversation pertains to physical appearance,” and “during certain recreational activities.” On these questions both men and women reported experiencing negative body image emotions between sometimes and moderately often. This may indicate that men and women experience somewhat negative levels of body image perceptions when in the presence of a member of the opposite sex. It is possible that both men and women care about how potential partners evaluate their appearance, or that they feel physical attractiveness is an important factor in heterosexual relationships. Furthermore, men and women are equally affected by negative body image perceptions during conversations about physical appearance. This may suggest that men and women are equally aware of and insecure about their appearance when it is a direct topic of conversation and they feel that others may be thinking about their appearance.

Finally, women did not report significantly higher levels of negative body image perceptions than men during recreational activities. This may indicate that participating in recreational activities provides a different way to view the body that protects against body image dissatisfaction. Viewing the body as an instrument rather than as an object may promote a healthier body image. Further research is needed to examine whether the situations addressed in the SIBID-S affect men and women differently. Results of such research could be useful in creating prevention and intervention programs, allowing professionals to target specific situations known to affect the population of interest.

The fact that women have higher overall scores than men on the body shame and surveillance subscales of the OBC may also explain why women have lower body esteem scores than men. However, the finding that men and women do not differ significantly on the control belief subscale suggests that control beliefs are not directly related to body image satisfaction. Indeed, the correlation matrix for this measure revealed that control beliefs were not significantly related to any other variable in this study. This suggests that, contrary to expectation, when people feel as if they have control over their appearance, it does not protect them from feeling negatively about their body. This appears to counter Taylor’s (2003) findings that control beliefs mitigate stressful situations. Perhaps body image dissatisfaction is not experienced in the same way as other stressful experiences.

Women scored higher on the internalization of sociocultural appearance standards than men, which may explain why women have lower body esteem scores than men. The fact that so many variables appear to play a role in body image dissatisfaction supports the belief that body image dissatisfaction is a multidimensional construct, as proposed earlier (Cash, Morrow, et al., 2004). More research needs to be done to determine if men are more likely to internalize societal appearance standards than they were in the past, and if women are
somewhat becoming less susceptible.

Body esteem scores were negatively correlated with self-esteem for both women and men, supporting the findings of Mendelson et al. (2001); however, the results from the present study indicate that weight was not significantly correlated with body esteem. This is in contrast with the results from other studies in which significant positive correlations were observed between being overweight and being dissatisfied with one’s body, particularly in women (Matz et al., 2002). Further corroborating research is needed to support the findings from this study suggesting that weight is no longer a significant predictor of body image dissatisfaction.

In the present study, body esteem scores on all three subscales: Weight, Appearance, and Attribution, had significant negative correlations with body image perceptions during sexual activity. Lower body esteem scores were associated with more negative body image perceptions during sexual activity. These results are in line with the findings of Cash et al. (2004). Surprisingly, body esteem scores had a stronger negative correlation with body exposure during sexual activity for men than women. Although these correlations were not significantly different, there was a trend toward significance for this relationship in regard to the body esteem Weight subscale. Future research could examine whether this difference would be significant with a larger sample size to determine whether negative body image perceptions during sexual activity are more strongly linked to weight dissatisfaction in men than they are in women.

One of the limitations of this study was that it had a narrow sample—undergraduate students. In addition, these students received course credit as an incentive to participate. Certain types of students may be more inclined to seek the bonus credit and this sample may, therefore, be less representative of the general population of undergraduate students. The fact that this was an online study may also threaten generalizability. It is possible for students to answer questions in an online survey quickly—or even randomly—without actually reading the questions. In the present study, however, a timer was used to ensure that respondents took a reasonable amount of time to complete each question. Another possible limitation was the length and the number of the measurement instruments. Completion of all the questionnaires took approximately 20-30 min and the number of questions may have contributed to fatigue or boredom, adversely affecting measurement validity.

Finally, the measure used to assess body image satisfaction (BESAA) assessed body esteem on three levels: Appearance, Weight satisfaction, and Attribution. Recent research has shown that measures that focus on weight instead of muscle are not valid scales for use with men. We included the BESAA because it did have two subscales that did not look specifically at weight. Interestingly, for participants in the current study, scores on the weight satisfaction subscale were significantly correlated with the other subscales of the body esteem scale, suggesting that weight is a valid measure of body esteem in men after all. Research suggests that an equal number of men want to gain weight as want to lose weight (Drewnowski & Yee, 1987). Therefore, it would have been helpful to consider the direction of the desired change in weight when comparing weight dissatisfaction in men and women (Furnham et al., 2002). It appears that future research should assess both weight satisfaction (and direction of any desired change) and muscle satisfaction when measuring body image dissatisfaction. These measures would provide a more accurate description of body image satisfaction levels for men in particular.

Conclusion

This study demonstrated that much remains to be learned about the differences and similarities in the body image perceptions of men and women. Body image dissatisfaction is more prevalent among women than men, but men may be becoming more negatively affected and women less so. Our findings support the assertion that men are more commonly becoming the targets of mass media images, resulting in more emphasis on the muscular ideal (Pope et al., 1999). To aid all those affected by body image dissatisfaction, however, future research should concentrate on the important gender differences, as well as similarities, revealed in the present study.

References


Student evaluations of teaching (SETs) have been a standard procedure on college campuses since the early 1900s (see Algozzine et al., 2004, for a review). Although the method of evaluation may vary from institution to institution, typically the process involves students anonymously answering a series of open- and closed-ended questions about course content, teaching effectiveness, and student learning. Ideally, faculty use the feedback to enhance teaching and learning; in addition, college administrators may use the evaluations when making decisions on salary, tenure, and promotion. At most institutions, the completed evaluations are not accessible to the students (Kindred & Mohammed, 2005). However, due to recent technological innovations (e.g., the Web), the popularity of Web-based survey sites has increased significantly (Carini, Hayek, Kuh, Kennedy, & Ouimet, 2003), offering students access to informal evaluations of professors.

Online faculty rating sites, such as RateMyProfessors.com, Pick-A-Prof.com, and ProfessorPerformance.com provide students with a new method of evaluating professors. Currently, the largest and most well known of these sites is RateMyProfessors.com, which includes over 10 million reviews of more than 1 million professors (RateMyProfessors.com, 2010). When visiting the site, students can anonymously rate professors based on Clarity, Helpfulness, and Easiness on a scale of 1 (negative) to 5 (positive), and the site calculates an Overall Quality score by averaging the Clarity and Helpfulness scores. Moreover, students may rate their professor’s appearance (i.e., “hot” or “not”) and post written comments about their course experiences and professors. Recently, RateMyProfessors.com added a feature that allows professors to offer rebuttals to posted comments.

It is apparent that RateMyProfessors.com is becoming more popular on college campuses (RateMyProfessors.com, 2010), although little is known about how students use the site. Kindred and Mohammed (2005) investigated undergraduate students’ opinions of RateMyProfessors.com by conducting focus groups. They asked students about their motives for using RateMyProfessors.com as well as their perceptions of the site. They found that students were motivated to visit RateMyProfessors.com because they were curious about other students’ opinions. Moreover, although students revealed that they trust their friends’ opinions of professors, they also reported that the RateMyProfessors.com ratings provided supplemental information for course selection. In addition, they preferred the comment-based assessment of each professor more than the numerical ratings, but they viewed the comments with suspicion and thought some comments reflected students with extreme views. Overall, students visit RateMyProfessors.com to quickly gather information.

We surveyed 550 students to examine which rating categories on RateMyProfessors.com (2010), an online faculty rating site, they found to be most important when selecting a professor. We hypothesized that students would trust RateMyProfessors.com and choose Easiness as the most important category. Results indicated that students did tend to trust RateMyProfessors.com ratings. Furthermore, they reported that Quality, Helpfulness, and Clarity are more important categories than Easiness and Hotness. In addition, analyses revealed that men are more likely to consider Hotness when selecting a professor than women. The findings from this study shed light on how online faculty rating sites may influence students’ selection of professors.

Online Faculty Rating Sites: Examining How Students Perceive and Use RateMyProfessors.com

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*Faculty mentor
tion about professors and courses so that they can make more informed course selections.

Aside from the research conducted by Kindred and Mohammed (2005), there is a paucity of research on RateMyProfessors.com usage. In the present study, we explored students’ use of RateMyProfessors.com by surveying 550 undergraduate students. First, based on the literature and RateMyProfessors.com statistics (Felton, Mitchell, & Stinson, 2004; Felton, Koper, Mitchell, & Stinson, 2008; Kindred & Mohammed 2005; RateMyProfessors.com, 2010), we predicted that the majority of students would report using RateMyProfessors.com at least once to browse reviews or to comment on professors. Second, based on Kindred and Mohammed’s findings (2005), we predicted that students would trust the information on RateMyProfessors.com. Finally, considering that instructors of courses rated as easy tend to be rated more positively overall (Felton et al., 2004; Felton et al., 2008; Kindred & Mohammed, 2005; Silva et al., 2008), we hypothesized that students would consider Easiness the most important category when selecting a professor or course. Because of the exploratory nature of this study, we did not state hypotheses for the other categories.

Method

Participants
We used convenience sampling to distribute surveys to five hundred-fifty 17- to 22-year-old (Mage = 19.54 years; 222 men, 328 women) undergraduate students enrolled at a small liberal arts college in the northeastern United States. We recruited participants by visiting dorms and classrooms across campus. The participants consisted of first- (n = 127), second- (n = 166), third- (n = 168) and fourth-year (n = 89) students.

Procedure
We administered a 13-item paper questionnaire. The instructions informed participants that their answers would be held in confidence and that they had the right to withhold any information. Participants completed questions that asked their gender, age, high school GPA, college GPA, and class year. Participants circled “yes” or “no” in response to “Have you participated in a previous RateMyProfessors.com study?” and “Have you ever used RateMyProfessors.com before?” Furthermore, they rated “the importance of each RateMyProfessors.com factor in your decision to take a professor” on a scale from 1 (strongly disagree) to 5 (strongly agree). Finally, the survey asked “On a scale from 1 (strongly distrust) to 5 (strongly trust), how much do you trust the reviews on RateMyProfessors.com?” After participants completed the survey, we debriefed them about the intended purpose of the study.

Results
Of the 550 students we surveyed, 500 (90%) students reported using RateMyProfessors.com at least once; therefore, we conducted analyses on the data of these 500 participants (Mage = 19.55 years; 192 men, 308 women). First, we found that students who used RateMyProfessors.com generally trusted the ratings (M = 3.46, SD = 0.74). An independent samples t test comparing trust scores of men (M = 3.41, SD = 0.79) and women (M = 3.49, SD = 0.71) revealed no statistically significant difference, t(498) = 1.14, p > .05.

Second, we analyzed the ratings data with a 2 (gender: Male, Female) x 5 (RateMyProfessors.com category: Easiness, Clarity, Helpfulness, Hotness, Overall Quality) mixed-factor ANOVA with RateMyProfessors.com category as a within-subjects variable. Results indicated that there was a significant main effect of RateMyProfessors.com category, F(4, 1992) = 550.56, p < .01, partial η² = 0.53. Post-hoc analyses using Tukey’s HSD (HSD = 0.17, p = .05) indicated that participants rated Hotness as a significantly less important factor in their decision to enroll in a professor’s course than Easiness, Helpfulness, Clarity, and Overall Quality. Furthermore, they rated Overall Quality as significantly more important than Easiness, Helpfulness, and Clarity, and Easiness as significantly less important than Helpfulness and Clarity (see Table 1).

In addition, there was a significant interaction between RateMyProfessors.com category and gender, F(4, 1992) = 6.85, p < .01, partial η² = 0.01 (see Figure 1). Although Hotness was the least important category for both men and women, a follow-up independent samples t test indicated that men rated Hotness signifi-
cantly higher than women, \( t(330.66) = 3.63, p < .01. \)

Finally, the main effect of gender was not significant.

**Discussion**

Online faculty rating sites are growing in popularity: 90% of the students in our sample reported visiting RateMyProfessors.com at least once. Also, they seemed to trust the RateMyProfessors.com ratings. Although we predicted that students would consider Easiness the most important RateMyProfessors.com category, our findings revealed that Overall Quality, Helpfulness, and Clarity were more important. Furthermore, men and women reported that Hotness is not an important category; however, men were more likely to consider Hotness than women.

Undergraduate students spend a significant amount of time online, so it is not surprising to find that 90% of the students reported using RateMyProfessors.com to evaluate or choose professors. Moreover, not only do they use online faculty rating sites, but they also trust RateMyProfessors.com ratings. According to Kindred and Mohammed (2005), students enjoy using RateMyProfessors.com to quickly obtain information about a class or professor. It is clear that these sites are popular and that they may affect students’ course choices.

In the present study, students indicated a preference for considering Overall Quality, Helpfulness, and Clarity instead of Easiness when making decisions about courses and professors. It is encouraging that students focused on categories that are more likely to correlate with teaching effectiveness and student learning. In addition, similar to Kindred and Mohammed (2005), we found that students dismissed Hotness as an important category. This is a surprising finding because research suggests that attractiveness influences how students rate professors (Felton et al., 2004; Felton et al., 2008; Riniolo, Johnson, Sherman, & Misso, 2006). For instance, when Riniolo et al. (2006) examined the influence of physical attractiveness on student evaluations using the RateMyProfessors.com Hotness ratings, they found that professors who had higher Hotness ratings had higher SETs. Apparently, students’ evaluations of their professors are influenced by physical attractiveness, but they say their reasons for selecting a course or professor are not very much affected by attractiveness. Further research is necessary to explore the potential impact of gender and attractiveness on how students perceive and use SETs (Riniolo et al., 2006).

Faculty could use online faculty rating sites to enhance their teaching and improve their traditional evaluations. For instance, to increase Helpfulness and Clarity, professors might self-reflect about their helpfulness, or poll their current students about what they find unclear. Although the sites may be perceived by many students as providing supplemental information for course selection, students, faculty, and administrators should be cautious when using such sites for several reasons. First, online ratings may not be valid. For example, an emotional student could use a site to “attack” a professor. In addition, the online ratings represent a small percentage of the total number of students enrolled in courses. Therefore, the ratings are not representative of the population.

Another reason for using caution is because the online faculty rating sites are constantly changing. For example, as new features are added to a site or old features are deleted, students’ ratings may be influenced. Therefore, their ratings may depend on when they visited the site. Finally, the operational definitions of the rating categories are poorly developed. Otto, Sanford, and Ross (2008) suggest that Easiness could have several different meanings and therefore could affect how students interpret the ratings. The sites should take greater care in defining the rating categories.

The current study had several limitations. First, we used convenience sampling and recruited our entire

<table>
<thead>
<tr>
<th>RateMyProfessors.com Category</th>
<th>Easiness</th>
<th>Helpfulness</th>
<th>Clarity</th>
<th>Hotness</th>
<th>Overall Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>M ( \bar{X} )</td>
<td>SD</td>
<td>M ( \bar{X} )</td>
<td>SD</td>
<td>M ( \bar{X} )</td>
<td>SD</td>
</tr>
<tr>
<td>3.71\text{a}</td>
<td>0.95</td>
<td>3.97\text{b}</td>
<td>0.89</td>
<td>3.93\text{b}</td>
<td>0.86</td>
</tr>
</tbody>
</table>

*Note.* Means that do not share subscripts differ at \( p < .05 \) in the Tukey HSD comparison.

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Footnote: Because the assumption of homogeneity of variance was violated, the results of the \( t \) test do not assume equal variances.
sample from the same small liberal arts college. Further research should consider taking a random sample from a larger population (i.e., several institutions from across the country). Second, because we relied on the survey method, we did not measure students as they were using the actual RateMyProfessors.com website. Perhaps future research could focus on students using RateMyProfessors.com during the course registration period. Furthermore, a comparison of these students with a group of students who do not use the site, or use the site infrequently, would be worth exploring. Third, we examined just one site. Future work should examine other sites and the importance of the rating categories listed on such sites. Finally, we did not assess the importance of the written comments on RateMyProfessors.com. According to Kindred and Mohammed (2005), students pay more attention to written comments than numerical ratings; therefore, it is imperative to consider both in future studies.

Given the popularity of online faculty rating sites, this is an important area of research. Our data show that sites such as RateMyProfessors.com affect many students’ decisions about which professors to take. Due to concerns about validity of the online ratings, institutions should consider making their SETs public, providing students with more information than what they find on online faculty rating sites. Babad, Darley, and Kaplowitz (1999) examined post-course evaluations at Princeton University, which are made public to the student body. They suggested that students chose classes after reviewing the post-course evaluations, and students selected professors and courses in accordance with their needs. If institutions made their student evaluations of faculty public, students would most likely use this information rather than the information found on websites such as RateMyProfessors.com (Coladarci & Kornfield, 2007).

References
Eating a healthy diet and being physically active are essential to leading a healthy and long-lasting life. According to the United States Department of Health and Human Services (US DHHS, 2004), engaging in moderate physical activity can significantly reduce the risk of developing or dying from chronic diseases such as heart disease, diabetes, colon cancer, or high blood pressure. From a public health perspective, physical activity plays a vital role in preventing weight gain and promoting the maintenance of weight loss. Being overweight or obese significantly raises the risk of adverse health effects such as high blood pressure, high cholesterol, type 2 diabetes, heart disease and stroke, gallbladder disease, arthritis, sleep disturbances and breathing problems. Obese individuals may also suffer from social stigmatization, discrimination, and lowered self-esteem. Regular physical activity offers several health benefits including increased muscle and bone strength, increased lean muscle, decreased body fat, enhanced psychological well-being, and possible decreases in the risk of developing depression, symptoms of depression and anxiety, and improvement in mood (Silberstein, Striegel-Moore, Timko, & Rodin, 1988; US DHHS, 2004).

Over the last few decades, the percentage of Americans who are clinically overweight has steadily increased (National Center for Health Statistics, 2004). In 2006, more than two-thirds of Americans were overweight or obese (Ogden et al., 2006). Furthermore, in 2007, 23.9% of Americans did not participate in leisure-time physical activity, and 77.3% did not consume enough fruits and vegetables (Centers for Disease Control and Prevention, 2002, 2008). Better nutrition and exercise practices could prevent 300,000 deaths each year from heart disease, diabetes, cancer, and stroke.

The obesity trend in the United States has infiltrated college-aged student populations. Approximately 38% of college students are classified as either slightly or very overweight (American College Health Association [ACHA], 2008). Although college students may have access to information about the hazards of poor dietary choices and a sedentary lifestyle, and about how to improve their health-related behaviors via such tools as the United States Department of Agriculture’s (USDA’s) online MyPyramid.gov, they do not necessarily make positive health behavior choices. In fact, studies have indicated that college students have poor nutrition habits and often exhibit at-risk weight control

Can Health Behaviors and Motives Predict College Students’ Self-Esteem?

A sample of 268 college students completed a 98-item questionnaire that surveyed their knowledge of eating and exercise recommendations, their eating and exercise motives and behaviors, and their self-esteem. A regression analysis using a forward method of entry was used to investigate whether certain food choice motives, exercise motives, knowledge of diet and physical activity recommendations, and healthy eating and physical activity behaviors can predict college students’ self-esteem. The first variable to enter the model and significantly increase the amount of variance explained was the food motive of mood ($\beta = 0.23; R^2$ change = 0.07; $F(1, 209) = 13.90, p < .001$). The food motive of health entered next and significantly increased the amount of variance explained ($\beta = -0.21; R^2$ change = 0.07; $F(2, 208) = 16.22, p < .001$). The final three variables to enter and significantly increase the amount of variance explained were the following: the exercise motive of health ($\beta = -0.23; R^2$ change = 0.02; $F(3, 207) = 12.89, p < .001$); the exercise motive of attractiveness ($\beta = 0.22; R^2$ change = 0.03; $F(4, 206) = 12.14, p < .001$); and the food motive of ethical concern ($\beta = 0.16; R^2$ change = 0.02; $F(5, 205) = 11.07, p < .001$). No other variables significantly explained additional variance in self-esteem. These findings suggest that for college students, certain food and exercise motives are related to self-esteem. The potential impact of college students’ health-related motives and behaviors on self-esteem may be beneficial in developing interventions related to health and self-esteem.
behaviors. College students tend to engage in a number of unhealthy eating behaviors including extreme dieting, skipping meals, high intake of fast foods, low intake of fruits and vegetables, and minimal consumption of dairy products (ACHA, 2008; Cotugna & Vickery, 1994; Douglas & Collins, 1997; Huang et al., 2003; Matvienko, Lewis, & Schafer, 2001). Furthermore, when young adults begin college, the new environment may place them at increased risk for developing unhealthy eating habits and adopting a more sedentary lifestyle. Because beginning college is a period when students begin to manage their own lives and to adopt and solidify their health-related habits, it is important to investigate factors associated with activities such as being physically active and choosing to consume a healthy diet, as well as how these health behavior choices may affect their psychological well-being.

Some researchers are studying how knowledge of diet and physical activity may affect people’s corresponding health behaviors. For example, nutritional knowledge has been positively correlated with healthy eating (Wardle, Parmenter, & Waller, 2000), and knowledge regarding physical activity has been positively correlated with being more active (Rimal, 2001). However, researchers have not yet related both nutritional and physical activity knowledge and their corresponding behaviors to psychological factors such as self-esteem.

Self-esteem is an important factor in measuring an individual’s overall psychological well-being (Rosenberg, Schuler, Schoenbach, & Rosenberg, 1995). Psychological factors such as depression, neuroses, and psychosomatic symptoms of anxiety often accompany low self-esteem (Rosenberg, 1965). In addition, physical activity appears to promote psychological well-being and reduces feelings of mild to moderate depression and anxiety (Silberstein et al., 1988; US DHHS & USDA, 2005). However, researchers have not cohesively investigated how college students’ health behaviors may affect their psychological well-being.

Some researchers are attempting to understand how eating attitudes and food choice motives play a role in self-esteem. Many of these studies concentrate on self-esteem in relation to eating attitudes that are associated with disordered eating (Furnham, Badmin, & Sneade, 2002; Furnham & Calnan, 1998; Baş, Aşçi, Karabudak, & Kızıltan, 2004). Few, if any, studies have looked at normal or nonmaladaptive (maladaptive, as defined by the current study, means behavior and/or motive that is counter-productive or interferes with everyday living) eating motives in relation to self-esteem. However, a multidimensional measure for eating motives that underlies food choices has been developed by Steptoe, Pollard, and Wardle (1995) for potential use in fields such as health psychology and will likely be useful for implementing appropriate strategies for health intervention models. This multidimensional measure for food choice motives includes factors such as choosing foods based on healthiness, mood enhancement, being convenient, having sensory appeal, having natural contents, having an affordable price, facilitating weight control, being familiar, and promoting ethical choices.

Silberstein et al., (1988) found a positive correlation between exercise and well-being. Many studies have examined the relationship between reasons or motives for exercise and self-esteem (Furnham et al., 2002; Silberstein et al., 1988; Strelan, Mehaffey, & Tiggemann, 2003; Tiggemann & Williamson, 2000). In these studies, researchers have generally found that exercising for appearance is moderately negatively related to self-esteem, and that exercising for health and/or fitness reasons is moderately positively related to self-esteem. Furthermore, exercising for enjoyment and/or mood reasons is moderately positively related to self-esteem (Strelan et al., 2003).

Other, more complex relationships of how health behaviors affect college students’ well-being have not been explored. Because past studies have shown that college students make poor health choices (ACHA, 2008; Cotugna & Vickery, 1994; Douglas & Collins, 1997; Huang et al., 2003; Matvienko et al., 2001) it is logical to assume that they will suffer from negative health effects due to these poor choices. Furthermore, according to past studies, these poor health choices and negative health effects could, in turn, lead to impaired psychological well-being (Silberstein et al., 1988; US DHHS, 2004). Self-esteem is an important factor in measuring an individual’s overall psychological well-being (Rosenberg et al., 1995).

The current research will consider more complex relationships among college students’ self-esteem and their knowledge, motivations, and behaviors regarding eating a healthy diet and being physically active. More specifically, this study will investigate whether certain food choice motives, exercise motives, knowledge of diet and physical activity recommendations, and healthy eating and physical activity behaviors can predict college students’ self-esteem. Based on previous research findings, I hypothesized that if the food choice motive of mood and the exercise motives of attractiveness and mood were primary motives, it would predict lower self-esteem. I also hypothesized that if the food choice motive of health and the exercise motives of health, fitness, and enjoyment were primary motives, it would predict higher self-esteem. Furthermore, I hypothesized that greater knowledge of diet and physical activity recommendations and more frequent healthy eating
and physical activity behaviors would predict higher self-esteem.

**Method**

**Participants**

Participants were 268 undergraduate students, 93 men and 175 women enrolled in a sophomore-level psychology course at a large southern university. Approximately 25% were 19 years old or younger, about 46% were 20 or 21 years old, 19% were 22 or 23 years old, about 4% were 24 or 25 years old, and about 7% were 26 years old or older. Almost 62% of the students were Non-Hispanic White, about 24% were Hispanic, 7.5% were African American, 1.5% were Asian, and about 5% classified themselves in other ethnic groups. Most students described themselves as middle class (45%) or upper-middle class (31%).

**Materials**

The materials for this study included a consent form and a 98-item survey divided into six sections that assessed participants’ self-esteem as well as their behaviors, motivations, and knowledge regarding eating a healthy diet and engaging in physical activity. In order to control for social-desirability response bias, the six sections were ordered as follows: (a) demographic questionnaire, (b) dietary and physical activity assessment, (c) food choice motivations, (d) physical activity/exercise motivations, (e) knowledge of healthy diet and physical activity recommendations, and (f) self-esteem. The demographic section of the questionnaire included questions about the participants’ age; gender; ethnicity; whether they were seeking a major or minor in nutrition and foods, the department of health, physical education, and recreation, or other; whether or not they lived on the college campus; and their socioeconomic status.

To determine participants’ healthy eating behaviors, I formulated multiple choice questions from the USDA’s healthy eating recommendations found in the *Dietary Guidelines for Americans, 2005* (US DHHS & USDA, 2005). Questions addressed participants’ fruit, vegetable, whole grain, and dairy consumption in the last seven days. The internal consistency of the healthy eating behavior factors was high, with a Cronbach’s score of 0.71.

In order to survey physical activity behaviors, I adapted questions from the Physical Activity Assessment Tool or PAAT (Meriwether, McMahon, Islam, & Steinmann, 2006). The PAAT was originally developed for physicians to quickly assess a patient’s physical activity. Seven-day test-retest reliability was comparable for the PAAT (r = 0.62, p < 0.001) and the MTI accelerometer (r = 0.53, p < 0.001; Meriwether et al., 2006). The PAAT classified participants as “active” or “under-active” concordantly with the MTI accelerometer for 69.8% of participants and with the IPAQ for 66.7%; strength of agreement was fair (κ = 0.34 and 0.21, respectively). The PAAT classified fewer participants as active than either the MTI (p = 0.17) or the IPAQ (p < 0.001), and measured physical activity more like the direct objective measure (the MTI accelerometer) than did the IPAQ.

To evaluate food choice motivations, I adapted questions from the Food Choice Questionnaire (Steptoe et al., 1995). Steptoe et al. (1995) developed the original 68-item questionnaire to measure eating motives that underlie food choices, and included such factors as health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, and ethical concern. However, I omitted the factor of sensory appeal, which consisted of four items, because it was not relevant to this study’s purpose. The order of the items was very close to the order of the items in the original questionnaire. Participants were asked to endorse the statement “It is important to me that the food I eat on a typical day…” for each of the 64 items by choosing between four responses: *not at all important, a little important, moderately important, and very important*, scored from 1 to 4. For example, some statements for the 9 food choice factors were: “is nutritious,” “cheers me up,” and “is cheap.” The internal consistency of the food choice questionnaire factors, as reported by...
To measure participants’ physical activity/exercise motivations, I adapted questions from the Reasons for Exercise Inventory (Silberstein et al., 1988). The questionnaire asks the participants to rate the importance of a variety of reasons for why they may exercise using a scale ranging from 1 (not at all important) to 7 (extremely important). I included all of the original 24 items of the questionnaire; questions assessed factors such as weight control, fitness, mood, health, attractiveness, enjoyment, and tone. For example, some statements for the 7 exercise factors were: “to be slim,” “to have fun,” and “to improve my appearance.” To facilitate computer scoring, I slightly altered the range of the scale to range from A (not at all important) through D (very important). The internal consistency of the food choice questionnaire factors, as reported by Silberstein et al. (1988), was good with Cronbach’s α scores as follows: weight control = 0.81, fitness = 0.71, health = 0.73, attractiveness = 0.78, enjoyment = 0.67, tone = 0.74, mood = 0.79.

To assess participants’ knowledge regarding eating a healthy diet, I adapted a total of seven multiple choice questions from the Nutrition Knowledge Questionnaire (Parmenter & Wardle, 1999) and the recommendations given by the USDA in the Dietary Guidelines for Americans, 2005 (US DHHs & USDA, 2005). The questions included items that referenced recommendations to eat from the following particular food groups: fruits, vegetables, milk and milk equivalent products, fats, and whole grains. For example, some of the questions were: “According to accepted guidelines, how many cups of fruit do you think people should consume per day (for a reference 2,000 calories a day intake?)” and “What do experts consider the healthiest type of fat?”

In order to survey participants’ knowledge regarding physical activity recommendations, I adapted six multiple choice from the interview questions used by Morrow, Krzewinski-Malone, Jackson, Bungum, and FitzGerald (2004) and the recommendations provided by the USDA (2005) and the US DHHS (2005) in Dietary Guidelines for Americans, 2005. For example, some of the questions were: “What is the minimum number of days per week you believe a person must be physically active in order to receive any health benefit?” and “What is the minimum length of time (in minutes) one needs to be physically active throughout a typical day in order to achieve a health benefit?” The factors measuring overall knowledge of a healthy diet and physical activity recommendations had a Cronbach’s α score of 0.59.

Lastly, to determine participants’ self-esteem, I used the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965), a generally accepted measure of self-esteem. The scale is a 10-item questionnaire in which positive and negative statements are presented alternatively to reduce the danger of response set. In this study, participants answered the 10 items using a 4-point scale, with possible responses ranging from 1 (strongly agree) to 4 (strongly disagree). Sample statements were: “On the whole, I am satisfied with myself,” and “At times, I think I am no good at all.” The Rosenberg Self-Esteem Scale has an estimated Cronbach’s α score of 0.69 and an estimated test-retest reliability score of 0.78 (Mohamjadi, 2004).

Procedure

Students in a psychology class at a large southern university were asked by their professor to volunteer to be part of the research study following a class examination in order to receive extra credit points for that particular class. However, any students who did not wish to participate were given an alternative extra credit option. All volunteers were asked to sign a consent form upon their decision to participate in the study; however, their names were not connected to their responses. Information disclosed by the participants remained confidential, and the general results from the study were provided to students upon request.

The professor explained the procedure for participation in the study before the students began their class examination. At this time, the professor also gave the information about the research, including what the study was considering, assurances of anonymity, and the instructions for the surveys. After the students completed their class examination they approached the researcher to receive the survey materials, which included a 98-item questionnaire, consent form, and a Scantron answer sheet. The consent form described the information requested during the study, identified any foreseen risks, gave assurances of anonymity, and provided further contact information if students were interested in learning about the hypotheses and results. Once the participants completed the survey, they returned the materials to the researcher and signed a separate sheet in order to receive their extra credit. The students then left the room after they finished.

Results

A regression analysis using a forward method of variable entry was performed with self-esteem as the dependent variable. The predictor variables included the eight food choice motives of health, mood, convenience, natural content, price, weight control, familiarity, and ethical concern; the seven exercise motives of weight control,
fitness, mood, health, attractiveness, enjoyment, and tone; recommended diet/exercise knowledge; physical activity behavior; and healthy eating behavior.

The food choice motive of mood entered the model first and accounted for 7% of the variation in self-esteem ($\beta = 0.23; R^2$ change $= 0.07; F(1, 209) = 13.90, p < .001$). The food motive of health entered next and significantly increased the variation in self-esteem to 14% ($\beta = 0.21; R^2$ change $= 0.07; F(2, 208) = 16.22, p < .001$). The final three variables that entered the model and significantly increased the amount of variance in self-esteem to 21% were the following: the exercise motive of health ($\beta = 0.24; R^2$ change $= 0.02; F(3, 207) = 12.89, p < .001$); the exercise motive of attractiveness ($\beta = 0.22; R^2$ change $= 0.03; F(4, 206) = 12.14, p < .001$); and the food motive of ethical concern ($\beta = 0.16; R^2$ change $= 0.02; F(5, 205) = 11.07, p < .001$). No other variables significantly explained additional variance in self-esteem.

Because the self-esteem items were coded so that a lower score meant higher self-esteem, having the primary food choice motive of health and the primary exercise motive of health were related to higher self-esteem. On the other hand, having the primary food choice motives of mood and ethical concern as well as the primary exercise motive of attractiveness were related to lower self-esteem.

**Discussion**

These results support my original predictions that if the food choice motive of mood and the exercise motives of attractiveness and mood were primary motives, they would predict lower self-esteem. These results also support my hypotheses that if the food choice motive of health and the exercise motive of health were primary motives, they would predict higher self-esteem. Unexpectedly, the food choice motive of ethical concern added to the amount of variance in self-esteem and was indicative of a lower self-esteem. The food choice item of ethical concern consisted of the following statements: “Comes from countries I approve of politically,” “Has the country of origin clearly marked,” and “Is packaged in an environmentally friendly way.” Furthermore, contrary to my expectations, health-related knowledge and health-related behaviors were not significant contributors to the amount of variance in self-esteem.

This study suggests that particular food choice and exercise motives may be the strongest predictors of college students’ self-esteem. These motivations may be more important correlates of self-esteem than health-related knowledge or health-related behavior. Moreover, the findings indicate that primarily choosing foods and exercising for health reasons can significantly predict higher self-esteem in college students.

The findings also suggest that exercising for mainly attractiveness reasons and choosing food based largely on mood or ethical reasons can significantly predict lower self-esteem in college students. This is similar to previous research findings, which concluded that exercising for appearance is moderately negatively related to self-esteem, and that exercising for health reasons is moderately positively related to self-esteem (Furnham et al., 2002; Silberstein et al., 1988; Strelan et al., 2003; Tiggemann & Williamson, 2000). Previous research has also indicated that ethical concern may influence food choice and that this factor does not appear to be correlated with social desirability scores (Steptoe et al., 1995). That is to say that the food choice factor of ethical concern is not simply based on presenting a set of motives that are assumed to be socially acceptable (Steptoe et al., 1995). The reason why the food choice motive of ethical concern may predict lower self-esteem in college students should be explored in future research.

It is important to note that this study only outlines relationships among these variables. To determine cause and effect relationships, future research could employ a longitudinal design that includes a wider variety of participants, not just college students. Possible research questions could include the following: Are particular food choice and exercise motives better able to predict health behaviors? Does increasing people’s knowledge about healthy diet and physical activity improve his or her health-related behaviors and/or change his or her eating and exercise motives? Can improving people’s eating and physical activity behaviors enhance psychological factors, such as self-esteem and well-being? Answers to these questions could improve the development of interventions to help individuals acquire and maintain healthy habits and improve their well-being.

Future researchers could also adopt theoretical frameworks, such as the health belief model (HBM) and the theory of planned behavior (TPB), to investigate how and why college students decide to engage or not engage in particular health behaviors such as healthy eating and exercising (Straub, 2007). The HBM states that decisions about health behaviors are based on four interacting factors (perceived susceptibility to health threats, perceived severity of health threats, perceived benefits of and barriers to treatment, and cues to action) that influence our perceptions about health threats (Straub, 2007). In other words, if we believe that a health behavior will reduce our vulnerability to or the severity of a particular health threat, then we will be more likely to engage in that health behavior (Straub, 2007). Perhaps in future studies, researchers could investigate college students’ perceived susceptibility.
to health threats, perceived severity of health threats, perceived benefits of and barriers to treatment, and cues to action with regard to health behaviors such as healthy eating and exercising.

The TPB specifies relationships among attitudes and behavior, and argues that the best way to predict whether a health behavior will occur is to measure people’s behavioral intentions or their decision to engage in or refrain from a health-related behavior (Straub, 2007). Behavioral intentions, in turn are predicted by attitudes toward the behavior; subjective norms, which reflect our motivation to comply with the views of other people regarding the behavior in question; and perceived behavioral control, which refers to our expectation of success in performing the contemplated health behavior (Straub, 2007). Perhaps in future studies, researchers could investigate whether a health behavior, such as healthy eating or exercise, will occur based on college students’ behavioral intentions.

Numerous studies have been conducted using the HBM or the TPB as a theoretical framework to examine countless health behaviors including a few that look at healthy eating and physical activity (Ajzen & Timko, 1986; Conner, Norman, & Bell, 2002; Deshpande, Basil, & Basil, 2009; Juniper, Oman, Hamm, & Kerby, 2004; Povey, Conner, Sparks, James, & Shepherd, 2000). However, few have looked specifically at these health behaviors in college student populations. I anticipate that research that applies theoretical frameworks such as the HBM and the TPB to college students’ health behaviors will become increasingly more sophisticated in the years to come and thus be able to draw more causal inferences.

One study conducted by Stellefson, Zhongmiao, and Klein (2006) created inconsistent cognitions within college students about their diet and exercise behaviors in order to elicit positive changes in their diet and physical activity behaviors. They found that making college students feel greater levels of risk for health problems associated with eating and exercise behaviors had little effect on their health-related behaviors. Furthermore, they found that emphasizing the effect of health behaviors on physical appearance is important in increasing positive health-related behaviors. These results may have an interesting implication when taking into account the results of the regression analysis from the current study. The exercise motive of attractiveness accounted for 3% of the variance in low self-esteem, even after taking into account several other eating and exercise motives. Perhaps future studies could look more closely at the relationship among these variables (i.e., the health behavior motives of attractiveness and appearance, self-esteem and/or other important psychological factors, cognitions surrounding health-related behaviors, and health behavior change) in order to develop appropriate intervention strategies that target college students’ health-related behaviors.

Limitations of the current study are worth noting. Physical activity and healthy eating behaviors were not individualized. For example, the survey did not take into consideration the different dietary needs of individuals based on age, gender, and physical activity level. The survey also did not ask the participants about everything they ate, just about the healthy foods they ate. This is important to note because recommended calorie intake will differ for individuals depending on age, gender, and activity level (USDA & US DHHS, 2005).

Furthermore, because physical activity/diet recall and reporting involve a complex cognitive process, misclassifications by participants may have occurred due to errors in the interpretation of questions; estimation of duration, frequency, and intensity of physical activity periods; estimation of frequency and amount of food groups, or failure to recognize some activities as physical activity (Baranowski, 1988; Durante & Ainsworth, 1996; Montoye, 2000; Sallis & Saelens, 2000; Taylor et al., 1984; Washburn & Montoye, 1986). Future studies could focus more on the individual by implementing a more direct empirical research method, such as having participants wear a heart monitor in order to record their level of physical activity and having them record their diets in a food diary that professionals could examine and rate on a scale of healthfulness.

In a society that emphasizes appearance and success while also suggesting that we indulge ourselves, motives related to eating and exercising can become complex. The data here suggest that primarily choosing foods and exercising for health reasons can significantly predict higher self-esteem in college students. The findings also suggest that exercising for mainly attractiveness reasons and choosing food based largely on mood or ethical reasons can significantly predict lower self-esteem in college students. Becoming more self-aware about the reasons behind our choices and possible implications of those choices for our physical and psychological health may ultimately promote the well-being of individuals and society as a whole.

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Past research has established a link between low self-esteem and juvenile delinquency. Specifically with juvenile sex offenders (JSOs), research has shown that low self-esteem is linked to more serious sexual offenses (Smith, Wampler, Jones, & Reifman, 2005) as well as violent and nonviolent nonsexual recidivism (Worling & Curwen, 2000). It is therefore crucial to find strategies that increase the self-esteem of JSOs to avoid relapse. Therapeutic interventions have attempted to raise the self-esteem of juvenile delinquents in order to promote stronger peer relationships, mentally healthier individuals, and fewer offending behaviors. However, there is little research regarding the use of normalizing interventions to increase self-esteem in juvenile offenders and specifically in JSOs. I predicted that a normalizing intervention that emphasized increased knowledge of group norms would effectively promote higher self-esteem and decrease feelings of loneliness in JSOs.

For clarity, in this paper the term juvenile offenders is used to indicate juveniles (ages 12-17 years) who committed an antisocial criminal offense and were adjudicated, whereas juvenile delinquents refers to juveniles who committed antisocial delinquent behaviors but were not adjudicated. The term JSOs refers to preteenagers and teenagers who were adjudicated of one or more sexual offenses. The index sexual offense is the sexual offense for which the JSO was adjudicated (although this offense may not be the only sexual or nonsexual offense the juvenile has committed). Sex-offense-specific therapy is the name commonly used for JSO therapy programs.

Effects of Normalization on Self-Esteem and Loneliness in Juvenile Sex Offenders

I examined the effect of exposure to normalizing data on the self-attitudes of juvenile sex offenders (JSOs). I hypothesized that self-esteem levels would rise whereas loneliness levels would drop in a sample of male JSOs (n = 17; age range = 14-20) after completion of a normalizing intervention. Participants’ self-esteem and loneliness was evaluated pre- and postintervention. Results showed a significant increase in self-esteem and a significant decrease in loneliness, suggesting that the use of normalizing interventions in sex-offense-specific treatment with JSOs may help facilitate group therapy and increase self-esteem while decreasing loneliness in an efficient manner.

Self-Esteem and Social Isolation in Juvenile Offenders

According to Rosenberg (1965), self-esteem is a favorable or unfavorable assessment of oneself. Low self-esteem (or an unfavorable appraisal of oneself) is related to externalizing behaviors like aggression, antisocial attitudes, and delinquent acts in teenagers (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005), as well as to poor peer and family relationships (e.g., Wells & Rankin, 1983). Many JSOs in treatment report problems of social isolation (or loneliness) from their peers (DiGiorgio-Miller, 1994). Indeed, Marshall et al. (2005) suggested that offenders’ self-perceived lack of skill and confidence in establishing social relationships may lead to offending behaviors in an attempt to achieve social goals (e.g., relatedness, support, intimacy).

Smith et al. (2005) found high-risk JSOs scored lower in self-esteem and higher in social isolation than lower-risk JSOs. The authors used scores on risk factors (e.g., more serious offenses, behavior problems) to assign the risk of reoffending levels (high, medium, and low) in a sample of 161 male JSOs. They then surveyed the participants on measures of aggression, self-esteem, and social avoidance and distress, finding that high-risk JSOs had lower self-esteem, higher social avoidance, higher social discomfort, and higher aggression than low- and medium-risk JSOs. Smith et al. noted “high-risk offenders appear to be less socially skillful, avoiding social situations and experiencing discomfort when the situation is not avoidable. Their reluctance to

Faculty mentor: Gail M. Ferguson
engage in social interactions is probably worsened by their lower self-esteem” (p. 99). When socially-isolated juveniles such as JSOs do not have a peer environment in which to exercise developmentally-appropriate sexual and aggressive instincts, they may form dominant relationships with younger children in which it is easier to offend.

Social Comparison
One of the ways people form their self-concept is through comparisons with others in the social group (Festinger, 1954); people determine their self-esteem through favorable or unfavorable evaluations of this self-concept. The proximity and perceived similarity of in-group members appear to make a person’s in-group (versus out-group) social comparisons more influential to his or her self-evaluation (Crocker & Major, 1989; Hillman, Wood, & Sawilowsky, 1998).

Members of a stigmatized (i.e., disadvantaged) group serve as a safer basis for social comparison because comparisons with more-advantaged out-group members may lead to threats to self-esteem (Crocker & Major, 1989). Therefore, members of stigmatized groups tend to compare themselves to their in-group. Marshall, Marshall, Serran, and O’Brien (2009) suggested that an offender’s self-evaluation can suffer considerably when out-group others (e.g., nondelinquent peers, family members, teachers, members of the legal system) learn of his or her deviant behavior. The offender’s self-esteem may suffer when out-group others behave negatively toward him or her. Delinquent juveniles may then attempt to protect their self-esteem by comparing themselves to the delinquent in-group (Crocker & Major; Marshall et al., 2009). Therefore, providing the opportunity for in-group social comparisons by making in-group norms more salient to JSOs may have the effect of increasing self-esteem and social connectedness.

Self-Esteem Interventions and Normalization
Various therapeutic programs have attempted to raise self-esteem in JSOs, with the hope that higher self-esteem would reduce or eliminate offending behaviors and lead to more beneficial social interactions. Eastman (2004) noted that interventions aimed at reducing cognitive distortions regarding the sexually abusive acts (e.g., denial, justification) appeared to be the best method to prevent re-offending. Other programs, both residential and nonresidential, use cognitive-behavioral techniques and group therapy or outdoor settings to increase self-esteem (e.g., Coping Course: Rohde, Jorgensen, Seeley, & Mace, 2004; wilderness programs: Romi & Kohan, 2004). However, these programs require substantial time and resources, and it would be beneficial to discover quicker, less costly ways to increase self-esteem levels in JSOs. Normalizing interventions may be effective in working with JSOs.

A normalizing intervention is a process by which peoples’ symptoms are recast in light of the group norms; essentially, people see data that demonstrate that others have the same symptoms or behaviors. The effects of normalization encourage people with debilitating problems or symptoms to realize they are not alone in their suffering and that others in their therapy group are experiencing similar or the same troubles; this realization can decrease feelings of isolation and increase self-esteem (Koller, Marmar, & Kanas, 1992). In a group setting for JSOs specifically, a normalizing intervention could boost self-esteem and social connectedness. Research has noted normalization in group therapy can promote healing through the sharing of symptoms and common experiences, development of social skills and support systems, and increase in affinity with others in the group. These occurrences work to raise the self-esteem and functioning levels of the group members as well as to decrease feelings of social isolation (Battegay, 1971; Koller et al.). I expected that through exposure to normalizing data JSOs would experience more feelings of normality and would feel more comfortable talking about their sexual offenses in therapy.

The Present Study
I sought to investigate the effects of a normalizing group intervention on JSOs’ self-esteem, feelings of social isolation, feelings of normality, and comfort with disclosure about their sexual offending histories in therapy. By recognizing through concrete data (i.e., group means) that other juveniles in their therapy group have committed sexual offenses beyond their index sexual offenses, JSOs can realize their actions are more normative than they thought, thus increasing self-esteem and decreasing feelings of loneliness. I investigated the impact of a normalizing intervention on self-esteem and loneliness levels as well as feelings of normality and comfort with disclosure in therapy in JSOs. I hypothesized that

1. JSOs’ self-esteem levels would show an immediate rise after exposure to a normalizing intervention, whereas loneliness levels would drop.
2. Levels of self-esteem and loneliness would be inversely related.
3. JSOs would show increased feelings of normality and increased comfort with disclosure in therapy after exposure to a normalizing intervention.
Method

Participants
The college IRB approved the study and protocol prior to asking JSOs to participate. Seventeen male JSOs from two Midwestern U.S. counties participated in the study; 28 were invited to participate (60.7% participation rate). Sixteen participants were Caucasian; one was African-American. In order to avoid raising concerns among participants about confidentiality, participants did not report their names, ages, or races on surveys. However, based on clinic records, the participants ranged from 14 to 20 years. Two of the 17 participants were above the age of 18; they participated in juvenile sex-offense-specific therapy and this study because they committed their sexual offenses and began therapy before 18.

Each participant had been adjudicated for committing one or more sexual offenses as a juvenile and had been referred to one of two outpatient counseling centers. I received parental permission for each participant under 18 to participate in a study on teenagers’ feelings about group therapy and to access the participants’ clinical histories. The two participants over 18 signed identical consent forms but did not require parental permission. I informed the participants that involvement in the study was voluntary and that they could drop out of the study with no penalties at any time.

I also informed the participants that their information was confidential and would not be shared with any outside agencies. To match pre- and postintervention surveys, 16 of the participants at the first treatment center drew unique identification numbers out of a hat; they kept their number in their personal therapy binders. I told these participants that their numbers and surveys would never be identified with their names in any way, verbally or written. Each participant knew his identification number, but nobody, myself and my assistant included, knew which participant had which number. For one participant, who was the only participant at the second treatment center, I assigned him his own identification number and informed him that no one besides he and myself would ever know his identification number. For this participant, and the 16 others, there are no written or computer records of their identifying information or their identification numbers. After completion of the study, I debriefed the participants.

Measures
Self-esteem. I employed the 10-item Rosenberg (1965) Self-Esteem Scale (SES), a well-established and widely-used measure to assess self-esteem. The reported internal consistency of the scale is .88 (Fleming & Courtney, 1984); I also found a Cronbach alpha of .88 in this study. Higher SES scores indicate higher self-esteem levels.

Loneliness. I used the 20-item University of California at Los Angeles (UCLA) Loneliness Scale (Version 3; Russell & Cutrona, 1988) to measure participants’ levels of loneliness (determined by the discrepancy between actual and ideal levels of social contact). The scale is a widely-used measure of loneliness; Russell and Cutrona (1988) found a Cronbach alpha of .92. I also found a Cronbach alpha of .92 in this study. The respondent indicates his or her levels of loneliness along a 4-point Likert scale (1 = Never, 4 = Always). Possible scores range from 20 to 80; higher scores indicate higher levels of loneliness.

Therapy questions. I included a page of researcher-designed questions (Appendix A) directly asking the participants about their feelings of normality (i.e., how similar they feel to their peers) and their comfort with disclosure in therapy (i.e., how comfortable they feel sharing details of their sexual offenses with others in their therapy group). These questions are unvalidated and uncoded. Higher scores indicate increased feelings of normality and comfort with disclosure. I found Cronbach alphas of .75 for questions addressing feelings of normality and .83 for questions addressing comfort with disclosure in therapy in this study.

Procedure
I assessed the self-esteem and social isolation levels of the participants at two time points; just before participants estimated their lifetime number of sexually abusive fantasies/acts (first contact point; baseline measures) and immediately after the normalizing intervention (second contact point). The amount of time between the first and second contact points ranged from 1 to 4 weeks due to participant absences. As stated before, one participant participated in the study individually, rather than in a group context, because he was the only participant at one of the treatment centers. Given the private and individual work of the procedure outlined subsequently, I do not believe this participant’s answers were affected by completing the study in an individual setting.

First contact point. Each participant chose a unique identification number out of a hat; only the participant knew his individual number and thus remained confidential. As stated earlier, I assigned the one participant who completed the survey alone at the second treatment center his own unique identification number. This number was known to me and the participant, but I assured the participant that his name would never be associated with his number or surveys in any manner.
Abusive sexual behaviors
were verbally defined as thoughts/fantasies about the
abusive act, thoughts/fantasies of the abusive act with
masturbation, and acting out the abusive act. I used
eight categories for abusive sexual behaviors first estab-
lished by Smith, Seavey, and White (2003): voyeurism,
exposing, frottage, bestiality, obscene phone calling,
sexual activity with a younger child, sexual activity with
a peer or older adult without their permission, and
necrophilia. One act (fantasizing once, masturbating
and fantasizing once, or acting out the sexually abusive
act once) counted as one instance toward the lifetime
estimates.

I operationalized the eight abusive acts for the
participants (e.g., “Sexual activity with a younger child
means making a child do sexual things with you”). I
gave the participants an article about sports to read
when they were finished estimating their lifetime
number of abusive thoughts/actions so that everyone
appeared to be doing work and no one saw when any-
one else was done calculating. After completing the
estimates chart, the participants individually placed their
charts in a stack of others wherever they wanted, to
ensure confidentiality.

Second contact point. One to four weeks later,
the second phase of the normalizing intervention
was completed. I read aloud the group total, group mean,
and group median of the estimated lifetime sexually
abusive thoughts/actions for each category and explained
to the participants (group norms; Appendix B). I then
separated the participants so that no one
could see anyone else’s paper and gave them pencils to
complete the postintervention survey (the same survey
assessing self-esteem, loneliness, feelings of normality,
and comfort with disclosure in therapy). I asked the
participants to put their individual number at the top of
the survey to later match their postintervention surveys
to their preintervention surveys. After completing the
survey the participants individually placed their surveys
in a stack of others wherever they wanted, to ensure
confidence.

Results
I conducted paired-samples t tests to determine the
effect of the normalizing intervention on the self-
esteeom levels, loneliness levels, feelings of normality,
and comfort with disclosure in therapy. I used an alpha
level of .05 for all statistical tests and Cohen’s d as a
measure of effect size (Cohen, 1988).

Self-Esteem
Self-esteem levels (calculated from sums of Rosenberg,
1965, SES scores), as predicted, increased significantly
from preintervention (M = 31.29, SD = .46) to postintervention
(M = 34.18, SD = 5.88), t(16) = -2.62, p = .02,
d = .54. Thus, the normalizing intervention appears to
have raised significantly the participants’ self-esteem
levels.

Loneliness
Loneliness levels (calculated from sums of UCLA
Loneliness Scale, Version 3, Russell & Cutrona, 1988,
scores), as predicted, decreased significantly from pre-
intervention (M = 40.82, SD = 7.36) to postintervention
(M = 36.30, SD = 9.82), t(16) = 2.85, p = .01, d = .52.
The normalizing intervention appears to have lowered
significantly loneliness levels in the participants.

Inverse Relation Between Self-Esteem and
Loneliness
I used a Pearson’s correlation analysis to determine
the relation between self-esteem scores and loneliness
scores. As predicted, I found a statistically significant
negative correlation, r(15) = -.70; p < .01.

Therapy Questions
Feelings of normality, as predicted, increased signifi-
cantly from preintervention (M = 12.82, SD = 3.23)
to postintervention (M = 14.76, SD = 2.68), t(16) =
-3.80, p < .01, d = .65. The normalizing intervention
appeared to increase feelings of normality in the JSO
participants.

Comfort with disclosure in therapy did not
increase significantly from preintervention (M = 11.29,
SD = 1.96) to postintervention (M = 12.53, SD = 3.54),
t(16) = -1.85, p = .08, d = .43. Thus, JSOs’ comfort
with disclosure in therapy increased slightly, albeit not
significantly, after exposure to normalizing data.
Discussion

The present study assessed the impact of a therapeutic normalizing intervention on the self-esteem levels, loneliness levels, feelings of normality, and comfort with disclosure in therapy for male JSOs. The hypotheses of the study were mainly supported. The use of a normalizing intervention that emphasized group norms in the context of group therapy with JSOs appeared to increase self-esteem levels, decrease loneliness levels, and increase feelings of normality. These findings showed medium effect sizes. The normalizing intervention also appeared, to some extent, to have increased comfort with disclosure in therapy. This finding showed a somewhat small effect size.

Noting that their peers have thought about, masturbated to, and committed other sexual offenses beyond their index sexual offense appeared to make JSOs feel better about themselves, less socially isolated, and more like their peers. Past research has indicated that low self-esteem in JSOs can influence them to reoffend or act out in sexually abusive manners (Eastman, 2004; Smith et al., 2005; Worling & Curwen, 2000) and is related to aggression and other delinquent acts (Donnellan et al., 2005). In addition, Smith et al. (2005) noted high-risk JSOs experienced higher levels of social discomfort and avoidance; the authors described the typical high-risk male JSO as “a shy, awkward adolescent boy” (p. 99). The authors add that “given [the JSO’s] social disabilities, he may find himself more comfortable with younger children whom he can dominate and with whom he can feel more comfortable” (p. 99). The current study suggested that normalizing interventions can be used in sex-offense-specific therapy to increase JSOs’ self-esteem levels and decrease loneliness levels.

This study also indicated that normalizing data appear to make JSOs feel more “normal.” Because the measure used did not specify a comparison group, it is unclear whether JSOs felt more “normal” in relation to delinquent therapy peers (in-group) or nondelinquent juvenile peers (out-group; e.g., school classmates). Crocker and Major (1989) suggested that socially low-status groups (e.g., JSOs) tended to make in-group comparisons rather than out-group comparisons in an attempt to preserve self-esteem. It is possible JSOs are inclined to compare themselves to similarly-disadvantaged in-group members rather than more-advantaged out-group members to protect feelings of self-worth; future research should differentiate more clearly between these two comparison groups.

It is important to note that I did not suggest during the research sessions or at any other point in my work with the participants that committing sexual offenses was normal or acceptable behavior. When conducting the normalizing intervention by explaining the lifetime estimates results to the participants, I noted that the fact that others in the therapy group had committed additional sexual offenses beyond the index offense did not mean it was “okay” for anyone to have committed offenses, but that the behavior was normative for the group.

Limitations of this study include a small sample size as well as an almost exclusively Caucasian male sample. JSOs in outpatient therapy can be a difficult population to study; many view any outside agency (e.g., attorneys, judges, probation officers, even researchers) as a threat to their well-being (Marshall et al., 2009). Although I told the participants before their participation that their answers were purely for research and would not be shared with any outside agencies, many did not want to participate. I believe those who participated did so because they knew me well from my previous work with them and trusted that I would not improperly use their information. Future research should also include larger, more diverse samples from different backgrounds, as well as female offenders and adult offenders, who indicate similar trends of low self-esteem and social isolation (e.g., Hubbard, 2007; Marshall et al., 2009; Morton & Leslie, 2005; Thornton, Beech, & Marshall, 2004).

Another limitation of this study is the absence of a control group. This study does not provide definitive evidence that the self-esteem and loneliness levels of JSOs would not improve similarly through the course of regular therapy sessions rather than participating in a normalizing intervention. However, progress in regular therapy can often evolve slowly, whereas the shock of the normalizing data appeared to have made a strong impact. Despite this observation, future research should utilize a control group to provide a comparison sample.

Future research should also correct the methodological inconsistency of this study; some participants completed the pre- and postintervention measures within a week, and others completed the measures with several weeks’ break. Though the presence of significant self-esteem and loneliness effects with longer pretreatment intervals demonstrates the strength of the findings, future research should use the same amount of time between the contact points. An ideal study would measure the participants’ self-esteem and loneliness levels several times postintervention to assess longer term effects of the normalizing intervention. Future researchers should also use additional measures (e.g., external vs. internal locus of control measures, self-concept scales) and individual participant reactions to gather even more information on the effects of normalizing interventions in therapy.

Given the time, resources, and financial constraints of the rehabilitation of JSOs, research addressing the
specific needs of JSOs is needed to develop ways to treat JSOs quickly and effectively to minimize the risk of reoffending. JSOs' feelings of low self-esteem and acute abnormality, as well as their unwillingness to talk about their sexual offenses, severely hinder the progress of therapy. Overcoming such obstacles could allow therapy to progress more quickly and effectively. Such research is necessary to facilitate treatment and ideally protect both potential future victims as well as improve the lives and futures of JSOs.

References


APPENDIX A

This appendix includes the self-designed therapy questions addressing feelings of normality and comfort with disclosure in therapy. These questions were included in the pre- and postintervention surveys.

QUESTIONS ADDRESSING FEELINGS OF NORMALITY
Please answer the questions below using the numbers on the scale below.

1) Not at all
2) A little
3) Somewhat
4) A lot
5) Completely

1) How “normal” do you feel compared to other people your age? _____
2) When you think about your sexual offense, how much do you believe that you are similar to others who have committed sexual offenses? _____

Please answer how much you agree with the following statements using the numbers on the scale below.

1) Strongly Disagree
2) Disagree
3) Agree
4) Strongly Agree

3) I believe that I am worse than others that have committed sexual offenses.* _____
4) I believe that I am sick and disgusting for committing my sexual offense.* _____

QUESTIONS ADDRESSING COMFORT WITH DISCLOSURE IN THERAPY
Please answer the question below using the numbers on the scale below.

1) Not at all
2) A little
3) Somewhat
4) A lot
5) Completely

5) How comfortable do you feel describing the details of your sexual offense? _____

Please answer how much you agree with the following statements using the numbers on the scale below.

1) Strongly Disagree
2) Disagree
3) Agree
4) Strongly Agree

6) If someone in my treatment program told me that they committed their sexual offense and that they committed some sexual offenses that no one knew about, it would make me feel more like talking about my own sexual offense. _____
7) If someone in my treatment program told me that they had a history of having sexually abusive thoughts/fantasies, this would make me feel more like talking about my own sexually abusive thoughts/fantasies. _____
8) If someone in my treatment program told me that they had masturbating to abusive sexual thoughts, this would make me feel more like talking about my own masturbation to sexually abusive thoughts/fantasies. _____

* Reverse-scored item.

Higher scores indicate increased feelings of normality and comfort with disclosure in therapy.
APPENDIX B

This appendix includes the group norms presented to the participants in the normalizing intervention; the group norms are the aggregated data of the participants’ estimated lifetime number of sexually abusive fantasies/actions.

One instance of a sexually abusive fantasy, a fantasy with masturbation, or an action counted as one mark in the chart under the corresponding category; thus, for example, out of the 18 participants who completed the lifetime estimates chart, there were 103 total instances of fantasizing about exposing.

<table>
<thead>
<tr>
<th>Sexually Abusive Category</th>
<th>Thoughts/Fantasies</th>
<th>Fantasies with Masturbation</th>
<th>Sexually Abusive Acts</th>
</tr>
</thead>
</table>
| **Voyeurism** – sexually spying on someone (watching them undress, seeing them naked, watching people have sex) | TOTAL: 98  
Mean: 5.4  
Median: 7 | TOTAL: 41  
Mean: 2.3  
Median: 1 | TOTAL: 30  
Mean: 1.7  
Median: 0 |
| **Exposing** – showing your penis, vagina, or butt to someone | TOTAL: 103  
Mean: 5.7  
Median: 1 | TOTAL: 26  
Mean: 1.4  
Median: 0 | TOTAL: 48  
Mean: 2.7  
Median: 1 |
| **Frottage** – touching or grabbing someone’s butt, breasts, vagina, or penis | TOTAL: 158  
Mean: 8.7  
Median: 7 | TOTAL: 76  
Mean: 4.2  
Median: 5 | TOTAL: 48  
Mean: 2.7  
Median: 5 |
| **Bestiality** – having sex with animals | TOTAL: 35  
Mean: 1.9  
Median: 0 | TOTAL: 30  
Mean: 1.7  
Median: 0 | TOTAL: 24  
Mean: 1.3  
Median: 0 |
| **Obscene Phone Calling** – calling someone on the phone and saying suggestive sexually inappropriate things to them – not a prank call | TOTAL: 29  
Mean: 1.6  
Median: 0.5 | TOTAL: 20  
Mean: 1.1  
Median: 0 | TOTAL: 18  
Mean: 1.0  
Median: 0 |
| **Sexual Activity with a Younger Child** – making a child to do sexual things with you | TOTAL: 133  
Mean: 7.4  
Median: 9 | TOTAL: 73  
Mean: 4.1  
Median: 5 | TOTAL: 48  
Mean: 2.7  
Median: 2 |
| **Sexual Activity with a Peer or Older Without Their Permission** – making someone your own age or older to do sexual things with you without their permission | TOTAL: 86  
Mean: 4.8  
Median: 4 | TOTAL: 87  
Mean: 4.8  
Median: 5 | TOTAL: 25  
Mean: 1.4  
Median: 0 |
| **Necrophilia** – having sex with dead bodies, either humans or animals | TOTAL: 30  
Mean: 1.7  
Median: 0 | TOTAL: 26  
Mean: 1.4  
Median: 0 | TOTAL: 0  
Mean: 0  
Median: 0 |
| **TOTALS** | 672  
Mean: 37.3 | 379  
Mean: 21.1 | 241  
Mean: 13.4 |

N = 18 (One participant completed his lifetime estimates of sexually abusive thoughts/actions but did not complete the study)
“Why me?” is a common response to personal misfortune. One cognitive strategy used to make sense of traumatic or victimizing experiences is to interpret one’s role in the experience, which may involve self-blame (Janoff-Bulman, 1992). Accordingly, many people experiencing misfortunes, including medical illness, accidents, and sexual victimization, express some degree of self-blame (Davis, Lehman, Silver, Wortman, & Ellard, 1996; Janoff-Bulman & Lang-Gunn, 1988). Although self-blame is a common cognitive coping strategy, self-blame does not facilitate emotional recovery. For example, numerous studies have documented the adverse effects (e.g., posttraumatic stress, depression) of self-blame on recovery after rape or sexual assault (Koss & Figueredo, 2004) or sexual abuse (Daigneault, Tourigny, & Hébert, 2006). In addition to interfering with emotional recovery, self-blame for sexual assault predicts risk for future sexual revictimization (Miller, Markman, & Handley, 2007). As such, researchers need to identify factors that promote women’s self-blame following sexual victimization to inform both treatment and prevention programs.

According to the extant literature, it appears that women’s self-blame following sexual victimization partly depends on their closeness to the perpetrator. In a campus-based study, Frazier and Scales (1997) found that acquaintance rape victims reported significantly greater self-blame than victims of stranger rape. Likewise, B. L. Katz (1991) examined women’s self-reports of closeness to the perpetrator in a continuum of pre-rape relationships: “stranger,” “acquaintance,” “close friend,” and “intimate others.” Closeness with the perpetrator preceding the sexual assault predicted self-blame and longer recovery time. Immediately following the rape, B. L. Katz found that victims of stranger rape blamed themselves the least, whereas victims of friend rape blamed themselves the most. Apart from B. L. Katz (1991), few other researchers (i.e., Culbertson, Vik, & Kooiman, 2001; Small & Kerns, 1993) have studied friend perpetrators. Taken together, the available literature suggests that studying perpetration by friends and romantic partners will be helpful for understanding women’s risk for self-blame following sexual victimization.

Levels of self-blame may vary not only by women’s closeness to their perpetrators but also by the type of sexual victimization experienced. Sexual victimization may be defined broadly in terms of sexual contact, sex-
ual coercion, attempted rape, and rape (Koss & Oros, 1982; Testa, VanZile-Tamsen, Livingston, & Koss, 2004). Sexual contact involves coerced or forced fondling, kissing, or sexual touch without penetration. Sexual coercion involves capitulating to unwanted sexual penetration due to overwhelming verbal pressure or because the perpetrator is in position of authority (e.g., a boss or teacher). Attempted rape involves a perpetrator’s use of physical force, threats of force, or intoxication to attempt sexual penetration, whereas rape involves the use of these same tactics to obtain sexual penetration. Across this spectrum of sexual victimization, almost 80% of adolescent and college-aged women report such experiences (Smith, White, & Holland, 2003). However, findings on the association between self-blame and the type of sexual victimization have been inconsistent. For example, Ullman, Townsend, Filipas, and Starzynski (2007) found support for the hypothesis that female victims may view more severe sexual assaults involving greater force as more serious than those involving psychological pressure; their results suggested that more forcible assaults were associated with less self-blame. In contrast, Nurius, Norris, Young, Graham, and Gaylord (2000) reported that college women who perceived a sexually aggressive acquaintance as more threatening and controlling also reported greater self-blame. These inconsistent results might be due to the fact that different perpetrators tend to use different sexually coercive tactics. Unmarried women who are intimate with perpetrators are more likely to experience psychological pressure (e.g., verbal bullying) than forceful coercive tactics (e.g., use of physical force; Abbey, BeShears, Clinton-Sherrrod, & McAuslan, 2004; Katz & Tirone, 2010; Nurius et al., 2000). Small and Kerns (1993) found that friends and partners of middle and high school students were equally likely to engage in unwanted sexual fondling, whereas partners were more likely than friends to force intercourse. These findings suggest that researchers need to identify the types of sexual victimization most commonly perpetrated in different types of close relationships that promote self-blame.

Janoff-Bulman (1979) proposed that self-blame can be conceptualized as behavioral and characterological. Behavioral self-blame involves attributing negative events to one’s controllable actions; for example, a rape victim might blame herself to some extent for her rape because she hitchhiked or drank too much. In contrast, characterological self-blame involves attributing negative events to one’s disposition or character; for example, a rape victim might blame herself for being a bad judge of character or “an easy target.” Janoff-Bulman (1979) predicted that behavioral self-blame would help victims because it could provide them with a sense of control over future risk for harm. Despite the conceptual distinction between behavioral and characterological self-blame, however, both forms of self-blame predict emotional distress and inhibit recovery among rape victims (e.g., Koss & Figueredo, 2004; O’Neill & Kerig, 2000). Although research has found that these theoretically distinct constructs function similarly in terms of predicting postrape recovery, we examined both forms of self-blame to see whether one or both might be affected by a broad range of sexual victimization experiences by a friend, a partner, or both, to advance knowledge of self-blame in these circumstances.

Specifically, we conducted two studies to examine differences in self-blame for sexual victimization perpetrated within the context of a close relationship as compared to more distant relationships or strangers. We defined a close relationship as involving either a friend or romantic/sexual partner rather than a first date, a coworker, a neighbor, or other known person in a more distant relationship. The term sexual victimization refers to any report of rape, attempted rape, sexual coercion, or unwanted sexual contact perpetrated against the respondent as defined by the Sexual Experiences Survey (Koss & Oros, 1982; Testa et al., 2004). The term close sexual victimization and distant sexual victimization refer to sexual victimization perpetrated within a close and distant relationship, respectively. Study 1 investigated associations among close sexual victimization experiences and self-blame from adolescence through college, as assessed at one point in time. In contrast, Study 2 prospectively examined close sexual victimization and self-blame among women in their first year of college, a transitional stage in which women are at elevated risk for sexual victimization (Fisher, Daigle, & Cullen, 2009).

**Study 1**

Adolescent and college-aged women show disproportionately high rates of sexual victimization (Smith et al., 2003), and, once victimized, many women report further repeated episodes of sexual victimization over time, or revictimization (Himelein, 1995). Humphrey and White (2000) found that victimization was more common among younger adolescent women as compared to college women, and almost 70% of women victimized as adolescents were later revictimized. Although many past studies have examined self-blame related to a single incident of sexual victimization (e.g., B. L. Katz, 1991; Ullman et al., 2007), our focus was on self-blame related to the cumulative number of events women reported as perpetrated by friends and partners during adolescence and into college.

Women’s sexual refusal assertiveness (SRA) may influence their actions during an unwanted sexual
encounter, as well as their psychological functioning after the event. SRA involves the extent to which an individual directly, verbally refuses to participate in unwanted sexual activity (Morokoff et al., 1997). Research suggests that greater assertiveness with men is a protective factor against women’s sexual victimization (Greene & Navarro, 1998; Livingston, Testa, & VanZile-Tamsen, 2007). Unfortunately, however, women may be particularly inhibited from behaving assertively with partners or friends (VanZile-Tamsen, Testa, & Livingston, 2005), especially if they feel sexually obligated, invested in the relationship, or both. When a partner or friend initiates a perpetration event, women may be less likely to directly resist for fear of damaging the relationship. In turn, low SRA may predict self-blame following the event.

Our first hypothesis was that women’s self-blame would be positively associated with the number of close sexual victimization experiences. In contrast, we expected that the number of experiences of distant sexual victimization would not predict women’s self-blame. Our second hypothesis was that women who reported more experiences of close sexual victimization would also report less SRA. Our third hypothesis was that decreased SRA could account for the expected association between close sexual victimization and increased self-blame. Finally, because we examined a range of sexual victimization experiences, we explored the associations between self-blame and different types of close sexual victimization varying in severity (unwanted contact, sexual coercion, attempted rape, and rape).

**Method**

**Participants.** Undergraduate women (N=139) from a small public college participated in the study. Participants identified themselves as White (82%), Asian (8%), African-American/Black (3%), Hispanic (6%), or other (1%). The mean age was 19.37 (SD=1.13). All college class ranks were represented, with 35% freshmen, 37% sophomores, 18% juniors, and 10% seniors. We recruited female participants through a voluntary psychology pool and collected data in campus classrooms. Participants received two extra credits (assigned to a specific course) for their involvement.

**Measures.** Participants completed demographic questions regarding their age, race, year in school, sexual orientation, current dating status (i.e., not dating anymore, dating more than one person, dating casually but exclusively, dating one person exclusively, living together, engaged, married), age of first sexual intercourse (defined as any penetration by a boy’s or man’s penis into the participant’s vagina, mouth, or anus, regardless of whether he ejaculated, with her consent), and number of sexual intercourse partners.

We assessed sexual victimization using the Sexual Experiences Survey (SES; Koss & Oros, 1982, updated by Testa et al., 2004), a self-report measure of 11 behaviorally-specific items assessing sexual contact, sexual coercion, attempted rape, and rape. A representative item is, “How many times have you ever been fondled, kissed, or touched sexually when you didn’t want to because a boy or man threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?” Evidence for reliability and validity is well-established in a sample of women aged 18 to 30 (Testa et al., 2004).

To assess sexual victimization during adolescence and into college rather than child sexual abuse, SES instructions specified that participants should consider experiences with a boy or man since the age of 15. For any item that participants experienced, participants identified their relationship to any perpetrator(s) at the time and how many times the event occurred with each perpetrator. We created several composite variables based on women’s relationships with the perpetrations. More specifically, close sexual victimization was the sum of all SES incidents perpetrated by partners and friends, whereas distant sexual victimization was the sum of all SES incidents perpetrated by other acquaintances (e.g., co-workers, bosses, casual dates, neighbors). We also created additional composite variables by summing the number of different types of sexual victimization across the four subscales with separate scores calculated for perpetration by friends and by partners. Because SES scores were positively skewed, we used a logarithmic transformation (log[score + 1]), to normalize the distributions, although we report untransformed means for ease of interpretation.

The 12-item Behavioral and Characterological Self-Blame Scale (BCSB; O’Neill & Kerg, 2000) has two six-item subscales. We revised scale instructions that asked participants “to rate their level of agreement with each of the following statements” to specify “when you have experienced unwanted sexual attention or contact from boys or men.” This instruction allowed us to compare self-blame levels across women with and without previous sexual victimization histories. Most young women, regardless of their victimization history, experience some form of unwanted sexual attention (e.g., unwelcome sexual comments, staring; Timmerman, 2005). Participants rated each item on a 6-point scale (1 = strongly disagree, 6 = strongly agree); items are summed within each dimension for scoring. In the present research, the estimates of internal consistency (Cronbach’s alpha) were .84 and .73 for behavioral and characterological self-blame, respectively.

We assessed SRA with a six-item subscale of the
Sexual Assertiveness Scale (SAS; Morokoff et al., 1997). A representative item is, “I refuse to have sex if I don’t want to, even if my partner insists.” Participants responded on a 5-point scale (1 = 0% of the time, 5 = 100% of the time). Responses are summed, with higher scores reflecting greater refusal assertiveness. The internal consistency estimate (Cronbach’s alpha) was .64.

**Procedure.** The study protocol was approved by the college’s Institutional Review Board. We recruited female participants for a study of “Women’s self-views and interactions with men.” One to two undergraduate female researchers met the participants for data collection sessions in campus classrooms. Participants sat at individual desks to ensure privacy while responding to questions. After providing informed consent, participants anonymously completed self-report paper-and-pencil measures in sessions lasting less than an hour. During the debriefing, participants received information about free, on-campus counseling services.

**Results**

**Sample characteristics.** More than half the sample, 64.2% \((n = 102)\), reported at least one experience of sexual victimization enacted by a boy or man since age 15. One or more experiences of unwanted sexual contact was most commonly reported (52%), followed by sexual coercion (26%), completed rape (15%), and attempted rape (12%). Similar proportions of the sample reported at least one act of perpetration by a partner (29%), friend (25%), or other acquaintance (21%). Only 4% reported stranger perpetration. When we compared cumulative SES experiences across close versus distant relationships, women reported significantly more episodes of sexual victimization in a close relationship involving a friend or partner \((M = 3.66, SD = 9.18)\) than episodes involving a more distant perpetrator \((M = .80, SD = 2.25)\), \(t(158) = 3.96, p < .001\), Cohen’s \(d = .43\). Univariate \(t\) and chi-square tests revealed that women who reported at least one episode of close sexual victimization (47.7%; \(n = 76\)) did not differ from women who did not report close sexual victimization (51.6%; \(n = 82\)) in age, race, year in school, sexual orientation, current dating status, age of first sex, or number of sexual partners, \(p > .05\). Likewise, women who reported at least one episode of distant sexual victimization (26.4%; \(n = 42\)) did not differ demographically from women who did not report any distant sexual victimization (73.6%; \(n = 117\)), \(p > .05\).

**Associations between close or distant victimization, self-blame, and SRA.** Table 1 shows the zero-order correlations calculated among the primary study variables: cumulative frequency of close and distant sexual victimization, both types of self-blame, and SRA. Our first and second hypotheses were supported. Cumulative close sexual victimization was significantly positively related to both types of self-blame and negatively related to SRA. In contrast, cumulative distant sexual victimization was unrelated to women’s self-blame.

**SRA as a mediator.** Next, we tested our third

| TABLE 1 |
| Zero-Order Correlations Among Cumulative Sexual Victimization Experiences by a Close Perpetrator, a Distant Perpetrator, Sexual Refusal Assertiveness, and Women’s Self-Blame for Unwanted Sexual Experiences \((N = 159)\) |

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
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<tbody>
<tr>
<td>1. Close sexual victimization a</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Distant sexual victimization a</td>
<td>.10</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>3. Sexual refusal assertiveness b</td>
<td>-.34**</td>
<td>-.09</td>
<td>--</td>
</tr>
<tr>
<td>4. Behavioral self-blame c</td>
<td>.30***</td>
<td>.15</td>
<td>-.20**</td>
</tr>
<tr>
<td>5. Characterological self-blame c</td>
<td>.28***</td>
<td>.16</td>
<td>-.29***</td>
</tr>
</tbody>
</table>

**Note.** **\(p < .01\), ***\(p < .001\).**

a Number of sexual victimization experiences since age 15.

b Possible scores range from 6 to 30.

c Possible scores range from 6 to 36.
hypothesis that SRA would mediate the relation between cumulative close victimization and self-blame. We calculated separate hierarchical multiple regression equations for each type of self-blame. In the first block predicting characterological self-blame, close sexual victimization was a significant predictor, $\beta = .27$, $p < .001$, overall model, $F(1, 155) = 11.85, p < .01$.

In a second block, SRA significantly added to the model, $\beta = -.22$, $p < .001$, and the beta weight associated with past close victimization was reduced, $\beta = .19$, $p < .05$, overall model, $F(2, 154) = 10.01, p < .001$. Sobel’s test revealed that the partial mediating path via SRA was significant (Preacher & Leonardelli, 2003). In predicting behavioral self-blame, close sexual victimization was a significant predictor, $\beta = .29$, $p < .001$, in block 1, overall model, $F(1, 155) = 13.81, p < .01$. In block 2, SRA did not add to the model ($\beta = -.11$, ns), and close sexual victimization remained significant, $\beta = .25$, $p < .05$, overall model, $F(2, 154) = 7.88, p < .05$. Although we had expected that women who reported more cumulative close victimization would blame themselves due to fewer direct sexual refusals, there was partial mediation for characterological self-blame only.

Exploratory associations among close perpetrator type, victimization experience, and self-blame. Next, we conducted exploratory analyses to describe associations among different forms of sexual victimization perpetrated by friends versus partners and women’s self-blame. In our sample, 25.3% reported at least one sexual victimization experience perpetrated by a friend. Within this subsample, 80% reported unwanted contact, 20% reported sexual coercion, 10% reported attempted rape, and 32% reported one or more completed rapes by a friend. Further, 29.7% of the sample reported at least one act of sexual victimization perpetrated by a partner. Within this subsample, 70% reported unwanted contact, 62% reported sexual coercion, 11% reported attempted rape, and 8% reported one or more completed rapes by a partner. These descriptive statistics show that sexual victimization was common in both types of close relationships.

We used zero-order correlations to explore the associations between friends’ and partners’ cumulative perpetration of different types of sexual victimization (unwanted contact, sexual coercion, attempted rape, or rape) and women’s self-blame. Significant associations appear in Table 2. Friend unwanted sexual contact was related to both behavioral and characterological self-blame. In contrast, although friend attempted rape was related to behavioral self-blame, friend attempted rape was unrelated to characterological self-blame. No other forms of sexual victimization perpetrated by friends were related to women’s self-blame. With regard to partners, significant relations occurred between characterological self-blame and partner unwanted contact, sexual coercion, and rape. Partner sexual coercion was also related to behavioral self-blame, but no other type of victimization perpetrated by partners was related to behavioral self-blame.

Discussion
As expected, past sexual victimization perpetrated by a friend or partner was positively associated with women’s self-blame for unwanted sexual experiences. This finding converges with past research that suggests that a woman is especially likely to blame herself for rape by someone with whom she shares a close relationship (B. L. Katz, 1991). Our study also extends this finding to suggest that women may blame themselves for a range of sexual victimization experiences within

<table>
<thead>
<tr>
<th>Characterological Self-Blame</th>
<th>Unwanted Contact</th>
<th>Sexual Coercion</th>
<th>Attempted Rape</th>
<th>Completed Rape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends</td>
<td>.21**</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Partners</td>
<td>.18**</td>
<td>.17**</td>
<td>–</td>
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<tr>
<td>Behavioral Self-Blame</td>
<td></td>
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<tr>
<td>Friends</td>
<td>.31**</td>
<td>–</td>
<td>.18**</td>
<td>–</td>
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<tr>
<td>Partners</td>
<td>–</td>
<td>.19*</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. Only statistically significant correlations are presented: * $p < .05$, ** $p < .01$. 

TABLE 2: Significant Zero-Order Correlations Between Different Types of Friend and Partner Perpetration and Women’s Self-Blame
Our mediational analysis showed that the effect of close kind of person who became involved or maintained a romantic or sexual relationship with a sexually insistent nonpenetration experiences, were related to behavioral self-blame. Perhaps women blame themselves for being the friend perpetration may attribute it, at least in part, to their own friendly behaviors falsely communicating sexual availability. Friends may be excused as having misread a woman’s behavior as indicating openness to sexual contact (but not penetration). In contrast, rape and sexual coercion by partners, as well as unwanted contact, were associated with characterological self-blame. Perhaps women blame themselves for being the kind of person who became involved or maintained a romantic or sexual relationship with a sexually insistent man. Future research may explore these possibilities.

Study 2
College women are at a high risk for sexual victimization, and this risk may be increased among women during the transition to college. For example, Humphrey and White (2000) found that the risk of college victimization is greatest during the first year and declines during the next four years on campus (see also Fisher et al., 2009; Gross, Winslett, Roberts, & Gohm, 2006). First-year women in college also may be vulnerable to shifts in their views about themselves and the world because of the developmental transition that is occurring. According to Janoff-Bulman (1992), “role transitions that occur as we move through our lives—entering kindergarten, high school, and college, getting a job, getting married, becoming a parent—typically involve life changes that could affect more general, abstract views of ourselves and our world” (p. 44). Accordingly, sexual victimization experiences during one such transition—the first year of college—have the potential to exert particularly strong effects on a woman’s sense of herself as in control of such experiences (behavioral self-blame) and as the type of person who is vulnerable to such treatment (characterological self-blame).

Self-blame reactions in general vary across developmental stages (Bybee, Merisca, & Velasco, 1998). Although self-blame has been established as a reaction to trauma in adulthood, developmental research by Bybee et al. (1998) found self-blame, particularly remorse and regret, was a common reaction among adolescents to guilt-producing events (not necessarily involving sexual victimization). Feelings of remorse and regret become more prevalent with age, nearly doubling from 5th (27.2%) to 11th grade (49.7%). Sexual victimization perpetrated by a friend or partner may constitute a specific type of guilt-producing event, which would indicate that young women starting college may be at risk for self-blame after experiencing close victimization.

Study 1 provided evidence that sexual victimization perpetrated by friends or partners is common and that such experiences are positively associated with women’s self-blame. However, an alternative explanation for those findings is that women who have dispositional self-blaming tendencies are also more likely to be targeted by sexually predatory men for friendships and romance. Therefore, to establish temporal precedence between these constructs, longitudinal research is needed to examine the relation of self-blame scores with close sexual victimization over time. In Study 2, we hypothesized that self-blame scores would increase during the first year of college as a function of subsequent close sexual victimization.

Method
Participants. At baseline, 41 female students (none involved in Study 1) were recruited during their first year at a state university. Most were 18 years old (with one 19 year old) and were recruited through a voluntary subject pool or through class announcements. The sample was predominantly White (83%), although women also identified as Asian (7%), African-American/Black (7%), or other (2%). Most (95%; n = 39) completed both baseline and follow-up assessments. For compensation, participants earned two course credits (i.e., extra credit for an assigned course) at baseline and $10 at follow-up.

Measures. As in Study 1, the BCSB (O’Neill & Kerig, 2000) and SES (Koss & Oros, 1982; Testa et al., 2004) were administered at both baseline and follow-up. However, SES items at follow-up pertained only to experiences that occurred since baseline in order to index first-year college victimization.
**Procedure.** We recruited female participants for a study of “Women’s self-views and interactions with men: A two part study.” Prior to participating, all participants provided written informed consent and verbally agreed to participate in baseline (in October) and follow-up sessions (in April). We requested names and contact information to schedule follow-up sessions. Data were anonymous given that participants were assigned an identification number known only to them to match baseline and follow-up responses. Participants responded to measures via computer in individual lab rooms. All received telephone calls to schedule the follow-up and e-mail reminders prior to their appointment. Debriefings were held after the follow-up. The Institutional Review Board approved all study procedures.

**Results and Discussion**
Of the 39 women who participated in both assessments, 23% \((n = 9)\) reported that they had experienced at least one episode of close sexual victimization between baseline and follow-up. Within this subgroup, the average number of experiences perpetrated within a close relationship from October to April during the first year of college was 4.89 \((SD = 3.86, \text{range } 1-11)\). Only 7% \((n = 3)\) reported victimization outside of a close relationship.

We expected that women who experienced close sexual victimization would also report increased self-blame for unwanted sexual attention or contact over time, in contrast to other women. To test this prediction, behavioral and characterological self-blame were the two dependent variables in a 2 \((\text{time; baseline or follow-up}) \times 2 \text{ (sexual victimization by a close perpetrator; present or absent)}\) mixed MANOVA. Results showed a main effect of close sexual victimization, \(F(2, 36) = 7.88, p < .001, \text{Pillai's Trace} = 0.30, \) but not time, \(F(2, 36) < 1, \text{ns} ,\) such that participants with close sexual victimization reported greater self-blame than participants without close sexual victimization. As expected, there was a significant time \(x\) close sexual victimization interaction (see Figure 1), \(F(2, 36) = 4.93, p < .02, \text{Pillai's Trace} = 0.22.\) Table 3 lists the results of post hoc comparisons with a Bonferroni correction. Simple effects analyses conducted at baseline revealed no between-group differences in behavioral self-blame, \(t(37) = 1.46, \text{ns} ,\) or characterological self-blame, \(t(37) = 0.47, \text{ns} .\) In contrast, at follow-up, there were significant between-group differences such that women who reported close sexual victimization reported greater behavioral self-blame, \(t(37) = 4.34, p < .001, \) Cohen’s \(d = 1.81,\) and greater characterological self-blame, \(t(37) = 3.27, p < .01, \) Cohen’s \(d = 1.34,\) than women who did not experience close sexual victimization. As in past research, we found that the transition to college was a high-risk time for victimization \(\text{(e.g., Gross et al., 2006)}\). Study 2 results also suggested that close sexual victimization predicted subsequent self-blame, but self-blame at baseline did not predict subsequent close sexual victimization. In other words, women’s levels of self-blame at baseline were not elevated within the close sexual victimization group; in contrast, self-blame scores were elevated after women experienced close sexual victimization.

**General Discussion**
Our research showed that victimization in a close relationship by a friend or partner predicted women’s greater self-blame. In Study 1, women’s cumulative experiences of close victimization since the age of 15 predicted greater self-blame. In Study 2, 23% of the sample reported at least one episode of close sexual victimization over the first year of college. After their close victimization experiences, these women perceived themselves as both having acted in ways that contributed to unwanted sexual attention and contact (behavioral self-blame) and as being dispositionally vulnerable to such experiences (characterological self-blame). Our findings extend those of B. L. Katz \(\text{(1991)}\), who suggested that rape by friends and partners was especially harmful to women in terms of self-blame; our results further suggest that a range of sexual victimization in close relationships, not just rape, may elicit self-blaming responses. Particularly in light of the prevalence of perpetration by friends and partners, it is necessary to move beyond the broad categorization of perpetrators as either strangers or acquaintances. The distant versus

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**FIGURE 1**

Changes in behavioral and characterological self-blame over the first year of college as a function of time and close sexual victimization.

Note. BSB = behavioral self-blame; CSB = characterological self-blame.
close perpetrator distinction appears to be critical to advance understanding of women’s responses to sexual victimization.

A focus on these close relationship contexts may account for discrepancies in the past literature regarding tactics used by perpetrators and women’s self-blame (e.g., Nurius et al., 2000; Ullman et al., 2007). These inconsistencies are likely due, in part, to the tendency for different perpetrators to use different tactics (e.g., Abbey et al., 2004). Similarly, descriptive statistics reported in Study 1 indicated that rape was infrequently perpetrated by partners and sexual coercion was infrequently perpetrated by friends. We also found that different types of victimization by friends versus partners were associated with women’s greater self-blame. Specifically, in Study 1, friend unwanted contact was related to both behavioral and characterological self-blame, and attempted rape was related to women’s behavioral self-blame. In contrast, partner unwanted contact and rape were related to women’s characterological self-blame, and partner sexual coercion was related to behavioral and characterological self-blame. These results suggest that both the perpetrator relationship and the type of victimization may affect how women interpret victimization experiences.

Specific relational factors may lead women to blame themselves for victimization, especially when perpetrated within a close relationship context. It is likely that women are often less direct in sexually refusing a friend or partner compared to another acquaintance, due to concerns about the relationship (e.g., VanZile-Tamsen et al., 2005), which may increase self-blame. Study 1 provided some support for this idea in that SRA partially mediated the effect of close sexual victimization on characterological self-blame. However, because this finding was a partial effect and because SRA did not mediate the effect of close sexual victimization on behavioral self-blame, other explanations must be considered. Another possibility is that women victimized by a friend or partner blame themselves for having chosen a close relationship with that person. Self-blame could be especially high if a woman is strongly invested in the relationship, if she maintains the relationship after the victimization experience, or both. Some women may maintain or even deepen a relationship with a friend or partner after sexual victimization in order to justify or excuse his behavior (Parrot, 1999). Another explanation of the relationship between close victimization and self-blame involves women’s sense of sexual obligation. In the context of past consensual sexual activity, a woman’s refusals may be seen as less legitimate (Shotland & Goodstein, 1992), and she may therefore blame herself more for a partner’s or friend’s use of sexual pressure or force.

To extend these preliminary findings, future research should examine the effects of perpetration within different types of close relationships, including spouses, relatives, and nonsexual close friendships. Research on situational factors within different types of close relationships that affect how women respond to unwanted sexual advances also is needed. Presumably, women care about both friends and partners who may perpetrate against them, and concerns for the relationship and self-consciousness may increase self-blame (Nurius et al., 2000). Other aspects of these relationships, including level of commitment, conflict, and sexual obligation, also may influence women’s appraisals of and responses to perpetration by partners.

| TABLE 3 |
| Changes in Women’s Self-Blame for Unwanted Sexual Experiences as a Function of the Presence of Close Sexual Victimization Over the First Year of College (N = 39) |

<table>
<thead>
<tr>
<th></th>
<th>First-Year Close Victimization</th>
<th>F(1, 37)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absent (n = 30)</td>
<td>Present (n = 9)</td>
</tr>
<tr>
<td>Behavioral Self-Blame</td>
<td>13.43***</td>
<td>2.43</td>
</tr>
<tr>
<td>Time 1</td>
<td>14.57a</td>
<td>17.78a</td>
</tr>
<tr>
<td>Time 2</td>
<td>13.53a</td>
<td>23.00b</td>
</tr>
<tr>
<td>Characterological Self-Blame</td>
<td>5.04*</td>
<td>2.16</td>
</tr>
<tr>
<td>Time 1</td>
<td>13.56a</td>
<td>14.33a</td>
</tr>
<tr>
<td>Time 2</td>
<td>12.23a</td>
<td>18.22b</td>
</tr>
</tbody>
</table>

Note: Means with different superscripts differ significantly; * p < .05, ** p < .01, *** p < .001.
versus friends. Finally, because self-blame interferes with women’s recovery from rape (Koss & Figueredo, 2004; O’Neill & Kerg, 2000), studies that examine emotional recovery from close sexual victimization specifically are warranted. A related area of research is to consider secondary victimization related to perpetration by friends or partners. How others respond to disclosures of close sexual victimization likely impacts recovery.

The current findings, along with past research, may inform sexual victimization prevention programs for college women. A focus on risk in close relationships in prevention efforts seems necessary given the high rates of close sexual victimization reported in these two studies. Past research shows that women who reported that they were less confident about whether a perpetrator’s behavior actually reflected threat also tended to blame themselves for his behavior (Nurius et al., 2000), suggesting the importance of self-assurance in responding to perpetration. In addition, immediate, initial responses of self-blame in response to perpetration significantly predicted psychological barriers and emotional responses that deflected assertive behavior. Similarly, Study 1 indicated that low SRA may partially explain the relationship between close perpetration and characterological self-blame. This finding is consistent with past research indicating that women perceive less threat, and are less likely to behaviorally resist unwanted sexual advances, in the context of a close relationship (VanZile-Tamsen et al., 2005).

Furthermore, prevention programs focused on close sexual victimization for first-year college women are needed. Results from Study 2 suggest that first-year college women are at high risk for close sexual victimization and often respond with elevated self-blame. It is troubling to note that other research has demonstrated that college women’s self-blaming responses to victimization predict future revictimization (Miller et al., 2007). More generally, young women who blame themselves for perpetration by a friend or partner early in their college careers also may develop a pattern of excusing men for other types of unacceptable behavior (e.g., physical or emotional abuse) that may interfere with the development of healthy close relationships later in life.

Taken together, research suggests that prevention programs should proactively address sexual assertiveness and self-blame for women, including a focus on initial cognitive and behavioral responses to unwanted advances (e.g., worry about threatening relationship, embarrassment) by friends and intimate partners. Preparing women for such experiences while acknowledging their concerns for the relationship may increase their ability to perceive risk, directly assert themselves, and reduce self-blame in response to perpetration. Educational programs should specifically address sources of self-blame and expose common victim-blaming tendencies such as presuming consent unless the woman expresses “enough” resistance (McGregor, 2005). Even if direct sexual refusals ultimately fail to prevent women’s victimization, educated women should be less likely to blame themselves for the perpetrator’s actions.

Our results must be viewed in light of the limited sample size in Study 2 and the homogeneity of both samples. Further, the results on past sexual victimization relied wholly on self-report, which may be subject to a variety of cognitive biases related to initial interpretation of the event and memory. Of note, not all women may experience perpetration by friends or partners as victimizing or traumatic, especially when perpetration involves less severe forms. Nevertheless, this research suggests that distinguishing close sexual victimization from distant sexual victimization has important applied and research implications. Attention to close sexual victimization is critical to understand and prevent women’s harmful self-blaming reactions to victimization. Women are not to blame for being sexually victimized, regardless of their relationship to the perpetrator.

References


Researchers have extensively studied the influence of food on mood. Often, people seek out comfort foods when experiencing a low mood (Christensen & Brooks, 2006; Christensen & Pettijohn, 2001; Dubé, LeBel, & Lu, 2005). These comfort foods usually have high carbohydrate and fat content and frequently have a sweet flavor. Notably, chocolate features many of the characteristics associated with comfort foods: a sweet flavor and the macronutrients carbohydrates and fat. Chocolate seems to be a particularly popular food for which many people reach when feeling low. However, some people prefer savory foods (i.e., foods prepared with little or no sugar, thus having no sweet or sugary flavor) when seeking to alleviate a negative mood. Whether sweet or savory, comfort foods tend to contain high levels of carbohydrates, fat, or both nutrients, and people feel soothed and consoled by eating them.

Examining the effect of sweet flavor on mood enhancement, Kampov-Polevoy, Alterman, Khalitov, and Garbutt (2006) investigated the relation between a preference for sweet flavor (sweet liking), cravings for sweet foods, and diminished constraint over eating sweet foods in a sample of healthy college-aged men and women. The researchers developed a questionnaire designed to determine the level of participants’ inhibition regarding eating sweets and their susceptibility to the mood-influencing effects of sweets. At random intervals, the participants tasted five different concentrations of sucrose solution and rated them based on intensity of the sweet flavor and how much they liked the flavor. The researchers found a direct relation between sweet liking and a susceptibility to the mood-influencing effects of sweets. Further, the researchers found that women were more likely than men to eat sweets as well as experience mood-modifying effects of eating sweets.

Sweet flavor also seems to have a calming effect that is present at birth. Barr et al. (1999) conducted an experiment investigating the effect of sweet flavor on crying healthy newborns between 12 and 96 hr old. They compared solutions of sucrose, aspartame, polycose (a readily digestible carbohydrate), and water. The researchers randomized participants into a between-groups design for the solutions, using water as a control. The researchers dropped the solutions on the tongues of the crying infants and recorded their calming response. The infants responded almost identically to the sucrose solution and the aspartame solution by calming faster and staying calm longer compared to the water control. The polycose solution affected crying no differently than water. This finding could indicate that a sweet flavor has more of a calming effect than carbohydrates and that this effect is present at birth.

Similar to the effects of a sweet flavor, carbohydrates also seem to affect mood. Christensen and Pettijohn (2001) hypothesized a relation between mood and carbohydrate cravings in the general population. They surveyed college-aged men and women. Self-identified protein cravers and carbohydrate cravers completed a craving questionnaire and three mood surveys. Carbohydrate cravers showed a significant correlation between craving strength and negative constraint of eating sweets. Further, the researchers found that women were more likely than men to eat sweets as well as experience mood-modifying effects of eating sweets.

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Chocolate and Cheese: Their Effects on Mood

Researchers have related several food factors to an effect on mood, most notably sweet flavor, carbohydrates, fat, and the chemical compounds in chocolate. The purpose of this study was to parse these different characteristics in select foods to determine which has the pivotal effect on mood. Participants (N = 105) consumed chocolate (white, milk, or dark) or cheese and completed a preconsumption and postconsumption Positive and Negative Affect Schedule mood test. Participants showed a general decline in positive affect. Women who ate dark chocolate had a significant rise in negative affect. Women who ate cheese experienced a decrease in negative affect.
mood on nearly all of the surveys. That correlation appeared primarily in people craving sweet-flavored, carbohydrate-rich foods.

The relation between food and mood is reciprocal; as well as food choices affecting mood, mood can influence food choice and preference. Christensen and Brooks (2006) studied the influence of mood on food choice in 98 college-aged men and women. Participants read vignettes with either a sad or happy theme and projected themselves into the scenario described. The participants reported whether they thought they might want to eat, and if so, what they would want to eat. The authors hypothesized that participants experiencing a sad event would be more inclined to eat carbohydrate- and fat-rich foods and that women would be more inclined than men to eat those foods. Contrary to the first hypothesis, both men and women indicated they would be more inclined to eat after a happy event rather than a sad event, with men showing a greater effect. Further, the type of food men and women thought they would eat varied based on the type of event. Vegetarian and snack foods emerged as the most popular foods after a happy event for all participants, with men presuming they would be more inclined than women to eat after such an event. Consistent with the second part of the hypothesis, women thought they would be more inclined to eat sweet carbohydrate- and fat-rich foods after a sad event.

Dubé et al. (2005) conducted further research supporting the influence of mood on food choice. They administered an Internet survey that assessed the emotional triggers of eating comfort foods and whether the food eaten could be related to positive or negative affect. Male respondents reported a tendency to seek comfort food to enhance a positive mood, whereas women reported seeking comfort food to ameliorate a negative mood. Further, although the consumption of comfort foods relieved negative moods in women, in some it also rendered guilt. The researchers also found that although low-calorie foods helped boost positive mood, foods high in sugar and fat were most effective at relieving a negative mood.

In a review of the literature, Benton (2002) pointed out that many of the foods sought during a dysphoric emotional state are foods that are sweet tasting and high in both carbohydrates and fat. Benton’s assertion raises the question of whether it is the carbohydrate or fat content or a combination of the two that increases mood. Foods high in carbohydrates and fats tend to be highly palatable. Drewnowski (1997) suggested palatability triggers an increase in mood after consumption, because eating palatable foods stimulates the release of endorphins, which would result in a sense of well-being.

It is a common view that carbohydrates alone can enhance a person’s mood. Fernstrom and Wurtman (1971) found that ingesting carbohydrates can trigger the release of serotonin in the brain, thus increasing positive mood. However, Yokogoshi and Wurtman (1986) found that small levels of protein (as low as 5-10%) inhibited release of serotonin, therefore disrupting the mood enhancement. Noting milk chocolate is high in sugar and fat and quite low in protein (3-6%), Gibson (2006) postulated that if eaten on an empty stomach, chocolate could trigger the release of serotonin, thus stimulating elevation or enhancement of positive mood.

Chocolate is an extremely popular and highly palatable food for many people. Macht and Dettmer (2006) examined the effects of eating chocolate, fruit, or nothing on the moods of 37 healthy women. The experiment extended across six days with the women participating in two food conditions each day. The women abstained from eating for 1 hr prior to opening an envelope containing instructions to eat a chocolate bar, an apple, or nothing. The women then completed mood surveys at 5, 30, 60, and 90 min after following the instructions. Both foods decreased hunger and raised mood, with chocolate affecting the women most. In addition, among some women, positive response to the chocolate was followed by guilt.

Chocolate seems to have an effect on men, too. Macht and colleagues (2002) studied the influences of different emotions on eating chocolate among healthy men. Independent variables were emotion (fear, anger, sadness, or joy induced by presentation of selected film clips) and food deprivation (2 or 8 hr). The participants (a) completed a survey regarding current emotional state and motivation to eat; (b) watched a film clip; (c) ate either a piece of white or milk chocolate, determined by personal preference; and then (d) completed another survey about current emotional state, motivation to eat, and response to the chocolate. Macht and colleagues found that participants’ motivation to eat was increased by joy, the enjoyment of the chocolate, and by the 8 hr deprivation. Conversely, sadness and anger decreased participants’ motivation to eat.

Interestingly, chocolate does not enhance mood for everyone. Macdiarmid and Hetherington (1995) conducted a study of chocolate’s effect on mood in self-identified “chocolate addicts.” The participants were 40 women: 20 controls and 20 chocolate addicts. Participants kept a diary for seven days in which they recorded their hunger levels, mood, chocolate cravings, and quantity of chocolate eaten. Chocolate addicts recounted eating more chocolate than controls. The addicts also reported that eating the chocolate...
produced feelings of guilt but did not enhance their moods. Like any addictive substance, chocolate may alleviate withdrawal and forestall a negative state but over time it may potentially lose its power to produce a pleasant effect in addicts.

Chemical components of chocolate may explain its influence on mood. Smit, Gaffan, and Rogers (2004) conducted two studies on the psychopharmacologically active components of chocolate. In the first study, participants consumed capsules containing identical amounts of cocoa powder, a theobromine/caffeine composition (referred to as methylxanthines), or a placebo. The researchers then measured participants’ mood and their performance on tasks. The effects of the cocoa powder and the methylxanthines were the same, with participants showing a significant positive improvement on both mood and performance on a simple reaction time task. In the second study, participants consumed water (as a control), white chocolate (containing no methylxanthines), milk chocolate (containing low methylxanthines), or dark chocolate (containing high methylxanthines) and completed similar tasks and mood questionnaires. White chocolate and water produced no differences in mood or performance. Milk chocolate and dark chocolate produced results comparable to one another and similar to the first study. The results of these two experiments demonstrated that the sugar and fat in prepared chocolate did not appear to hinder or enhance the effects of methylxanthines, nor was there a discernable difference between milk and dark chocolate that could be attributed to differing levels of methylxanthines.

Parker, Parker, and Brotchie (2006) reviewed the literature and argued that chocolate is not unique in producing a mood-altering effect. Rather, they asserted, when an individual experiences a dysphoric mood, any carbohydrate would serve as a comfort food to raise mood. Further, Hetherington and Macdiarmid (1993) found that individuals experience an improvement in mood only while actually eating chocolate, with a dysphoric mood returning immediately after consumption. This finding implies that the mood change is due to the experience of eating chocolate, probably the sweet flavor and texture, not the methylxanthines.

Thus, it appears that sweet flavor, carbohydrates, and methylxanthines in chocolate can enhance mood. Further, people often use foods that are rich in a combination of carbohydrates and fat to alleviate negative moods. It is important to note that carbohydrates, fat, sweet flavor, and even methylxanthines co-occur in popular foods. Ice cream is a sweet, carbohydrate- and fat-dense food that is frequently chocolate flavored. The same is true of cookies and cakes. Which of these elements makes the difference when people reach for a snack to lift mood? Is it the sweet flavor, the carbohydrates, the carbohydrates combined with fat, the fat alone, or is it the methylxanthines in chocolate that enhances mood?

The purpose of this study was to parse these different characteristics to determine which has the pivotal effect on mood. Chocolate is a food that embodies all the characteristics that seem to influence mood in a positive manner. It has a sweet, pleasant flavor and is highly palatable. In addition, it contains high levels of sugar and fat. Chocolate also contains methylxanthines, which research has shown to increase mood. Interestingly, no one has examined the macronutrient fat in isolation as far as it pertains to contributing to an increase in mood after consumption. Therefore, by using white chocolate, milk chocolate, dark chocolate, and cheese, we examined the comparative effects of sweet flavor, methylxanthine content, carbohydrate content, and fat content on mood. Table 1 shows a breakdown of the constituents of each food. We compared these factors to determine which has the strongest effect on mood and if any of the factors interacted to influence mood. We hypothesized that sweet and fat would both enhance a positive mood and that milk chocolate would be the food with the greatest impact on overall mood because of its sweet flavor, high carbohydrate and fat content, and methylxanthine content.

Method

Participants
We recruited 52 men and 53 women from a small Midwestern university with a population that is 82% Caucasian. We recruited participants from introductory psychology classes and compensated them with course credit. We also recruited participants from other classes as well as from public meeting areas such as the student union. Those participants received no compensation. We excluded data from four participants because they did not complete the experiment.

Materials
The foods we used were Lindt Swiss Classic White Chocolate, Lindt Swiss Classic Milk Chocolate, Lindt Excellence 85% Cocoa Dark Chocolate, and Land O Lakes Snack’N Cheese To-Go! Co-Jack cheese. We based our portion size on the suggested serving size specified on the food packaging: for chocolate, 40 gm; and for cheese, two prepackaged portions totaling 42 gm. To disguise the purpose of the experiment, we designed two decoy questionnaires comprised of Likert-type statements on flavor and food preferences: a pretaste questionnaire containing 23 items addressing flavor preferences (e.g., “I prefer the flavor of milk chocolate”) and a posttaste questionnaire containing 25 items.
addressing immediate reaction to the food (e.g., “I found the flavor to be sweet”). The essential measure was the PANAS mood scale (Watson, Clark, & Tellegen, 1988), which participants completed in concert with the decoy surveys. The PANAS test measures positive affect (PA) and negative affect (NA). Alpha reliability for “in the present moment” PA and NA are .89 and .85, respectively with a -.15 PA-NA intercorrelation. Test-retest reliabilities for in the moment PA and NA are .54 and .45, respectively. Scale validity for in the moment PA and NA are .95 and .91, respectively. Item validity ranges from .52-.75 (Watson et al., 1988).

Procedure
We tested participants in groups of 30 or fewer. We initially presented participants with the pretaste questionnaire and then the PANAS test. The participants completed the PANAS after the pretaste questionnaire in order to prevent students from thinking about mood in connection with chocolate. Upon completing the survey, participants ate a randomly assigned food: white chocolate, milk chocolate, dark chocolate, or cheese. We provided participants with a cup of water to drink while eating. After eating, the participants immediately completed the posttaste questionnaire and the PANAS test again. We debriefed and thanked participants via e-mail.

Results
Using the PANAS mood test, we measured participants’ levels of positive and negative affect. We administered the PANAS prior to eating an assigned food as a pretest and after eating the assigned food as a posttest. The mean PANAS scores and standard deviations appear in Table 2.

A 2 (sex) x 4 (food) x 2 (time) mixed group ANOVA was performed on both positive and negative affect scores. For PA, there was a main effect for time, $F(1, 92) = 12.00, p = .001$, such that participants showed a general decline in PA from pretest to posttest (Figure 1). There was no main effect for food or sex. There were no interactions between time and sex; sex and food; food and time; or among time, sex, and food.

For NA, we performed a 2 (sex) x 4 (food) x 2 (time) mixed group ANOVA and found an interaction among time, food, and sex, $F(3, 91) = 4.27, p = 0.007$. Paired $t$ tests ($p < .017$), by sex and food categories across time, revealed that women who ate dark chocolate experienced a significant increase in negative affect and women who ate cheese experienced a decrease in negative affect. Figure 2 illustrates the results for the 3-way interaction.

Discussion
By using white chocolate, milk chocolate, dark chocolate, and cheese, we examined the comparative effects of sweet flavor, methylxanthine content, carbohydrate content, and fat content on mood. We hypothesized that both sweet flavor (white and milk chocolate) and isolated fat (cheese) would enhance a positive mood and that milk chocolate would be the food with the greatest impact on mood because of its combination of sweet flavor, high carbohydrate and fat content, and methylxanthine content. Contrary to our expectations and hypotheses, no participants experienced an increase in positive affect. Rather, participants experienced a general decline in positive affect for all foods.

This finding, that positive mood decreased, contradicts the extant literature. The most salient explanation may be the surprising dislike the participants demonstrated for the dark chocolate. Figure 1 shows a marked decrease in positive affect for participants who ate dark chocolate. Several participants complained about the flavor of the dark chocolate, and four participants exited the experiment citing the dark chocolate flavor

<table>
<thead>
<tr>
<th>TABLE 1</th>
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<tbody>
<tr>
<td><strong>Food Nutrients and Characteristics</strong></td>
</tr>
<tr>
<td><strong>Nutrient (in grams)</strong></td>
</tr>
<tr>
<td><strong>Food</strong></td>
</tr>
<tr>
<td>White chocolate</td>
</tr>
<tr>
<td>Milk chocolate</td>
</tr>
<tr>
<td>Dark chocolate</td>
</tr>
<tr>
<td>Cheese</td>
</tr>
</tbody>
</table>
as the reason. It is possible that the students did not like the dark chocolate because the chocolate we served was high quality, European chocolate with 85% cocoa. Although there is not an American standard for dark chocolate, sweet chocolate and bittersweet chocolate (which are often considered dark chocolate) must have at least 15% and 35% chocolate liquor, respectively (FDA Food for Human Consumption, 2010). Similarly, Europe legislates that dark chocolate have at least 35% chocolate liquor (European Parliament, 2000). Dark chocolate that is advertised as “Extra Dark” by Hersheys has 60% liquor (“Types of Chocolate,” n.d.). Comparatively, milk chocolate requires only 10% chocolate liquor (“Types of Chocolate,” n.d.). Thus, 85% chocolate is a markedly higher concentration of chocolate than most American chocolate and what many Americans are used to. In addition, the higher the cocoa content, the more bitter and less sweet chocolate is. The dark chocolate may have been so disappointing relative to student expectations of chocolate that the disappointment, more than the taste, influenced mood negatively.

Unexpectedly, we found women who ate dark chocolate experienced a significant increase in negative affect. This finding is inconsistent with the findings on the effects of methylxanthines by Smit et al. (2004). Perhaps the surprise of the unpleasant, bitter flavor had a greater impact on mood than the methylxanthines in the dark chocolate. It is unclear why dark chocolate had a stronger negative impact on women than men. However, Zellner, Garriga-Trillo, Rohm, Centeno, and Parker (1999) found that American women reported twice the chocolate cravings as men. Perhaps because women have a stronger affinity for chocolate than men, their feelings of disappointment were greater.

Two additional characteristics of the study may explain participants’ decrease in positive mood. First, we randomly assigned food categories to participants who knew they were signing up for a food study that included chocolate and cheese. This assignment of the food item may have resulted in disappointment for some participants if they did not get their preferred food choice. Secondly, the serving sizes were large in order to be sure there was enough chocolate or fat to have an effect. However, the serving may have been so large that consuming the whole product became aversive. This possibility may be especially true if the food was considered too bitter or too rich. Anecdotally, many students commented on a desire not to consume the full product.

Although positive affect declined in general, women who ate cheese experienced a decrease in negative affect. To clarify, women felt an improvement in mood after eating fat not because they had an increase in positive affect, but due to a decrease in negative affect. Thus, this finding suggests fat may be a factor with a positive impact on mood. Further, it is important to note that the reaction to cheese was immediate. The macronutrient fat typically can take hours to digest, in contrast to carbohydrate and protein macronutrients.

### TABLE 2

Positive Affect (PA) and Negative Affect (NA) Scores by Food Condition and Testing Times

<table>
<thead>
<tr>
<th>Food Condition</th>
<th>PA</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>White chocolate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>25.58</td>
<td>8.05</td>
</tr>
<tr>
<td>Posttest</td>
<td>22.42</td>
<td>8.91</td>
</tr>
<tr>
<td>Milk chocolate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>25.58</td>
<td>8.05</td>
</tr>
<tr>
<td>Posttest</td>
<td>29.79</td>
<td>9.90</td>
</tr>
<tr>
<td>Dark chocolate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>28.43</td>
<td>6.83</td>
</tr>
<tr>
<td>Posttest</td>
<td>23.68</td>
<td>10.13</td>
</tr>
<tr>
<td>Cheese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>26.57</td>
<td>6.86</td>
</tr>
<tr>
<td>Posttest</td>
<td>25.05</td>
<td>7.41</td>
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Thus, the immediate mood-improving response to fat may suggest something about the flavor or the sensory experience of eating fat. Interestingly, fat receptors have been identified in the mouths of rats and mice (Laugerette et al., 2005). It is possible that similar receptors exist for humans and, if so, such receptors could account for participants’ immediate response to fat. However, if these receptors do exist in humans, it would not explain why only women experienced the decrease in negative affect. Further, cheese and dark chocolate contained identical amounts of the macronutrient fat, and women who ate dark chocolate experienced an increase in negative affect. The strong flavor of the dark chocolate may have counteracted any positive influence from other factors, including fat. Our search of databases (PsycINFO and PsycARTICLES) revealed no research addressing fat as an isolated factor and its effect on mood. However, it appears that the macronutrient fat may be a relevant component in comfort food.

Although these findings are interesting, some limitations exist. We did not control for potential confounds such as whether participants had ingested caffeine or other foods prior to the experiment. For instance, Gibson (2006) postulated that, if eaten on an empty stomach, chocolate could trigger the release of serotonin, thus stimulating elevation or enhancement of positive mood. Because we did not monitor or control for other food or beverages ingested by the participants at any time prior to or during the experiment, perhaps other substances ingested by participants prior to the experiment interrupted the effects of the chocolate. Individuals conducting future research should account for such variables.

In this experiment, women who ate dark chocolate experienced a significant increase in negative affect, which appeared to be due to an unpleasant flavor. Further, participants experienced a general decline in positive affect, which we surmise may have been due to food preferences and/or flavor. The influence on mood of the unpleasant flavor appears to be stronger than the influence of methylxanthines. Due to these unexpected findings, future research is warranted to determine the magnitude of the influence of flavor, particularly unpleasant or less preferred flavor, on mood. It would be interesting to further explore how varying intensities of bitter flavor in chocolate, flavor preference, and methylxanthine levels interact to influence mood. Perhaps the results would be different for participants who anticipate and enjoy the pronounced flavor of very dark chocolate.

Future research is also warranted to examine the macronutrient fat and its influence on mood. In this experiment, fat influenced mood in a positive direction by decreasing negative affect in women; however, fat did not increase positive affect for any participants. This finding may be relevant in research exploring the role that fat plays in various comfort foods. Perhaps fat contributes to the soothing element of comfort food not by increasing positive affect but rather simply by reducing negative affect. In other words, perhaps fat does not help a person feel good per se, but feel less
bad. Future research exploring mood as influenced by the macronutrient fat could prove interesting and relevant to understanding why people eat what they do.

References


FDA Food for Human Consumption, Title 21 § 163.123 (2010).


<table>
<thead>
<tr>
<th>Name of Award or Grant</th>
<th>Submission Deadline</th>
<th>Who Can Apply?</th>
<th>Award/Grant Amount</th>
<th>Brief Description</th>
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<tr>
<td>SuperLab Research Grants</td>
<td>October 1</td>
<td>Graduate, Undergraduate</td>
<td>SuperLab software, Response pad</td>
<td>Two awards for conducting the best computer-based research.</td>
</tr>
<tr>
<td>Thelma Hunt Research Grants</td>
<td>October 1</td>
<td>Graduate, Undergraduate</td>
<td>Three grants, $3,000 each</td>
<td>Enables members to complete empirical research on a question directly related to Psi Chi.</td>
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<tr>
<td>Undergraduate Psychology Research Conference Grants</td>
<td>October 1</td>
<td>Sponsor(s) of local and regional conference</td>
<td>Up to $1,000 each (number varies)</td>
<td>Funding to defray cost of sponsoring local/regional undergraduate psychology conferences. Total grant money available is $15,000.</td>
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<tr>
<td>Graduate Research Grants</td>
<td>November 1, February 1</td>
<td>Graduate</td>
<td>Up to $1,500 each (number varies)</td>
<td>Funding to defray the cost of conducting a research project. Total grant money available is $20,000.</td>
</tr>
<tr>
<td>Undergraduate Research Grants</td>
<td>November 1, February 1</td>
<td>Undergraduate</td>
<td>Up to $1,500 each (number varies)</td>
<td>Funding to defray the cost of conducting a research project. Total grant money available is $35,000.</td>
</tr>
<tr>
<td>Regional Research Awards</td>
<td>Deadlines Vary, Fall/Winter</td>
<td>Graduate, Undergraduate</td>
<td>$300 each (number varies)</td>
<td>Up to 78 awards presented for the best research papers submitted as Psi Chi posters for the regional conventions.</td>
</tr>
<tr>
<td>Denmark Faculty Advisor Award</td>
<td>December 1</td>
<td>Faculty Advisor (chapter nomination)</td>
<td>Travel expense to APA + Plaque</td>
<td>To one outstanding faculty advisor who best achieves Psi Chi’s purpose. Chapter nominates.</td>
</tr>
<tr>
<td>Society Annual Convention Research Awards</td>
<td>December 1</td>
<td>Graduate, Undergraduate</td>
<td>$500 graduate, $300 undergraduate</td>
<td>Up to 16 awards (8 grad, 8 undergrad) presented for the best research papers submitted for APA/APS conventions.</td>
</tr>
<tr>
<td>Regional Chapter Awards</td>
<td>December 1</td>
<td>Chapter</td>
<td>Twelve $500 awards + Plaque</td>
<td>Presented to two chapters in each of six regions that best achieve Psi Chi’s purpose.</td>
</tr>
<tr>
<td>Regional Faculty Advisors</td>
<td>December 1</td>
<td>Faculty Advisor (chapter nomination)</td>
<td>Six $500 awards + Plaque</td>
<td>To six outstanding faculty advisors (one per region) who best achieve Psi Chi’s purpose.</td>
</tr>
<tr>
<td>FBI NCAVC Internship Grants</td>
<td>February 1, June 1</td>
<td>Graduate, Undergraduate</td>
<td>Two grants, up to $7,000 each</td>
<td>14-week unpaid FBI NCAVC internship to conduct research; grant covers living expenses</td>
</tr>
<tr>
<td>Bandura Graduate Research Award</td>
<td>February 1</td>
<td>Graduate</td>
<td>Travel expense to APS + Plaque + 3yr APS Membership</td>
<td>Student submitting best overall empirical study. Cosponsored by APS.</td>
</tr>
<tr>
<td>Cousins Chapter Award</td>
<td>February 1</td>
<td>Chapter</td>
<td>One $3,500 award + Travel to APA + Plaque</td>
<td>Presented to one chapter that best achieves Psi Chi’s purpose.</td>
</tr>
<tr>
<td>Newman Graduate Research Award</td>
<td>February 1</td>
<td>Graduate</td>
<td>Travel expense to APA + Plaque + 3yr journal subscription</td>
<td>Student submitting best overall empirical study. Cosponsored by APS.</td>
</tr>
<tr>
<td>Website Awards</td>
<td>February 1</td>
<td>Chapter</td>
<td>Three $200 awards</td>
<td>Presented to chapters with websites that are innovative, aesthetic, and useful, and that advance Psi Chi’s purpose.</td>
</tr>
<tr>
<td>APS Summer Research Grants</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Six $5,000 grants ($3,500/student + $1,500/sponsor)</td>
<td>Provides opportunities to conduct research during the summer with sponsors who are APS members.</td>
</tr>
<tr>
<td>CUR Summer Research Grants</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Two $5,000 grants ($3,500/student + $1,500/sponsor)</td>
<td>Provides opportunities to conduct research during the summer with sponsors who are CUR members.</td>
</tr>
<tr>
<td>SRCD Summer Research Grants</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Two $5,000 grants ($3,500/student + $1,500/sponsor)</td>
<td>Provides opportunities to conduct research during the summer with sponsors who are SDRC members.</td>
</tr>
<tr>
<td>Summer Research Grants</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Fourteen $5,000 grants ($3,500/student + $1,500/sponsor)</td>
<td>Provides opportunities to conduct research during the summer at recognized research institutions.</td>
</tr>
<tr>
<td>Kay Wilson Leadership Award</td>
<td>April 1</td>
<td>Chapter President (chapter nomination)</td>
<td>One $500 award + Travel to APA + Plaque</td>
<td>Award to one chapter president who demonstrates excellence in the leadership of the local chapter.</td>
</tr>
<tr>
<td>Allyn &amp; Bacon Psychology Awards</td>
<td>May 1</td>
<td>Undergraduate</td>
<td>1st place—$1,000, 2nd place—$650, 3rd place—$350</td>
<td>Awards for the best overall empirical study submitted.</td>
</tr>
<tr>
<td>Guilford Undergraduate Research Awards</td>
<td>May 1</td>
<td>Undergraduate</td>
<td>1st place—$1,000, 2nd place—$650, 3rd place—$350</td>
<td>Awards for the overall best research papers submitted.</td>
</tr>
<tr>
<td>Faculty Advisor Research Grants</td>
<td>June 1</td>
<td>Faculty Advisor</td>
<td>Twelve $2,000 grants</td>
<td>Awards for two faculty advisors per region to conduct empirical research.</td>
</tr>
<tr>
<td>Model Chapter Awards</td>
<td>June 30</td>
<td>Chapters</td>
<td>$100 each chapter</td>
<td>All chapters meeting the five criteria will receive $100.</td>
</tr>
</tbody>
</table>
Chapter and Advisor Awards

Denmark Award | Dec 1
The Psi Chi/Florence L. Denmark Faculty Advisor Award is presented annually to the one Psi Chi faculty advisor who best achieves Psi Chi's purpose. The award includes (1) travel expenses to attend the APA/Psi Chi Society Annual Convention to receive the award and (2) an engraved plaque. The award is intended to recognize Psi Chi faculty advisors for their outstanding service to the chapter and to Psi Chi.

Regional Chapter Awards | Dec 1
The Psi Chi Regional Chapter Awards provide annual recognition for up to two chapters in each region that best achieve Psi Chi's purpose. Each winning chapter receives a check for $500 and a plaque to display in the winning chapter's department. The awards are intended to perpetuate the chapters, to identify chapters as role models for others, and to promote the purposes of Psi Chi.

Regional Faculty Advisor Awards | Dec 1
This award is presented annually to one Psi Chi faculty advisor from each region who best achieves Psi Chi's purpose. The award is to recognize and reward actively involved chapter advisors. The winning faculty advisor from each region will receive $500 and a plaque.

Cousins Award | Feb 1
The Psi Chi/Ruth Hubbard Cousins Chapter Award is presented annually to the one chapter that best achieves Psi Chi's purpose. The winning chapter receives: (1) a check for $3,500, (2) travel expenses for one chapter officer to attend the APA/Psi Chi Society Annual Convention to receive the award, and (3) a plaque to display in the winning chapter's department.

Website Awards | Feb 1
These awards are presented annually to three chapters with websites that are innovative, aesthetic, and useful, and that advance or support Psi Chi's purpose. Winning chapters will receive awards of $200 each.

Kay Wilson Leadership Award | April 1
The Psi Chi/Kay Wilson Leadership Award for Outstanding Chapter Presidents is presented annually to the one chapter president who demonstrates excellence in leadership of the local chapter. The winning Psi Chi chapter officer receives: (1) a $500 cash award, (2) travel expenses for one chapter president to attend and make a short presentation at the APA/Psi Chi Society Annual Convention to receive the award, and (3) an engraved plaque commemorating the award.

Model Chapter Awards | June 30
Model Chapter Awards of $100 each are presented annually to recognize and reward Psi Chi chapters that consistently maintain outstanding records of membership inductions, chapter correspondence, service projects, and other criteria associated with being an outstanding chapter. All chapters submitting evidence of meeting these criteria are designated as winners.

Research Awards

Regional Research Awards | Deadlines Vary
All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Regional Research Awards. Cash awards of $300 each are presented to students submitting the best research papers to Psi Chi sessions at regional conventions. The number of awards in each region varies based on the size of the region; a total of 78 awards of $300 each are available for the academic year. Award monies are distributed at the conventions following the presentations. Deadlines for submissions vary according to region and sometimes from year to year; check the Psi Chi website for details.

Society Annual Convention Research Awards | Dec 1
All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Society Annual Convention Research Awards. Cash awards of $300 for undergraduates and $500 for graduates are presented to students submitting the best research for Psi Chi sessions at the APA and APS national conventions. Up to 16 awards are given: 8 for the APA Convention and 8 for the APS Convention. Award monies are distributed at the conventions following the presentations.

Bandura Award | Feb 1
All psychology graduate students who are Psi Chi members and graduate student affiliates of the Association for Psychological Science (APS) are eligible to submit their research for the Psi Chi/APS Albert Bandura Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APS National Convention to receive the award, (2) a three-year membership in APS, including subscriptions to all APS journals, and (3) two engraved plaques, one for the winner and one for the winner’s psychology department as a permanent honor to the winner. In addition, the abstract of the winning paper, as well as a photograph and brief biography of the winner, are published in Eye on Psi Chi. This award is presented during the APS opening ceremony at the APS National Convention.

Newman Award | Feb 1
All psychology graduate students are eligible to submit their research for the APA/Psi Chi Society Annual Edwin B. Newman Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APA/Psi Chi Society Convention to receive the award, (2) a three-year membership in APS, including subscriptions to all APS journals, and (3) two engraved plaques, one for the winner and one for the winner’s psychology department as a permanent honor to the winner. In addition, the abstract of the winning paper, as well as a photograph, and brief biography of the winner, are published in Eye on Psi Chi. This award is presented during the APA/Psi Chi Society Convention in August.

Allyn & Bacon Awards | May 1
The Psi Chi/Allyn & Bacon Psychology Awards, cosponsored by Allyn & Bacon Publishers, are open to all undergraduate Psi Chi members and are awarded to those who submit the best overall empirical research papers. The awards are $1,000 for first place, $650 for second place, and $350 for third place. The abstracts of the winning papers, as well as photographs and brief biographies of the top three winners, are published in Eye on Psi Chi.

Guilford Awards | May 1
All Psi Chi undergraduate members are eligible to submit their research for the Psi Chi/J. P. Guilford Undergraduate Research Awards. Cash awards are $1,000 for first place, $650 for second place, and $350 for third place. The abstracts of the winning papers, as well as photographs and brief biographies of the top three winners, are published in Eye on Psi Chi.
Research Grants

Hunt Research Grants | Oct 1
All Psi Chi student and faculty members are eligible to apply for a Thelma Hunt Research Grant. Up to three grants of up to $3,000 each are presented annually to enable members to complete empirical research that addresses a question directly related to Psi Chi. Unlike other Psi Chi award/ grant programs, the Hunt Grants focus on research directly related to the mission of Psi Chi.

SuperLab Research Grants | Oct 1
All undergraduate and graduate Psi Chi members are eligible to apply for these research grants. The purpose of this program is to provide annual grants to aid one undergraduate and one graduate student in conducting computer-based research. Grant winners receive a copy of SuperLab experimental lab software and a response pad from Cedrus®.

Undergraduate Psychology Research Conference Grants | Oct 1
The purpose of this program is to provide funds for local/regional undergraduate psychology research conferences. Funding is intended for conferences that will invite student research presenters from at least three schools in the area and will notify all Psi Chi chapters in the geographic area of the conference. The maximum grant for each conference is $1,000.

Graduate Research Grants | Nov 1 & Feb 1
All graduate Psi Chi members are eligible to apply for these graduate research grants. The purpose of this program is to provide funds for members to defray the cost of conducting a research project. Applicants may request up to $1,500 for each project. A total of $20,000 has been allotted for this student grant program.

Undergraduate Research Grants | Nov 1 & Feb 1
All undergraduate Psi Chi members are eligible to apply for these undergraduate research grants. The purpose of this program is to provide funds for members to defray the cost of conducting a research project. Applicants may request up to $1,500 for each project. A total of $35,000 has been allotted for this student grant program.

FBI NCAVC Internship Grants | Feb 1 & June 1
All undergraduate and graduate Psi Chi members who are accepted as FBI NCAVC interns are eligible to apply for this internship grant. The purpose of this program is to provide annual grants to aid two Psi Chi members in conducting research at the FBI NCAVC. Two grants up to $7,000 will be awarded annually for the 14-week unpaid position.

APS Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty mentor who is a member of APS. This allows the student to partner with a faculty mentor who shares the same research interests and may work at a different institution than the student attends. Psi Chi awards six $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

CUR Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty mentor who is a member of the Council of Undergraduate Research (CUR). This allows the student to partner with a faculty mentor who shares the same research interests and may work at a different institution than the student attends. Psi Chi awards two $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

SRCD Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty mentor who is a member of the Society for Research in Child Development (SRCD). This allows the student to partner with a faculty mentor who shares the same research interests and may work at a different institution than the student attends. Psi Chi awards two $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these summer research grants (research must be conducted while still an undergraduate, not after graduation). The purpose of this program is to provide funds for members to conduct summer research at recognized research institutions. Psi Chi will award 14 grants of $5,000 (a stipend of $3,500 to the Psi Chi student plus $1,500 to the sponsoring faculty member at the research institution each year).

Faculty Advisor Research Grants | June 1
All current faculty advisors and coadvisors who have served an active Psi Chi chapter for at least one year are eligible to apply for these faculty advisor research grants. The purpose of this program is to provide funds for advisors to defray the direct costs of conducting a research project (no stipends included). Two grants will be awarded annually within each of Psi Chi’s six regions, for a total of 12 grants. The maximum amount of each grant will be $2,000.