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THE CORRELATION OF COMPULSIVE BUYING AND BINGE EATING
BEHAVIORS IN FEMALE UNDERGRADUATE
COLLEGE STUDENTS

By
Michele Z. Clemente

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
(May 4, 2002)

Approved by _____
Professor

Date Approved 5/8/02

ABSTRACT

MICHELE Z. CLEMENTE

THE CORRELATION OF COMPULSIVE BUYING AND BINGE EATING
BEHAVIORS IN FEMALE UNDERGRADUATE COLLEGE STUDENTS

2001-2002

DR. MARY LOUISE KERWIN

MASTER OF ARTS IN APPLIED PSYCHOLOGY AND MENTAL HEALTH
COUNSELING

The purpose of this study was to extend previous research by Faber et al. (1995) in which comorbidity (two or more disorders existing at the same time) was found between Binge Eating Disorder and compulsive buying behaviors in a clinical sample. Faber et al. explored whether a subset of impulse control disorders could be called “compulsive consumption” disorders. Participants in this study, 51 undergraduate, female students, aged 18-23, were obtained from the Introduction to Psychology subject pool at Rowan University. The subjects completed the Binge Eating Scale and Compulsive Buying Scale and a correlation was completed. The result was that a significant negative correlation was found between scores on the Binge Eating Scale and scores on the Compulsive Buying Scale. A higher score on the Binge Eating Scale indicated greater severity, whereas a lower score on the Compulsive Buying Scale indicated greater severity. The behaviors were, not only, likely to occur together, but also,

with the same level of severity. This finding further supports the possible link between compulsive consumption disorders. If such a subset exists, it may help to determine possible cause and treatment.

MINI-ABSTRACT

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Possible subset of impulse control disorders (compulsive consumption) was explored. Fifty-one undergraduate, female students, aged 18-23, completed the Binge Eating Scale and the Compulsive Buying Scale. A significant negative correlation was found between the scores, indicating the behaviors occurred together at the same severity levels and extending previous research findings.

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Chapter 1

Introduction

The following research project is an extension of previous research completed by Faber, Christenson, De Zwaan, and Mitchell (1995) in the area of compulsive consumption. This section will begin with a background of the development of the original study that examined the relationship between Binge Eating Disorder and compulsive buying. It will continue with information regarding the history of both disorders, including diagnostic criteria and possible origins. Finally, this section will conclude with a detailed review of the original study completed by Faber and his colleagues.

Compulsive Consumption

Compulsive consumption is a term used to describe a disorder where an individual consumes items, impulsively, as in drug abuse, eating disorders such as Bulimia Nervosa and Binge Eating Disorder, compulsive buying, and compulsive gambling. These behaviors are mostly classified under impulse control disorders, which are disorders characterized by a failure to resist a temptation causing harm or guilt (American Psychiatric Association, 2000). These disorders are in contrast with other impulse control disorders such as pyromania (fire setting) and trichotillomania (hair pulling) because consumption of items is not a key factor in these disorders.

Early research has suggested that there are many similarities among disorders of compulsive consumption, such as common causes, similar developmental patterns, and

similar characteristics of the people who engage in these behaviors. Because of these similarities, it has been suggested that a subset of impulse control disorders may exist consisting of addictive or compulsive consumption behaviors (O'Guinn & Faber, 1989; Hirschman, 1992). In order for this subset to be defined, these disorders of compulsive consumption must be related. The best way to show the relationship between disorders of compulsive consumption is to show that comorbidity exists between them.

Comorbidity is a term used to describe when one disorder leads to the development of another disorder or when both disorders occur as a result of similar underlying problems (Faber et al., 1995). Comorbidity has already been established between several compulsive consumption disorders such as kleptomania and compulsive buying (McElroy, Pope, Hudson, Keck & White, 1991) and alcoholism and compulsive buying (Glatt & Cook, 1987; Valence, d'Astous & Fortier, 1988). Faber et al. studied the comorbidity of compulsive buying and binge eating in a continuing effort to group together different disorders of consumption to help support this theory.

Compulsive Buying

Compulsive buying is also known as Oniomania and is characterized by mounting tension until the individual goes shopping; irresistible and intrusive urges to shop; and loss of control while shopping. These urges are increased by negative emotional states and are followed by a relief of tension after shopping or making a purchase. After the episodes, many people reported feeling guilty or ashamed over what they had bought and how much they spent. Items bought are usually associated with one's appearance such as clothes, cosmetics, and jewelry. Often the items that are purchased are not needed or used causing the individual to hoard the items or give them away as gifts. (Christensen et

al., 1994; McElroy, Keck, Pope, Smith & Strakowski, 1994) Most of the time individuals who engage in compulsive buying behaviors realize that their spending is problematic only after many years. Often times, they have made attempts to control their spending by avoiding stores and giving their credit cards to family or friends (McElroy et al., 1994).

Although compulsive buying is not a diagnosis at this time, proposed diagnostic criteria are: (a) presence of buying impulses or excessive buying (not both in order to include those who have impulses but do not give in and also people who do not have impulses but spend excessively), (b) shopping as well as spending behavior, (c) excessive shopping as evidenced by spending larger amounts of money and/or time than intending while shopping, and (d) experiencing marked distress such as excessive time consumed, interfered social or occupational functioning, and resultant money difficulties (McElroy et al., 1994). Subjects with oniomania have been found to meet criteria for many other Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Axis I disorders (American Psychiatric Association, 2000) such as major depression, bipolar I, obsessive-compulsive disorder, panic disorder, phobias, substance abuse, eating disorders, and other impulse control disorders. (McElroy et al., 1994; Schlosser, Black, Repertinger, & Freet, 1994).

Another theory likens compulsive buying to an addiction such as that seen with alcohol or drugs. Faber and O'Guinn (1988) described a general tendency towards compulsive and addictive behaviors in compulsive shoppers. When compared to normal shoppers, compulsive shoppers tended to score higher on a scale measuring general compulsivity. The authors hypothesize that these individuals would be compulsive in another behavior if they were not compulsive shoppers.

Compulsive buying is most often identified as being in the family of impulse control disorders (Faber et al., 1995). The repetitive problem behavior and mounting tension, which is released only by engaging in the behavior is characteristic of both compulsive buying and impulse control disorders. However, compulsive buying shares with obsessive-compulsive disorder intrusive or disturbing thoughts (such as constant thoughts about shopping) and resistance to those thoughts (Christensen et al., 1994).

“Impulse control disorders” and “obsessive-compulsive disorders” are names that are often used interchangeably. For example, compulsive buying is considered an impulse control disorder although it is called “compulsive” buying. The two types of disorders are actually thought to be opposites on the same spectrum (Oldham, Hollander & Skodol, 1996). Both impulse control disorders and obsessive-compulsive disorders are characterized by mounting pressure or tension until the individual performs the behavior and the result of the behavior is usually harmful, such as loss of money, weight gain, or skin abrasions due to compulsively washing one’s hands. However, there are some very important differences between the two types of disorders. Impulse control disorders are considered to be due to a lack of control of behavior, as in shopping or eating binges. Also, with impulse control disorders, the behavior, itself, is pleasurable. Behaviors such as shopping and eating give the individual pleasure at the time it is performed; is only the resultant money loss or weight gain that is harmful (Oldham, Hollander & Skodol, 1996).

Conversely, individuals with obsessive-compulsive disorders are overly controlling of their behavior, as in Anorexia Nervosa where an individual controls his or her weight by not eating. Also, in direct contrast with impulse control disorders, the behaviors performed by an individual with an obsessive-compulsive disorder are not

pleasurable. The behavior is meant to avoid harm, such as washing one's hands repeatedly to avoid contamination (Oldham, Hollander & Skodol, 1996).

Impulse control and obsessive-compulsive disorders are said to be on a continuum because there is sometimes an overlapping between behaviors. An example of this is the individual with Bulimia Nervosa (which is considered an impulse control disorder due to the pleasure one gets by binge eating) who controls his or her weight, occasionally, by not eating, as in Anorexia Nervosa (an obsessive-compulsive disorder) (Oldham, Hollander & Skodol, 1996).

Binge Eating Disorder

Binge Eating Disorder (BED) is a recent addition to the DSM-IV and is found in the appendix dealing with disorders for future study. BED is characterized by recurrent episodes of binge eating marked with a loss of control. The episodes must include eating much more rapidly than normal, eating in a short amount of time an amount of food that is larger than most people would eat in a similar amount of time, and must occur at least two times per week for at least six months. Individuals must not regularly engage in compensatory behaviors (i.e. purging, excessive exercise, use of laxatives) and must feel marked distress over the binges (Spitzer et al., 1992). However, differentiating between BED and Bulimia Nervosa can be difficult, at times, because some binge eating individuals occasionally engage in compensatory behaviors such as exercise, calorie restriction, and use of appetite suppressants (Yanovski, 1993).

The development of diagnostic criteria for BED has been advocated by several groups of researchers because they feel that BED is a disorder separate from Bulimia Nervosa that causes great distress for many individuals. However, there is a certain

disadvantage to developing such rigid criteria. Some feel that by developing a set of criteria to describe and diagnose BED it will be changing what is now a continuous measure of severity of BED into a categorical measure (either the presence or absence of BED). Such categorization may result in the loss of some important information about different binge eating frequency, severity, and related behaviors (Yanovski, 1993).

Due to the lack of compensatory behaviors, many individuals suffering from BED have a high rate of obesity and/or significant weight fluctuations (Tuschl, 1990; Spitzer et al., 1993). BED has been found to have a higher prevalence in women as compared to men and whites as compared to non-whites (Spitzer et al., 1993). BED has also been found to have a high prevalence in weight control groups. Spitzer et al. found that over 70% of the members of Overeaters Anonymous currently met criteria for BED.

Those who meet criteria for BED have been found to show greater psychopathology as measured by the Minnesota Multiphasic Personality Inventory (Kolotkin, Revis, Kirkley, & Janick, 1987). Psychological disturbances such as anxiety disorders, depression (with typical and atypical features), panic disorders, phobias, and affective disorders occur more in those with BED when compared with control samples, including samples of obese non-bingers (Kolotkin et al., 1987; Marcus et al., 1990; Vollrath, Koch, & Angst, 1992). Also when compared with non-binge eaters, those with more severe binge eating tendencies are likely to exhibit greater self-doubt, guilt, worry, excessively high standards, rigid beliefs, and obsessive thinking creating a possible link to obsessive-compulsive and impulse control disorders (Kolotkin et al., 1987).

The theory of “restrained eating” attempts to explain why individuals engage in binge eating behaviors. It is built on the idea that those who continuously deprive

themselves by restraining their calorie intake are precipitating binges by doing so. Wardle (1990) and Tuschl (1990) give evidence that the reduced satiety that occurs in restrained eaters leads to the individual eventually bingeing in order to make up for the calories they normally do not allow their bodies to ingest. However, this theory has been criticized saying that it inaccurately likens a binge to an extended meal. It ignores the emotional aspect and apparent loss of control associated with a binge (Herman & Polivy, 1990).

Other explanations have included BED as a form of obsessive-compulsive disorder, addiction (much like alcohol or drug addiction), and a result of sexual abuse. Preliminary studies cannot, at this time, support or negate these ideas (Yanovski, 1993).

Relationship Between Compulsive Buying and Binge Eating Disorder

Faber, Christensen, de Zwaan, and Mitchell (1995) chose compulsive buying and BED as the focus of their study because they seem to share many features. They are most likely to be classified as impulse control disorders, they both are characterized by an inability to control the urge to over consume, and, finally, they share demographic and psychological profiles. Those displaying BED and compulsive buying behaviors tend to have low self-esteem, show higher rates of depression and anxiety, and higher prevalence for other psychological disorders. Research also shows that people who display these behaviors are, most often, women (Yanovski, 1993; McElroy et al., 1994). With this in mind, it is possible that both behaviors may have a common cause and may serve the same purpose for the individuals who engage in them.

In order to be sure that true comorbidity exists between BED and compulsive buying and one behavior is not merely a subset of the other, two studies were conducted.

The first study was to determine if people with BED were more likely to engage in compulsive buying behaviors than those without BED. The second was to determine if compulsive buyers were more likely than noncompulsive buyers to have symptoms of BED.

In order to be included in the first study, subjects had to be at least 50 pounds above the ideal body weight for their age and height as determined by the Metropolitan Life Insurance Company standard tables. Subjects were to have no significant health problems, no current substance abuse, and no history of bipolar disorder or schizophrenia. Subjects were also required to pay \$1,000 for a 26-week treatment program, which included dietary supplements and therapy sessions. A total of 197 subjects participated in the study with ages ranging from 20-55 and with 51.3% having a college degree. Before treatment sessions began, subjects were interviewed by a psychiatrist to determine if they met criteria for BED. Additionally, all subjects completed the Compulsive Buying Scale (CBS).

As a result, 84 of the subjects were diagnosed as having BED and 113 did not meet the criteria for such a diagnosis and were classified as non-binge eaters. The two groups did not differ significantly in age, education, or body mass. A comparison was made between the two groups' mean scores on the CBS. This indicated that the BED group had significantly greater compulsive buying tendencies than the non-binge eating group and significantly more binge eaters were classified as compulsive buyers than non-binge eaters (23.8% vs. 10.6%; $\chi^2=5.98$, $df=1$, $p<.05$).

Two items on the CBS were of particular interest and were reported most often by the respondents. First, 21.8% of the subjects indicated that they often or very often

“bought something in order to make themselves feel better.” This is a potential problem because some people use food to make themselves feel better and they could be including this as the item purchased. Second, 34.9% of the subjects also indicated that they often or very often “made only the minimum payments on my credit card.” With an economic recession many more people are making minimum payments on credit cards and this figure may be inflated.

Taking these two items into consideration the cut-off point for the CBS was modified thus bringing the percentage of non-binge eaters who were now classified as compulsive buyers 4.4%. This means that 15%, not 10.6%, of non-binge eaters were now classified as compulsive buyers (15% vs. 4.4%; $\chi^2=6.51, df=1, p<.05$). This figure is more consistent with the previous estimates for the general population and still demonstrates a significant relationship.

In summary, this study included 84 subjects who were identified by a psychiatrist as binge eaters and 113 subjects who did not meet the criteria for BED and were identified as non-binge eaters. Both groups were given the CBS and their scores were compared. The first comparison showed that 23.8% of binge eaters vs. 10.6% of non-binge eaters were classified as compulsive buyers by the CBS, with this result being significant at the .05 level. Two items were then removed because of their ambiguous nature and the cut-off point for the scores was modified, bringing the total percentage of non-binge eaters classified as compulsive buyers to 15%. With the modified cut-off, the two groups were still statistically significant ($p<.05$).

The second study compared compulsive buyers and noncompulsive buyers on the incidence of eating difficulties, especially behaviors relating to BED and bulimia (Faber

et al., 1995). Subjects for the compulsive buying group were recruited via a newspaper advertisement asking for “people 18 years or older who have a compulsive buying problem.” Subjects for the noncompulsive buying group were recruited with a similar advertisement requesting people “18 years or older interested in participating in a research study.” All respondents were screened using the CBS. Those who responded to the compulsive buying advertisement who did not meet the criterion for compulsive buying were excluded, as were respondents to the non-compulsive buying advertisement who met criterion for compulsive buying. Also, subjects from both groups were excluded if they were taking medication for psychosis or if they had ever been diagnosed as psychotic.

All subjects filled out a shortened version of the Eating Disorder Questionnaire, which asks questions about one’s history of dieting, binge eating, and purging behaviors and also assesses attitudes towards weight and body proportions. Subjects were also evaluated by trained psychiatric interviewers using a modified version of the Structured Clinical Interview for DSM-III-R Disorders (SCID), which evaluates for symptoms of different forms of psychopathology. Finally, subjects were interviewed with the Minnesota Impulse Disorder Interview (MIDI) to identify the presence of any of the five impulse control disorders such as kleptomania, pyromania, pathological gambling disorder, trichotillomania, and intermittent explosive disorder.

Because earlier research has shown that compulsive buyers tend to be younger than the general population and also female, subjects were matched by age and sex. The final sample for this study was 24 compulsive buyers and 24 matched control subjects. There were no significant differences found for race, marital status, education, income, or

mean weight between groups. Although the difference was not significant, compulsive buyers reported weights that were, on average, 15 pounds heavier than the control group.

Compulsive buyers were significantly more likely to report having engaged in binge eating episodes than the control group (54.2% vs. 20.8%; $\chi^2=5.69$, $df=1$, $p<.05$). Also, 33% of compulsive buyers versus 4.2% of the control group (one person) reported binge eating several times a month or more often ($\chi^2=6.70$, $df=1$, $p<.01$). Significant differences were also found between the two groups regarding the frequency they engage in the following BED criteria: consuming large quantities of food (37.5% vs. 12.5%; $\chi^2=4.00$, $df=1$, $p<.05$), eating very rapidly (37.5% vs. 4.2%; $\chi^2=8.08$, $df=1$, $p<.005$), feeling out of control during a binge (29.2% vs. 4.2%; $\chi^2=5.40$, $df=1$, $p<.05$), and feeling very badly after a binge (45.8% vs. 8.3%; $\chi^2=8.55$, $df=1$, $p<.005$). Differences between the groups did not reach significance for frequency regarding the following BED criteria: having an uncontrollable urge to eat until physically ill (20.8% vs. 4.2%; $\chi^2=3.05$, $df=1$, $p<.10$) and binge eating in private (33.3% vs. 12.5%; $\chi^2=2.95$, $df=1$, $p<.10$).

Several questions examined whether there were significant differences in the feelings, attitudes and behaviors of compulsive buyers towards their body and weight gain. The results were that compulsive buyers tended to display greater negativity regarding their body and weight gain. This could be because of their higher rate of depression and/or bulimic tendencies.

In summary, the second study compared eating behaviors between groups of 24 compulsive buyers and 24 non-compulsive buyers, as identified by the CBS. Both groups completed the Eating Disorders Questionnaire, the MIDI, and the SCID. The

result was compulsive buyers were more likely to engage in binge-eating behaviors than non-compulsive buyers.

The results of these two studies showed that people diagnosed as having BED scored significantly higher on the CBS than those who were not diagnosed with BED, and thus were more likely to be classified as compulsive buyers. Conversely, those who were in the compulsive buying group were more likely than non-compulsive buyers to be diagnosed as having an eating disorder, to report engaging in binge eating episodes, and have greater negative feelings towards their body and weight gain.

In Faber et al.'s studies (1995) both groups were given a diagnosis of one disorder and then assessed to see if they showed features of the other disorder. Both samples were, therefore, considered clinical samples because they were assessed as meeting certain criteria. Those who do not meet the criteria of frequency and severity, are not given a diagnosis of the disorder. However, both compulsive buying and BED have been considered disorders with features on a continuum. This means that one can have the features of the disorder with varying degrees of severity.

Purpose of this Study

The purpose of this study is to determine whether or not a relationship exists between BED and compulsive buying behaviors at any level of severity by determining if those in a non-clinical population who engage in one set of behaviors will also engage in the other set of behaviors at the same level of severity. The results of this project will help to further treatment of both disorders and determine possible etiologies. The hypothesis proposed for this study is: Undergraduate college females' scores on the Binge Eating Scale will be correlated negatively with their scores on the Compulsive

Buying Scale. The negative correlation will exist because a higher score on the Binge Eating Scale indicates a higher level of severity whereas, on the Compulsive Buying Scale, a lower score indicates a higher level of severity.

Chapter 2

Method

Participants

The participants for this study were female, undergraduate students ages 18-23. Participants who reported having been diagnosed with an eating disorder were excluded so as to compose a non-clinical sample. Participants were obtained by soliciting, via fliers, the Introduction to Psychology classes at Rowan University. Students in the Introduction to Psychology participant pool at Rowan University received credit for participating in a total of 60 minutes of research studies at the university. Students received 30 minutes of credit for this study. Students wishing to participate in this study were able to sign up at the Psychology Department bulletin board with no more than 25 people being allowed to sign up for each session. Five sessions were needed to obtain a large enough sample size.

A total of 62 people participated. However, of the 62 participants, 9 did not complete either the CBS or the Binge Eating Scale (BES), one answered several questions on the BES with two answers, and one reported being previously diagnosed as having an eating disorder. These 11 participants were eliminated from the study leaving a total of 51 participants (n=51).

Measures

The CBS and BES were the tools used in this study.

Compulsive buying scale. The Compulsive Buying Scale (Faber & O'Guinn, 1992) is a self-report questionnaire that uses a five-point Likert scale to measure levels of agreement or disagreement with seven statements about different feelings and behaviors common among compulsive buyers. Faber and O'Guinn report internal reliability (Cronbach's alpha) for the Compulsive Buying Scale of .95. The questionnaire was validated using samples from two groups: self-identified compulsive buyers and a general community sample. Both groups were tested using the CBS. Scores from the group of self-identified compulsive buyers were compared with scores from the general community samples who were identified as compulsive buyers by the CBS.

The result was that there was no significant difference in the scores of both the self-identified compulsive buyers and the CBS-identified compulsive buyers. The researchers believe that this result supports the belief that those individuals from the general community sample who were identified by the screener as compulsive buyers were no different from those who identified themselves as compulsive buyers. This tool is currently the only widely used tool for diagnosing compulsive buying and is the tool used in the original study that is the basis of this research study.

Binge eating scale. The BES was used in place of the Eating Disorders Questionnaire and the Structured Clinical Interview for DSM-III-R Disorders (SCID) from Faber et al. (1995). This was done because the results of the original study found that, of the eating disorders measured by the researchers, BED was most highly correlated with compulsive buying. This study is being done to extend that finding.

The BES consists of a 16-item questionnaire that measures feelings, cognitions, and behavioral manifestations associated with binge eating (Gormally, Black, Daston &

Rardin, 1982). A high score indicates greater severity in binge eating problems. In the original study, validity was assessed using two samples of overweight people who were seeking treatment for obesity. One sample consisted of 65 females aged 24 to 55 with an average weight of 178.1 pounds. The other sample consisted of 32 females and 15 males (n= 42) aged between 24 and 67 with an average weight of 209.9 pounds.

The researchers developed a scale by identifying eight characteristics of binge eating that described feelings and thoughts (such as guilt) and eight characteristics that described behaviors (such as eating too fast). They then created statements that reflected those characteristics at various degrees of severity. Those statements were then given a weight from 0-3 with zero indicating no binge eating problem and three indicating a severe binge-eating problem. Next, a structured interview was developed to determine the severity of binge eating where the interviewer focused on behaviors during a recent binge eating episode, emotions after the episode, and feelings of control of eating urges. Interviewers were trained for five hours and were given a manual to use. Finally, the Cognitive Factors Scale was administered to assess whether the person had unrealistically high standards or low efficacy expectations for sustaining a diet.

In the first sample, the interview was conducted before the tests were given and in the second sample the tests were given before the interview. Scores were compared between the BES and the structured interview using a one-way analysis of variance and indicated a significant difference between the levels of severity (sample 1: $F= 13.48$, $df= 2, 62$, $p< .001$; sample 2: $F= 25.13$, $df= 2, 44$, $p< .001$). Cognitive Factors Scale was also significantly correlated with the BES in both samples (sample 1: $r= .56$, $p< .001$; sample 2: $r= .53$, $p< .001$).

In 1999, Gayle M. Timmerman conducted a study to further assess the validity and reliability of the BES. This study was part of a larger study that examined the relationship between degree of body fat in non-purge binge eating women and binge eating severity. To be included in this study one had to be a healthy woman who engaged in non-purge binge eating at least twice monthly for the last 6 months, not during chronic illness, or other compensatory behaviors such as fasting or appetite suppressants. The frequency of twice monthly is not as strict as the BED diagnostic criteria so as not to only have people with severe binge-eating problems in the study.

Food records were used to measure binge-eating severity in an everyday setting and were analyzed using Food Processor II software. Subjects recorded food intake for 28 days and indicated for each eating episode whether or not it was a binge. In this study a binge was defined as being “uncontrolled consumption of a large amount of food.” Self-identified binge episodes were classified as objective binges if at least 1,000 calories were consumed. If less than 1,000 calories were consumed, the episode was classified as a subjective binge. Objective and subjective binge eating severity were examined separately and together with the minimum calorie criterion removed.

The results were that BES scores correlated with the measures of binge eating severity from the 28-day food records with correlations ranging from .39 to .40. BES scores had significant association between all measures of subjective binge eating severity such as number of subjective binge episodes, binge days, and binge calories consumed. BES scores also had a significant association between all measures of objective binge eating severity with correlations ranging from .29 to .32. When the two were combined and the minimum number of calories criterion was removed, BES scores

had higher significant correlations ranging from .42 to .48. However, BES scores were not significantly related to total caloric intake for 28 days ($r = .16$, $p = .12$). This indicates that the BES measures uncontrolled eating (binge eating severity) and not total caloric intake.

Also in this study, further examination of the validity of the BES led the researchers to divide the subject into groups based on their total BES scores. Scores less than or equal to 17 indicated mild or no binge eating problem ($n=15$), scores from 18 to 26 indicated a moderate binge eating problem ($n= 25$), and scores at or above 27 indicated serious binge eating problems ($n=16$). A one-way ANOVA was used to examine differences among the groups in average number of binge calories, binge days, and binge episodes over 28 days for subjective binge eating, objective binge eating, and the two combined. The Scheffe test was used with an alpha level of .05. There were no significant differences in the three groups' average number of objective binges. There were, however, significant differences among the three BES groups in the average number of subjective binge calories and subjective and objective binge calories combined. Differences were mainly between the groups with mild and serious binge eating problems.

The three groups were examined regarding number of binge days and binge episodes and similar results were found. There were significant differences found among the three groups for average number of objective binge eating days, average number of subjective binge eating days, subjective binge episodes, combined subjective and objective binge eating days and combined binge eating episodes. Again, the differences

were between the groups with mild and serious binge eating problems. A two-week test-retest reliability for total BES scores was $r = .87$.

These findings suggest that the BES can measure severity of binge eating rather than overall caloric intake and for this reason it can successfully differentiate between binge eating, or uncontrolled food intake, and overall caloric intake. This study suggests that the BES may be most appropriate when the amount of food consumed is not an area of interest.

Research Design

This is a correlational design in which binge eating behaviors were correlated with compulsive buying behaviors.

Procedure

After receiving approval from the Rowan University Institutional Review Board, the experiment took place on five separate days in a reserved classroom in Robinson Hall at Rowan University. The classroom had approximately 20-30 chairs with attached desks, one teacher's desk in the front of the room, and one entrance/exit. The participants were instructed on the sign-up sheet to meet at this room. Upon entering the room, participants were asked to sign in and to take a seat. They were not instructed as to where to sit.

The experimenter explained that they would be participating in a study focusing on spending and eating habits among undergraduate college females. The participants were asked to complete an information sheet (see appendix A) and to sign two copies of the Informed Consent form (see appendix B). The information sheet asked for the participant's age, the name of her Introduction to Psychology professor, the day/time of

the class, and whether or not she had been previously diagnosed as having an eating disorder. The information sheet did not ask for the participant's name. The experimenter collected one copy of the Informed Consent form and instructed the participants to keep the other copy for their records.

The participants were then told they were completing questionnaires on spending and eating habits. They were assured that their answers will be kept confidential and were asked to answer all questions honestly. Participants then received both the CBS and BES at the same time. In order address the close seating of the room, the scales were handed out in alternating order (the BES on top and then the CBS on top). Participants were asked to complete the scales in the order in which they were given and to wait quietly until everyone finished. They were also told that if they had any questions to raise their hands and the researcher would come over and address the question individually.

When all of the participants were done, the questionnaires and information sheets were collected and the participants were debriefed as a group. Debriefing consisted of distributing and reading aloud a prepared statement to the participants (see Appendix C). Finally, the participants were asked if they had any questions. Participants in all five groups stated that they did not have any questions or concerns and left the room quietly. The entire experiment took no longer than 30 minutes for each group.

Chapter 3

Results

Binge Eating Scale

The BES consists of 16 groups of numbered statements. All groups have four statements except for groups 6 and 16, which have only three statements each. Subjects were to read all the statements in each group and put a check mark next to the one that best described the way they felt about their control over their eating behavior.

Statements were arranged in order beginning with the statement that indicated little or no problem with control of an eating behavior and ending with the statement that indicated the greatest problem with control. Subsequently, most groups were scored using a 0,1,2,3 scale. This means that if the first statement was checked it was worth zero points; the second statement was worth one point; the third statement was worth two points; and the fourth statement was worth three points. However, the following groups were scored differently: group one (0,0,1,3); group three (0,1,3,3); group four (0,0,0,2); group six (0,1,3); group seven (0,2,3,3); and group thirteen (0,0,2,3).

Feelings and cognitions. Eight groups of statements (one, three, four, six, seven, twelve, fourteen, and fifteen) referred to feelings and cognitions such as guilt and preoccupation with eating urges. For groups three, seven, twelve, and fourteen, most subjects chose the first statement (61%, 66%, 55%, and 41%, respectively). For groups four, six, and fifteen, most subjects chose the second statement (53%, 49%, and 59%, respectively). For group one, most subjects chose the third statement (49%). For these

groups of statements dealing with feelings and cognitions, most subjects chose the first or second statements, which means that most subjects had little or no problems in this area.

Eating behaviors. Eight groups of statements (two, five, eight, nine, ten, eleven, thirteen, and sixteen) referred to eating behaviors such as speed of eating and when one stops eating. For groups two, nine and ten, most subjects chose the first statement (43%, 59%, and 53%, respectively). For groups five, eight, and sixteen, most subjects chose the second statement (72%, 49%, and 55%, respectively). Group eleven showed 47% of subjects chose the second statement, however, 43% chose the first statement. For group thirteen, 39% of subjects chose the second statement, but 35% chose the first statement. For these groups of statements dealing with eating behaviors, subjects chose either statement one or two indicating little or no problems in this area.

For each subject, their chosen statements and the corresponding points were recorded onto a separate score sheet (see Appendix D). The points were added and the total score was recorded onto the score sheet, as well. Scores are broken down into three groups: a score of 17 or less indicates no binge-eating problem or a mild binge-eating problem; a score falling in the range of 18 to 26 indicates a moderate binge-eating problem; and a score of 27 or above indicates a severe binge-eating problem. In this sample, the minimum score on the BES was three and the maximum score was 33 with the average score being 12. Forty-two subjects (82%) showed a score of 17 or less indicating no binge-eating problem or a mild binge-eating problem. Four subjects (8%) scored between 18 and 26 indicating a moderate binge-eating problem and five subjects (10%) showed a score of 27 or above indicating a severe binge-eating problem.

Compulsive Buying Scale

The CBS consists of seven statements. The first statement (labeled 1a) required subjects to indicate how much they agreed or disagreed with the statement by putting an X on the line that best indicated how they felt about the statement. The choices were, “strongly agree,” “somewhat agree,” “neither agree nor disagree,” “somewhat disagree,” and “strongly disagree.” The subjects then had to indicate, also by using an X, how often they engaged in the behaviors described by the remaining six statements (labeled 2a-2f). The choices for this section were, “very often,” “often,” “sometimes,” “rarely,” and “never.” Each of the choices for all seven statements was given a point value ranging from 1-5. This means that the choices of both “strongly agree” and “very often” were valued at one point. “Somewhat agree” and “often” held a value of two points. The choices, “neither agree nor disagree” and “sometimes” were worth three points, while “somewhat disagree” and “rarely” were worth four points. Finally, the choices, “strongly disagree” and “never” were both worth five points.

Scoring of the CBS required the use of an equation:

$$-9.69 + (Q1a * .33) + (Q2a * .34) + (Q2b * .50) + (Q2c * .47) + (Q2d * .33) + \\ (Q2e * .38) + (Q2f * .31)$$

Points earned for the statement 1a were multiplied by .33; points earned for statement 2a were multiplied by .34; points earned for statement 2b were multiplied by .50; points earned for statement 2c were multiplied by .47; points earned for statement 2d were multiplied by .33; points earned for statement 2e were multiplied by .38; and points

earned for statement 2f were multiplied by .31. Finally, all seven of the products, in addition to -9.69 were then added together. A score of -1.34 or less indicated the subject was a compulsive buyer.

Feelings and cognitions. The CBS can also be divided into a group of statements that refer to feelings and cognitions about shopping and spending habits such as anxiety and embarrassment of money spent. Statements that referred to such feelings and cognitions were statements 1a, 2a, and 2e. For statement 1a, most subjects (33%) chose “somewhat disagree.” For statement 2a, most subjects (45%) chose “rarely” and for statement 2e, most subjects (71%) chose “never.” This means that most subjects had little or no difficulty in this area.

Spending behaviors. The next group of statements referred to spending behaviors such as buying items one cannot afford. Statements 2b, 2c, 2d, and 2f addressed such behaviors. For statement 2b 39% of subjects chose “sometimes” and 39% of subject chose “rarely.” For statements 2c and 2f, most subjects chose “never” (82% and 69%, respectively). For statement 2d, most subjects (37%) chose “sometimes.” Most subjects chose “sometimes,” “rarely,” or “never,” for these statements, which indicated little or no difficulty in this area.

In this sample the minimum score on the CBS was -2.58 and the maximum score was 3.28 with the average score being 1.02 . Three subjects (6%) scored below -1.34 (-1.35 , -1.85 , and -2.58) on the CBS indicating that they are compulsive buyers.

Correlation of Binge Eating Scale and Compulsive Buying Scale

Using a one-tailed Pearson correlation, the BES and CBS were correlated

($r = -.248$, $p = .039$). The correlation is negative due to the fact that the BES uses a higher score to indicate greater distress while the CBS uses a lower score. This means that the higher the score on the BES, the lower the score on the CBS.

Comparison of Scores

Scores from the BES were separated into groups of subjects who showed scores of 17 or less, which indicated no binge-eating problem or a mild binge-eating problem; scores from 18 to 26, which indicated a moderate binge-eating problem; and scores of 27 and above, which indicated a severe binge-eating problem. Additionally, subjects' scores on the CBS of -1.34 or lower, which identifies those subjects as compulsive buyers, were grouped together.

Table 1

Mild or No Binge-Eating Problem

	N	Minimum	Maximum	Mean	Std. Dev.
BES	42	3.00	17.00	9.4762	4.2840
CBS	42	-2.58	3.28	1.1124	1.3882

Table 2

Moderate Binge-Eating Problem

	N	Minimum	Maximum	Mean	Std. Dev.
BES	4	18.00	22.00	20.00	1.6330
CBS	4	.20	1.47	.9225	.5305

Table 3

Severe Binge-Eating Problem

	N	Minimum	Maximum	Mean	Std. Dev.
BES	5	27.00	33.00	30.4000	2.7928
CBS	5	-1.35	2.45	.3560	1.4902

Table 4

Compulsive Buying Problem

	N	Minimum	Maximum	Mean	Std. Dev.
CBS	3	-2.58	-1.35	-1.9267	.6186
BES	3	9.00	28.00	17.6667	9.6090

Forty-two subjects scored 17 or less on the BES indicating mild or no binge-eating problem. Their scores on the CBS ranged from -2.58 to 3.28, with a mean of 1.11 and a standard deviation of 1.39 (see table 1). Four subjects scored between 18 and 22 on the BES indicating a moderate binge-eating problem. Their scores on the CBS ranged from .20 to 1.47, with a mean of .92 and a standard deviation of .53 (see table 2). Five subjects scored 27 or above on the BES indicating a severe binge-eating problem. Their scores on the CBS ranged from -1.35 to 2.45, with a mean of .36 and a standard deviation of 1.49 (see table 3). Three subjects scored -1.34 or lower on the CBS classifying them as compulsive buyers. Two of these subjects scored in the no binge-eating problem to mild binge-eating problem range on the BES (BES score of nine, CBS score of -1.85; BES score of 16; CBS score of -2.58) and one subject scored in the

severe binge-eating problem range on the BES (BES score of 28; CBS score of -1.35).
The average score on the BES for these subjects was 17.7 with a standard deviation of 9.61 (see table 4).

Chapter 4

Discussion

The current research project is an extension of research completed by Faber and et al. (1995) where comorbidity was established between BED and compulsive buying in a clinical population. Subjects participating in the current research project were recruited from the Introduction to Psychology subject pool. They were undergraduate female students, aged 18-23. They reported not having been previously diagnosed with an eating disorder. Fifty-one people completed both the CBS and the BES. A statistically significant correlation was found in this sample. This means that the more severe the binge eating behavior, the more severe the compulsive buying behavior.

Research conducted by Faber and his colleagues (1995) determined that there was a definite link between BED and compulsive buying by using tools such as the CBS, the Eating Disorder Questionnaire, the Structured Clinical Interview for DSM-III Disorders, and the Minnesota Impulse Disorders Interview. The current research project extended this research with the use of the BES, a tool specifically designed to address BED. This tool made it possible to focus solely on the feelings, thoughts, and behaviors associated with BED giving the results greater reliability. Also, because the tools used in this project both had self-report formats, the subjects were assured complete confidentiality with their answers and were, therefore, able to answer honestly.

The results of the current research project, not only support Faber et al.'s (1995) findings of a relationship between the behaviors, but also, strengthen it. In both studies

completed by Faber et al., a clinical population was the focus. In the current study, the population was non-clinical. Such a relationship is more difficult to find in a non-clinical population because eating and buying behaviors found in these subjects could fall anywhere from no disturbance to severe disturbance. However, even with such a large variation of severity, a significant correlation was still found between the two behaviors. Additionally, not only are the two behaviors likely to occur together, but they are likely to occur at the same level of severity.

There are some limitations to this study. First, the researcher administered the questionnaire to the participants. Obviously the researcher is not blind to the hypothesis and may have, unintentionally, influenced the respondents. Also, the subjects used for this project were Rowan University females only. Community and university samples from across the country would increase the generalizeability of this project. Finally, the CBS and BES are self-report instruments, and are subject to misinformation from lying or poor memory.

Support for a relationship between BED and compulsive buying in both the clinical and non-clinical population may bring researchers closer to proving that a subset of compulsive consumption disorders exists within the category of impulse control disorders. This relationship may bring researchers closer to determining possible cause for these behaviors, and, in turn, possible treatments. Perhaps people have a general tendency towards compulsive behaviors. It may be that a person who compulsively buys is just as likely to compulsively gamble, but something, maybe preference of the activity, determines what compulsive behavior in which the person will engage.

Perhaps the determination of a relationship between, yet another, pair of compulsive consumption behaviors will lead researchers to determining how they are linked. Future research should focus on determining which, if any, other impulse control disorders are related. However, if a separate category of compulsive consumption behaviors is to be supported, it is not enough to determine which impulse behaviors of consumption have comorbidity. It is also necessary for future research to determine that *only* the impulse behaviors of consumption have comorbidity. Studies should focus on whether disorders such as compulsive buying are linked with disorders such as trichotillomania. If there is, in fact, comorbidity between these two behaviors then, perhaps, all impulse control behaviors are related, not just the behaviors of consumption.

Many factors can determine whether a person will develop one of these disorders such as psychological, sociological, or genetic factors. Most often, people with these disorders also have low self esteem, suffer from depression, and possibly have a tendency towards impulsive behaviors. Also, some impulse control disorders are experienced more often by women and some more often by men. Perhaps people are socialized to engage in one form of behaviors over another because of gender (Faber et al., 1995). Finally, current research suggests the lack of control associated with impulse control disorders is caused by lower-than-normal levels of the neurotransmitter, serotonin (Oldham, Hollander & Skodol, 1996). Perhaps different neurotransmitters are responsible for different types of impulsive behaviors.

Finally, treatment of different behavioral disorders often includes the substitution of one behavior for another behavior. For example, in the treatment of BED, it is often found that as a reward for controlling eating behaviors, one is encouraged to buy

something special. Since comorbidity exists between compulsive buying and BED this type of substitution of behaviors may not be appropriate and may encourage the development of compulsive buying (Faber et al., 1995).

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APPENDICES

APPENDIX A
SUBJECT INFORMATION SHEET

Please complete the following information sheet:

Age: _____

General Psychology Professor: _____

Day/Time of General Psychology Class: _____

Have you been previously diagnosed with/treated for an eating disorder?

Yes No

APPENDIX B
INFORMED CONSENT FORM

Informed Consent Form

I agree to participate in a study entitled, "Spending and Eating Habits Among College Women," which is being conducted by Michele Z. Clemente of the Applied Psychology Department, Rowan University. The purpose of this study is to examine the relationship between spending and eating habits in the general population of college females. The data collected in this study will be used in a Masters Degree thesis.

I understand that I will be required to complete two questionnaires but that I need not respond to all questions on the questionnaires. My participation in this study is voluntary and should not exceed one hour. I understand that my responses will be anonymous and all my information will be confidential. I agree that any information obtained from this study may be used in any way thought best for publication or education provided that I am in no way identified and my name is not used. I understand that there are minimal physical or psychological risks involved in this study and that I am free to withdraw my participation at any time without penalty. I understand that my participation does not imply employment with the state of New Jersey, Rowan University, the principal investigator, or any other project facilitator.

If I have any questions or problems concerning my participation in the study I may contact Michele Z. Clemente at (856) 256-4388 or Dr. Mary Louise Kerwin at (856) 256- 4500 X3521.

(signature of participant)

(date)

(signature of investigator)

(date)

APPENDIX C
DEBRIEFING STATEMENT

Debriefing Statement

The purpose of the study you have just completed was to assess whether an individual who engages in binge eating behaviors will also engage in compulsive buying behaviors. Literature has found a possible link between Binge Eating Disorder and other compulsive behaviors such as Compulsive Buying. It has also been found that women are more likely than men to engage in these behaviors. Both behaviors, when paired together, have been termed “compulsive consumption” (Faber, Christensen, de Zwaan, and Mitchell, 1995). A link between these types of compulsive consumption may be helpful in determining an underlying cause for such behaviors.

The researcher asks that you do not discuss the details of this study with others so as not to reveal information to potential subjects. The purpose of this study is not to diagnose. If you are concerned that you may have problems in either one of these areas such as feeling a loss of control while shopping or eating, eating until excessively full, or irresistible urges to shop, please seek help at the Rowan University Counseling Center or from another professional.

APPENDIX D
SCORING SHEET

BES/CBS Score Sheet

Question #	Check	Points	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
Total			
Question #	Check	Multiplied by:	Points
1a		X .33	
2a		X .34	
b		X .50	
c		X .47	
d		X .33	
e		X .38	
f		X .31	
Subtotal			
			- 9.69
Total			