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Perceptions of Childhood Abuse and Life Stress: Contributors to Increase in Binge Eating Behavior

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PERCEPTIONS OF CHILDHOOD ABUSE AND LIFE STRESS: CONTRIBUTORS TO INCREASE IN BINGE EATING BEHAVIOR

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Many studies reported that childhood abuse and stress play contributory roles in the development and maintenance of disordered eating behaviors. However, these studies made no mentioned efforts to validate their self-report data, and thus failed to separate the effects of actuality versus perception of childhood abuse. Thus, the current study examined how perceptions of childhood abuse and life stress affect binge eating behavior among university students.

Participants for the current study included 173 undergraduate students, recruited via Study Board. After giving verbal consent, participants completed a series of surveys and questionnaires that collected demographic data, and measured perception of abuse, perceived stress levels and binge eating activity. Upon completion, participants were given either course credits or extra credits, to be given at the discretion of their professors.

Results indicated that all of the hypotheses were supported. There were significant differences between the perception of abuse and the perceived life stress conditions (respectively). Furthermore, both of the independent variables were shown to be predictive of binge eating behavior. However, there was no interaction effect between the two independent variables. Moreover, these two variables did not moderate each other in terms of predicting binge eating behavior among university students.

Findings from this study indicated that perceptions of childhood abuse and recent life stress are both predictive of binge eating activity among university students, which was highest among individuals with a perceived history of childhood abuse. While findings from this study showed a correlation between perception of abuse and binge eating behavior, they did not show a correlation between reporting of actual incidents of childhood abuse and binge eating behavior. There were a number of limitations to the study, including limited generalizability of the findings, limited reliability of self-report measures, and any confounding of analyzed data due to order effect. Future studies are encouraged to further explore the relationship between perception and actuality of childhood abuse.

Introduction

For most people, there is a fine line between overeating and binge eating. Most people can remember instances when overeating is commonplace, such as Thanksgiving dinners, family cookouts, or birthday dinners. During those instances, people consume an excess amount of calories, but they would never qualify those instances as binges. Instead, people think of those instances as indulgent moments. So what is the difference between overeating and bingeing? According to Johnson, Boutelle, Torgrud, Davig and Turner (2000), a binge is defined as a short period of time, typically within two hours, devoted to excess consumption of food, sometimes in absence of hunger, which is followed by feelings of remorse and guilt over the loss of control. Binge eaters habitually consume excessive amounts of food, often in secret, and they inevitably feel guilty afterward over the quantity of food they consume, the duration and frequency of their binges, and the loss of control they felt during and after their binges (Johnson et al., 2000). These differences are what separate the occasional overeaters from the binge eaters, and qualify people for Binge Eating Disorder.

Binge Eating Disorder (BED), classified as a psychological disorder, is defined as recurrent episodes of binge eating, in absence of post-bingeing compensatory behaviors, such as self-induced vomiting, use of laxatives or diuretics, fasting, or excessive exercise (American Psychiatric Association [APA], 2000). To be diagnosed with BED, one must engage in recurrent episodes of binge eating, at least twice a week for more than six months, and experience marked distress after binge eating (APA, 2000). Furthermore, these binge eating episodes must be associated with at least three of the following: eating more speedily than normal; eating until (or past the point of) feeling uncomfortably full;

eating large amounts of food in absence of hunger; eating in secret due to feelings of shame or embarrassment over how much food is being consumed; and feeling disgusted, guilty, depressed or embarrassed with one's self after each episode of binge eating (APA, 2000). But most importantly, the binge eating must not be accompanied with regular use of inappropriate compensatory behaviors, and it does not occur exclusively during the course of Anorexia Nervosa, Bulimia Nervosa, or Avoidant/Restrictive Food Intake Disorder (APA, 2000).

The upcoming fifth edition of the *Diagnostic and Statistical Manual of Mental Disorder* [*DSM-5*] (American Psychiatric Association [APA], 2013) operationally defines an episode of binge eating as eating an amount of food larger than most people would eat within any two-hour period on time under similar circumstances. Furthermore, a sense of lack of control over eating must be present during bingeing episodes (i.e., the individual must feel that he/she cannot stop eating or control how much he/she is eating) (APA, 2013). Lastly, marked distress regarding binge eating must be present, and the binge eating must occur at least once a week for a minimum of three months (APA, 2013).

Prevalence and Outcomes of BED

In a study examining the prevalence of BED among young adults, Smith, Marcus, Lewis, Fitzgibbon, and Schreiner (1998) reported that 1.5% of their participants met the full criteria for BED. Among the overweight participants, the percentage of those who met full criteria for the disorder jumped to 2.9% (Smith et al., 1998). The results indicated similar rates among the different racial groups, suggesting that there is no difference in the prevalence of BED across different populations. In a similar study

conducted by Kinzi, Traweger, Trefalt, Mangweth, and Biebl (1999), 3.3% of the participants were diagnosable for BED. Furthermore, 12% of the participants met the full criteria for binge eating behavior, and 8.4% met the criteria for Binge Eating Syndrome (an eating disorder characterized by persistent late-night binge eating), suggesting that binge eating behavior was becoming more widely recognized as a serious medical and psychological health condition in the late 1990s and early 2000s (Kinzi et al., 1999).

In a more recent study, Allison et al. (2006) reported that 4.2% of their participants met full criteria for BED. Additionally, 1.4% of their participants demonstrated sub-clinical levels of BED (i.e., not meeting the full criteria, but displaying symptomatology severe enough to warrant concerns). In a study examining the prevalence of BED among a community sample, Grucza, Przybeck, and Cloninger (2007) reported that 6.6% of their participants met criteria for BED, with no difference in prevalence between men and women. The results from these studies suggest that the prevalence of BED is on the rise, and that it affects men and women equally.

The rising prevalence of BED (and sub-clinical binge eating activity) among the general population not only solidifies BED as a separate eating disorder, it also suggests binge eating as a prominent global health concern. According to recent research, BED is commonly associated with recurring physical and mental illnesses, such as obesity, clinical depression, and mood disorders (Bryant & Hill, 2000; Stunkard, Faith, & Allison, 2003; Wifley, Wilson & Agras, 2003; Yanovski, 2003). Stunkard and Allison (2003) noted that, compared to other eating disorders, BED is linked to earlier and more severe onset of obesity, as well as greater psychopathology and lower self-worth. Furthermore, people with BED are at a higher risk to develop high blood pressure, high blood

cholesterol, Type II diabetes, heart diseases, gallbladder diseases, sleep apnea, osteoarthritis, joint pain, muscle pain, gastrointestinal problems, digestive problems, and certain types of cancer (Bulik, Brownley, & Shapiro, 2007; Wifley et al., 2003; Williams, Goodie, & Motsinger, 2008).

The effects of BED are especially severe among young children. Aside from interfering with children's development in multiple domains, the excessive caloric consumption and the lack of compensatory behaviors (to get rid of some of those consumed calories) can also lead to childhood obesity and the health and medical complications associated with childhood obesity (Lamerz et al., 2005). This disorder is also connected with an impaired quality of life and social functioning, as binge eaters are often too embarrassed about their disordered behavior to engage in social activity (Wifley et al., 2003). In sum, BED (and sub-clinical levels of binge eating activity) affects not only the physical and mental aspects of a person's life, but also the social and emotional aspects as well.

Misconceptions Concerning BED

It has been suggested that the basis of binge eating is about dieting behavior (or, more specifically, failure) and excessive food consumption (or, more specifically, the amount and type of food consumed). Certain studies, however, have demonstrated otherwise. Marcus and Kalarchian (2003) suggested that, for binge eaters, loss of control is more important than overeating. Binge eating behavior is more likely to be brought on by emotional disinhibition and distress than body dissatisfaction, dieting failures, and weight concerns (Marcus & Kalarchian, 2003).

Marcus and Kalarchian (2003) also noted that, among people with diagnosable and sub-clinical levels of BED, eating in absence of hunger and eating to modulate strong and/or negative affect (such as sadness, guilt, and restlessness) make binge eating behavior more about emotional compensation than body concerns, as most cases of binge eating lack the post-bingeing purging or fasting components. Johnson, Cohen, Kotler, Kasen and Brook (2002) noted that binge eating behavior often accompanies depressive symptoms, and suggested that people engage in binge eating to regulate negative feelings. Similarly, Stice, Killen, Hayward and Taylor (1998) found that negative affectivity predicted the onset of binge eating, which supported Marcus and Kalarchian's (2003) claim that binge eaters engage in excessive eating as a means of emotional compensation. While these studies did not elucidate what caused or brought on these negative affects, they all indicate that binge eating is more likely to be used as a coping mechanism against negative emotionality, and less likely to be used as a dieting strategy, as some have insisted in the past.

BED and Childhood Abuse/Maltreatment

Most researchers attribute the rise of disordered eating behavior to escalating societal pressure for females to be thin (Stevens & Tiggemann, 1998). Moreover, emphasis on thinness as one of the idealized notions of attractiveness for females in Westernized countries has been considered to be a driving factor for the occurrence of binge eating and other disordered eating behaviors among adolescent and adult females (Polivy & Herman, 2002). However, recent research has also noted another potential contribution for the onset of binge eating among females and some males: prior history of childhood abuse and maltreatment (Johnson et al., 2002).

Child abuse is the intentional or unintentional maltreatment and/or neglect of a child (Herrenkohl, 2005; Noh-Anh, 1994). The Department of Children and Families (DCF) defines child maltreatment as any act or series of acts of commission or omission by a parent, guardian, or other caregiver that results in harm, potential for harm, or threat of harm to a child (Leeb, Paulozzi, Melanson, Simon, & Arias, 2008). Child abuse and maltreatment can occur in a child's home, or in the organizations, schools, or communities with which the child interacts (Saisan, Smith & Segal, 2011). There are four major categories of childhood abuse and maltreatment: physical abuse, psychological and emotional abuse, sexual abuse, and neglect (Goldman, Salus, Wolcott, & Kennedy, 2003).

There have been a number of studies conducted to examine the correlational relationship between BED and childhood abuse, the majority of which indicated that a history of childhood abuse often preceded the onset of BED. Polivy and Herman (2002) found that negative family experiences correlated with development of eating disorders. Thus, children are more likely to develop disordered eating behaviors, such as binge eating, if their families are intrusive, hostile, or negating of their feelings and emotional needs. Furthermore, Haudek, Rorty, and Henker (1999) and Neumark-Sztainer, Story, Hannan, Beuhring, and Resnik (2000) both found that adolescents with uncaring, uninvolved, abusive parents are at an increased risk to develop disordered eating patterns, supporting Polivy and Herman's (2002) suggestion. Patients with eating disorders reported higher incidences of childhood abuse and neglect, indicating that childhood abuse contributes to the development of disordered eating behaviors (Polivy & Herman, 2002).

In an effort to examine the occurrence of abuse prior to the onset of disordered eating behavior and its relationship with eating disorders, Garfinkle et al. (1995) compared the prevalence of childhood sexual abuse between bulimic and control participants. Results from their study indicated that, as compared to control participants, bulimic participants were more likely to experience childhood sexual abuse before the onset of their disordered eating behavior (Garfinkle et al., 1995). In a more recent study, Carter, Bewell, Blackmore and Woodside (2006) interviewed 113 eating disorder patients at the time of their admittance into a treatment program. Of the 77 female participants who completed the study, 48% reported a history of childhood sexual abuse before developing disordered eating behavior. And of those 37 participants with history of childhood sexual abuse, the average age at which sexual abuse first occurred among these participants was 10.1 years of age, which is about three years before the typical age range at which the onset of eating disorders is most prevalent (Carter et al., 2006). The findings from both these studies highlight that it is quite possible for childhood sexual abuse to precede the development of eating disorders among women (Carter et al., 2006; Garfinkle et al., 1995).

Additional research has demonstrated that childhood abuse and maltreatment have a very specific (and quite detrimental) effect on binge eating: it often contributes to the onset of BED. In a study conducted by Striegel-Moore, Dohm, Pike, Wifley and Fairburn (2002), participants with BED reported higher incidences of sexual and physical abuse than healthy participants. Over 43% of participants with BED reported history of sexual abuse, as compared to the 18% of healthy participants. The relationship between history of binge eating and physical abuse is even stronger among participants with BED,

with 55% reporting that they were physically abused (as compared to the 18% of healthy participants). The conclusion made from the Striegel-Moore et al. (2002) study is supported by Gustafson and Sarwer (2004), who reported that 35% of their BED participants reported history of a childhood sexual abuse, as compared to the 12% of the control participants. These studies suggest that a history of childhood abuse correlates with the development of BED, as participants with BED are at least two times more likely to report having a history of childhood abuse than healthy participants.

In another study, Wonderlich, Wilsnack, Wilsnack, and Harris (1996) examined whether childhood sexual abuse is a risk factor for binge eating behaviors. Of the 157 sexually abused females who participated in the study, 47% engaged in either binge eating or binge eating and purging behaviors. It is interesting to note that participants with binge eating or binge eating and purging behaviors testified that, had they not been sexually abused or assaulted as a child, most of them believe that they would not have engaged in any binge eating and purging behaviors. Findings also showed that the severity of childhood sexual abuse positively correlated with the severity of binge eating behaviors later in life.

Grilo and Masheb (2001) examined the prevalence rate of childhood maltreatment on individuals engaging in binge eating behaviors. They looked at how binge-eating behaviors are negatively affected by five domains of childhood maltreatment, including sexual abuse. All participants in this study were outpatients with previously diagnosed binge eating symptoms. Of the 145 patients who participated in the study, 34% of the female outpatients reported having been sexually abused during their childhood. In a later study, Allison, Grilo, Masheb, and Stunkard (2007) reported that BED patients were

twice as likely to report a history of childhood abuse, mistreatment and neglect than non-BED patients. Additionally, among the BED patients who reported a history of childhood abuse, those with the more severe symptomatology also reported higher incidences of emotional abuse. It is important to note that both of these studies imply that binge eating behaviors are not solely aesthetically driven, as the female participants in the Grilo and Masheb (2002) study reported low levels of body dissatisfaction. The combined results from these two studies suggest that, for BED patients, binge eating is less about food consumption as it is about compensation for negative emotions (Allison et al., 2007; Grilo & Masheb, 2002).

While many of the mentioned studies demonstrated a mere correlational relationship between BED and childhood abuse, Feldman and Meyer (2007) went a step further and suggested that binge eating and other disordered eating behaviors are potentially used as coping mechanisms to deal with the emotional aftermaths of childhood abuse. In their study, 33% of the gay and bisexual male participants reported having been physically abused, and 34% reported having been sexually abused prior to the onset of their disordered eating behavior. Results from the study further noted that, compared to anorexic symptoms, childhood abuse showed a stronger association with bulimic symptoms (especially binge eating), and that these disordered eating behaviors can represent attempts to regulate the negative emotionality associated with childhood abuse and victimization.

Although aesthetic aspirations and pressure to conform to homosexual values and norms may continue to predispose gay and bisexual men to develop eating disorders, Feldman and Meyer (2007) reasoned, among these two populations, a history of

childhood abuse could also play a factor in the development and maintenance of disordered eating symptomatology, particularly binge eating and purging behaviors; that is, their disorder eating behavior could have been developed as an attempt to reduce negative emotions and cope with their abused pasts. Feldman and Meyer's (2007) suggestion makes sense because, as demonstrated by Marcus and Kalarchian (2003), binge eating more often occurs in response to negative emotional cues than as an attempt to attain thinness.

It is evidenced that, for people who have been abused or mistreated during their childhood, engaging in binge eating is more than an attempt to regulate their food intake and aspire to a thin stature. For many people, it is a coping strategy, one that is used to temporarily subdue the emotional distress brought on by recollection of childhood trauma. As indicated by Grilo and Masheb (2001), most binge eaters do not overeat because they are dissatisfied with their body; rather, they overeat because they experience strong distress, one that (they believe) can only be lessened with excessive food consumption. This is further supported by Feldman and Meyer (2007): they stated that their participants engaged in binge eating in effort to cope with their childhood abuse and the stress brought on by recollection of the abuse and residual guilt. Binge eating and other disordered eating behaviors often precede the onset of eating disorders, so it is difficult to deny the contributory effects that childhood abuse has on the development of disordered eating behaviors (Carter et al., 2006; Grilo & Masheb, 2001; Wonderlich et al., 1996). While causation has yet to be established, it is certain that there is a strong correlational relationship between BED and childhood abuse/maltreatment.

BED and Perception of Stress

People with BED often note that they binge most frequently when they are under stress (Gluck, Geliebter, Hung, & Yahav, 2004; Yacono-Freeman & Gil, 2004). This notion supports the commonly held belief that binge eating is used as an attempt to alleviate negative emotions experienced during periods of stress. In a study conducted by Heatherton and Baumeister (1991), participants with a history of binge eating reported higher incidences of over-eating during stressful times than participants without a history of binge eating. These participants noted that they binged to escape from stress, which indicates that, for people with BED, excessive consumption of food in short periods of time is habitually used as a coping mechanism for the perceived aversive demands they face, as well as the unpleasant emotional states accompanying these aversive demands (Heatherton & Baumeister, 1991).

In another study conducted by Wolff, Crosby, Roberts, and Wittrock (2000), participants in the binge eating group reported higher levels of perceived stress than participants in the control group. However, there were no differences in the number of stressors, or the actual severity of the individual stressors, between the two groups, suggesting that participants in the binge eating group appear to perceive stress more negatively than the control group. This suggestion makes sense, as binge eaters often have poorer coping mechanisms for stress than non-binge eaters. Crowther, Sanftner, Bonifazi and Shepherd (2001) noted that participants with disordered eating patterns reported daily hassles as more stressful than participants without disordered eating patterns. Furthermore, perception of the severity of daily hassles (and the stress accompanying them) seems to positively correlate with the frequency and severity of

binge eating behavior, as participants who experienced higher levels of stress also reported that they binge more often than those who experience a normal level of stress. These findings are supported by a study conducted by Gluck (2005), which reported that obese participants report stress as their primary trigger for binge eating.

Adam and Epel (2007) noted that an increase in the development of binge eating and other disordered eating patterns appears to accompany the increase in the perceived level of stress experienced by their participants. This increase in perceived stress level seems to correlate with the growing obesity epidemic experienced by our nation. It is thus reasoned that an increase in perceived level of life stress experienced (and not necessary an increase the actual severity of the stress itself, or the number of stressors present) drives certain groups of people to consume more food to cope with said increased stress level, which in turn fosters excessive weight gain among those specific people and, consequently, fuels the obesity epidemic.

This perceived increase in life stress is especially prevalent among college students. The four-year university experience is a period of time where college students are removed from their familiar surroundings and thrust into an anxiety-provoking environment full of demands and expectations, effectively making college students one of the most stressed groups in the nation. Amponsah (2010) reported that, compared to the average person, college students experience a high number of daily hassles, as well as higher levels of both real and perceived stress. Furthermore, time pressures and work demands are rated as the top two stressors among college students, which are expected considering the number of tasks they have to juggle, the number of extracurricular activities in which they are involved, and the number of hours they have to devote toward

school work and gainful employment. Daily hassles, coupled with the anxiety experienced from unfamiliarity with educational expectations and cultural norms, make college life understandably stressful (Amponsah, 2010). Based on these studies, it is expected that the prevalence of BED among college students is high, especially when considering the high levels of perceived stress experienced by this population.

Childhood Abuse/Maltreatment and Stress Management

There appears to be a correlational relationship between BED and childhood abuse/maltreatment, as well as between BED and coping mechanisms for recent life stress. But is there a relationship between childhood abuse/maltreatment and coping mechanisms for stress? Past research would suggest that there is a relationship between these two areas. Heim et al. (2000) reported that participants with a history of abuse experience greater levels of perceived stress than participants without a history of abuse. They often perceive daily stressors more severely, and longer in duration than their counterparts. It is also suggested that their history of abuse compromises these participants' abilities to cope with stress, but the researchers noted that the data from their study is inconclusive, making it difficult for them to either support or refute this claim.

In an earlier study, Mullen, Martin, Anderson, Romans, and Herbison (1994) indicated that participants with a history of childhood sexual abuse reported lower levels of satisfaction with life, as compared to the control group. These participants also reported higher levels of social, interpersonal, and sexual dysfunction, all of which contribute to the amount of stress they experience in their daily lives. Most importantly, findings from the study indicated that these participants are prone to more maladaptive behaviors (such as disordered eating behaviors, drug and alcohol abuse/dependency,

engagement in delinquent activities, or self-injurious behaviors, etc.), especially when dealing with stressful events, suggesting that history of abuse can compromise one's ability to cope with stress. In a more recent study, Kenkel and Johnson (2002) showed that, compared to a control population, incest victims display poorer means of coping with stress. Additionally, they are more likely to resort to wishful thinking, temporary stress reduction (such as binge eating or excessive drinking), and detachment as coping mechanisms for stress.

Similar to the two previous studies, Filipas and Ullman (2006) demonstrated that participants who have been sexually abused are more likely to use maladaptive coping mechanisms to deal with stress than participants who have not been sexually abused; they are more likely to act out sexually, withdraw from other people, and participate in disordered eating behavior than their counterparts. Bal, Van Oost, Bourdeaudhiuj and Crombez (2003) demonstrated that sexually abused participants use more avoidant coping mechanisms than control participants, suggesting that these participants would rather avoid their problems and pretend that they do not exist than deal with them effectively. Instead of dealing with the negative emotions that stem from memories and recollections of their childhood abuse, these participants prefer to engage in binge eating and/or excessive drinking, reckless activities, and other maladaptive means to distract themselves from the negative emotions, completely ignoring both the short- and long-term consequences of these avoidant coping mechanisms (Bal et al., 2003).

Lastly, Cromer and Sachs-Ericsson (2006) showed that participants with a history of childhood abuse are more likely to be predisposed to poor health and maladaptive coping mechanisms, especially if they are experiencing high levels of current life stress.

These current life stressors also appear to be the moderator between childhood abuse and dysfunctional behaviors, poor health conditions, and medical problems, reasoned to be brought on by maladaptive coping strategies (such as binge eating to negate the residual negative emotions experienced because of their abusive past). This moderation is crucial because it shows that a history of childhood abuse/maltreatment can negatively affect stress coping and management, and, if the participant is prone to excessive food consumption, this interaction could worsen his or her binge eating behavior, and increase his or her likelihood to develop health problems associated with obesity.

Differences between Actual Occurrence and Perception

Most of the studies reviewed have looked at how childhood abuse/maltreatment and stress exposure affect binge eating behavior and stress management. However, these labels are somewhat deceptive, as many of these studies did not actually measure the effects of childhood abuse/maltreatment on binge eating behavior and stress management, especially when considering that no mentioned efforts were made to verify the incidence of abuse reported by the participants during data collection (Allison et al., 2007; Carter et al., 2006; Feldman & Meyer, 2007; Garfinkle et al., 1995; Grilo & Masheb, 2001; Haudek et al., 1999; Neumark-Sztainer et al., 2000; Polivy & Herman, 2002; Striegel-Moore et al., 2002; Wonderlich et al., 1996). Furthermore, many of these studies used self-report surveys and questionnaires, which only measured the participants' recollection of, beliefs concerning and attitudes toward their childhood (and any abusive events that supposedly occurred during their childhood), but not necessarily the actual incidences of abuse themselves.

Consequently, these researchers, by failing to make some validation efforts (or failing to mention any efforts made to validate the data collected), failed to confirm the validity of the abuse/maltreatment reported, thereby somewhat invalidating the reliability and generalizability of their findings. However, it should be noted that it is difficult to truly and accurately measure childhood abuse/maltreatment. As such, previous studies relied exclusively on their participants' recollection and report of past events, and that, in itself, limits the conclusions that can be made from these studies. After all, researchers cannot really validate the data collected, if in its very nature, such data is one-sided and presumably biased.

Limitations of Past Research

Some of the previously mentioned studies have demonstrated that people perceive the same events differently, especially if they are in a compromised state of mind, or if they are prone to believe things to be a certain way. Wolff et al. (2000), Crowther et al. (2001), Gluck (2005) and Adam and Epel (2007) are among some of the researchers that have demonstrated that people can perceive the same stressors differently, and that such perception can dramatically alter how they view their environment. It is arguable that the same problem is applicable to studies examining the relationship between abuse and BED. If there is a strong possibility that participants' perception of actual events might be negatively colored, then such perception could have interfered with how these participants responded to the survey and questionnaire items included in the previously mentioned studies, thereby affecting the validity of the data collected and the results obtained from those studies.

Researchers cannot fully guarantee that their participants will accurately report their childhood history. Moreover, these researchers cannot make any conclusions about actual occurrences of childhood abuse, especially when their data was based heavily on the perceptions and subjective experiences of those participants. Thus, it makes more sense to measure participants' perceptions of and attitudes toward their childhood abuse/maltreatment history, as such data, though initially limiting, allows for better and more reliable generalizations than the current assumptions made from the mentioned studies.

Current Study

The purpose of this study was to exclusively look at perceptions of childhood abuse/maltreatment and current life stress, and how, individually and combined, they affected binge eating behavior among college students. As mentioned earlier, it makes little sense to measure what cannot be empirically validated. Therefore, it makes more sense to look at the relationship between perception of an event and a set of behaviors than the actual occurrence of said event. Thus, this study set out to examine how college students' perceptions of their childhood abuse and current life stress affected their eating habits, and if the combined effect of perception of past abuse/maltreatment and perceived severity of current stressors increased the frequency, duration, and quantity of university students' food consumption during times of stress.

There are three hypotheses that will be tested. The first hypothesis states that participants with a perceived history of childhood abuse/maltreatment are more likely to engage in binge eating behavior than participants without a perceived history of childhood abuse/maltreatment. The second hypothesis states that participants with higher

levels of perceived stress are more likely to engage in binge eating behavior than participants with lower levels of perceived stress. The third hypothesis states that, among participants with a perceived history of childhood abuse/maltreatment, those with higher levels of perceived stress are more likely to engage in binge eating behavior than those with lower levels of perceived stress.

Method

Participants

A total of 173 undergraduate students (59 males and 114 females; *M* age = 20.09 years, *SD* age = 5.31 years, age range: 18 – 67) were recruited from undergraduate psychology courses at Western Kentucky University using the departmental Study Board website. There were a total of 131 (76%) Caucasian, 28 (16%) African-American, 5 (3%) biracial, 4 (2%) Hispanic, 1 (1%) Asian and 1 (1%) Native-American undergraduate students participating in the study; three students chose not to disclose their racial identification. Of the 173 students participating in the study, 107 (62%) of them were freshmen, 38 (22%) were sophomores, 16 (9%) were juniors, and 11 (6%) were seniors; one student (1%) chose not to disclose his/her year in school. The average height and weight among the 173 participants were 67.12 inches (in) and 156.99 pounds (lbs), respectively (*SD* height = 4.23 in, height range: 59 – 79 in; *SD* weight = 41.58 lbs, weight range: 95 – 390 lbs), resulting in an average Body Mass Index (BMI) of 24.37 (*SD* BMI = 5.60, BMI range: 17.22 – 57.59).

Design

The design for this study is a 2 (perceived history of childhood abuse/maltreatment: history vs. no history) x 2 (perceived level of recent life stress: high vs. low) between–subjects factorial design. The dependent variable is the frequency and severity of binge eating behaviors. The independent variables are participants' perceived history of childhood abuse/maltreatment and perceived level of recent life stress (within the past few months, as dictated by their recent exposure to general and college-related stress).

Measures

Demographics. Participants were asked to provide demographic information that included age, gender, ethnicity, educational level, year in school, weight and height, and childhood upbringing. (See Appendix A.)

Binge Eating. The Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) is a 16-item self-report questionnaire used to assess the presence of binge eating behavior indicative of an eating disorder, taking into consideration both the cognitive and behavioral aspects associated with binge eating. The BES is used to measure disordered eating behaviors primarily among obese individuals, and the questions in the BES are based on the behavioral characteristics (e.g., amount of food consumed and frequency of excessive food consumption) of and emotional responses (e.g., guilt, shame, self-hatred, etc.) to excessive food consumption. Findings demonstrated that the BES capably discriminated among people who were expertly categorized as having either no, moderate or severe binge eating problems (Gormally et al., 1982). Celio, Wifley, Crow, Mitchell and Walsh (2004) noted that the BES is a good measure for binge eating behavior because it encompasses all the different facets of binge eating disorder.

Each item on the BES consists of three to four response statements of increasing severity, and each response is assigned a numerical value (for instance, from a [1] to d [4]). Total scores for the BES range from 0 to 46, and are divided into three different categories: non-binging (0 – 17), moderate binging (18 – 26), and severe binging (27 or above). Examples of items on the BES include “I feel capable to control my eating urges when I want to” and “Because I feel so helpless about controlling my eating, I have become very desperate about trying to get in control.” The Cronbach’s alpha for the BES

in past studies ranges from .85 to .94, and the test-retest reliability ranges from .66 to .71 (Freitas, Lopes, Appolinario, & Coutinho, 2006; Gormally et al., 1982; Isnard et al., 2003; Kristeller & Hallett, 1999; Timmerman, 1999). The Cronbach's alpha for the BES in the current study is .91. The BES also showed sensitivity between 85% and 98% (Celio et al., 2004; Gladis, Wadden, Foster, Vogt, & Wingate, 1998; Greeno, Marcus & Wing, 1995; Telch & Agras, 1994). Thus, these results suggest that the BES is a valid screening instrument for binge eating behavior in the target population. (See Appendix B.)

Stress Level. The Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983) and the Inventory of College Students' Recent Life Experience (ICSRLE; Kohn, Lafreniere & Gurevich, 1990) were used to assess recent stress levels experienced by students who participated in this study. The PSS is a 10-item survey that assesses participants' perceived stress levels within the past few months (Cohen et al., 1983). The PSS is the most widely used scale to measure perception of stress; it measures the degree to which situations in an individual's life are appraised as stressful (Cohen & Williamson, 1988). For this scale, a rating of 0 (*never*) to 4 (*very often*) was used to assess perceived stress level. Total scores for the PSS range from 0 to 40, and are divided into three different categories: low stress (0 – 13), moderate stress (14 – 26), and high stress (27 - 40). Participants' perceived stress levels were determined by summing their responses for a total PSS score (ranging from 0 to 40, with higher scores indicating higher levels of perceived stress). Examples of items on the PSS include "In the last month, how often have you felt that difficulties were piling up so high that you could not overcome them?" and "In the last month, how often have you felt confident about your ability to handle

your personal problems?" The Cronbach's alpha for the PSS in past studies ranges from .80 to .83 (Cohen et al., 1983; Cole, 1999; Remor, 2006; Van Eck, Berkhof, Nicolson, & Sulon, 1996). The Cronbach's alpha for the PSS in the current study is .46. The test-retest reliability scores range from .68 to .86 (Cohen et al., 1983; Levenstein et al., 1993; Pbert, Doerfler & DeCosimo, 1992; Remor, 2006). Thus, these results suggest that the PSS is a valid and reliable screening instrument for recent stress in the target population. (See Appendix C.)

The ICSRLE, developed uniquely for college students, is a 49-item survey that measures participants' exposure to specific environmental stressors, and how they respond to these stressors (Kohn et al., 1990). The rating scale ranges from 0 (*not at all a part of my life*), indicating little to no effect, to 4 (*very much a part of my life*), indicating a substantial effect on the participant's life. Participants rate how each of the 49 items affects their lives, and, similar to the PSS, the participants' stress exposure is determined by their total scores; higher scores indicate higher levels of exposure to environmental stressors (and consequently, higher levels of recent stress). Total scores for the ICSRLE range from 0 to 147 (with higher scores indicating higher levels of exposure to stress and daily hassles), and are divided into three different categories: low levels of life stress (0 – 54), moderate levels of life stress (55 – 73), and high levels of life stress (74 or above). Examples of items on the ICSRLE include "Struggling to meet your own academic standards" and "Heavy demands from extracurricular activities." The Cronbach's alpha for the ICSRLE in past studies ranges from .80 to .89 (Amponsah, 2010; Bodehorn, Miyazaki, Ng, & Zalaquett, 2007; Osman, Barrios, Longnecker, & Osman, 1994). The Cronbach's alpha for the ICSRLE in the current study is .90. The ICSRLE's correlation

to the PSS ranges from .59 to .67 (Amponsah, 2010; Bodehorn et al., 2007; Kohn et al., 1990; Osman et al., 1994). These results suggest that the ICSRLE is a valid and reliable screening instrument for recent exposure to college-centric environmental stress in the target population. (See Appendix D.)

Childhood Abuse/Maltreatment. The Childhood History Questionnaire (CHQ; Milner, Robertson & Rogers, 1990) and the Perception of Childhood Abuse/Maltreatment Survey (PCAMS) were used to assess participants' self-reported and perceived history of childhood abuse and maltreatment. The CHQ, developed to screen large groups of individuals in a group setting, is a seven-item questionnaire that measures self-reported childhood physical and sexual abuse history (Milner et al., 1990). The first and third items in the questionnaire ask participants to rate the frequency of different acts and incidences of abuse to which they may have been subjected by their parents and/or guardians before and after the age of 13 (respectively). The second and fourth questions ask participants to rate the frequency of different acts and incidences of abuse that they may have witnessed (i.e., incidents during which their parents and/or guardians may have acted in an abusive manner toward their siblings, cousins, playmates, or other individuals in their same age range) before and after the age of 13 (respectively). The last three items ask participants to respond to general questions concerning their relationships with their peers and elders.

The revised rating scale ranges from 0 (*never*), indicating a non-existence, to 4 (*very often*), indicating a habitual occurrence of the described behavior in the participant's life. Total scores for the CHQ range from 0 to 220. For this questionnaire, higher scores indicate higher levels of childhood abuse. For the first four items on the

CHQ, examples of individual questions in each item include “Whipping,” “Dislocations, ” Inappropriate touching” and “Intercourse/rape.” The Cronbach’s alpha for the CHQ in past studies ranges from .73 to .91 (Eubanks, Kenkel & Gardner, 2006; Figueiredo et al., 2000; Figueiredo, Paiva, Maia, Fernandes, & Matos, 2002; Helzel & McCanne, 2005; Merrill, Thomsen, Gold, & Milner, 2001; Nash, Hulsey, Sexton, Harralson, & Lambert, 1993). The Cronbach’s alpha for the CHQ in the current study is .92. These results suggest that the CHQ is a valid screening instrument for self-reported history childhood abuse. (See Appendix E.)

The PCAMS is a 15-item survey, developed specifically for this study, designed to assess participants’ perception of their childhood abuse/maltreatment. Items on this survey were developed using information collected from various child abuse-related websites and literature; morsels of information repeatedly mentioned on various sources were comprised on a list, and, with this list, items for the survey were developed by rephrasing the information to reflect beliefs of, attitude toward and perception of childhood abuse. A 32-person pilot study was conducted to analyze the validity of the then-28-item survey, and, subsequently, faulty, poorly phrased or difficult-to-understand items were moved from the survey, resulting in a 15-item PCAMS with a Cronbach’s alpha of .94 (see Appendix F for detailed information regarding the pilot study). For this survey, participants were asked to respond to a series of items, using a Likert-type rating scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Examples of items on this survey include “I felt that my parents showed little concern for my safety or happiness” and “I felt that my parents rejected me.” Participants’ perceived histories of childhood abuse/maltreatment were determined by their responses to the individual items on the

survey, as well as their subsequent overall scores. Total scores range from 15 to 90, with higher scores indicating a stronger belief that one had been abused or mistreated during childhood. Scores are divided into three different categories: having no perceived history of childhood abuse (0 – 30), having a perceived history of slight to moderate childhood abuse (31 – 60), and having a perceived history of severe childhood abuse (61 or above). The Cronbach's alpha for the PCAMS for the current study is .86. (See Appendix G.)

Procedure

After obtaining Institutional Review Board (IRB) approval, participants were recruited from undergraduate Psychology courses to participate in the study. All participants were informed that their participation would be strictly voluntary, and that their responses would be kept confidential. Participants were then asked to read the Informed Consent Document (see Appendix H) before they began the study. Upon giving verbal consent (as indicated by the participant's willingness to continue with the study), participants were asked to complete a set of surveys and questionnaires.

First, participants completed a set of demographic questions. Next, participants completed the CHQ and the PCAMS to assess their abuse history. After that, participants were given the PSS and the ICSRLE to assess their stress level. Lastly, participants were given the BES to assess their eating behavior. Upon completion of the study, participants were presented with a debriefing statement (see Appendix I), explaining the purpose of the study and providing information for subsequent counseling services, if needed. Participants were rewarded for their participation with either course credit or extra credit at the discretion of their instructors. The completion time for this study took approximately 25 to 30 minutes.

Results

Results from the study indicated that the score range for the PCAMS ranged from 15 to 81. Distribution analysis yielded a mean of 23.55, a median of 21.00, a mode of 15, and a standard deviation of 4.98. Approximately 83% of the total scores fell in the 0 – 30 range, indicating that 83% of the participants in this study reported that they have no perceived history of childhood abuse. Of the remaining participants, approximately 16% their total scores fell in the 31 – 60 range and 1% of the scores fell in the 61 – 90 range, indicating that only 17% of all participants reported that they have a perceived history of childhood abuse. Due to the uneven distribution of the total scores, the median score (21.00) was used for subsequent split (of scores) to allow for a more representative division of data; that is, 21.00 was used to divided participants into two groups: those with no perceived history of childhood abuse (score range of 0 – 21), and those with a perceived history of childhood abuse (22 – 81).

Preliminary Analysis

Correlational analyses were performed to determine if there was a link between each of the independent variables (recent life stress: PSS and ICSRLE; and childhood abuse: CHQ and PCAMS) and the dependent variable (i.e., BES). Table 1 shows the mean and standard deviation (SD) for each of the measures, and Table 2 Shows the results of these correlational analyses. The analyses revealed that both measures for the stress variable moderately correlated with the measure of binge eating. It further revealed that, while the PCAMS moderately correlated with the BES, the CHQ did not correlate with the BES, thus ruling the CHQ out for subsequent analysis.

Table 1:

Distribution Information for Abuse, Stress and Binge Eating Measures

Measures	Means	Standard Deviation (SD)
PSS	23.57	4.98
ICSRLE	93.64	17.61
CHQ	16.97	12.33
PCAMS	23.35	9.33
BES	26.72	8.09

Note: List of abbreviations (PSS: Perceived Stress Scale, ICSRL: Inventory of College Students' Recent Life Events, CH: Childhood History Questionnaire, PCAMS: Perceived Childhood Abuse/Maltreatment Survey, BES: Binge Eating Scale).

Table 2:

Correlational Analysis of Abuse, Stress and Binge Eating Measures

Measures	PSS	ICSRLE	CHQ	PCAMS	BES
PSS	---	.36**	.22*	.27**	.28**
ICSRLE	.36**	---	.24*	.29**	.38**
CHQ	.22**	.24*	---	.34**	.12
PCAMS	.27**	.29**	.34**	---	.26**
BES	.28**	.38**	.12	.26**	---

Note: *$p < .005$ **$p < .001$.

Note: List of abbreviations (PSS: Perceived Stress Scale, ICSRL: Inventory of College Students' Recent Life Events, CH: Childhood History Questionnaire, PCAMS: Perceived Childhood Abuse/Maltreatment Survey, BES: Binge Eating Scale).

Median splits were performed to divide participants' scores for the abuse and stress measures into distinct categories for each of the hypotheses. For the first hypothesis, total scores on the PCAMS were split to divide participants into two groups: those who have no perceived history of childhood abuse, and those who have a perceived history of childhood abuse. For the second hypothesis, scores from the stress measures were split to divide participants into two groups: those with higher levels of perceived stress, and those with lower levels of perceived stress. For the third hypothesis, participants who indicated that they have a perceived history of childhood abuse were split into two groups (higher levels of perceived stress versus lower levels of perceived stress) based on their scores on the ICSRLE. Table 3 shows the means, SDs and number of participants (n) for each of these groups.

Table 3:

Distribution Information for Median Splits

Measures	Means	SD	n
Perceived history of abuse			
Presence	29.98	9.92	81
Absence	17.51	2.08	92
General life stress (PSS)			
Higher	26.81	3.93	91
Lower	19.98	3.26	82
College-related stress (ICSRLE)			
Higher	108.46	10.97	85
Lower	79.33	8.66	88

Note: List of abbreviations (PSS: Perceived Stress Scale, ICSRL: Inventory of College Students' Recent Life Event, PCAMS: Perceived Childhood Abuse/Maltreatment Survey).

Hypothesis Testing

The first hypothesis posited that participants with a perceived history of childhood abuse are more likely to engage in binge eating behavior than participants with no perceived history of childhood abuse. Results from a One-Way Analysis of Variance (ANOVA) showed that there is a significant main effect for perceived abuse history, $F(1,172) = 11.92$, $p = .001$, suggesting that there is a significant difference between the two groups. Participants who believe that they were abused or mistreated ($M = 28.49$, *SD*

= 8.97; n = 81) are more likely to engage in binge eating behavior than participants who do not believe that they have an abusive childhood (M = 25.16, SD = 6.90; n = 92). A regression analysis was additionally conducted to further examine the relationship between perception of childhood abuse/maltreatment and binge eating behavior among the university population (i.e., to determine if a perceived history of abuse significantly predicts binge eating behavior). Results from the regression analysis showed that perception of childhood abuse/maltreatment (as indicated by total scores on the PCAMS) predicted binge eating behavior (as measured by total scores on the BES), β = .26, t(172) = 3.45, p = .001; higher scores on the PCAMS, which indicated a stronger belief that one has been abused, mistreated or neglected during childhood, are predictive of more frequent and more severe binge eating behavior. Results also indicated that perception of childhood abuse/maltreatment explained a significant proportion of variance in BES scores, R^2 = .07, F(1,172) = 11.92, p = .001.

The second hypothesis posited that participants with higher levels of perceived stress are more likely to engage in binge eating behavior than participants with lower levels of perceived stress. Median splits (*Mdn* ICSRLE = 92, score range = 59 – 143; *Mdn* PSS = 23, score range = 0 – 56) were performed to divide participants into two separate groups based on their scores on the ICSRLE and the PSS: those with scores indicative of higher levels of perceived life stress, and those with scores indicative of lower levels of perceived life stress. Results from one-way ANOVAs showed that there is a significant main effect for level of perceived stress, F ICSRLE(1,172) = 28.58, p < .001; F PSS(1,172) = 14.88, p < .001; F combined(2,172) = 17.16, p < .001, suggesting that there is a significant difference between the two groups. Participants who believe or

feel that they have a high level of stress in their lives (mean and SD BES scores for high ICSRLE group: M = 29.73, SD = 9.06; mean and SD BES scores for high PSS group: M = 28.52, SD = 8.91) are more likely to engage in binge eating behavior than participants who believe or feel that they have a low and manageable level of stress in their lives (mean and SD BES scores for low ICSRLE group: M = 23.82, SD = 5.73; mean and SD BES scores for low PSS group: M = 24.73, SD = 6.57). In addition, a second regression analysis was conducted to further examine the relationship between levels of perceived stress and binge eating behavior among the university population (i.e., to ascertain if levels of perceived stress significantly predict binge eating behavior). Results from the regression analysis showed that levels of perceived current life stress (as indicated by measures of life stress: PSS [general life stress] and ICSRLE [college-related life stress]) predicted binge eating behavior (as measured by total scores on the BES), β ICSRLE = .32, t ICSRLE(172) = 4.24, $p < .001$; β PSS = .17, t PSS(172) = 2.25, $p < .05$. Results also indicated that levels of perceived current life stress explained a significant proportion of variance in BES scores, $R^2 = .17$, $F(1,172) = 17.16$, $p < .001$.

Further analysis revealed that, compared to the ICSRLE, the PSS was a weaker predictor for binge eating behavior. During the regression analysis, life stress measures (i.e., the ICSRLE and the PSS) were entered in separate blocks; using hierarchical regression, total scores from the ICSRLE were enter in the first model, and total scores from both the ICSRLE and the PSS were entered in the second model. The R square for both the ICSRLE and the PSS ($R^2 = .168$) indicated that, when combined, the ICSRLE and PSS model accounted for 16.8% of the variance. The R square for the ICSRLE ($R^2 = .143$) indicated that, independently, the ICSRLE model accounted for 14.3% of the

variance. When the variance for the ICSRLE is subtracted from the combined variance, the result indicated that the addition of the PSS merely accounted for an increase of 2.5% of the variance in the data.

While the change in R square value (after the addition of the PSS) is significant ($p < .05$), the marginal increase in variance ($R^2 = .025$; as indicated by the R square difference between the ICSRLE and the combined R squares) suggests that the addition of the PSS did not increase the amount of variance accounted for in BES scores by much. Furthermore, when calculated jointly, the beta weight for the ICSRLE ($\beta = .32$) is higher than the beta weight for the PSS ($\beta = .17$), and, when calculated independently, the beta weight for the ICSRLE increased in value ($\beta = .38$). Additionally, the Cronbach's alpha for the PSS (.46), compared to the Cronbach's alpha for the ICSRLE (.90), for this study was really low, which further reduced the PSS's predictive value. The differences in beta weights between the ICSRLE and the PSS, the increase in beta weight value when the ICSRLE was calculated independently, the significant, but minimal, increase in variance and the low Cronbach's alpha value fortified the notion that, compared to the PSS, the ICSRLE has better predictive value for binge eating behavior (as measured by the BES). Consequently, while both life stress measures showed a significant relationship with the dependent variable, the ICSRLE is considered a better predictor than the PSS, and was thus used as the sole measure in determining levels of perceived stress in subsequent analysis.

The third hypothesis posited that, among participants with a perceived history of childhood abuse, those with higher levels of perceived stress are more likely to engage in binge eating behavior than those with lower levels of perceived stress. Results from a

one-way ANOVA showed that there was a significant main effect for levels of perceived stress among individuals with a perceived history of childhood abuse, $F(1,80) = 11.01$, $p = .001$, suggesting that there is a significant difference between the high and low perceived stress groups. Participants who believe that they have been abused or mistreated and have high levels of perceived stress ($M = 30.96$, $SD = 9.78$; $n = 47$) are more likely to engage in binge eating behavior than participants who believe that they have been abused or mistreated but have low levels of perceived stress ($M = 25.09$, $SD = 6.43$; $n = 34$). A regression analysis was conducted to further examine the relationship between levels of perceived stress and binge eating behavior among individuals with a perceived history of childhood abuse/maltreatment (i.e., to determine if, among individuals who believe that they have been abused and/or mistreated during their childhood, levels of perceived stress predict binge eating behavior). Results from the regression analysis showed that levels of perceived stress (as indicated by total scores on the ICSRLE) predicted binge eating behavior (as measured by total scores on the BES) among participants who believed that they have been abused (as indicated by total scores on the PCAMS), $\beta = .35$, $t(80) = 3.32$, $p = .001$. Results also indicated that, among participants with a perceived history of childhood abuse/maltreatment, levels of perceived stress explained a significant proportion of variance in BES scores, $R^2 = .12$, $F(1,80) = 11.01$, $p = .001$.

To further examine the relationship between perceptions of childhood abuse/maltreatment and current life stress and how they jointly affect binge eating behavior among university students, a two-way ANOVA and regression analyses were conducted to determine if there were any interaction and moderation effects. Results

from a 2 (perceived history of childhood abuse: presence vs. absence) x 2 (perceived stress level: high vs. low) ANOVA showed that there was no interaction effect for perceptions of childhood abuse and current life stress, $F(66,172) = .67$, $p = .853$, suggesting that perceptions of abuse and stress do not interact to increase binge eating behavior among the university population. A regression analysis to test for moderation effect of levels of perceived stress (that is, to determine if levels of perceived stress moderate the predictive relationship between perception of childhood abuse and binge eating behavior) confirmed the absence of an interaction effect; it revealed that levels of perceived stress did not moderate perception of abuse in predicting binge eating behavior, $\beta = .16$, $t(172) = .31$, $p = .758$. An additional regression analysis to test for moderation effect of perception of childhood abuse (that is, to determine if perception of childhood abuse moderates the predictive relationship between levels of perceived stress and binge eating behavior) further revealed that perception of childhood abuse did not moderate levels of perceived stress in predicting binge eating behavior, $\beta = .16$, $t(172) = .31$, $p = .758$.

Discussion

Previous findings noted that childhood abuse and stress are two primary factors that foster binge-eating behavior in adolescent and adult years (Adam & Epel, 2007; Allison et al., 2007; Carter et al., 2006; Crowther et al., 2001; Feldman & Meyer, 2007; Garfinkle et al., 1995; Grilo & Masheb, 2001; Heatherton & Baumeister, 1991; Polivy & Herman, 2002; Striegel-Moore et al., 2002; Wolff et al., 2000; Wonderlich et al., 1996). Thus, it was hypothesized that perceptions of childhood abuse and recent life stress would independently increase binge eating behavior. It was also hypothesized that, among individuals with a perceived history of childhood abuse, higher levels of perceived life stress would lead to higher incidences of binge eating behaviors.

The first hypothesis states that, compared to individuals with no perceived history of childhood abuse, individuals with a perceived history of childhood abuse are more likely to engage in binge eating behavior. Findings from the study supported the first hypothesis; analysis revealed that participants whose total scores on the PCAMS indicated a perceived history of childhood abuse and maltreatment also reported more binge eating behaviors (as indicated by their total scores on the BES) than participants whose total scores on the PCAMS did not indicate a perceived history of childhood abuse. Findings also suggest that perception of childhood abuse plays a contributory role on the development and maintenance of binge eating behavior. Furthermore, a regression analysis showed that perception of childhood abuse significantly predicts binge eating behavior. Findings from this study speculate that binge-eating behavior may be used as a coping strategy for the trauma associated with a perceived victimized childhood, a notion that is consistent with past findings (Feldman & Meyer, 2007).

The correlation between reporting of actual incidents of abused (as measured by the CHQ) and perception of childhood abuse (as measured by the PCAMS) was .34, suggesting that there is a moderately positive relationship between having been abused during childhood and believing (or perceiving) that one had an abusive childhood. However, while there was a correlation and a predictive value between perception of childhood abuse and binge eating behavior, findings from this study did not show a correlational relationship between reports of actual incidents of childhood abuse or maltreatment and binge eating behavior, as indicated by a lack of correlation between scores on the CHQ (a self-report questionnaire that measures the frequency of specific acts and incidences of childhood abuse and maltreatment) and the BES, suggesting that a history of childhood abuse might not be enough to foster the development of binge eating behavior in later years. Findings from past studies showed that a history of childhood abuse increases binge-eating behavior in adolescent and adult years, but those studies made no mentions regarding the subsequent mindset of those individuals after their abuse (Grilo & Masheb, 2001; Gustafson & Sarwer, 2004; Polivy & Herman, 2002; Streigel-Moore et al., 2002; Wonderlich et al., 1996). Furthermore, there were participants in those studies who indicated that, despite having an abusive childhood, they did not engage in any binge eating or other disordered eating behaviors. Consequently, it is reasoned that the individuals who participated in the mentioned studies (and indicated an active engagement in binge eating activity) must have truly felt victimized by the abuse, and it is that victimized mindset that led to the onset of their disordered eating symptomatology; a history of childhood sans a victimized mindset (i.e., a history of childhood abuse that did not result in the child feeling victimized and mistreated) might

not be enough to contribute to or predict future binge eating behavior. Thus, it is then posited that, in addition to being abused and/or mistreated during childhood years, the presence of a victimized mentality or state of mind (i.e., a perception that one has been abused and mistreated) is needed to foster binge-eating behavior in subsequent years. Future studies are encouraged to further explore this concept.

The second hypothesis posited that, compared to individuals with lower levels of perceived stress, individuals with higher levels of perceived stress are more likely to engage in binge eating behavior. Findings from this study supported the second hypothesis and indicate that perceived stress levels correlate with binge eating behavior. More specifically, results from the second regression analysis demonstrated that, as scores on both the life stress measures (the ICSRLE and the PSS) increased, scores on the BES also increased, suggesting that one's perception of current life stress plays a predictive role in the development and maintenance of binge eating behavior among the university population. Findings from this study echoed past findings from similar studies examining the relationship between stress perception and binge eating in general and clinical populations; consistent with past trends (Adam & Epel, 2007; Crowther et al., 2001; Heatherton & Baumeister, 1991; Wolff et al., 2000), findings from this study showed that higher levels of perceived life stress lead to higher levels of engagement in binge eating behavior. It is thus inferred that perceived stress level plays a contributory in binge eating behavior, and that binge eating may be used as a coping mechanism for stress and daily hassles.

It is interesting to note that, compared to scores on the ICSRLE (which measures life stress pertaining to the college life experience), scores on the PSS (which measure

general life stress) showed a weaker correlation with scores on the BES, suggesting that people might experience (or at least perceive that they experience) a higher level of stress during their college years than they do during other phases of life. This particular finding is consistent with Amponsah's (2010) study, which showed that, compared to other populations, university students reported that they experience higher levels of life stress. It is thus suggested that, compared to the average person, college (or university) students experience higher levels of perceived stress, and thus will have higher incidence rates of binge eating. Future studies are also encouraged to further explore this notion.

The third hypothesis posited that, among individuals with a perceived history of childhood abuse and maltreatment, individuals with higher levels of recent stress are more likely to engage in binge eating behavior than individuals with lower levels of recent life stress. Findings from this study supported the third hypothesis and indicate that, among individuals who believe that they have been abused, victimized or mistreated during their childhood, binge eating behavior increased as perceived stress level increased. Findings from past studies (Heim et al., 2000; Mullen et al., 1994) support this notion, as many of those studies reported that, compared to a control population, individuals who believe that they have been abused by their parents, guardians or caregivers also reported that they perceived the same stressors and daily hassles as being more stressful, and that, to cope with these stressors and daily hassles, they engage in more maladaptive behavior (e.g., smoking, excessive drinking, promiscuous sexual behavior, engagement in risky and dangerous activities, and binge eating).

It is also interesting to note that, in comparing between each set of groups, there were substantial differences among mean BES scores. For instance, the mean BES score

for participants who indicated no history of childhood abuse (25.16) fell into the moderate range, whereas the mean BES score for the group of participants who indicated a perceived history of childhood abuse (28.49) fell into the severe range, thus suggesting that perception of childhood abuse plays a strong contributory role in increasing binge eating activity. A similar pattern was seen with the stress variable, as participants who reported higher levels of perceived stress have higher mean BES score (ICSRLE: 29.73, falling into the severe range; PSS: 28.52, also falling into the severe range) than participants who reported lower levels of perceived stress (ICSRLE: 23.82, falling into the moderate range; PSS: 24.73, also falling into the moderate range). Lastly, this pattern was repeated for the third hypothesis, with a mean BES score of 30.96 (falling into the severe range) for group of participants with higher levels of perceived stress, and a mean BES score of 25.09 (falling into the moderate range) for the group with lower levels of perceived stress.

While findings from this study demonstrated that, independently, perceptions of childhood abuse/maltreatment and current life stress predict binge eating behavior among the university population, further analyses showed that these two factors do not interact to increase binge eating activity. Moreover, regression analyses confirmed that neither of these two factors moderates one another in predicting binge eating behavior among the university population (i.e., perceived stress level does not moderate the predictive value of perception of childhood abuse and maltreatment on binge eating behavior, and perception of childhood abuse does not have any moderating effects on the relationship between perceived level of life stress and binge eating behavior). Thus, while past studies implied that there is a interacting relationship between childhood abuse and stress

perception (and that these two factors intertwine to predict the onset and maintenance of binge eating behavior in adolescent and adult years), findings from this study suggest that, contrary to those notions, perceptions of childhood abuse and life stress do not play a joint contributory (or predictive) role in increasing binge-eating activity (Bal et al., 2003; Cromer & Sachs-Ericsson, 2006; Filipas & Ullman, 2006; Kenkel & Johnson, 2002; Mullen et al., 1994). It is unclear whether the interaction effect (or lack of) between childhood abuse and stress extends to other maladaptive coping mechanisms (such as excessive drink, self-medication, engagement in reckless behavior, etc.), and future studies are encouraged to further explore this relationship.

In general, findings from this study showed that there is a positive correlational relationship between perception of childhood abuse and binge eating behavior. It further showed that there is also a positive correlational relationship between perceived stress levels and binge eating behavior, thus indicating that, independently, perceptions of childhood abuse and life stress are associated with binge eating behavior in adolescent and adult years. Results also showed that these two factors have predictive values in examining binge eating behavior. Results, however, did not show any interaction or moderation effects between perceptions of childhood abuse and recent life stress, thus suggesting that these two factors do not interact with each other to increase binge-eating activity or moderate the predictive value of each other in predicting binge eating behavior. Nonetheless, findings from this study, combined with findings from past studies, illuminated two potential correlates of binge eating behavior, an illumination that could be quite useful (and needed) in the future to combat the escalating rate of obesity in the United States and other parts of the world (Ebbeling, Pawlak & Ludwig, 2002;

Hedley et al., 2004; Kim & Popkin, 2006; Mokdad et al., 1999; Odgen et al., 2006; Stunkard & Allison, 2003). Findings from this study suggest that, by intervening and reducing the negative effects of childhood abuse and developing more adaptive coping mechanisms to combat stress, scientists and physical and mental health professionals could reverse the rise of obesity among the American populations, as well as lessen the number of people treated for obesity-related health complications.

While this study found the expected results, there are a number of limitations that need to be addressed. First, results from this study are generated from responses made by college students, which, as past findings have demonstrated, are different from the general population in terms of stress levels and types (Amponsah, 2010). Thus, caution should be taken when generalizing findings from this study to other populations. Furthermore, this study examined the effect of perception (of childhood abuse) on binge eating behavior, and makes no claims between the relationship between actual occurrence of childhood abuse and binge eating behavior (or any other coping strategies). It also makes no claims regarding the relationship between binge eating behavior and career or family stress, as such factors were not extensively explored in this study. For this study, sub-clinical binge eating behaviors were also measured, and, consequently, results from this study are limited in their generalizability to clinical populations. Findings from this study were collected from self-reports, which may or may not be indicative of actual behavior (Adams, Soumerai, Lomas, & Ross-Degnan, 1999; Bauhoff, 2011; Dodd-McCue & Tartaglia, 2010; Donaldson & Grant-Vallone, 2002; Manfredo & Shelby, 1988; Wilson & Zietz, 2004). Thus, it is recommended that findings from this study be taken with some considerations. Additionally, main findings were all based on measures

with limited validity, and therefore need to be taken into consideration for data analysis, results and subsequent interpretation. Finally, considering that the order of the surveys and questionnaires was not varied for different participants and different groups, the static presentation of measures might have produced some order effects and, consequently, confounded the data collected. Thus, it is cautioned that findings from this study to interpreted with some reservations, as these order effects might have primed participants during the data collection phase, and, as a result, exaggerated their severity of their reported conditions.

In terms of clinical and treatment implications, findings from this study suggest that efforts should be made to screen BED patients (or individuals who are afflicted with sub-clinical levels of BED [i.e., those who do not meet full criteria for BED, but whose conditions are severe enough to warrant clinical intervention]) for any history of perceived abuse, maltreatment or victimization, as results from this study indicate that perceptions of abuse can increase the frequency and severity of binge eating behavior. Clinical efforts should also be made to screen for inadequate, unrealistic or heightened appraisal of stress exposure (as well as poor or ineffective stress management), as findings indicate that people binge more frequently and in greater amount during period of unmanageable stress. A more thorough assessment will undoubtedly assist in later effort to properly treat the disorder.

As for treatment, intervention programs designed to combat BED symptomatology should consider incorporating posttraumatic stress disorder (PTSD) treatment and stress reduction and management techniques for a more holistic treatment process. Many BED treatment programs focus on eating behavior, self image and body

acceptance, and relationship difficulties, via means of medication, nutrition counseling and behavioral weight-loss programs, self-help strategies, and group/family therapy (Berner, Bocarsly, Hoebel, & Avena, 2011; DeAngelis, 2002; Goldberg, 2012; Peat, Brownley, Berkman & Bulik, 2012). While these programs and techniques are effective in alleviating symptoms of BED, they do not adequately address the factors underlying the manifestation and perseverance of binge eating behavior. Thus, future efforts should incorporate more intensive psychotherapy (such as cognitive-behavioral therapy (CBT), dialectical behavior therapy (DBT) or interpersonal therapy) techniques to deal with perceptions, attitudes and emotions that exacerbate BED symptomatology, and effective stress reduction and management techniques to combat use of binge eating as a coping mechanism (Grohol, 2012; Levine & Marcus, 2003; Smith, Barston, Segal & Segal, 2012).

For future research, it is recommended and encouraged that studies follow-up and further examine the difference between binge eating behaviors among collegiate and general populations. Future studies should also examine the difference between perception and actual occurrence of childhood abuse, and see if there are differences in terms of coping behaviors for these two phenomena. Finally, in future studies sampling college students, more efforts should be devoted to examining binge-eating behavior among different class cohorts. Past research noted that college freshmen are especially vulnerable to stressors because of the transitional nature of their college experience, such as being away from home for the first time, adjusting to new surroundings, and adhering to stricter academic expectations (D'Zurilla & Sheedy, 1991; Pritchard, Wilson, & Yamnitz, 2007; Towbes & Cohen, 1996). Similarly, college seniors, compared to college

sophomores and juniors, are also prone to a higher level of stress, as they have to deal with the prospect of entering a declining job market, in addition to the usual pressures of college schoolwork (Barnett, Gareis, James, & Steele, 2003). Thus, it is encouraged and recommended that future studies examine the effect of stress exposure of the different class level on binge eating behavior, and see if differences in stress level will increase binge eating activity.

In conclusion, this study hypothesized that, independently, pre-existing perceptions of childhood abuse and recent life stress may predispose college students to engage in more binge eating activities. Findings from this study supported these two hypotheses. This study also hypothesized that, among individuals with a perceived history of childhood abuse, higher levels of perceived stress would lead to an increased likelihood to engage in binge eating behavior. Findings from the study also supported this hypothesis. Further analyses revealed that perceptions of childhood abuse/maltreatment and current life stress can independently predict binge eating behavior, but failed to show any interaction or moderation effects. Collectively, this study elucidated on two possible correlates of binge eating, and paves the way for future research effort to develop treatment for binge eating disorder and combat the rise of obesity in the United States.

APPENDIX A

Demographics

Directions: Please answer the following questions in an honest manner. **DO NOT** include your name or any other identifying information.

1. AGE: _____ **Prefer not to Respond**
2. GENDER: **Male** **Female** **Prefer not to Respond**
3. ETHNICITY: **African American** **Asian** **Caucasian** **Hispanic** **Native American** **Pacific Islander** **Bi-Racial** **Other** **Prefer not to Respond**
4. EDUCATION LEVEL: **Less Than High School Degree** **High School Graduate** **Some College** **Associates Degree** **Bachelors Degree** **Post Bachelors** **Prefer not to Respond**
5. YEAR IN SCHOOL: **Freshmen** **Sophomore** **Junior** **Senior** **Prefer not to respond**
6. ESTIMATED WEGIHT: _____ **Prefer not to Respond**
7. APPROXIMATE HEIGHT: _____**Prefer not to Respond**
8. CHILDHOOD UPBRINING: **Raised by Biological Parents** **Raised by Foster Parents** **Raised by Guardians (grandparents, aunts, uncles, etc.)** **Raised by Care Givers** **Prefer not to respond**

APPENDIX B

Binge Eating Scale (BES)

Directions: Below are groups of numbered statements. Read all of the statements in each group and mark on this sheet the one that best describes the way you feel about the problems you have controlling your eating behavior.

1.
a. I don't feel self-conscious about my weight or body size when I'm with others.
b. I feel concerned about how I look to others, but it normally does not make me feel disappointed with myself.
c. I do get self-conscious about my appearance and weight, which makes me feel disappointed in myself.
d. I feel very self-conscious about my weight and frequently. I feel intense shame and disgust for myself. I try to avoid social contacts because of my self-consciousness.

2.
a. I don't have any difficulty eating slowly in the proper manner.
b. Although I seem to "gobble down" foods, I don't end up feeling stuffed because of eating too much.
c. At times, I tend to eat quickly and then, I feel uncomfortably full afterwards.
d. I have the habit of bolting down my food, without really chewing it. When this happens I usually feel uncomfortably stuffed because I've eaten too much.

3.
a. I feel capable to control my eating urges when I want to.
b. I feel like I have failed to control my eating more than the average person.
c. I feel utterly helpless when it comes to feeling in control of my eating urges.
d. Because I feel so helpless about controlling my eating I have become very desperate about trying to get in control.

4.
a. I don't have the habit of eating when I'm bored.
b. I sometimes eat when I'm bored, but often I'm able to "get busy" and get my mind off food.
c. I have a regular habit of eating when I'm bored, but occasionally, I can use some other activity to get my mind off eating.
d. I have a strong habit of eating when I'm bored. Nothing seems to help me break the habit.

5.
a. I'm usually physically hungry when I eat something.
b. Occasionally, I eat something on impulse even though I really am not hungry.
c. I have the regular habit of eating foods that I might not really enjoy, to satisfy a hungry feeling even though physically, I don't need the food.

d. Even though I'm not physically hungry, 1 get a hungry feeling in my mouth that only seems to be satisfied when I eat a food, like a sandwich, that fills my mouth. Sometimes, when I eat the food to satisfy my mouth hunger, I then spit the food out so I won't gain weight.

6.
a. I don't feel any guilt or self-hate after I overeat.
b. After I overeat, occasionally I feel guilt or self-hate.
c. Almost all the time I experience strong guilt or self-hate after I overeat.

7.
a. I don't lose total control of my eating when dieting even after periods when I overeat.
b. Sometimes when I eat a "forbidden food" on a diet, I feel like I "blew it" and eat even more.
c. Frequently, I have the habit of saying to myself, "I've blown it now, why not go all the way" when I overeat on a diet. When that happens I eat even more.
d. I have a regular habit of starting strict diets for myself, but I break the diets by going on an eating binge. My life seems to be either a "feast" or "famine."

8.
a. I rarely eat so much food that I feel uncomfortably stuffed afterwards.
b. Usually about once a month, I eat such a quantity of food, I end up feeling very stuffed.
c. I have regular periods during the month when I eat large amounts of food, either at mealtime or at snacks.
d. I eat so much food that I regularly feel quite uncomfortable after eating and sometimes a bit nauseous.

9.
a. My level of calorie intake does not go up very high or go down very low on a regular basis.
b. Sometimes after I overeat, I will try to reduce my caloric intake to almost nothing to compensate for the excess calories I've eaten.
c. I have a regular habit of overeating during the night. It seems that my routine is not to be hungry in the morning but overeat in the evening.
d. In my adult years, I have had weeklong periods where I practically starve myself. This follows periods when I overeat. It seems I live a life of either "feast or famine."

10.
a. I usually am able to stop eating when I want to. I know when "enough is enough."
b. Every so often, I experience a compulsion to eat which I can't seem to control.
c. Frequently, I experience strong urges to eat which I seem unable to control, but at other times I can control my eating urges.
d. I feel incapable of controlling urges to eat. I have a fear of not being able to stop eating voluntarily.

11.
a. I don't have any problem stopping eating when I feel full.
b. I usually can stop eating when I feel full but occasionally overeat leaving me feeling uncomfortably stuffed.
c. I have a problem stopping eating once I start and usually I feel uncomfortably stuffed after I eat a meal.
d. Because I have a problem not being able to stop eating when I want, I sometimes have to induce vomiting to relieve my stuffed feeling.

12.
a. I seem to eat just as much when I'm with others (family, social gatherings) as when I'm by myself.
b. Sometimes, when I'm with other persons, I don't eat as much as I want to eat because I'm self-conscious about my eating.
c. Frequently, I eat only a small amount of food when others are present, because I'm very embarrassed about my eating.
d. I feel so ashamed about overeating that I pick times to overeat when I know no one will see me. I feel like a "closet eater."

13.
a. I eat three meals a day with only an occasional between meal snacks.
b. I eat 3 meals a day, but I also normally snack between meals.
c. When I am snacking heavily, I get in the habit of skipping regular meals.
d. There are regular periods when I seem to be continually eating, with no planned meals.

14.
a. I don't think much about trying to control unwanted eating urges.
b. At least some of the time, I feel my thoughts are pre-occupied with trying to control my eating urges.
c. I feel that frequently I spend much time thinking about how much I ate or about trying not to eat anymore.
d. It seems to me that most of my waking hours are pre-occupied by thoughts about eating or not eating. I feel like I'm constantly struggling not to eat.

15.
a. I don't think about food a great deal.
b. I have strong cravings for food but they last only for brief periods of time.
c. I have days when I can't seem to think about anything else but food.
d. Most of my days seem to be pre-occupied with thoughts about food. I feel like I live to eat.

16.
a. I usually know whether or not I'm physically hungry. I take the right portion of food to satisfy me.

b. Occasionally, I feel uncertain about knowing whether or not I’m physically hungry. At these times it’s hard to know how much food I should take to satisfy me.
c. Even though I might know how many calories I should eat, I don’t have any idea what is “normal” amount of food for me.

APPENDIX C

Perceived Stress Scale (PSS)

Directions: The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1.
In the last month, how often have you been upset because of something that happened unexpectedly?
0 1 2 3 4

2.
In the last month, how often have you felt that you were unable to control the important things in your life?
0 1 2 3 4

3.
In the last month, how often have you felt nervous and "stressed"?
0 1 2 3 4

4.
In the last month, how often have you felt confident about your ability to handle your personal problems?
0 1 2 3 4

5.
In the last month, how often have you felt that things were going your way?
0 1 2 3 4

6.
In the last month, how often have you found that you could not cope with all the things that you had to do?
0 1 2 3 4

7.
In the last month, how often have you been able to control irritations in your life?
0 1 2 3 4

8.
In the last month, how often have you felt that you were on top of things?
0 1 2 3 4

9.
In the last month, how often have you been angered because of things that were outside of your control?
0 1 2 3 4

10.
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
0 1 2 3 4

APPENDIX D

Inventory of College Students Recent Life Experiences (ICSRLE)

Directions: Following is a list of experiences that many students have experienced at some time or other. Please indicate for each experience how much it has been a part of your life *over the past month*. Put a "1" in the space provided next to an experience if it was *not at all part of your life* over the past month (e.g., "trouble with mother in law-1"); "2" for an experience which was *only slightly part of your life* over that time, "3" for an experience with was *distinctly part of your life*; and "4" for an experience which was *very much part of your life* over the past month.

Intensity of Experience over Past Month
1- not at all part of my life
2- only slightly part of my life
3- distinctly part of my life
4- very much a part of my life

____ 1. Conflicts with boyfriend/girlfriend/spouse's FAMILY

____ 2. Being let down or disappointed by friends

____ 3. Conflict with professor(s)

____ 4. Social rejection

____ 5. Too many things all at once

____ 6. Being taken for granted

____ 7. Financial conflicts with family members

____ 8. Having your trust betrayed by a friend

____ 9. Separation from people you care about

____ 10. Having your contributions overlooked

____ 11. Struggling to meet your own academic standards

____ 12. Being taken advantage of

____ 13. Not enough leisure time

____ 14. Struggling to meet the academic standards of others

____ 15. A lot of responsibilities

____ 16. Dissatisfaction with school

____ 17. Decisions about intimate relationship(s)

____ 18. Not enough time to meet your obligations

____ 19. Dissatisfaction with your mathematics ability

____ 20. Important decisions about your future career

____ 21. Financial burdens

____ 22. Dissatisfaction with your reading ability

____ 23. Important decisions about your education

____ 24. Loneliness

____ 25. Lower grades than you hoped for

____ 26. Conflict with teaching assistant(s)

____ 27. Not enough sleep

____ 28. Conflicts with your family

____ 29. Heavy demands from extracurricular activities

____ 30. Finding courses too demanding

____ 31. Conflicts with friends

____ 32. Hard effort to get ahead

____ 33. Poor health of a friend

____ 34. Disliking your studies

____ 35. Getting “ripped off” or cheated in the purchase of services

____ 36. Social conflicts over smoking

____ 37. Difficulties with transportation

____ 38. Disliking fellow student(s)

____ 39. Conflicts with boyfriend/girlfriend/spouse

____ 40. Dissatisfaction with your ability at written expression

____ 41. Interruptions of your schoolwork

____ 42. Social isolation

____ 43. Long waits to get service (e.g., at banks, stores, etc.)

____ 44. Being ignored

____ 45. Dissatisfaction with your physical appearance

____ 46. Finding course(s) uninteresting

____ 47. Gossip concerning someone you care about

____ 48. Failing to get expected job

____ 49. Dissatisfaction with your athletic skills

APPENDIX E

Childhood History Questionnaire (CHQ)

Directions: Please read and respond to the following questions by circling the appropriate number that corresponds best with your response.

0 = Never 1 = Rarely 2 = Occasionally 3 = Often 4 = Very Often

1.

As a child, did **<u>you</u>** receive any of the following from one of your parents or another adult **<u>before</u>** you were 13?

Whipping	**0**	**1**	**2**	**3**	**4**
Slapping/kicking	**0**	**1**	**2**	**3**	**4**
Poking/punching	**0**	**1**	**2**	**3**	**4**
Hair pulling	**0**	**1**	**2**	**3**	**4**
Bruises/wells	**0**	**1**	**2**	**3**	**4**
Cuts/scratches	**0**	**1**	**2**	**3**	**4**
Dislocations	**0**	**1**	**2**	**3**	**4**
Burns	**0**	**1**	**2**	**3**	**4**
Bone fractures	**0**	**1**	**2**	**3**	**4**
Inappropriate touching	**0**	**1**	**2**	**3**	**4**
Sexual fondling	**0**	**1**	**2**	**3**	**4**
Intercourse/rape	**0**	**1**	**2**	**3**	**4**
Exhibition/flashing	**0**	**1**	**2**	**3**	**4**

2.

As a child, did **you** receive any of the following from one of your parents or another adult **after** you were 13?

Whipping	**0**	**1**	**2**	**3**	**4**
Slapping/kicking	**0**	**1**	**2**	**3**	**4**
Poking/punching	**0**	**1**	**2**	**3**	**4**
Hair pulling	**0**	**1**	**2**	**3**	**4**
Bruises/wells	**0**	**1**	**2**	**3**	**4**
Cuts/scratches	**0**	**1**	**2**	**3**	**4**
Dislocations	**0**	**1**	**2**	**3**	**4**
Burns	**0**	**1**	**2**	**3**	**4**
Bone fractures	**0**	**1**	**2**	**3**	**4**
Inappropriate touching	**0**	**1**	**2**	**3**	**4**
Sexual fondling	**0**	**1**	**2**	**3**	**4**
Intercourse/rape	**0**	**1**	**2**	**3**	**4**
Exhibition/flashing	**0**	**1**	**2**	**3**	**4**

3.

As a child, did **others** receive any of the following from one of your parents or another adult **before** you were 13?

Whipping	**0**	**1**	**2**	**3**	**4**
Slapping/kicking	**0**	**1**	**2**	**3**	**4**
Poking/punching	**0**	**1**	**2**	**3**	**4**
Hair pulling	**0**	**1**	**2**	**3**	**4**
Bruises/wells	**0**	**1**	**2**	**3**	**4**

Cuts/scratches	**0**	**1**	**2**	**3**	**4**
Dislocations	**0**	**1**	**2**	**3**	**4**
Burns	**0**	**1**	**2**	**3**	**4**
Bone fractures	**0**	**1**	**2**	**3**	**4**
Inappropriate touching	**0**	**1**	**2**	**3**	**4**
Sexual fondling	**0**	**1**	**2**	**3**	**4**
Intercourse/rape	**0**	**1**	**2**	**3**	**4**
Exhibition/flashing	**0**	**1**	**2**	**3**	**4**

4.

As a child, did **<u>others</u>** receive any of the following from one of your parents or another adult **<u>after</u>** you were 13?

Whipping	**0**	**1**	**2**	**3**	**4**
Slapping/kicking	**0**	**1**	**2**	**3**	**4**
Poking/punching	**0**	**1**	**2**	**3**	**4**
Hair pulling	**0**	**1**	**2**	**3**	**4**
Bruises/wells	**0**	**1**	**2**	**3**	**4**
Cuts/scratches	**0**	**1**	**2**	**3**	**4**
Dislocations	**0**	**1**	**2**	**3**	**4**
Burns	**0**	**1**	**2**	**3**	**4**
Bone fractures	**0**	**1**	**2**	**3**	**4**
Inappropriate touching	**0**	**1**	**2**	**3**	**4**
Sexual fondling	**0**	**1**	**2**	**3**	**4**
Intercourse/rape	**0**	**1**	**2**	**3**	**4**
Exhibition/flashing	**0**	**1**	**2**	**3**	**4**

5.

As a child, I had an adult who really cared about me.

0 1 2 3 4

6.

As a child, I had a friend who really cared about me.

0 1 2 3 4

7.

As a child, I felt my life was predictable.

0 1 2 3 4

APPENDIX F

Results from Pilot Study

The followings are results from the pilot study for the Perception of Childhood Abuse/Maltreatment Survey.

Cronbach's alpha, prior to item deletion: .52

Item Statistics:

	Mean	SD
Item 1	2.40	1.40
Item 2	3.50	2.03
Item 3	2.20	1.58
Item 4	5.50	.90
Item 5	4.77	1.17
Item 6	2.10	1.63
Item 7	1.63	1.10
Item 8	5.73	0.83
Item 9	1.43	0.83
Item 10	4.00	1.99
Item 11	1.93	1.29
Item 12	1.73	1.36
Item 13	4.73	1.05
Item 14	4.03	2.94
Item 15	4.93	1.20
Item 16	4.50	1.33

Item 17	1.80	1.27
Item 18	1.47	0.94
Item 19	4.47	2.08
Item 20	1.43	1.04
Item 21	1.83	1.37
Item 22	3.23	1.55
Item 23	1.40	1.04
Item 24	2.43	1.48
Item 25	5.23	1.07
Item 26	2.27	2.42
Item 27	1.63	1.25
Item 28	4.73	1.39

Cronbach's alpha, after item deletion: .94

APPENDIX G

Perception of Childhood Abuse/Maltreatment Survey (PCAMS)

Directions: Answer each question as truthfully as you can, to the best that you can recall. There are no right or wrong answers.

1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = somewhat agree
5 = agree
6 = strongly agree

Reflecting on your childhood experience and upbringings…

1.
I remember going through bad changes in behavior or school performances whose causes were not due to learning difficulties or teen angst.
1 2 3 4 5 6

2.
I remember always having to stay watchful, as if preparing for something bad to happen.
1 2 3 4 5 6

3.
I was severely punished by my parents, sometimes without actually doing anything wrong.
1 2 3 4 5 6

4.
I was often coerced or forced to engage in inappropriate physical or sexual contact.
1 2 3 4 5 6

5.
There was no one at home to provide care for me.
1 2 3 4 5 6

6.
I often wanted to (or attempted to) run away.
1 2 3 4 5 6

7.
I did not want to be involved in any activities that required me to remove my clothing.
1 2 3 4 5 6

Concerning your biological parent(s), foster parent(s), guardian(s), or other care giver(s)…

8.
I felt that my parents showed little concern for my safety or happiness.
1 2 3 4 5 6

9.
I felt that my parents often blamed me for any problems that our family might have at home.
1 2 3 4 5 6

10.
I felt that my parents constantly belittled, or berated me.
1 2 3 4 5 6

11.
I saw my parents as evil, worthless, or inadequate.
1 2 3 4 5 6

12.
I felt that my parents often touched me inappropriately.
1 2 3 4 5 6

13.
I felt that my parents had unrealistic expectations of me, and did not realistically consider my actual abilities/capability to achieve these expectations.
1 2 3 4 5 6

Reflecting on your relationship with your parents…

14.
I felt that my parents rejected me.
1 2 3 4 5 6

15.
I feel that I had a bad relationship with my parents.
1 2 3 4 5 6

APPENDIX H

Informed Consent

You are being asked to participate in a survey research project. Before verbally giving your permission to participate we would like to explain the following.

1. Your participation is completely voluntary. This means you have the right to not answer any question, or to quit at any time without any penalty.

2. For this study, you will remain completely anonymous. That is, you will not be asked to write down identifying information such as your name.

3. This study appears to have minimal risks and discomfort. However, there is always a chance that a question could cause discomfort or problems. Please let the researchers know if any questions are upsetting.

4. If you desire counseling at any point during, or after, your participation in the study, all efforts will be made to refer you to the University Counseling and Testing Center, and ensure that you are given the services you need.

5. Benefits of this study include a sense of wellbeing for contributing to scientific research, helping a WKU graduate student, and providing information that will be used to help better understand disordered eating behaviors.

6. During participation you will be asked to complete a section asking about age, education, grade level, ethnicity, and gender. Also, you will be asked to complete several short surveys and questionnaires that assess childhood abuse, exposure to stress, and disordered eating behaviors. These surveys and questionnaires collectively should take about 20 - 30 minutes to complete.

7. Although your individual responses will remain anonymous, your data will be combined with the data of others and may be submitted for publication in scholarly journals or presented at conventions.

8. Your continued cooperation with the research implies your consent.

Professor Rick Grieve, Ph.D., is the Faculty Sponsor for this research project and can be contacted at (270) 745-4417, with any questions in regards to the study, Monday through Friday from 9:00 am until 4:00 pm. Dr. Grieve's office is located in Gary Ransdell Hall, room 3028. Questions or complaints about research participants' rights can be directed to the Human Subjects Review Board, Western Kentucky University, Bowling Green, KY 42101, or by phone at (270)-745-4652.

APPENDIX I

Debriefing Statement

Thank you for taking part in this study. This study examines the relationship between perception of abuse, recent life stress, and binge eating disorder. You were asked to complete surveys and questionnaires that assess your perception of childhood abuse/maltreatment, experience with current life stress, and binge eating behavior. The results of this study will be used to examine whether perception of childhood abuse, coupled with recent life stress, could increase binge-eating behaviors.

I want to remind you that your responses in this study will remain anonymous. If you have any questions regarding your participation, you may contact the primary investigator, Dylan Nguyen, at dylan.nguyen417@topper.wku.edu, or my supervising professor, Dr. Rick Grieve, at (270) 745-4417, or at rick.grieve@wku.edu. Also, if you feel any discomfort from participating in this study, you may contact the Western Kentucky University Counseling and Testing Center at (270)-745-3195. Once again, thank you for participating in this study.

REFERENCES

Adam, T. C., & Epel, E. S. (2007). Stress, eating and the reward system. *Physiology & Behavior, 91*, 449 – 458.

Adams, A. S., Soumerai, S. B., Lomas, J., & Ross-Degnan, D. (1999). Evidence of self-report bias in assessing adherence to guidelines. *International Journal for Quality in Health Care, 11*, 187 – 192.

Allison, K. C., Grilo, C. M., Masheb, R. M., & Stunkard, A. J. (2007). Binge eating disorder and night eating syndrome. *Journal of Consulting and Clinical Psychology, 73*, 1107 – 1115.

Allison, K. C., Wadden, T. A., Sarwer, D. B., Fabricatore, A. N., Crerand, C. E., Gibbons, L. M., . . . Williams, N. N. (2006). Night eating syndrome and binge eating disorder among persons seeking bariatric surgery: prevalence and related features. *Surgery for Obesity and Related Diseases, 2*, 153 – 158.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC.

Amponsah, M. O. (2010). Non-UK university students stress levels and their coping strategies. *Educational Research, 1*, 88 – 89.

Bal, S., Van Oost, P., Bourdeaudhuij, I. D., & Crombez, G. (2003). Avoidant coping as a mediator between self-reported sexual abuse and stress-related symptoms in adolescents. *Child Abuse & Neglect, 27*, 883 – 897.

Barnett, R. C., Gareis, K. C., James, J. B., & Steele, J. (2003). Planning ahead: College seniors' concerns about career-marriage conflict. *Journal of Vocational Behavior, 62*, 305 – 319.

Bauhoff, S. (2011). Systematic self-report bias in health data: Impact on estimating cross-sectional and treatment effects. *Health Services and Outcomes Research Methodology, 11*, 44 – 53.

Berner, L. A., Bocarsly, M. E., Hoebel, B .G., & Avena, N. M. (2011). Pharmacological interventions for binge eating: Lessons from animal models, current treatments, and future directions. *Current Pharmaceutical Design, 17*, 1180 – 1187.

Bodehorn, N., Miyazaki, Y., Ng, K. M., & Zalaquett, C. (2007). Analysis of the inventory of college student's recent life experiences. *Multicultural Learning and Teaching, 2*, 45 – 58.

Bryant, N., & Hill, A. (2000). Binge eating and obesity. *European Eating Disorders Review, 8*, 339 – 343.

Bulik C. M., Brownley K. A., & Shapiro J. R. (2007). Diagnosis and management of binge eating disorder. *World Psychiatry, 6*, 142 – 148.

Carter, J. C., Bewell, C., Blackmore, E., & Woodside, D. B. (2006). The impact of childhood sexual abuse in anorexia nervosa. *Child Abuse & Neglect, 30*, 257 – 269.

Celio, A. A., Wifley, D. E., Crow, S. J., Mitchell, J., & Walsh, B. T. (2004). A comparison of the binge eating scale, questionnaire for eating and weight patterns-revised, and eating disorder examination questionnaire with instruction

with the eating disorder examination in the assessment of binge eating disorder and its symptoms. *The International Journal of Eating Disorders, 36*, 434 – 444.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385 – 396.

Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan & S. Oskamp (Eds.). *The social psychology of health: Claremont Symposium on applied social psychology (31 – 67)*. Newbury Park, CA: Sage.

Cole, S. R. (1999). Assessment of differential item functioning in the perceived stress scale-10. *Journal of Epidemiol Community Health, 53*, 319 – 320.

Cromer, K. R., & Sachs-Ericsson, N. (2006). The association between childhood abuse, PTSD, and the occurrence of adult health problems: Moderation via current life stress. *Journal of Traumatic Stress, 19*, 967 – 971.

Crowther, J. H., Sanftner, J., Bonifazi, D. Z., & Shepherd, K. L. (2001). The role of daily hassles in binge eating. *International Journal of Eating Disorders, 29*, 449 – 454.

D'Zurilla, T. J., & Sheedy, C. F. (1991). Relation between social problem-solving ability and subsequent level of psychological stress in college students. *Journal of Personality and Social Psychology, 615*, 841 – 846.

DeAngelis, T. (2002). Binge eating disorder: What's the best treatment? *American Psychological Association, The Monitor, 33*. Retrieved from http://www.apa.org/monitor/mar02/binge.aspx

Dodd-McCue, D., & Tartaglia, A. (2010). Self-report response bias: Learning how to live with its diagnosis in Chaplaincy research. *Journal of the Association of Professional Chaplains, 26,* 2 – 8.

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology, 17*, 245 – 260.

Ebbeling, C. B., Pawlak, D. B., & Ludwig, D. S. (2002). Childhood obesity: Public-health crisis, common sense cure. *The Lancet, 360*, 473 – 482.

Eubanks, J. R., Kenkel, M. Y., & Gardner, R. M. (2006). Body-sized perception, body-esteem, and parenting history in college women reporting a history of childhood abuse. *Perceptual and Motor Skills, 102*, 485 – 497.

Feldman, M. B., & Meyer, I. H. (2007). Childhood abuse and eating disorders in gay and bisexual men. *International Journal of Eating Disorders, 40*, 418 – 423.

Figueiredo, B., Fernandes, E., Ribeiro, L., Martins, C., Matos, R., & Maia, A. (2000, June). *Psychological context of child abuse: History of child abuse, psychopathological symptoms, and child abuse potential in non-patient couples.* Poster presented at the meeting of the Society for Psychotherapy Research, Chicago, IL.

Figueiredo, B., Paiva, C., Maia, A., Fernandes, E., & Matos, R. (2002, August). *History of childhood abuse in Portuguese parents.* Paper presented at the meeting of the Victimization of Children & Youth: An International Research Conference, Portsmouth, NH.

Filipas, H. H, & Ullman, S. E. (2006). Child sexual abuse, coping responses, self-blame, posttraumatic stress disorder, and adult sexual revictimization. *Journal of Interpersonal Violence, 21,* 652 – 672.

Freitas, S. R., Lopes, C. S., Appolinario, J. C., & Coutinho, W. (2006). The assessment of binge eating disorder in obese women: A comparison of the binge eating scale with the structured clinical interview for the DSM-IV. *Eating Behaviors, 7,* 282 – 289.

Garfinkle, P. E., Lin, E., Goering, P., Spegg, C., Goldbloom, D. S., Kennedy, S., . . . Woodside, D. B. (1995). Bulimia nervosa in a Canadian community sample: Prevalence and comparison of subgroups. *American Journal of Psychiatry, 152*, 1052 – 1058.

Gladis, M. M., Wadden, T. A., Foster, G. D., Vogt, R. A., & Wingate, B. J. (1998). A comparison of two approaches to the assessment of binge eating in obesity. *International Journal of Eating Disorders, 23*, 17 – 26.

Gluck, M. E. (2005). Stress response and binge eating disorder. *Appetite, 46*, 26 – 30.

Gluck, M. E., Geliebter, A., Hung, J., & Yahav, E. (2004). Cortisol, hunger, and a desire to binge eat following a cold stress test in obese women with Binge Eating Disorder. *Psychosomatic Medicine, 66*, 976 – 881.

Goldberg, J. (2012). Binge eating disorder health center: Treatment for binge eating disorder. *WebMD*. Retrieved from http://www.webmd.com/mental-health/binge-eating-disorder/binge-eating-disorder-treatment

Goldman, J., Salus, M. K., Wolcott, D., & Kennedy, K. Y. (2003). *A coordinated response to child abuse and neglect: The foundation for practice*. Washington, DC: Office of Child Abuse and Neglect (HHS).

Gormally, J., Black, S., Daston, S., & Rardin, D. (1982). The assessment of binge eating severity among obese persons. *Addictive Behavior, 7*, 47 – 55.

Greeno, C. G., Marcus, M. D., & Wing, R. R. (1995). Diagnosis of binge eating disorder: Discrepancies between a questionnaire and clinical interview. *International Journal of Eating Disorders, 17*, 153 – 160.

Grilo, C. M., & Masheb, R. M. (2001). Childhood psychological, physical, and sexual maltreatment in outpatients with binge eating disorder: Frequency and associations with gender, obesity, and eating-related psychopathology. *Obesity Research, 9*, 320 – 325.

Grohol, J. (2012). Treatment for binge eating disorder. *Psych Central*. Retrieved from http://psychcentral.com/lib/2006/treatment-for-binge-eating-disorder/all/1/

Grucza, R. A., Przybeck, T. R., & Cloninger, C. R. (2007). Prevalence and correlates of binge eating disorder in a community sample. *Comprehensive Psychiatry, 48*, 124 – 131.

Gustafson, T. B., & Sarwer, D. B. (2004). Childhood sexual abuse and obesity. *Obesity Reviews, 5*, 129–35.

Haudek, C., Rorty, M., & Henker B. (1999). The role of ethnicity and parental bonding in the eating and weight concerns of Asian-American and Caucasian college women. *International Journal of Eating Disorders, 25*, 425 – 433.

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as an escape from self-awareness. *Psychological Bulletin, 110,* 86 – 108.

Hedley, A. A., Odgen, C. L., Johnson, C. L., Carroll M. D., Curtin, L. R., & Regal, K. M. (2004). Prevalence of overweight and obesity among US children, adolescents, and adults, 1999-2002. *The Journal of the American Medical Association, 291*, 2847 – 2850.

Heim, C., Newport, D. J., Heit, S., Graham, Y. P., Wilcox, M., Bonsall, R., . . . Nemeroff, C. B. (2000). Pituitary-adrenal and autonomic responses to stress in women after sexual and physical abuse in childhood. *The Journal of the American Medical Association, 284,* 592 – 597.

Helzel, M. D., & McCanne, T. M. (2005). The roles of peritraumatic dissociation, child physical abuse, and child sexual abuse in the development of posttraumatic stress disorder and adult victimization. *Child Abuse & Neglect, 29*, 915 – 930.

Herrenkohl, R. C. (2005). The definition of child maltreatment: From case study to construct. *Child Abuse and Neglect, 19*, 413 – 424.

Isnard, P., Michel, G., Frelut, M. L., Vila, G., Falissard, B., Naja, W., . . . Mouren-Simeoni, M. C. (2003). Binge eating and psychopathology in severely obese adolescents. *International Journal of Eating Disorders, 34*, 235 – 243.

Johnson, W. G., Boutelle, K. N., Torgrud, L., Davig, J. P., & Turner, S. (2000). What is a binge? The influence of amount, duration, and loss of control criteria on judgment of binge eating. *International Journal of Eating Disorders, 27*, 471 – 479.

Johnson, J. G., Cohen, P., Kotler, L., Kasen, L. & Brook, J. S. (2002). Psychiatric disorders associated with risk for the development of eating disorders during

adolescence and adulthood. *Journal of Consulting and Clinical Psychology, 70*, 1119 – 1128.

Kenkel, M. B., & Johnson, B. K. (2002). Stress, coping, and adjustment in female adolescent incest victims. *Child Abuse & Neglect, 15*, 293 – 305.

Kim, S., & Popkin, B. M. (2006). Commentary: Understanding the epidemiology of overweight and obesity – A real global public health concern. *International Journal of Epidemiology, 35*, 60 – 67.

Kinzi, J. F., Traweger, C., Trefalt, E., Mangweth, B., & Biebl, W. (1999). Binge eating disorder in females: A population-based investigation. *International Journal of Eating Disorder, 25*, 287 – 292.

Kohn, P. M., Lafreniere, K., & Gurevich, M. (1990). The inventory of college students' recent life stress experience: A decontaminated hassles scale for a special population. *Journal of Behavioral Medicine, 13*, 619 – 630.

Kristeller, J. L., & Hallett, C. B. (1999). An exploratory study of a meditation-based intervention for binge eating disorder. *Journal of Health Psychology, 4*, 357 – 363.

Lamerz, A., Kueppler-Nybelen, J., Bruning, N., Wehle, C., Trost-Brinkhues, G., Brenner, H., . . . Herpertz-Dahlmann, B. (2005). Prevalence of obesity, binge eating, and night eating in a cross-sectional field survey of 6-year-old children and their parents in a German urban population. *Journal of Child Psychology and Psychiatry, 46*, 385 – 393.

Leeb, R. T., Paulozzi, L. J., Melanson, C., Simon, T. R., & Arias, I. (2008). Child maltreatment surveillance: Uniform definitions for public health and

recommended data elements. *Center for Disease Control and Prevention*. Retrieved from http://www.cdc.gov/ViolencePrevention/pub/CMP-Surveillance.html

Levenstein, S., Prantera, C., Varvo, V., Scribano, M. L., Berto, E., Luzi, C., & Andreoli, A. (1993). Development of the perceived stress scale questionnaire: A new tool for psychomatic research. *Journal of Psychomatic Research, 37*, 19 – 32.

Levine, M. D., & Marcus, M. D. (2003). Psychosocial treatment of binge eating disorder: An update. *Eating Disorder Review, 14*. Retrieved from http://www.bulimia.com/client/client_pages/newsletter16.cfm

Manfredo, M. J., & Shelby, B. (1988). The effect of using self-report measures in tests of attitude-behavior relationships. *The Journal of Social Psychology, 128*, 731 – 743.

Marcus, M. D., & Kalarchian, M. A. (2003). Binge eating in children and adolescents. *International Journal of Eating Disorder, 34*, S47 – S57.

Merrill, L. L., Thomsen, C. J., Gold, S. R., & Milner, J. S. (2001). Childhood abuse and preliminary sexual assault in male Navy recruits. *Journal of Consulting and Clinical Psychology, 69*, 252 – 261.

Milner, J. S., Robertson, K. R., & Rogers, D. L. (1990). Childhood history of abuse and adult child abuse potential. *Journal of Family Violence, 5*, 15 – 34.

Mokdad, A. H., Serdula, M. K., Dietz, W. H., Bowman, B. A., Marks, J. S., & Koplan, J. P. (1999). The spread of the obesity epidemic in the United States, 1991 – 1998. *The Journal of the American Medical Association, 282*, 1519 – 1522.

Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E., & Herbison, G. P. (1994). The effect of childhood sexual abuse on social, interpersonal, and sexual function in adult life. *The British Journal of Psychiatry, 165,* 35 – 47.

Nash, M. R., Hulsey, T. L., Sexton, M. C., Harralson, T. L., & Lambert, W. (1993). Long-term sequelae of childhood sexual abuse: Perceived family environment, psychopathology, and dissociations. *Journal of Consulting and Clinical Psychology, 61*, 276 – 283.

Neumark-Sztainer, D., Story, M., Hannan, P. J., Beuhring, T., & Resnik, M. D. (2000). Disordered eating among adolescent: Associations with sexual/physical abuse and other familial/psychological factors. *International Journal of Eating Disorder, 28*, 249 – 258.

Noh-Anh, H. (1994). *Cultural diversity and the definition of child abuse*. New York, NY: Columbia University Press.

Odgen, C. L., Carroll, M. D., Curtin, L. R., McDowell, M. A., Tabak, C. J., & Regal, K. M. (2006). Prevalence of overweight and obesity in the United States, 1999-2004. *The Journal of the American Medical Association, 295*, 1549 – 1555.

Osman, A., Barrios, F. X., Longnecker, J., & Osman, J. R. (1994). Validation of the inventory of college students' recent life experiences in an American college sample. *Journal of Clinical Psychology, 50*, 856 – 863.

Pbert, L., Doerfler, L. A., & DeCosimo, D. (1992). And evaluation of the perceived stress scale in two clinical populations. *Journal of Psychopathology and behavioral assessment, 14*, 363 – 375.

Peat, C. M., Brownley, K. A., Berkman, N. D., & Bulik, C. M. (2012). Binge eating disorder: Evidence-based treatments. *Current Psychiatry Online, 11*. Retrieved from http://www.currentpsychiatry.com/article_pages.asp?aid=10421

Polivy, J., & Herman, C. P. (2002). Causes of eating disorders. *Annual Review of Psychology, 53,* 187 – 213.

Pritchard, M. E., Wilson, G. S., & Yamnitz, B. (2007). What predicts adjustment among college students? A longitudinal panel study. *Journal of American College Health, 56*, 15 – 21.

Remor, E. (2006). Psychometric properties of a European Spanish version of the perceived stress scale (PSS). *The Spanish Journal of Psychology, 9*, 86 – 93.

Saisan, J., Smith, M., & Segal, J. (2011). Child abuse and neglect: Recognizing and preventing child abuse. *Helpguide: A trusted non-profit resource*. Retrieved from http://www.helpguide.org/mental/child_abuse_physical_emotional_sexual_neglect.htm

Smith, M., Barston, S., Segal, R., & Segal, J. (2012). Binge eating disorder: Symptoms, causes, treatment and help. *Helpguide: A trusted non-profit resource*. Retrieved from http://www.helpguide.org/mental/binge_eating_disorder.htm

Smith, D. E., Marcus, M. D., Lewis, C. E., Fitzgibbon, M., & Schreiner, P. (1998). Prevalence of binge eating disorder, obesity and depression in a biracial cohort of young adults. *Annuals of Behavioral Medicine, 20*, 227 – 232.

Stevens, C., & Tiggemann, M. (1998). Women's body figure preferences across the life span. *Journal of Genetic Psychology, 159,* 94 – 102.

Stice, E., Killen, J. D., Hayward, C., & Taylor, C. B. (1998). Support for the continuity hypothesis of bulimic pathology. *Journal of Consulting and Clinical Psychology, 66,* 784-790.

Striegel-Moore, R. H., Dohm, F. A., Pike, K. M., Wifley, D. E., & Fairburn, C. G. (2002). Abuse, bullying, and discrimination as risk factors for Binge Eating Disorder. *American Journal of Psychiatry, 159,* 1902-1907.

Stunkard, A. J., & Allison, K. C. (2003). Binge eating disorder: Disorder or marker? *International Journal of Eating Disorders, 34*, 107 – 116.

Stunkard, A. J., Faith, M. S., & Allison, K. C. (2003). Depression and obesity. *Biological Psychiatry, 54*, 330 – 337.

Telch, C. F., & Agras, W. S. (1994). Obesity, binge eating and psychopathology: Are they related? *International Journal of Eating Disorders, 15*, 53 – 61.

Timmerman, G. M. (1999). Binge eating scale: Further assessment of validity and reliability. *Journal of Applied Biobehavioral Research, 4,* 1 – 12

Towbes, L. C., & Cohen, L. H. (1996). Chronic stress in the lives of college students: Scale development and prospective prediction of distress. *Journal of Youth and Adolescence, 25*, 199 – 217.

Van Eck, M., Berkhof, H., Nicolson, N., & Sulon, J. (1996). The effects of perceived stress, traits, mood rates, and stressful daily events on salivatory cortisol. *Psychosomatic Medicine, 58,* 447 – 458.

Wifley, D. E., Wilson, G. T., & Agras, W. S. (2003). The clinical significance of binge eating disorder. *International Journal of Eating Disorders, 34*, S96 – S106.

Williams, P. M., Goodie J., & Motsinger C. D. (2008). Treating eating disorders in primary care. *American Family Physician, 77*, 187 – 195.

Wilson, M. L., & Zietz, J. (2004). Systematic bias in student self-report data. *Journal of Economic Educators, 4*, 13 – 19.

Wolff, G. E., Crosby, R. D., Roberts, J. A., & Wittrock, D. A. (2000). Difference in daily stress, mood, coping, and eating behavior in binge eating and non-binge eating college women. *Addictive Behaviors, 25*, 205 – 216.

Wonderlich, S. A., Wilsnack, R. W., Wilsnack, S. C. & Harris, T. R. (1996). Childhood sexual abuse and bulimic behavior in a nationally represented sample. *American Journal of Public Health, 86,* 1082 – 1086.

Yacono-Freeman, L. M., & Gil, K. M. (2004). Daily stress, coping, and dietary restraint in binge eating. *International Journal of Eating Disorders, 36*, 204 – 212.

Yanovski, S. Z. (2003). Binge eating disorder and obesity in 2003: Could treating an eating disorder have a positive effect on the obesity epidemic? *International Journal of Eating Disorders, 34*, S117 – S120.