Prevalence of Eating Disorder Symptoms in Women Living in Residence Halls and Off Campus

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PREVALENCE OF EATING DISORDER SYMPTOMS IN WOMEN LIVING IN RESIDENCE HALLS AND OFF CAMPUS

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts

By
Carolyn Sie Powell
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PREVALENCE OF EATING DISORDER SYMPTOMS IN WOMEN LIVING IN RESIDENCE HALLS AND OFF CAMPUS

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Date
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Eating disorders should be a growing concern in today’s society. This study was designed to examine the occurrence of eating disorders in women living in residence halls compared to women living off-campus. The participants for this study were 200 women (105 on campus and 95 off campus) attending Western Kentucky University. Age of the participants ranged from 18 to 47 years, with a mean of 21.1 years (SD=3.70).

The instrument used to determine eating disorder symptoms was the Eating Disorder Diagnostic Scale (EDDS; Stice, Rizvi, & Telch, 2000). The EDDS is a self-report scale consisting of 22 items in which participants answer the questions in several different ways such as yes-no, write-in, Likert, and frequency responses. A series of paired t-tests were performed on the results from the EDDS. See Appendix B. The data revealed that there was a significant body image difference between individuals living on campus and those living off campus ($t(199) = -1.91, p < .05$); specifically, women who live on campus have a worse body image than women who live off-campus. A significant difference in eating patterns between individuals on living campus and those living off campus was found ($t(199) = -2.13, p < .03$), indicating that women who live on campus have more pathological eating patterns. No significant difference was found with binge eating between the two groups ($t(199) = -0.83, p = .29$).
The data supported the hypothesis; there was a difference in the number of self-reported eating symptoms of disorders within the residence hall environment versus the off campus population. The results of this study indicate that individuals living in the residence halls could be at a higher risk for developing an eating disorder than individuals who live off campus. There is a need for educational prevention programs concerning eating disorders within the residence hall environments as well as a need to evaluate the residence halls in order to determine possible causes of this increased risk.
Introduction

Eating disorders are a growing concern in today’s society. This concern is especially high within college and university populations. According to Cook and Reiley (1991), 94% of individuals surveyed considered eating to be a campus-wide concern for college women. This knowledge has raised several questions important to researchers in the fields of both psychology and student affairs. Researchers strive to determine who is at risk for eating disorders and whether there are preventative measures that can be taken. Studies have been conducted dealing with differences in race, gender, and religion (Cook & Reiley) and the effect of these variables on the development of eating disorders. Research has also explored the conservativeness of the campus and whether it plays a role in the number of individuals with eating disorders and found that it does have an effect (Kashubeck & Walsh, 1994).

A major line of research in this area involves determining whether there is a connection between eating disorders and women’s involvement in the sorority system. The attempt was to determine if sorority participants are at a higher risk than non-sorority individuals (Alexander, 1998). Results generally indicate that woman participating in sororities have a higher self-reported level of eating disorders symptoms compared to women participating in other groups on campus due possibly to social pressure (Alexander, 1998). However, there has been little research concerning another prominent group of individuals on campus- students living in the residence halls. Like women living in sorority housing, students living on a floor in a residence hall interact continuously by attending mandatory programs and meetings and engaging in various social activities. Environmental factors may play a role in eating disordered behavior, thus living in a
residence hall could be a risk factor for the development of an eating disorder, just as belonging to a sorority is. The present study was designed to examine the occurrence of eating disorders in women living in residence halls compared to women living in off-campus environments in order to see if there was a difference in eating disorder symptomatology between the two groups.

Eating Disorders

According to the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000), the symptoms of bulimia nervosa include recurrent episodes of binge eating and recurrent inappropriate compensatory weight-management behavior in order to maintain weight. Binge eating involves eating a larger amount of food than would normally be eaten in a particular period of time and a feeling of a loss of control over the amount of food that is eaten. Recurrent inappropriate compensatory weight-management behaviors include fasting; enemas; self-induced vomiting; excessive exercise; and the misuse of laxatives, diuretics or excessive use of over-the-counter medications to prevent weight gain. The compensatory behaviors and binge eating must occur at least twice a week for approximately three months. The final symptom of bulimia nervosa is a reliance on body shape and weight for self-evaluation (American Psychiatric Association, 2000).

There are two subtypes of bulimia nervosa: purging type and non-purging type. The purging type consists of individuals who regularly engage in self-induced vomiting or the misuse of laxatives, diuretics, or enemas during the current episode. Individuals who fall under the non-purging type use other compensatory behaviors, such as fasting or
excessive exercise, but do not engage in self-induced vomiting or misuse of laxatives, diuretics, or enemas.

According to the DSM-IV (American Psychiatric Association, 2000), the symptoms of anorexia nervosa are an intense fear of gaining weight or becoming fat, refusal to maintain a normal (less than 85% of ideal body weight) body weight for age and height, denial of the seriousness of the low body weight, and, for women, amenorrhea, which consists of missing at least three consecutive menstrual cycles. There are two types of anorexia nervosa. With the restricting type, the individual does not engage in binge-eating or purging behavior. The second type is binge-eating/purging type in which the individual regularly does engage in binge-eating or purging behavior (American Psychiatric Association, 2000). People with anorexia nervosa binge-eating type exhibit the same types of behaviors as people with bulimia nervosa non-restricting type; however, people with anorexia nervosa are at less than 85% of their ideal body weight.

Binge eating disorder (described as recurrent episodes of binge eating without compensatory behaviors) is classified as an eating disorder not otherwise specified (American Psychiatric Association, 2000). Binge eating episodes are characterized by eating an amount of food that is larger than most people would eat in a similar period of time and sensing of lack of control over eating during the episode (i.e., people feeling as if they cannot stop eating). According to the DSM-IV (American Psychiatric Association, 2000), these binge-eating episodes are associated with at least three of the following characteristics: eating much more rapidly than normal, eating until feeling uncomfortably
full, eating large amounts of food when not hungry, eating alone because of being embarrassed that people may think of them eating, or feel disgusted by their eating.

**Women and Eating Disorders**

Recent surveys with American women report that the average female weight is increasing (Jones, Moulton, Moulton, & Roach, 1999). Past research on weight issues and dieting has indicated that men and women are equally dissatisfied with their weight, but more women wanted to lose weight (Davis & Cowles, 1995). This dissatisfaction may be due to the fact that men are exposed to less general sociocultural pressure to be slim or to diet (Andersen, 2002). Sociocultural pressures may be increasing especially for women. Yet the environment is conducive to weight gain (e.g., the large amount of fast food restaurants in our society). This situation may lead to increases in eating disorders.

Until recently eating disorders of anorexia nervosa and bulimia nervosa appeared to be confined to Westernized countries; however, this trend has changed and disordered eating has been identified across cultures. Several community studies in Hong Kong indicate that between 3-10% of young females in that country suffer from disordered eating (Lee & Katsman, 2002).

Research has also indicated that the occupation an individual holds may be related to the development of eating disorders. Individuals who are in an athletic occupation such as dancing or sports are at a higher risk for developing these poor eating habits (Bryne, 2002). In a Norwegian study, researchers identified eating disorders in 25% of female thin-build athletes, 12% of female normal-build athletes, and 5% of female nonathletes (Bryne, 2002).
Etiology of Eating Disorders

Socioculture influences have been identified as a major factor in the development of disturbances in body image and eating (Stice, 2002). Things such as media, family, and peers may play a role in developing disordered eating. Researchers found that the assignment of participants to a fashion magazine subscription led to increased body dissatisfaction, but only for individuals who felt under pressure to be thin and had deficits in social support (Stice, 2002).

Research also indicates that bulimic individuals perceive greater pressure to be thin from their families and friends (Stice, 2002). For example, mothers of youths with eating disorders evidence greater dieting and eating pathology than control group mothers (Stice, 2002). Stice argued that this finding provides support for the direct modeling effect for the transmission of eating disorders. In addition, he reported that a positive relationship was found between binge eating and peer binge eating and that the effect increased as the friendship became closer.

College Students and Eating Disorders

College is a time of major change for individuals due to the increase in reported distress by college students (Koplik & DeVito, 1986). Students become more responsible for their own eating habits and often gain weight. This weight gain often results in on-again/off-again dieting which may increase the risk of developing an eating disorder. If an individual is struggling with body image and weight before college, college life may lead to more severe problems due to an increase in stress and pressure.

There have been several studies examining eating disorders among college students. For example, Hoerr, Bokram, Lugo, Bivins, and Keast (2002) conducted a
survey in order to estimate the frequency of disordered eating among college students by gender, ethnicity, participation in social organizations and athletics. The researchers used a short form of the Eating Attitudes Test (EAT-26: Garner & Garfinkel, 1979) as a screening instrument in order to identify the risks of developing an eating disorder. They also asked eight questions concerning health behaviors and attitudes and had participants self-report height and weight. The survey sampled 1,899 college students who attended four classes, were members of 14 sororities or lived in five residence halls. The results revealed that 4.5% of women and 1.4% of men reported previous treatment for eating disorders. Also based on their reported behaviors, 10.9% of women and 4% of men were at risk for developing an eating disorder in the future. However, the study did not examine differences between women living in sorority houses and women living in residence halls.

Eating disorders occur about nine times more often in women than men (Mitchell & Eckert, 1981). Demonstrating this, Cook and Reiley (1991) completed research on gender differences in eating concerns among college students by administering an scale designed to measure eating concerns, not to diagnose eating disorders. Participants rated on a scale from 1 to 5 their level of concern about eating, how eating affected their work habits and social relationships, how academic pressure contributed to eating problems, and the relationship between eating and faith issues such as Bible study. Participants were 92 undergraduate students (67 females and 25 males) at Gordon College. The participants were also asked to rate the adequacy of present support services and the need for additional services at their university.
A Chi square was used to examine the sex differences on the Wellesley Eating Attitudes Survey. The participants’ responses were grouped into two categories, 1 to 2 indicating minimal concern and 3 to 5 indicating moderate to extreme concern (Cook & Reiley, 1991). The results indicated that women were more preoccupied with eating than were men. Women reported counting calories more often, feeling more guilt after eating, and dieting more often than men. Women also were more likely to attribute their eating difficulties to social stress, personal insecurity, pressure of exams, and emotional stress (Cook & Reiley, 1991). Of the participants, 94% considered eating to be a campus-wide concern for college women. Cook and Reiley (1991) also surveyed students at Franklin and Marshall College and Georgia Southern University and found similar results.

The most common eating disorder reported on college campuses today is bulimia nervosa (Hoerr et al, 1998). Research indicates that 67% of college students surveyed have engaged in binge eating at least once (Fisher et al., 1995). It appears that the increased awareness of eating disorders on campus has had only a minimal effect on the number of individuals engaging in unhealthy eating habits.

Researchers are examining the etiology of bulimia nervosa in women. Lyubomirsky, Casper, and Sousa (2001) completed a study concerning negative affect, psychopathology and dissociative experiences, and how these factors affect the development of bulimia nervosa. There were 180 women who participated in the study. The women were divided into three groups based on an interview of how often they engaged in binge-eating behaviors: nonclinical, occasional binge eating, and bulimia nervosa. The individuals completed the 40-item EAT in order to assess thoughts, feelings, and behaviors concerning eating and weight. The individuals in the bulimia
nervosa and occasional binge-eating groups also reported whether they had experienced certain emotions (e.g., helplessness, anger, euphoria) before they binged. The results of the study indicated that distress and anxiety play a role in the binge eating behavior of individuals. This finding can provide ideas for insight as to why bulimia nervosa is common on college campus considering the high level of stress and anxiety associated with classes, the social circle of campus, and desire to be thin (Lyubomirsky, Casper, & Sousa, 2001).

How Different College Environments and Organizations Affect Eating Disorders

Research by Kashubeck and Walsh (1994) examined whether different campus environment factors are related to eating disorder symptomatology by using two distinctly different colleges. The first college campus environment was considered to be typically conservative, placing more emphasis on appearance and clothes, while the second college campus environment was typically considered to be liberal, placing more emphasis on intelligence and political involvement.

Introductory psychology students from both schools participated in the study, 90 from the conservative college and 67 from the liberal college. The participants were given the Eating Disorder Inventory (EDI; Garner & Olmsted, 1984) which is a 64-item instrument used in assessing eating disorder symptomology. The instrument contains eight different scales: Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interceptive Awareness, and Maturity Fears.

The overall findings of this study determined that the two colleges did not differ in the rates of eating disorders in students. The research also supported the central hypothesis that different factors were associated with eating disorder symptomatology at
each school’s campus (Kashubeck & Walsh, 1994). EDI results in reference to the conservative campus indicated that students who felt a high pressure to dress a certain way were more likely to report eating disorder symptomatology, whereas this dress code pressure was not true for the liberal campus. Feeling pressure to attain high grades was positively associated with eating disorder symptomatology at both schools (Kashubeck & Walsh, 1994). In summary, the research results indicate that if a school is more conservative, then the likelihood is that dress and related factors will be correlated with eating disorder symptomatology. This information provides further evidence that some subgroups, such as those who focus on dress, are at higher risks for developing eating disorders than others.

Research has shown that not only does the college environment itself have an impact on eating disorders but that various college subgroups are affected in different ways (Tufts University, 1999). A recent article in the Health and Nutrition Letter suggested that young women who major in dietetics in college are more likely to develop eating disorders than those who major in biology or psychology. Another study that examined social pressure, self-esteem, body image, and completion anxiety as risk factors for disordered eating in female university level athletes determined that this college subgroup was at a higher risk for developing an eating disorder than individuals who do not participate in female university-level athletics (Berry & Howe, 2000).

One of the more highly researched subgroups on college campuses is the Greek system. For example, Alexander (1998) examined the prevalence of bulimia nervosa, anorexia nervosa, and disordered eating behaviors in sororities. The results of eating disorder measures from women in sororities were compared with those of college women
in dance or athletic teams and a control group. Participants were recruited from the human subjects pool (a list of volunteers) and campus sororities at a large northeastern university. There were 253 women who participated in the study (though 14 were dropped for not completely filling out the measures): 89 women in the sorority group, 41 in the activity comparison group; and 109 in the control group (Alexander, 1998).

The participants were asked to complete several questions including a demographic survey, the EDI, EAT, and the Bulimia Test-Revised (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991). When the results were analyzed, Alexander (1998) concluded that women in sororities did not report more eating disorders or eating disordered behaviors than control participants but that they tended to score more pathologically on the EAT, BULIT-R and the Bulimia Subscale of the EDI than did the control participants. The suggestion is that women in sororities may actually be more likely to have a higher risk for developing eating disorders and eating disorder behaviors than college women in general (Alexander, 1998).

Meilman, Von Hippel and Gaylor (1991) compared the frequency of alcohol and food purging between sorority and non-sorority students. In the study, 229 college women were asked to complete a survey about their food and alcohol purging behaviors and their sorority membership. The researchers found that participants in a sorority had a significantly higher percentage of eating purgers (students who purge at least once a month) and high-frequency purgers (students who purge at least four times in a month) than those individuals not involved in a sorority (Meilman et al., 1991). Of the 28 participants who reported purging behavior, 72.2% were sorority members, and of the 21 high-frequency eating purgers, 80% were sorority members.
Eating Disorders and Residence Halls

There are a number of similarities between the living environment of a sorority and that of a residence hall. The actual physical make up of the buildings is very similar, usually consisting of a number of women living together on a single floor, or in a specific building. More often than not, the women share a community shower or bathroom and share a room with at least one other individual. Both living environments also have a group laundry facility and a kitchen shared by all members in the hall or house. If environment does play a role in the development of eating disorders, then these similarities may indicate that residence halls may have an impact on eating behavior similar to that of sorority houses.

Other similarities are the group activities that are provided within the residence hall environment and in the sorority. Most residence halls have mandatory meetings, a list of specific policies and procedures, and a type of residential counsel, which is comparable to that in a sorority. Residence halls have a Hall Director, which is similar to sororities who have a Housemother or Greek Director who is responsible for the safety of the individuals in the hall.

There are several differences between sororities and residence halls. For example there is no competitive selection process for becoming a member of a residence hall, whereas sorority systems undergo a process of selection and elimination. Another difference is the public acknowledgement of being a member of a sorority system. Also the sorority systems require an individual to pay a fee for membership in the sorority; this is not the case in residence halls. If a policy is broken within the sorority system there tends to be a monetary sanction, whereas within the residence halls there tends to be
educational sanctions (e.g., completing research papers, constructing bulletin boards, completing worksheets.

Drewnowski, Hopkins, and Kessler (1981) investigated the number of individuals who suffer from bulimia nervosa on college campuses and whether these individuals seek treatment. A sample of 53 colleges and universities were selected by stratified probability procedures. School directories from these institutions were used to randomly select 1,733 students to be called and interviewed. Of these, 726 either could not be reached or did not complete the survey for other reasons.

In phone interviews, students were asked questions addressing symptoms of eating disorders as well as other information such as height, weight, and current dieting practices. The results of the study indicated that, although the number of students with bulimia nervosa was lower than anticipated (approximately 1.0% for women and 0.2% for men), overall there appeared to be a higher rate of bulimia nervosa among undergraduate students than graduate students. This finding, in turn, related to the fact that individuals living in the residence halls (predominately undergraduates) also revealed an increase in the incidence rate of bulimia nervosa as compared to those individuals not living in the residence halls (Drewnowski et al., 1988).

The researchers suggest that several previous studies concerning the number of college students suffering from bulimia nervosa may be inaccurate. Previous studies have used the residence halls as a subpopulation for determining the number of college students who suffer from bulimia nervosa. Drewnowski and his colleagues argue that if residence halls have a higher rate of bulimia nervosa than other college groups, then
using them as a sample population will not provide a true representation of the number of college students suffering from the disorder (Drewnowski et al, 1988).

Limitations of Existing Research

The previous research has not taken into consideration that the residence hall environment may actually be a risk factor for eating disorders. If it is shown that living in a residence hall is a risk factor, this finding could alter the current estimates of eating disorders on college campuses as the large number of individuals surveyed live within the residence halls. Previous research has yet to examine eating disorders other than bulimia. Anorexia nervosa and binge eating disorder have yet to be evaluated, therefore not providing a complete analysis of eating disorders within the residence halls. The higher the score the individual receives on the EDDS, the more pathological the symptoms.

The Present Study

While eating disorders have been studied using various populations on college campuses, little research has been conducted examining students living in a residence hall environment. In the present study, this population will be studied in an attempt to determine whether or not the residence hall environment has an effect on the rate of eating disorders. The specific hypothesis under study is as follows: There will be a difference in the number of self-reported symptoms of eating disorders by students living within the residence hall environment versus students living off-campus.
Method

Participants

The participants for this study were 200 women (105 living on campus and 95 living off campus) who were students attending from Western Kentucky University. The researcher recruited participants by going into classrooms and asking for volunteers as well as asking for volunteers as students entered the residence halls. By chance, all participants had English as their native language. All participants were 18-47 years, with a mean of 21.1 years ($SD = 3.70$). There were 38 freshmen, 31 sophomores, 64 juniors, 64 seniors, and 3 graduate level participants. There were 168 (84%) Caucasian participants, 26 (13%) African American participants and 6 (3%) Hispanic participants.

Design

The design for this study is a between groups quasi-experiment. The independent variable is living status (residence halls vs. off campus). The dependent variables are eating disorder symptoms (body image disturbance, binge eating, eating patterns).

Measures

Demographics. Participants recorded age, ethnicity, education level and current residence. A 7-item Likert scale was also created as part of the demographic page. Participants were asked to rate questions concerning religion, social interaction, academic, residence hall involvement, peer pressure, perfectionism and family conflict. See Appendix A.

Eating Disorder Symptomatology. The instrument used to determine eating disorder symptoms was the Eating Disorder Diagnostic Scale (EDDS; Stice, Rizvi, & Telch, 2000. See Appendix B). The EDDS is a self-report scale consisting of 22 items in
which the participants answer the questions in several different ways such as yes/no, write-in, Likert, and frequency responses. All of these questions are used to assess the DSM-IV diagnostic symptoms of anorexia nervosa, binge-eating disorder and bulimia nervosa. Stice et al. report an internal consistency (Cronbach’s alpha) of .91 for the EDDS. The test-retest reliability was .87 (Stice, Rizvi, & Telch, 2000). See Appendix B.

Procedure

Volunteers were recruited from psychology classes as well as from the residence halls at Western Kentucky University. Each participant was asked to read and sign an informed consent form prior to the experiment. Upon signing the consent form, each participant was given the EDDS questionnaire and the demographic report, which was in an envelope. Each participant completed these two questionnaires, placed them back into the envelope and returned them to the examiner. The participants were then given a debriefing paragraph and dismissed from the experiment.
Results

The EDDS was scored by dividing the questions into three separate areas: body image, binge eating, and eating patterns. The category of body image consisted of the first four questions of the EDDS scale and had an internal consistency estimate (Cronbach’s alpha) of .89. These questions focused on how the individual felt about her physical appearance. The category of binge eating was assessed by using eight items on the EDDS scale. This category had an internal consistency estimate (Cronbach’s alpha) of .80. The last category of eating patterns consisted of six questions that focused on eating habits of the individual. This category had an internal consistency estimate (Cronbach’s alpha) of .57.

Table 1
Eating Disorder Symptom Means for Women Living On Campus and Off Campus

<table>
<thead>
<tr>
<th></th>
<th>On Campus</th>
<th>Off Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Body Image</td>
<td>14.13</td>
<td>6.80</td>
</tr>
<tr>
<td>Binge Eating</td>
<td>2.59</td>
<td>2.51</td>
</tr>
<tr>
<td>Eating Patterns</td>
<td>5.14</td>
<td>6.21</td>
</tr>
</tbody>
</table>

1Higher score indicate more pathological body image
2Higher scores indicate higher levels of binge eating
3Higher scores indicate more pathological eating patterns

As shown in Table 1, the data revealed that there was a significant difference in body image between individuals living on campus and those living off campus ($t (199) = -1.91, p < .05$); specifically, women who live on campus have a more pathological body image than women who live off-campus. No significant difference was found with binge
eating between the two groups ($t(199) = -0.83, p = .29$). A significant difference in
eating patterns between individuals living campus and those living off campus was found
($t(199) = -2.13, p < .03$), indicating that women who live on campus have more
pathological eating patterns.

Additional information was collected concerning possible stressors that may be
present in the individual’s life. Table 2 lists the means and standard deviations for these
variables. As shown, women living on campus reported higher levels of religiosity, social
interaction, hall involvement and peer pressure.

Table 2
Demographic Comparisons of Means for Women Living On Campus and Off Campus

<table>
<thead>
<tr>
<th></th>
<th>On Campus</th>
<th></th>
<th>Off Campus</th>
<th></th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20.10</td>
<td>1.47</td>
<td>22.30</td>
<td>4.80</td>
<td>4.72</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Classification</td>
<td>14.40</td>
<td>1.50</td>
<td>15.20</td>
<td>1.00</td>
<td>4.21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Religiosity$^1$</td>
<td>2.86</td>
<td>1.06</td>
<td>2.49</td>
<td>1.17</td>
<td>-2.28</td>
<td>.02</td>
</tr>
<tr>
<td>Social Interaction$^1$</td>
<td>3.19</td>
<td>0.79</td>
<td>2.91</td>
<td>0.97</td>
<td>-2.30</td>
<td>.02</td>
</tr>
<tr>
<td>Academic Pressure$^1$</td>
<td>3.01</td>
<td>0.87</td>
<td>3.01</td>
<td>0.98</td>
<td>0.01</td>
<td>.99</td>
</tr>
<tr>
<td>Hall Involvement$^1$</td>
<td>1.58</td>
<td>1.32</td>
<td>0.44</td>
<td>0.84</td>
<td>-7.17</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Peer Pressure$^1$</td>
<td>1.45</td>
<td>0.95</td>
<td>1.16</td>
<td>0.92</td>
<td>-2.18</td>
<td>.03</td>
</tr>
<tr>
<td>Perfectionism$^1$</td>
<td>2.38</td>
<td>1.11</td>
<td>2.47</td>
<td>1.08</td>
<td>0.60</td>
<td>.55</td>
</tr>
<tr>
<td>Family Conflict$^1$</td>
<td>1.52</td>
<td>1.02</td>
<td>1.47</td>
<td>1.06</td>
<td>-0.34</td>
<td>.73</td>
</tr>
</tbody>
</table>

$^1$ Higher numbers indicate stronger endorsement of the variables
Discussion

This study examined symptoms of eating disorders within the residence hall environment versus the off campus population. The hypothesis under investigation was that there would be a difference in self-reported symptoms of eating disorders between women who live in residence halls and those who live off campus.

The first t-test that was performed on the data focused on the questions that were related to body image. The results supported that there was a difference in body image between the two populations. Specifically, women in residence halls had higher levels of body image disturbance. Research indicates that individuals in the sorority system score more pathologically on the EAT, BULIT-R and the Bulimia Subscale of the EDI than control participants (Alexander, 1998). In comparing the residence hall living experience with that of the sorority living environment, many commonalities can be found such as building structure, presence of a governing body, programming, mandatory meetings, and a building manager of some type. Previous research has indicated that environment plays a role in the development of eating disorders (Schwitzer, Rodriguez, Thomas, & Salimi, 2001; Kashubeck & Walsh, 1994). This result may provide support for the idea that perhaps, as with sororities, those individuals living within the residence halls may have a higher risk for developing eating disorder behaviors. One factor that has consistently emerged from studies as predicting future development of eating disorders is weight concerns (Piran, 2002). In this study, females living in residence halls reported higher levels of concern about weight. This finding further supports the idea individuals living in the residence hall may be at a risk for developing an eating disorder.
The second t-test that was performed on the data was focusing on binge eating. The results found no significant difference between those individuals living on or off campus. This factor may be the result of a restriction of range in the binge eating measure, which was composed of a series of yes/no questions. Given that, this finding supports previous research by Alexander (1998), who examined the prevalence of bulimia nervosa, anorexia nervosa, and disordered eating behaviors in sororities. It was found that there was no significant difference in the actual number of eating disorders, reported with the sorority participants versus the control participants but there was significant difference in pathology. The indication maybe that being a member of a sorority or perhaps even a resident in a residence hall is somehow influencing pathology resulting in individuals having an increased risk for developing disordered eating.

The third t-test was performed on the data that focused on eating patterns. The results indicated that individuals living on campus have more pathological eating patterns than those living off campus. This outcome supports the idea that the campus environment where women live affects their eating patterns (Kashubeck & Walsh, 1994). It also supports other research suggesting that not only does the campus environment affect eating patterns but the particular subgroup a person belongs to such as sororities, athletics, or majors does as well (Berry & Howe, 2000). It could also be an indication that the individuals who live on campus have a certain personality trait that could cause the increased pathology.

There were other differences between women living in residence halls and those living off campus. Those in the residence halls reported higher levels of religiosity, social interaction, hall involvement and peer pressure than those off-campus. In addition,
women living in the residence halls were younger than those living off-campus. All of these variables with the exception of hall involvement have been related to increase in eating disorder symptoms (Cook & Reiley, 1991; Stice, 2002). Taken together these factors suggest an environment that may foster the development of eating disorder symptoms in the residence hall system.

It may be possible to use these environmental differences to influence women living in residence halls through educational prevention programs concerning eating disorders. Athletics and sororities already have programs in place in hopes of decreasing the number of college women within these groups affected by eating disorders. Some universities (e.g., Wellesley College) have already attempted to implement such programs. Another option may be to start peer meetings in which individuals can provide a support system for one another. If indeed sociocultural pressures play a part in the development of eating disorders this type of intervention may provide a positive pressure not to engage in unhealthy eating behaviors. Also programming involving religion and peer pressure could be used to promote a healthy eating environment.

At Wellesley College (a women's institution) an electronic bulletin board system has been put in place so that individuals can discuss issues related to body image, food, and eating (Gleason, 1995). This bulletin board can be accessed by anyone on campus. According to Gleason, after a month the bulletin board became extremely active and individuals began to discuss their pressures and concerns openly. Those who currently were involved in unhealthy eating behaviors received support and information about where to go for help. The bulletin board has been a success based on the increase in the number of individuals using its services. Such a system could easily be put into place for
the individuals within the residence hall system. The individuals living in residence halls could all be allowed access to an exclusive bulletin board. This type of education programming may bring information to a more accessible level for our college students.

Limitations.

One limitation to the study is that the results found at Western Kentucky University may not be consistent with what would occur at other universities. Universities that are greater or smaller in size, all female universities, and universities that have a religious affiliation may report different results within the residence halls. Furthermore, individuals who live within the residence halls may have other differences that contribute to whether or not they develop an eating disorder; for example, these individuals may have needy characteristics such as the desire for attention. Another difference that could have similarly influenced scores is that individuals who lived in the residence halls were younger than those living off-campus. Age may be a factor in why there is a difference in pathology. Lastly, individuals are self-reporting their behavior, and individuals may be responding inaccurately on the survey or be unaware of their behavior.

Future Research

The results of this study, call into question the methods of previous research that used primarily participants from the residence halls as a means to compute statistics on eating disorders on college campuses. New research may be necessary for providing a more accurate account of the prevalence of eating disorders on all college campuses. It is possible that current estimates are too high.
The topic of eating disorders within the residence halls appears to be relatively new. This concept opens the door for a number of different research opportunities. A comparison between individuals living in sorority housing and individuals living on campus, similar to the one performed in this study, may be beneficial in determining if there are differences between the two groups. Also, some insight may be provided by looking at the different types of residence halls on campuses to determine if there is a difference between the number of self-reported eating disorders between coed and single gender halls and whether living category has anything to do with eating disorders.

An important question to be answered is “What are some possible reasons that individuals who live on campus may be at a higher risk for developing eating disorders?” Research should explore the theory that sociocultural influences play a role in developing eating disturbances within residence hall environments. Making comparisons with race, age and college year may also identify those mostly affected by the residence hall environment. Another variable of interest is the impact of the size of the university or the type of university.

Conclusion

Based on differences in body image and eating disorders, the results of this study indicate that individuals living in the residence halls could be at a higher risk for developing an eating disorder than individuals who live off campus. There is a need for educational prevention programs concerning eating disorders within the residence hall environments as well as a need to evaluate the residence halls in order to determine possible causes of this increased risk.
References


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Appendix A

Demographic Survey
<table>
<thead>
<tr>
<th>Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you consider yourself a religious person?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Would you consider yourself a socially active person?</td>
<td>Not Somewhat Very</td>
</tr>
<tr>
<td>Would you consider yourself a person who is pressured by grades?</td>
<td>Not somewhat very</td>
</tr>
<tr>
<td>Would you consider yourself to be active in Hall Programming (campus wide programs, hall programs, RHA programs)?</td>
<td>Not somewhat very</td>
</tr>
<tr>
<td>Would you consider yourself to be a person who is pressured by friends?</td>
<td>Not somewhat very</td>
</tr>
<tr>
<td>Would you consider yourself to be a perfectionist?</td>
<td>Not somewhat very</td>
</tr>
<tr>
<td>How much conflict would you say occurs between you and your parents?</td>
<td>None some a lot</td>
</tr>
</tbody>
</table>

If you live on campus please list which residence hall

Are you in a Sorority or a Fraternity? Yes No
If so, what type? Honor Social Service

Are you an Athlete? Yes No
If so, which sport?
Appendix B

Eating Screen
**Eating screen**

Please carefully complete all questions.

<table>
<thead>
<tr>
<th>Over the past 3 months…</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you felt fat?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Have you had a definite fear that you might gain weight or become fat?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Has your weight influenced how you think about (judge) yourself as a person?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Has your shape influenced how you think about (judge) yourself as a person?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

5. During the past 6 months have there been times when you felt you have eaten what other people would regard as an unusually large amount of food (e.g., a quart of ice cream) given the circumstances? YES NO

6. During the times when you ate an unusually large amount of food, did you experience a loss of control (feel you couldn't stop eating or control what or how much you were eating)? YES NO

7. How many DAYS per week on average over the past 6 MONTHS have you eaten an unusually large amount of food and experienced a loss of control? 0 1 2 3 4 5 6 7

8. How many TIMES per week on average over the past 3 MONTHS have you eaten an unusually large amount of food and experienced a loss of control? 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

**During these episodes of overeating and loss of control did you…**

9. Eat much more rapidly than normal? YES NO

10. Eat until you felt uncomfortably full? YES NO

11. Eat large amounts of food when you didn't feel physically hungry? YES NO

12. Eat alone because you were embarrassed by how much you were eating? YES NO

13. Feel disgusted with yourself, depressed, or very guilty after overeating? YES NO

14. Feel very upset about your uncontrollable overeating or resulting weight gain? YES NO

15. How many times per week on average over the past 3 months have you made yourself vomit to prevent weight gain or counteract the effects of eating? 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

16. How many times per week on average over the past 3 months have you used laxatives or diuretics to prevent weight gain or counteract the effects of eating? 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

17. How many times per week on average over the past 3 months have you fasted (skipped at least 2 meals in a row) to prevent weight gain or counteract the effects of eating? 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

18. How many times per week on average over the past 3 months have you engaged in excessive exercise specifically to counteract the effects of overeating episodes? 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14


20. How tall are you? _____ ft. _____ in.

21. Over the past 3 months, how many menstrual periods have you missed? 0 1 2 3 n/a

22. Have you been taking birth control pills during the past 3 months? YES NO

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Appendix C

Informed Consent Document
Informed Consent Statement

You are being asked to participate in a study that is looking at the eating habits of college women. Please read the following material carefully. It describes the purpose of the study, the procedure to be used, risks, and benefits of your participation, and what will happen to the information that is collected from you. This project is being conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this project.

A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

1. **Nature and Purpose of the Project:** This study is being done to help examine the eating habits of college women as part of a Master's thesis for a graduate student at Western Kentucky University.

2. **Explanation of procedures:** You will be asked to complete a 22-question survey related to eating habits.

3. **Discomfort and risks:** The risks to participation appear to be small. Remember that no one has to answer any question that they do not want to and everyone may stop at any time without penalties. There is always a small chance that a question could bring about problems. Please let the examiner know if a question has bothered you.

4. **Benefits:** You may be able to receive extra credit for your psychology courses, if your instructor offers such credit (be sure to check with your instructor). Other benefits could include a sense of having helped contribute to the current research.

5. **Confidentiality:** The data collected from you will be used evaluate eating habits of individuals living on and off campus. Your answers to the questions are confidential and no identifying information will be attached to them.

6. **Refusal/Withdrawal:** Refusing to be in the study will have no effect on any future services you may receive from the University. Anyone who agrees to participate in this study is free to quit at any time with no penalty.

7. **Questions:** If you have any questions about the study, please ask them at this point. If you think of questions later on, you may direct them to Rick Grieve, Ph.D., at (270) 745-4417, Monday –Friday from 9:00 am until 4:30 PM, or Sie Powell at (270) 745-2695

You understand also that it is not possible to identify all potential risks in an experiment procedure, and you believe that reasonable safeguards have been taken to minimize both the known potential but unknown risks.

________________________________________________________________________

Participants signature Date

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT THESIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS REVIEW BOARD
Dr. Phillip E. Myers, Human Protections Administrator
TELEPHONE: 270-745-4652
Appendix D

Debriefing
DEBRIEFING STATEMENT

Thank you for participating in this research study. We are interested in the differences in eating habits between students who live on campus and those living off campus. It is predicted that individuals living on campus will have less healthy eating habits than those living off campus will. If you have any questions regarding the research or if you would like a final copy of the research project, please contact Dr. Rick Grieve at (270) 745-4417, Sie Powell at (270) 745-3603, or the Department of Psychology, Western Kentucky University, 1 Big Red Way, Bowling Green, KY 42101. The final copies will not be available until after January 1, 2004.
Appendix E

Human Subjects Review Board Approval
In future correspondence please refer to HS03-124, May 6, 2003

Carolyn Powell
WKU Box 8238
Bowling Green, KY 42101

Dear Carolyn:

Your research project, “Eating Disorder and Eating Disordered Behavior Within the Residence Hall Environment,” was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects’ welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that: (1) signed informed consent will be obtained from all subjects. (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

a. Your research therefore meets the criteria of Expedited Review and is Approved.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Sincerely,

Phillip E. Myers, Ph.D.
Director, OSP and
Human Protections Administrator