INVESTIGATING THE ROLE OF GOD ATTACHMENT, ADULT ATTACHMENT AND EMOTION REGULATION IN BINGE EATING

by

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has been approved

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ABSTRACT

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Using a cross-sectional, self-report research design, this study examined a non-clinical population of 175 college women between the ages of 18-28 at a private, Christian university. A Pearson correlation matrix confirmed significant linear relationships between binge eating symptoms, emotion regulation, adult attachment insecurity and God attachment insecurity. A hierarchical multiple regression model determined that God attachment insecurity does not contribute unique variance toward binge eating symptoms after controlling for emotion regulation and adult attachment insecurity. Because God attachment insecurity was correlated to emotion regulation and adult attachment insecurity, and weakly correlated to binge eating symptoms without contributing unique variance, this study suggests that God attachment insecurity plays an indirect role in the perpetuation of binge eating symptoms.

Dedication

This dissertation is for Ann F. Charpia, a loving, faithful and determined mother. You are the world's best mother; know that I do not take your time, love or attention for granted.

Acknowledgments

I would like to first acknowledge my wonderful and very loving husband, Brad Weaver. Thank you for cheering me on, encouraging me to keep going, and letting me go a little crazy at times. I would also like to acknowledge both of my parents, George and Ann Charpia. Thank you for your support and encouragement during the entire process of this degree, and for giving me and Sable a place to stay for part of it. I love you all!

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CHAPTER ONE: INTRODUCTION

Binge eating is found across a wide population that spans from general dieters to those with clinically diagnosable eating disorders (Madeley, 2009). A frequent problem exhibited in chronic binge eaters is difficulty with the emotional regulation of negative affect (Ginsberg, 2007; Wheeler, Greiner & Boulton, 2005). This inability to effectively modulate distressful emotional processes is theorized as a developmental result of insecure parental attachment (Cozolino, 2006; Schore, 2003), patterns from childhood that are often predictors of insecure adult attachment styles with romantic partners (Clinton & Sibcy, 2009; Dinero, Conger, Shaver, Widaman & Larsen-Rife, 2008) and God (Beck, McDonald, Allison & Norsworthy, 2005; Clinton & Straub, 2010). Since binge eating is considered a form of maladaptive emotion regulation (Wheeler, Greiner & Boulton, 2005; Whiteside, Chen, Neighbors, Hunter, Lo & Larimar, 2007) used to offset negative affect (Gilbert, 2007), and emotion regulation is a function of attachment (Schore, 2003), research extended this to show that binge eaters have a propensity to suffer from insecure attachment patterns in parent (Kenny & Hart, 1992; Ringer & Crittenden, 2007) and romantic adult relationships (Brennan & Shaver, 1995; Evans & Wertheim, 2005; Gilbert, 2007). What has not been empirically linked, however, is the potential relationship between binge eating, emotion regulation, adult attachment and attachment to God. This was the goal of the current study.

Background of the Problem

Binge eating is a form of disordered eating that can exist in subthreshhold diagnostic levels, lead to obesity, and develop into a clinical eating disorder (ED) diagnosis (Gilbert, 2007). Among those who binge eat, which typically has a female majority (Fairburn, 1995; Madeley, 2009), there are some who binge on an infrequent basis and this symptom does not worsen into a chronic issue. For many, however, this form of disordered eating becomes a primary symptom among a constellation of connected problems that significantly impact psychological and physical health (Fairburn, 1995). In the severest form, binge eating is a main diagnostic symptom of Bulimia Nervosa (BN) and Binge Eating Disorder (BED), as well as a symptom found in the binge/purge subtype of Anorexia Nervosa (AN) (APA, 2000).

While binging behavior seems to be simply an act of overeating, it is complex in that different psychological mechanisms impact distinct phases of the eating behavior (Polivy & Herman, 1993). Chronic binge eating develops in the context of body dissatisfaction, dietary restraint, chronic negative affect, insecure attachment patterns and the inability to emotionally regulate in a healthy way (Gilbert, 2007; Tasca, Kowal, Balfour, Ritchie, Virley, & Bissada, 2006; Wheeler, Greiner, & Boulton, 2005; Whiteside et al., 2007). Within the setting of these variables, body dissatisfaction typically leads to both dieting and increased negative affect (Stice, 2001). The heightening of negative affect during a time of dietary restraint disinhibits the ability or desire to restrict food and triggers overeating, since this act temporarily relieves the dysphoric mood and is a maladaptive attempt at self-soothing (Whiteside et al., 2007). A lack of control to

stop drives the binge to continue until food is gone or there is an impact on the aversive mood. When the binge terminates, however, the negative affect is then re-heightened along with increased body dissatisfaction, leading to more dietary restraint, which in turn sets up the cycle to perpetuate (Ginsburg, 2007; Polivy & Herman, 1993; Stice, Akutagawa, Gaggar, & Agras, 2000).

The regulation of emotion plays a large role in the perpetuation of the binge cycle, a fact that is supported by a consistently significant relationship between emotion regulation and binge eating found in a growing body of research (Gilbert, 2007; Hayaki, 2009; Tasca, Szadkowski, Illing, Trinneer, Grenon, Demidenko, Krysandski, Balfour, & Bissada, 2009; Wheeler, Greiner, & Boulton, 2005; Whiteside et al., 2007). In fact, binge eating can be easily understood as a form of maladaptive emotional regulation, primarily triggered by negative affective states; the binge serves to temporarily alleviate seemingly unbearable emotion (Madeley, 2009; Polivy & Herman, 1993; Rufener, 2008; Swenson, 2007). The act of binge eating to modulate distressful emotional states in part is grounded in lower levels of emotional maturity (Gross & Thompson, 2007; John & Gross, 2007), or emotional processing deficits (Bydlowski, Corcos, Jeammet, Paterniti, Berthoz, Laurier, Chambry, & Consoli, 2005; Gilboa-Schechtman, Avnon, Zubery, & Jeczmien, 2006). A lack of emotional understanding and the inability to differentiate feeling states from somatic experience leads to the utilization of much less effective and sometimes destructive emotion regulation strategies such as binge eating (Gilbert, 2007).

Emotional processing deficits, chronic negative affective states and dysfunctional emotion regulation strategies such as binge eating can all be traced at least in part to attachment relationships (Cole-Detke & Kobak, 1996; Kenny & Hart, 1992; Schore, 2003; Shaver &

Mikulincer, 2007; Tasca et al., 2006). Insecure attachment organization formed in childhood often leads to similar relationship experiences in adult romantic relationships (Dinero et al., 2008), perpetuating the emotion regulation difficulties and chronic negative affectivity that stem from a history of attachment insecurity (Cole-Detke & Kobak, 1996; Shaver & Mikulincer, 2007). As all of these factors begin to coincide with body dissatisfaction and dietary restraint, binge eating becomes a typical course for emotion modulation of negative affect as seen in the binge eating cycle explained previously (Cole-Detke & Kobak, 1996; Tasca et al., 2006).

For many, however, there is another key relationship which has not been included in the explanation of this cycle. Attachment theory has been extended to a personal relationship with God (Kirkpatrick, 1999), where God attachment insecurity has also been linked to higher levels of psychological distress and negative affective states, as well as ED symptoms such as body dissatisfaction and dietary restraint (Bradshaw, Ellison, & Marcum, 2010; Homan & Boyatzis, 2010). But no studies have investigated whether the psychological distress from God attachment insecurity uniquely adds to the cycle of negative affect being emotionally regulated through binge eating, particularly for women who place importance on a relationship with God. Filling in this missing link was the primary goal of the current research.

Purpose of the Study

This study first empirically examined the in-depth relationship between binge eating, emotion regulation, and attachment styles with romantic partners and God. Secondly, romantic attachment and emotion regulation variance were statistically controlled in order to determine whether God attachment insecurity contributed unique variance toward the occurrence of binge

eating behaviors. The purpose of examining the questions in this study was to determine whether the significant empirical relationship that has been shown to exist between binge eating, emotion regulation and attachment organization extends beyond adult attachment relationships to the attachment relationship formed with God.

Research Questions

There were two main research questions: 1) Does a correlational relationship exist between binge eating, emotion regulation, adult attachment style and God attachment style for college women? 2) Does God attachment insecurity account for unique variance in binge eating severity in college girls, after controlling for emotion regulation and adult attachment style?

Assumptions and Limitations

This study used a cross-sectional design with self-reported data, both of which carried several assumptions and limits. Self-report inventories primarily assume honest responses will be given from research subjects in regard to assessment data, and rely upon the level of insight each participant has into each topic as they relate to their behavior and relationships. Because self-report inventories can be somewhat limited in measurement of elusive concepts such as attachment organization (Fraley, Waller & Brennan, 2000), this study made the assumption of suitable validity and reliability of measures based on prior research on all assessments chosen. Gathering a sample of college women was a self-imposed limit of this study, based on past

findings that have shown a majority of women make up the binge eating population (Madeley, 2009); another self-imposed limit existed by gathering data from a Christian university, based on the desire to find a population of women more likely to place an emphasis on a relationship with God (Railsback, 2006). The correlational design of this study only allowed for a portrayal of pre-existing relationships between variables, and the cross-sectional data collection (Time 1 only) showed one point in time and limited an assumption that empirical relationships uncovered by this study would endure for this population. Finally, while the choice of a Christian university was particularly relevant to this study and specific population, this data may not generalize to other populations such as college women from a secular school, women who do not sign up for Psychology courses, younger and/or older populations of women with binge eating issues, or a population of clinically diagnosed patients in eating disorder treatment.

Definition of Terms

The following terms are operationalized definitions taken from relevant research for the purposes of this study:

Adult Attachment – Attachment organization found in adult love relationships (Hazan & Shaver, 1987), differentiated from parent attachment because of the reciprocal nature of the relationship; each mate serves as a secure base/safe haven for the other, whereas a parent attachment is complementary and the caregiver is the secure base/safe haven only (Dinero et al., 2008). This term is often used synonymously with romantic attachment.

Attachment Theory – Originally derived from Bowlby's theory, the concept that people are innately driven to seek proximity toward significant caregivers, typically the mother, for the purposes of safety and emotion regulation (Bowlby, 1969, 1973, 1980).

Anxious Attachment – An insecure method of attachment organization that leads to hyperactivation of attachment behavior in order to maintain proximity and have needs met by an inconsistent attachment figure (Cozolino, 2006; Karen, 1998). This type of attachment organization in adults is sometimes referred to as Preoccupied (Bartholomew, 1990) or Reactive (Wei, Vogel, Tsun-Yao, & Zakalik, 2005).

Avoidant Attachment – An insecure method of attachment organization that leads to deactivation of attachment behavior in order to maintain proximity and have needs met by a consistently neglectful, rejecting or overwhelming attachment figure (Cozolino, 2006; Karen, 1998). This type of attachment organization in adults is sometimes referred to as Dismissing (Bartholomew, 1990) or Deactivating (Wei et al., 2005).

Binge Eating – The act of eating an excessive amount of food in short duration of time, while feeling a lack of control to stop (APA, 2000). This behavior tends to be cyclical, serves as a maladaptive form of emotion regulation, and is found as a symptom in all the eating disorder diagnoses (Polivy & Herman, 1993; Wheeler, Greiner, & Boulton, 2005).

Body Dissatisfaction – Discontent about the size and shape of one's body based on the socio-cultural promotion of thin body-types for women and self-comparison against this ideal standard (Stice, 2001).

Dietary Restraint – Restriction of food for the purpose of losing weight or maintaining a desired weight, also called dieting (Whiteside et al., 2007).

Eating Disorders – A diagnostic category that includes disrupted eating patterns, body image issues and severe distress surrounding these symptoms. Four main diagnoses include Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder and Eating Disorder Not Otherwise Specified (APA, 2000).

Emotion Regulation – A self-regulation process that modulates the duration, power or composition of emotional and/or physiological states, attention, motivation or behavior for adaption to circumstances and/or to achieve set goals within a circumstance (Eisenberg & Spinrad, 2004; Gross & Thompson, 2007). These abilities are first developed within primary attachment relationships (Mikulincer, Shaver, & Pereg, 2003).

Fearful Attachment – An insecure method of adult attachment disorganization derived from the need to maintain proximity to an attachment figure that is abusive or fear-inducing (Bartholomew, 1990). This type of attachment in children is referred to as Disorganized attachment (Cozolino, 2006; Karen, 1998).

God Attachment – The dynamics of attachment behavior and organization found within a personal relationship with God, typically within the Judeo-Christian tradition; God is found as a secure base and a safe haven, with proximity sought through actions such as prayer and worship (Kirkpatrick, 1999). Attachment styles include secure, anxious and avoidant (Beck & McDonald, 2004).

Negative Affect – A distressful affective state; within the cycle of chronic binge eating, this type of distressful state can include negative emotions such as depression, anxiety, frustration, stress, tension, anger and/or anger suppression (Swenson, 2007).

Thin-Ideal Internalization – The process of internalizing the western culture's standards of thinness found in mainstream media and then comparing one's body to this standard (Stice, 2001).

Romantic Attachment – Attachment organization found in adult love relationships (Hazan & Shaver, 1987), differentiated from parent attachment because of the reciprocal nature of the relationship; each mate serves as a secure base/safe haven for the other, whereas a parent attachment is complementary and the caregiver is the secure base/safe haven only (Dinero et al., 2008). This term is often used synonymously with adult attachment.

Significance of the Study

The importance of this study first lies in the area of furthering research and understanding of the role spirituality plays in the treatment of eating disorder symptoms, specifically in college women. Adding a spiritual component to ED treatment has been shown to be clinically advantageous for those with Christian faith beliefs and a personal relationship with God (Cumella, 2008). A more intricate understanding of how interpersonal distress can exist in a relationship with God would be helpful to clinicians in guiding treatment, specifically if negative affective states from insecure God attachment patterns are contributing to the use of binge eating as a maladaptive form of emotion regulation. For practitioners, this would allow for more comprehensive treatment plans and add to the overall understanding of each client from a holistic perspective. Also, attachment theory gives the template for a nuanced understanding for treating

the specific and most basic issues of emotional problems that stem from insecure God attachment.

Theoretical/Conceptual Framework

There are three primary theoretical underpinnings within the current study. First, though binge eating is typically viewed from a bio-psycho-social etiological viewpoint (Polivy & Herman, 1993), this study utilizes a more comprehensive bio-psycho-social-spiritual perspective (Cumella, 2008). Taking this expanded model and then placing it within the framework of attachment theory adds even more dimension, as this extensively researched developmental theory gives depth and historical understanding to factors relevant to the binge eating cycle (Cole-Detke & Kobak, 1996; Eggert, Levendosky, & Klump, 2007; Gilbert, 2007; Kenny & Hart, 1992; Ringer & Crittenden, 2007). Finally, the inclusion of emotion regulation theory, which intertwines with attachment theory (Mikulincer, Shaver, & Pereg, 2003), in fact shows the relationship of binge eating to attachment organization and explains the perpetuation of this pathological cycle (Whiteside et al., 2007).

Organization of the Remainder of the Study

Chapter Two will take an in-depth look at theory and research presented in the current chapter that defines and links the main variables in this study. Chapter Three will describe the methods of this study and the validity and reliability of the four assessments that were used to gather data. Also, hypotheses based on theoretical underpinnings and research (Chapter Two)

will predict the directionality of the statistical data from this study. Chapter Four will report the details of the participant population and results of the statistical analysis of data. Finally, Chapter Five will offer a discussion of the results of this study, as well as a description of limitations and areas for future research.

Chapter Summary

This study intends to further research in the area of God attachment, adult attachment, emotion regulation and binge eating. By pulling these variables together and investigating the possibility that chronic cycles of binge eating could be impacted by one's relationship with God will give great insight into how to guide treatment and healing. Binge eating is a serious problem (APA, 2000), particularly for college women (Madeley, 2009). For those who also place importance on their relationship with God, who is taught to be a source of strength and comfort in the Christian faith, it is vitally important to uncover issues that may stand in the way of this understanding. The following research hopes to accomplish this goal.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

Previous research shows that binge eating is greatly impacted by adult attachment insecurity through negative affective states and emotion regulation difficulties (Dinero et al., 2008; Ginsberg, 2007; Wei et al., 2005; Wheeler, Greiner, & Boulton, 2005; Whiteside et al., 2007). This study examined whether those factors extended to include attachment insecurity within a relationship with God as a contributor to the chronic cycle of binge eating. This chapter will review literature and theory that links binge eating with attachment insecurity and emotion regulation, showing the relevance of the current study's attempt to broaden this etiological understanding into the area of relationship with God.

Binge Eating

Binge eating is a problem found across a broad population that goes from dieters to those who develop a chronic habit of binge eating found in all three of the eating disorder diagnoses (APA, 2000; Madeley, 2009). However, the tendency to overeat can be distinguished from the cyclical and psychologically driven binge eating pattern found at extreme levels in the diagnostic criteria of Bulimia Nervosa, Binge Eating Disorder and the Binge/Purge type of Anorexia Nervosa (APA, 2000), though it is often difficult to determine what constitutes a binge versus a less complex act of overeating (Fairburn, 1995).

Binges are characterized in the DSM-IV diagnostic manual (2000) as having two main components comprised of both a behavioral and psychological element: the act of "eating, in a discrete period of time (e.g., within any 2-hour period, an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances," as well as "a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)" (APA, 2000, p.589). It is important to note the psychological lack of control regarding this behavior is the key to differentiating between overeating and binge eating (Ginsburg, 2007).

Lack of control is a distinguishing psychological element found within each individual binge, but of the many people for whom binge eating tends to have a chronic nature, a cycle is perpetuated by additional and complex psychological facets in what Polivy and Herman (1993) describe as five fairly predictable stages. The first phase is actually a constellation of chronic preconditions that leave a person at risk for binging behavior. Body dissatisfaction, lowered self-esteem, a drive to be thinner and ongoing food restriction are all preconditions that create a risk for overeating (Stice, 2001). Personality factors that also predispose a person for binging behavior are enduring patterns of anxious and dysphoric moods (Cole-Detke & Kobak, 1996; Eggert, Levendosky, & Klump, 2007), as well as chronic emotional dysregulation (Gilboa-Schechtman, Avnon, Zubery, & Jeczmien, 2006; Whiteside et al., 2007) and perfectionism (Heatherton & Baumeister, 1991; Polivy & Herman, 1993). Family patterns that are viewed as risk-factors include a lack of nurturing and empathy within the parent-child relationship, a lack of family cohesion and disengagement, insecure attachments, negative or hostile family interactions, and enmeshment (Ginsburg, 2007; Polivy & Herman, 1993).

Polivy and Herman's (1993) second phase of a binge is what actually instigates overeating. Heightened levels of negative affect and/or distress are typically cited as the main triggers, and the binge serves as a mechanism of regulating this emotion and making it temporarily more bearable. It is also theorized that stressful affect disinhibits and overrides dietary restraint, and the former state of food deprivation (real or perceived) makes a person more prone to overeat and not listen to the body's natural signals of satiety. In order to continue the triggered act of extreme overeating, or the third phase of a binge called the maintenance phase, there must be a reduction in distress and/or negative affect for a person to continue overeating (Polivy & Herman).

The fourth stage is binge termination, when either a person runs out of food or finally the function of emotional regulation has been served, which then alleviates the motivation to eat. The final (and fifth) stage of a binge involves felt consequences; when the temporary relief of negative affect brought on by overeating subsides, the binge eater is then typically overwhelmed with a new wave of distress that can include shame, guilt, and other negative and internalizing emotions such as disgust and depressive symptoms. This can prompt an immediate purge of some type and/or lead to another round of dietary restriction, thus uncovering how this becomes a chronic and cyclical behavior as these final acts feed into the psychological precondition and triggering mechanisms that encouraged binge eating in the first place (Polivy & Herman, 1993).

Etiology of Binge Eating

After describing the mechanics of the binge eating cycle, which somewhat overlaps etiological theory regarding the genesis and course, the broader question of what actually causes this problem comes into sharper focus. Many models have been argued in the eating disorder research, including the addiction, dietary restriction, conditioning, escape, trauma-response and affect regulation models (Ginsburg, 2007; Heatherton & Baumeister, 1991; Whiteside et al., 2007). There is a lack of consensus in the literature (Gilbert, 2007; Ginsburg, 2007), although the dietary restraint and affect regulation models are often considered the dominantly accepted models (Whiteside et al., 2007). It is noticeable, however, that all of the above competing models encompass the specific area of emotion regulation, a thread that runs through each theory in a prominent capacity. This overlap among different etiologic models offers insight into the complex and primary role emotion regulation plays in the cause of binge eating (Gilbert, 2007), as a brief highlight of the models will show (for a more comprehensive review see Ginsburg, 2007 and Polivy & Herman, 1993).

In the addiction model, food is seen as the addictive substance used to modulate unstable moods, mask internal conflicts, and regulate tension (Ginsburg, 2007). In the dietary restraint model, it is highlighted how the psychological and biological stresses of food restriction are typically preceded by body dissatisfaction, all of which coincide and contribute to mood dysphoria and vulnerability to binges for the purpose of emotion regulation (Ginsburg, 2007; Whiteside et al., 2007). The conditioning model suggests that negative affect becomes paired, or behaviorally conditioned, as a cue that triggers binge eating (Ginsburg, 2007; Polivy & Herman,

1993). The escape theory model explains the cognitive narrowing process that occurs to avoid negative affect brought on by perfectionist standards not being met; this more primitive cognitive state allows the disinhibition of broader weight-loss goals, which leads to binging in an attempt to regulate mood (Heatherton & Baumeister, 1991). The trauma-response model describes a subset of the binge-eating population that has experienced some form of trauma, and in a similar vein as the escape theory describes the act of binging as an attempt to dissociate from the awareness and negative affect resulting from unresolved psychic pain. Finally, the affect-regulation model is a straightforward explanation of binge eating as a dysfunctional coping attempt to mask, reduce and/or regulate negative affect (Ginsburg, 2007).

This commonality is supported by a large body of research that has shown a definitive relationship between binge eating and emotion regulation difficulties (Domingo, 2004; Gilbert, 2007; Hayaki, 2009; Heatherton & Baumeister, 1991; Madeley, 2009; Rufener, 2008; Tasca et al., 2009; Wheeler, Greiner, & Boulton, 2005; Whiteside et al., 2007). For instance, Whiteside and associates (2007) collected data from a nonclinical population of 695 male and female college students in a quantitative, cross-sectional study that assessed disordered eating levels and emotion regulation difficulties. The direct impact of emotion regulation difficulties on binge eating severity showed a unique variance of 16% from a multiple regression analysis; particularly a lack of emotional clarity and a lack of access to emotion regulation strategies were uniquely predictive of higher levels of binging behavior (Whiteside et al.). In another nonclinical sample of 115 college women, Hayaki (2009) found a significant relationship between bulimic symptoms and emotion regulation difficulties pertaining to alexithymia and emotional avoidance strategies, along with unique variance from eating expectancies that food would

relieve negative affect. Within a clinical population of 310 women with eating disorders, Tasca and associates (2009) were able to show a relationship between emotion regulation difficulties and disordered eating, as maladaptive reactive emotion regulation strategies mediated the course from attachment insecurity to ED symptoms.

So taking competing etiological models and extracting the element of emotion regulation, an element grounded in recurring research findings, offers the ability to synthesize various theories; a main key to this fusion is the emphasis of a developmental framework. This synthesis, in essence, is rather closely aligned with the biopsychosocial model of etiology, a more comprehensive way to organize the information known about binge eating (Polivy & Herman, 1993). From this broader perspective, it will be possible to see in more depth how the interaction of body dissatisfaction, dietary restraint, insecure attachment, negative affect and emotion regulation difficulties all tend to occur within the typical etiological course that leads to and maintains the cycle of binge eating (Bradford & Petrie, 2008; Tasca et al., 2006; Tasca et al., 2009; Stice, 2001; Stice & Agras, 1999).

Binge Eating and Negative Affect

To begin a breakdown of relevant variables, the topic of negative affect is a good place to begin because it is considered a primary psychological trigger for binge eating (Madeley, 2009; Polivy & Herman, 1993; Rufener, 2008). The act of binging is often an attempt to regulate affective states such as depression, anxiety, frustration, stress, tension, anger and anger suppression (Swenson, 2007). This constellation of emotions has been studied at length by

retrospective self-report as well as self-monitoring measures across a population that typically consists of women who exhibit disordered eating (Bradford & Petrie, 2008; Cole-Detke & Kobak, 1996; Stice, 2001; Stice & Agras, 1999; Tasca et al., 2006; Tasca et al., 2009; Wheeler, Greiner, & Boulton, 2005; Whiteside et al., 2007). This trigger has been found to span the range from the subclinical category of binge eaters to clinically diagnosed eating disorders (Swenson, 2007), where stronger negative affect is linked with more severe symptoms of ED psychopathology (Stice & Agras, 1999).

This tendency to suffer from distressful and negative emotional states does not lead to binge eating alone, however, but forges this path through interplay with other variables (Stice & Agras, 1999). According to Stice (2001), body dissatisfaction is an ED symptom that grows out of a psychological internalization of the 'thin-ideal' driven by western culture and media, and body dissatisfaction then partially mediates the course from thin-ideal internalization to dietary restraint, in which dieting is an attempt to alter one's body shape through food restriction. Thin-ideal internalization and body dissatisfaction also both contribute to an increase in negative affect because of the derogatory evaluation and harmful messages given internally, mainly in a population of women where body image can be a culturally defining gender factor (Stice). Together, this dual pathway of dietary restraint and negative affect has been shown to predict bulimic symptoms (Bradford & Petrie, 2008; Stice, 2001).

While dietary restraint and negative affect both grow from body dissatisfaction and together increase disordered eating, negative affect studied as a single variable has been shown to have a reciprocal effect on both body dissatisfaction and binge eating (Bradford & Petrie, 2008; Stice, 2001). In other words, negative mood states that rise from body dissatisfaction can

then in turn increase body dissatisfaction; also, disordered eating that develops from negative affect then will in turn increase and perpetuate negative affect (Bradford & Petrie, 2008). So obviously negative affect plays an integral part in the binge eating cycle as a form of emotion regulation, yet the origin of this factor begins before the initial impact of thin-ideal internalization and body dissatisfaction, variables that only serve to tap into a risk factor for mood instability (Cole-Detke & Kobak, 1996; Tasca et al., 2006). This pre-existing condition is rooted in developmental attachment insecurity and the inability to emotionally regulate in an effective and healthy manner (Whiteside et al., 2007).

Emotion Regulation

To specifically understand the regulation of negative affective states, the general and complex topic of emotion regulation must first be tackled. Emotion regulation is defined by Eisenberg and Spinrad (2004) as a process to self-regulate the length, strength or structure of emotional and/or physiological states, focus, motivation or simultaneous behavior for the purpose of adapting to a situation and/or obtain set goals. Emotion regulation can also be understood as only one of several types of affective processes that are then embedded within a larger system of self-regulation processes (Gross & Thompson, 2007), all of which can encompass both internal and external modulation of a person's intense feeling states (Cole, Martin & Dennis, 2004; Eisenberg & Spinrad, 2004).

According to *The Handbook of Emotion Regulation* (Gross, 2007), emotion regulation happens along a spectrum of awareness and effort that goes from unconscious to conscious, a

continuum along which several strategies are employed. The majority of skills are antecedentfocused, where the regulatory strategies are put into place prior to the full development of the
predicted and typically negative emotional state; situation selection is the process of choosing or
avoiding circumstances based on the projected amount of emotional distress, situation
modification is the process of manipulating within set circumstances to minimize the chance of
distress, attentional deployment is the process of shifting attention within a situation for the sake
of modulation, and cognitive change is the process of reappraisal for the purpose of altering the
emotional significance of the circumstance. The only regulatory strategy that is responsefocused, or an attempt to regulate after the full development of the emotional state, is called
response modulation. This basic strategy directly suppresses the physiological, behavioral and/or
experiential responses of a distressful feeling state with alternative physical, behavioral and/or
experiential responses such as substance use, exercise, or eating (Gross & Thompson, 2007; John
& Gross, 2007).

The antecedent-focused regulation strategies are more effective (Shutte, Manes, & Maloufe, 2009), demand an understanding of differentiated emotional states, the ability to predict emotional reactions in assorted contexts, and understanding of the emotional significance given to various circumstances (Gross & Thompson, 2007). These abilities hinge on higher levels of emotional development, a maturation process that is theorized by Lane and Schwartz (1987) to parallel the levels of cognitive development described by Piaget (Flavel, 1963). The first two levels are the most basic and are characterized by a somatic experience of emotions. In the first level, attempts to regulate affect involve behaviors intended to gain the attention of significant others for the purpose of external emotion regulation, with no understanding that

body feelings correlate with emotion or the nature of the emotion. In level two, broad behaviors that impact the environment are used to alleviate undifferentiated understandings of distressing feelings, and there is a very limited ability to articulate what is experienced as global states of good or bad feelings. The middle level (level three) is the beginning of a person's ability to understand different emotional states, but in a unilateral way of experiencing only one emotion at a time. The two highest levels (level four & five) show increasingly nuanced views and experiences of different and simultaneous emotional states. The more developed these abilities get, the greater a person's ability to articulate and make sense of their feelings; these key skills offer much higher and healthier levels of emotion regulation (Lane & Schwartz, 1987), such as antecedent-based regulation strategies (Gross & Thompson, 2007).

In the same vein, the lower levels of emotional development can be found within response-focused strategies that are primarily somatic in nature. Emotion is exhibited physiologically, experientially and behaviorally, and is marked by an undifferentiated understanding of emotional states (Lane & Schwartz, 1987). An example of this would be employing the response-focus strategy of suppression through use of an external mechanism such as substance use, physical activity or eating (John & Gross, 2007); there is a primary somatic element to this approach and modulation occurs after the feeling state is fully activated, assuming a higher level of emotional awareness would have led to antecedent-based strategies (Shutte, Manes, & Maloufe, 2009).

Emotion Regulation and Binge Eating

Fitting together two of the main variables in this study, binge eating can therefore be understood within this category as a maladaptive response modulation strategy used to suppress and regulate negative affect once it has fully developed into a current emotional state (Whiteside et al., 2007). The primitive levels of emotional development that drive this type of emotion regulation strategy are conceptualized in ED literature as emotional processing deficits (Bydlowski, Corcos, Jeammet, Paterniti, Berthoz, Laurier, Chambry, & Consoli, 2005; Gilboa-Schechtman, Avnon, Zubery, & Jeczmien, 2006). Alexithymia and interoceptive awareness are the main constructs that encompass this problem among those with disordered eating (Gilbert, 2007), and in fact they cut across ED diagnostic categories (Lawson et al., 2008), with alexithymia found to correlate with ED symptoms in clinical and non-clinical populations (Karukivi, Hautala, Korpelainen, Haapasalo-Pesu, Liuksila, Joukamaa & Saarijarvi, 2010).

Interoceptive awareness was first conceptualized as a construct on the Eating Disorders Inventory (EDI) by Garner, Olmstead and Polivy in 1983, measured by a subscale that assessed deficits in the ability to accurately label affect and understand body signals of hunger and fullness. Later research and versions of the EDI have refined this concept with a second dimension, highlighting how the inability to differentiate between affective and somatic states leads to fear and/or guilt in regard to this aversive arousal. These factors add a distressing element to the limitations of this emotional processing deficiency, as affective states and somatic signals such as hunger or fullness are not understood and immediately trigger shame and fearful non-acceptance, which then leads to avoidance behaviors such as binging (Merwin, Zucker, Lacy, & Elliott, 2009).

A broader form of the inability to differentiate emotional states is a condition called alexithymia (Leon, Fulkerson, Perry, & Early-Zald, 1995). Also an emotional processing deficit, this condition includes problems with understanding, labeling and describing emotions (Quinton & Wagner, 2005), in some ED research overlapping interoceptive awareness and including somatic feelings as well (De Berardis et al., 2009; Ridout, Thom, & Wallis, 2010). Alexithymia is found as a predictive factor in various psychopathologies besides eating disorders, the full definition of this concept including the lack of ability to define and describe emotions, a lack of fantasy or imagination and very concrete thinking (De Berardis et al., 2009). Research has shown in those with disordered eating, however, that only the deficit in understanding and articulation of emotion was consistent within the ED population, along with the addition of ambivalence over the act of emotional expression (Quinton & Wagner, 2005). This ambivalence may have roots in the fearful un-acceptance of affective states found in interoceptive awareness, particularly since these constructs are very similar.

As discussed previously, emotional processing deficits and the limited ability to emotionally regulate often lead to a response modulation strategy such as suppression (Gross & Thompson, 2007). Negative affect becomes fully developed, and is comprised of aversive and overwhelming visceral and emotional states that are unorganized and without differentiation (Gross & Thompson, 2007; Speranza et al., 2005). This negative experiential, somatic state is acted upon with experiential, somatic regulation tactics that work to contain the affective distress (Gross & Thompson, 2007), in this study focusing on the act of binge eating. But it is important to note this inability to label and organize affective states and emotions, as well as the inability to regulate emotion in a healthy and productive manner, are problems that preceded the

manifestation of ED psychopathology (Cozolino, 2006). Just as the predisposition to experience negative affect is rooted in insecure attachment patterns and emotion regulation issues, the hierarchy of this developmental trajectory is further explained with an understanding of how emotion regulation abilities originally stem from attachment patterns (Speranze et al., 2005).

Attachment Theory

Attachment theory was first conceptualized by John Bowlby (cf.1969). He theorized that we have a built-in system that fosters survival, which is an innate drive in the face of threat, pain, or distress to make sure we stay close to the people with whom we are intimately bonded and rely upon. For children, this is typically a parent, most often the mother (Bowlby, 1969, 1973, 1980; Karen, 1998). Building upon Bowlby's work, a colleague of his named Mary Ainsworth further defined four main characteristics of an attachment relationship between a child and his or her primary attachment figure (Ainsworth, 1985). The first is proximity-seeking, or attempting to stay physically near or have the perception of availability to the attachment figure. Second, a child needs to be able to perceive the attachment figure as a secure base, or a place of security from which to anchor in order to feel safe to explore the surrounding environment. Third, a child must experience the "secure base" person as a safe haven, someone that serves to help regulate distressful emotions and that will offer nurturing attention and attunement. Finally, if there is an experience of distress and anxiety when the secure base is not available, and if the attachment figure is permanently lost, then the grief process of protest, despair and then eventually detachment will evolve (Ainsworth, 1985; Beck & McDonald, 2004).

Attachment & Emotion Regulation

Attachment processes and emotion regulation are intricately intertwined. In fact, Bowlby conceptualized the attachment system to be a biologically-driven mechanism for emotion regulation (Mikulincer, Shaver, & Pereg, 2003). Understanding why early attachment relationships are so vital, particularly to the healthy development of emotion regulation abilities, involves understanding that relationships impact a child's developing brain when they are being nurtured by parents at a very young age. According to Schore (2003), mothers that are attuned to the moods and needs of their babies will actively reflect the child's emotional state, and also attempt to regulate distress and read signals of unmet needs such as being hungry or scared of a stranger. This consistent external regulation helps to create the attachment bond, as well as to begin teaching the child the long-term goal of effective self-regulation. As the child develops, this nurturing and external reflection allows the brain to develop a working understanding of how to label their own internal state and the state of others, which we also call empathy, based on the mother as a 'mirror' (Sharp & Fonagy, 2007). The very young stage (0-18 months) is a critical period for brain growth and development, and without the proper attunement and care the brain will fail to fully develop a healthy foundation of emotional development, self-regulation skills and empathy. These deficiencies and the inability to emotionally regulate then predispose a child to higher levels of negative affect and various forms of psychopathology (Cozolino, 2006; Schore, 2003).

Internal Working Model

In this early critical brain phase when these developmental tasks are being addressed, the most basic level of implicit memory is formed and structured before the development of language, creating deeply embedded relationship schemas that are formulated based on the quality of care (Schore, 2003). These attachment schemas, or the internal working model (Bowlby, 1982/1969), are lived out as affective and visceral states that are comprised of gut-level emotions, reactions, and instincts (Cozolino, 2006). A template for emotional regulation within relationships is formed as the level of security experienced from repeated attachment experiences becomes internalized and organized around core beliefs about the self and others. This is an understanding of whether the world is safe to explore, whether the child believes he or she is capable of successful interactions with others, and if people are trustworthy to protect and meet important needs (Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007). If primary caregivers are psychologically attuned, consistently available in times of need, and encourage exploration and appropriate autonomy, then a child will develop a positive self/positive others internal attachment schema because they will not have to regulate the overwhelming distress of attachment insecurity (Mikulincer, Shaver, & Pereg, 2003).

The attachment drive for caregiver proximity in the face of distress is the primary strategy of emotion regulation, and if met with adequate care the internal working model formed is considered a secure attachment because the primary strategy was effective for relieving distress (Shaver & Mikulincer, 2007). However, this early critical brain period is also the time when the brain is developing the lower and basic parts of the limbic system that creates fight,

flight or freeze (splitting) responses to distress, which gives the basic structure for the internal working model template of how a child responds to a poorly attuned, rejecting or abusive caregiver (Cozolino, 2006; Karen, 1998). These responses are secondary attachment strategies, since the primary strategy was ineffective. These defensive tactics are used to maintain proximity to the caregiver and get basic needs met, organized around the amount and quality of care given as a crude attempt to self-regulate emotions due to the lack of this function in the caregiver relationship (Shaver & Mikulincer, 2007).

When the care is consistently inconsistent and primary proximity-seeking is only sometimes effective, the child hyperactivates attachment behavior as a secondary defensive mechanism to get attachment needs met and to maintain proximity to a mother who will eventually attend to them. This organizes an anxious attachment schema, and is a "fight" reaction to distress. If response to attachment needs is consistently neglectful, rejecting or overwhelming and therefore primary proximity-seeking is never effective for the regulation of attachment distress, the child will deactivate attachment needs, which is an avoidant attachment schema. This is a defense mechanism to maintain proximity to a mother and not be rejected, neglected or overwhelmed because of attachment needs, which crudely regulates affect by avoiding distress and is a "flight" reaction (Karen, 1998; Shaver & Mikulincer, 2007). Finally, if a caregiver is abusive or has unresolved trauma and therefore creates a fearful bond, a disorganized attachment will form. The person who is supposed to be the safe haven is also the source of trauma and fear. A child must maintain proximity to survive, but does not know how to handle the proximity and shows severe confusion regarding how to react to the insecure base, which is a "freeze" reaction to distress (Cozolino, 2006; Karen, 1998).

Social, cognitive, affective and relational development then builds upon and interacts with how the attachment schema is originally organized (Karen, 1998). Part of the success in which a child goes about this maturation process, therefore, resides upon how well they were externally emotionally regulated and therefore taught to self-regulate, a function of the quality of their original attachment patterns and a driving influence that continues to impact attachment patterns and emotion regulation abilities all throughout life (Bowlby, 1982/1969; Cozolino, 2006; Diamond & Aspinwall, 2003; Schore, 2003). The internal working model goes beyond infancy and is a mental representation used mostly unconsciously in relationships throughout life, though it is adaptable and responsive to experience. Attachment patterns are found in peer, romantic and spiritual relationships throughout life, a great deal of which corresponds with and is impacted by how these patterns were founded as a child (Beck & McDonald, 2004; Dinero et al., 2008; Miller & Hoicowitz, 2004). Adults operate with a multi-level internal working model, which has an overarching global model of self/other core beliefs which generalize throughout all attachment relationships, but has differentiated elements for friendship, romantic, and family relationships (Overall, Fletcher, & Friesen, 2003).

Adult Attachment

Hazan and Shaver first proposed in 1987 that fundamental elements of attachment theory are found to be descriptively accurate in explaining close relationships beyond childhood into adolescence and adulthood, using a three category model of secure, avoidant and anxious/ambivalent patterns. Bartholomew (1990) then expanded this to encompass a four-category model of self and others, derived from the basic attachment styles to explain the

nuances of the internal working model within each pattern; secure attachments have a positive self/positive others view, dismissing (avoidant) attachments have a positive self/negative others style, preoccupied (anxious) attachments have a negative self/positive others style and fearful (disorganized) attachments have a negative self/negative others view.

Model of Self		
Positive	Negative	
Secure	Preoccupied	
Dismissing	Fearful	
	Positive	

Figure 1. Bartholomew's (1990) original model of self and other.

Brennan, Clark and Shaver (1998) then combined all of the above into a continuous measurement that has offered a more accurate understanding of the individual differences that people show in adult relationships. As adult attachment measurement and research has evolved, there is now a much fuller understanding of the original work of Bowlby and Ainsworth. This more developed model shows in depth how the internal working model extends into later decades of life and impacts relationships, explaining how the attachment system functions to

regulate emotion through adulthood (Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007).

Fraley and Shaver (2000) noted that while the original parent attachment schema is the foundation for romantic adult attachments schemas to build upon, it is important to understand the additional elements of a romantic relationship interacting with attachment schemas are sexuality and care-giving. These three systems work separately and with differing motivations, but interact and influence one another (Cassidy, 2000). Dinero and associates (2008) describe how these factors extraneous to adult attachment can lead to differentiation of how the internal working model affects behavior and emotions in parent versus romantic adult relationships. While parent attachment schemas correspond significantly with romantic attachment in adolescence and early adulthood, as a romantic history builds through adolescence and young adulthood, this history of past relationships can then become more influential on current and future attachment style (Dinero et al.). This potential differentiation also makes sense in light of the fact that romantic attachments are conceptually different from parent attachments because two adults serve as reciprocal secure bases/safe havens for each other, as opposed to the complementary relationship between a parent and a child. While a child requires the physical proximity and closeness to feel secure and emotionally regulated in an attachment relationship, adults in a romantic relationship can have "felt-security" from a perception of availability, even if they are not in the presence of the other (Hazan & Shaver, 1994).

That being said and even with these differences between parent and romantic attachments in mind, there is still a powerful continuity of emotional maturity and the ability (or deficiency) to emotionally regulate in an attachment relationship that follows a person into adulthood (Allen,

Stein, Fonagy, Fultz, & Target, 2005). The internal working model a person uses to build and navigate adult relationships was first created within parent attachments, and if that was an overall insecure experience the resulting poor emotion regulation skills and skewed understanding of how to attain attention and care will most likely manifest in adult romantic relationships (Dinero et al., 2008), and with it the distorted lens through which to view self and others (Bartholomew, 1990). This can become evident with the development of various psychopathologies and higher levels of negative affect, insecure parenting styles with children, and insecure romantic attachment styles marked by emotion regulation difficulties (Bartholomew, 1990; Dinero et al., 2008; Shaver & Mikulincer, 2007; Wei et al., 2005).

Adult Attachment and Emotion Regulation

Expanding Bowlby's concept, Shaver and Mikulincer (2007) describe the attachment system, and the internal working model that organizes attachment strategies within this system, as the structure that guides the development of emotional maturity and emotion regulation processes throughout the lifespan. As previously discussed, a secure attachment style is foundationally built on the primary strategy of proximity seeking (Mikulincer, Shaver, & Pereg, 2003), which then leads to higher-level emotional development and therefore antecedent-based emotion regulation (Gross & Thompson, 2007; Shutte, Manes, & Malouff, 2009). As securely attached children grow into adulthood, they internalize supportive caregiver's attitudes about themselves and from that build constructive, flexible attitudes toward problem-solving. There is

also the ability to endure negative affect within relationships in order to solve whatever issue is motivating the aversive state, because there is no need to suppress the expression of emotion; negative affect has been expressed in significant relationships before and there was no loss of control or rejection. Secure individuals have a higher tolerance of frustrating situations because they have internalized the principle that help is available if needed. A positive view of self and others allows for a flexible reappraisal of obstacles and threats, with self-efficacious beliefs that make obstacles seem surmountable (Shaver & Mikulincer, 2007). Also, those with a secure attachment style have a much greater capacity for self-reflection (Fonagy, Steele, Steele, Moran & Higgit, 1991; Shaver & Mikulincer, 2007), or the ability to label and express one's internal emotional state, which is the key function that allows for these higher-level, antecedent-based strategies of emotion regulation (Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007).

When the emotion regulation strategy of proximity seeking was not effective, however, and the secondary strategy of hyperactivation was employed as a child, this defensive strategy will often be continued into romantic relationships as an adult (Dinero et al., 2008). Anxious (also called preoccupied and sometimes referred to as ambivalent) adult attachment operates from an internal working model that assumes poor problem solving, clinginess, exaggerated neediness and the overstatement of distress are effective tactics to gain proximity and attention from a significant other. Self-perpetuated helplessness stems from this mindset, as well as

constant vigilance and preoccupation with distress or the threat of distress. All of these defensive tactics render the potential development of problem solving skills and constructive, antecedent-based emotion regulation strategies irrelevant, since distress and neediness are integral to the strategy for gaining attention and external regulation from their partner (Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007).

According to Shaver and Mikulincer (2007), adult avoidant (also called dismissing) attachment strategies look much different, but like the anxious strategies also create unhealthy relationship experiences and dysfunctional patterns. The deactivation of attachment needs is a suppression of negative emotion and inattention to threat, as opposed to the anxious attachment bid to overemphasize threat and distress. And while an anxious attachment pattern calls for overemphasized dependence and neediness, an avoidant internal working model uses the strategy of overemphasizing self-reliance and independence. Attachment-related emotions suppressed by avoidant strategies are usually "fear, anxiety, anger, sadness, shame, guilt, and distress" (Shaver & Mikulincer, pp. 452). Because these feelings are associated with vulnerability, they are inhibited. Those with avoidant attachments are also less likely to develop healthy emotional processing skills, because so much emphasis is placed on the suppression or avoidance of emotional response. This inhibits cognitive appraisal abilities and the development of healthy antecedent-based emotion regulation skills that require reflective capacity, since emotions are consistently suppressed and therefore not labeled or expressed (Gross & Thompson, 2007; Mikulincer, Shaver & Pereg, 2003; Shaver & Mikulincer, 2007).

Adult Attachment and Negative Affect

A history of insecure attachment organization, regardless of the type, results in less reflective functioning capacity (Fonagy, 1991), less emotional maturity and less effective regulation strategies that in turn allow negative affective states to more fully develop (John & Gross, 2007; Shaver & Mikulincer, 2007). Knowing this makes it easy to understand the prevalence of higher levels of negative affect for those with insecure attachment patterns (Cole-Detke & Kobak, 1996; Gilbert, 2007; Tasca et al., 2006; Wei et al., 2005), including manifestations of depression (Roberts, Gotlib, & Kassel, 1996), anxiety, significant amounts of distress, interpersonal tension and feelings of loneliness (Wei et al., 2005). In fact, Wei and associates (2005) found that both anxious and avoidant attachment strategies fully mediated the path from insecure attachment to negative affect. In other words, the course starts with insecure attachment organization, which creates and perpetuates emotion regulation difficulties throughout attachment relationships, from which higher levels of negative affect develop and perpetuate various forms of psychopathology (Cozolino, 2006; Schore, 2003).

Attachment, Emotion Regulation and Binge Eating

With the framework of attachment theory in place, it is now possible to see how the variables of the current study are fitting together. Binge eating has been empirically linked to emotion regulation difficulties (Domingo, 2004; Gilbert, 2007; Tasca et al., 2009; Whiteside et al., 2007), higher levels of negative affect (Stice, 2001; Tasca et al., 2006), and lower levels of emotional development (Wheeler, Greiner, & Boulton, 2005; Whiteside et al., 2007). Insecure parent and adult romantic attachment patterns have also been empirically linked to emotion regulation difficulties (Schore, 2003; Shaver & Mikulincer, 2007), negative affect (Cole-Detke & Kobak, 1996; Tasca et al., 2006; Wei et al., 2005) and lower levels of emotional development (Shaver & Mikulincer, 2007). As a logical extension, there is a body of research that closes the gap and shows a relationship between binge eating and both insecure parent and romantic attachment organization (Cole-Detke & Kobak, 1996; Eggert, Levendosky, & Klump, 2007; Gilbert, 2007; Kenny & Hart, 1992; Ringer & Crittenden, 2007).

In one of the first studies to link parent attachment and eating disorders, Kenny and Hart (1992) found that higher levels of secure parent attachment were negatively correlated with bulimic symptoms in clinical (inpatient for ED) and nonclinical college samples of women. In a sample of 61 college women all exhibiting depression and eating disorder symptoms, Cole-Detke and Kobak (1996) found not only a correlational link between insecure parent attachment and ED symptoms, but also that type of secondary attachment strategies showed a differentiation of impact. Women with eating disorder and depression symptoms tended to have more extreme

pathology and show hyper-activating, anxious parent attachment styles, while women with deactivating, avoidant parent attachment styles exhibited eating disorder symptoms without the presence of depression. Again, higher levels of secure attachment organization were consistent with lower levels of bulimic and depression symptoms (Cole-Detke & Kobak, 1996). In a more recent study, Ringer and Crittenden (2007) used a clinical population that included all types and subtypes of Bulimia and Anorexia Nervosa and found insecure parent attachment exhibited throughout the entire sample of 62 women, a factor that cut across all diagnostic categories and that showed all types of insecure attachment styles (anxious, avoidant and disorganized).

As for adult romantic attachment style, in a clinical sample of 268 women seeking treatment for various types of eating disorders, Tasca and associates (2006) were able to confirm a positive relationship between adult attachment insecurity as a risk factor for eating disorders through the impact of body dissatisfaction and negative affect. Another study looked specifically at anxious (preoccupied) adult attachment styles in 85 female twins and triplets and found the relationship between anxious attachment organization and eating disorder symptoms to be fully mediated by the personality trait of neuroticism, defined as emotion regulation difficulty, negative affect and anxiety (Eggert, Levendosky, & Klump, 2007).

The path from insecure attachment to binge eating is unquestionably complex, and this current study suggests using a synthesis of the above information to gain a fuller understanding of how this path unfolds. When consistent use of a secondary, defensive attachment strategy forges an insecure parent attachment style in early childhood, this creates an insecure internal working model that is likely to extend into adult romantic relationships, along with the accompanying emotion regulation difficulties and emotional processing deficits that restrict the

ability to label and express affective states (Shaver & Mikulincer, 2007). Higher levels of negative affect develop from the insecure attachments and interpersonal difficulties (Tasca et al., 2009; Wei et al., 2005), chronic dysphoric moods which are overwhelming and undifferentiated. Due to emotional processing deficits, these affective states are likely regulated with less effective secondary attachment strategies such as attempts at emotional reactivation or deactivation (John & Gross, 2007; Wei et al., 2005).

Secondary attachment strategies appear very different but in actuality have a similar course in how they can eventually lead to eating disorder symptoms through emotion regulation, which syncs with the understanding that insecure attachment (regardless of type) often cuts across diagnostic categories of eating disorder types, particularly in those with more severe symptoms (Ringer & Crittenden, 2007). Both hyperactivating (anxious/preoccupied) and deactivating (avoidant/dismissing) strategies, as previously discussed, can be viewed as response modulation strategies of emotion regulation (Gross & Thompson, 2007; Mikulincer, Shaver & Pereg, 2003; Shaver & Mikulincer, 2007). This means that negative affective states are becoming fully developed due to a lack of more sophisticated and mature emotion processing skills that would act to diffuse or modulate this state from the beginning (Wei et al., 2005). For those with anxious/hyper-activating secondary strategies, the higher levels of dysregulated emotion are actually used in an attempt to draw closer within relationships and gain attention, therefore more mature levels of emotion processing and regulation are not often allowed to develop because that would be counterintuitive to this strategy (Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007). For those who emotionally deactivate, the chronic suppression of emotion never allows this development of processing and regulation because to develop in this manner

would involve cognitive appraisal and/or attending to emotion during various situations, which would be counterintuitive to the original strategy of detaching from emotion to draw closer to others (Gross & Thompson, 2007; Shaver & Mikulincer, 2007). Therefore, people using either secondary attachment strategy in relationships often have higher levels of more fully developed negative affect due to emotion processing deficiencies, which then leads to immature, lower level emotion regulation strategies (response modulation) such as binge eating (Gross & Thompson, 2007; Mikulincer, Shaver & Pereg, 2003; Shaver & Mikulincer, 2007).

Meanwhile, these pre-existing insecure attachment patterns, emotion regulation difficulties and higher levels of negative affect then collide with the development of body dissatisfaction, a factor that is linked empirically to insecure attachment (Elgin & Pritchard, 2006), and happens mainly to women as they begin to internalize the cultural thin-ideal of beauty (Stice, 2001). Body dissatisfaction then interacts with and increases negative affect, which in turn increases body dissatisfaction, and leads to dieting in an attempt to alter body shape (Bradford & Petrie, 2008; Stice, 2001; Stice & Agras, 1999). As the increase of negative affect eventually triggers a need for emotion regulation, this overrides dietary restraint and leads to uncontrolled overeating (Bradford & Petrie, 2008; Stice, 2001). The act of overeating is a behavior that temporarily suppresses or dissociates attention from the negative affective state, by narrowing cognitive awareness to the act of eating and away from dieting goals, perfectionist standards and dysphoria (Heatherton & Baumeister, 1991; Polivy & Herman, 1993). Once the act of binging is over (due to a lack of food or temporary relief of the aversive state), feelings of shame and re-heightened body dissatisfaction then increases negative affect, which triggers compensatory behavior such as purging and/or another round of dietary restraint (Polivy &

Herman, 1993). This cycle becomes self-perpetuating as negative affect becomes conditioned to cue the act of overeating and certain foods begin to have an addictive quality (Ginsburg, 2007).

The above is a syntheses of relevant research, various models of binge eating etiology that include the component of emotion regulation, as well as Polivy and Herman's (1993) mechanics of the actual binge eating cycle. This understanding of binge eating as a maladaptive emotion regulation strategy that originally stems from insecure parent and romantic attachment patterns fits within a developmental bio-psycho-social theory of etiology (Polivy & Herman, 1993). What is missing at this point, however, is a spiritual component to this problem. Research has shown the effectiveness of adding spirituality into the treatment of eating disorders, from a bio-psycho-social-spiritual perspective, particularly documented for those within the Biblical-Christian faith (Cumella, 2008). A spiritual component is also a potential source of even deeper etiological and treatment understanding, particularly for those who place great value in relating to their Deity. Because of the developmental nature of the variables in this study, the inclusion of attachment processes within a personal relationship with God can fill in this potentially relevant space.

God Attachment

The same attachment processes found in parent and adult relationships have been found within relationships formed with God, specifically for those within the Judeo-Christian tradition who emphasize a personal relationship with God (Beck & McDonald, 2004; Clinton & Straub, 2010; Kirkpatrick, 1999). God is found by many within this religious population as a secure base

and a safe haven, and there are attempts to seek proximity through spiritual disciplines such as prayer and worship (Kirkpatrick, 1999). For those without a secure attachment organization with God, however, there are insecure attachment styles that can be measured along the same type of anxious and avoidant scales as found in adult and parent attachment measures. In fact, the Attachment to God Inventory, the first assessment created to measure God attachment on a continuous and typological scale, was created with the Experiences in Close Relationships scale (a measure of romantic attachment by Brennan et al., 1998) as a direct model (Beck & McDonald, 2004). Anxious attachment relationships with God tend to exhibit worry and doubt, anger toward God, jealousy of other's seemingly close relationship with God, as well as fear of God's rejection. Avoidant relationships are marked with distance from God, self-sufficiency and a lack of emotionality within interactions with God (Beck & McDonald, 2004).

According to Beck and associates (2005), attachment to God is conceptually similar to a parent-child relationship. Under circumstances that are not marked by attachment distress, people typically attach to God in the same manner and with a similar internal working model (view of self in relation to God and their image of God) that reflects their parent attachment organization, which is called the correspondence theory of God attachment. Those with a history of secure parent attachment tend to socially learn religiosity, and for those who grow up with an authoritative parenting style view God as more loving and accepting (Beck et al., 2005; Beck & McDonald, 2004). In the same vein, those with secure attachment history from a family that did

not value a relationship with God do not tend to place an emphasis on this in adulthood (Beck et al., 2005). Interestingly, many with a secure attachment organization history tend to grow in religiosity while also in a secure adult romantic relationship, since they find comfort within both relationships and can 'explore their environment' in a theological sense (Beck, 2006). Also, the end of a secure adult attachment relationship does not typically lead to a compensational move toward God, because they go to other attachment relationships (peers, parents, etc.) for emotional regulation (Beck et al., 2005).

There is also a correspondence between insecure parent attachments and insecure attachment to God, especially for those with anxious attachment styles (Beck & McDonald, 2004). However, it has been shown those with an insecure attachment style are motivated to seek God as a way to emotionally regulate and find emotional security, particularly at the end of a romantic relationship (Granqvist & Hagekull, 2003). This is the compensation theory of God attachment and is often characterized with sudden religious conversions (Beck, 2006; Beck & McDonald, 2004; Granqvist, Ljungdahl, & Dickie, 2007; Miner, 2007; Reinert, 2005). While early research set out to determine whether one theory was dominant, either compensation or correspondence, Beck and McDonald (2004) support the use of both concepts to understand the unfolding relationship a person forms with God. While a compensational religious conversion or resurgence in one's relationship with God may serve as a way to emotionally regulate, mainly for those with insecure attachment history and often triggered by the end of a insecure romantic attachment relationship (Granqvist & Hagekull, 2003), this compensation gives way to a more corresponding attachment dynamic as the relationship with God endures and grows (Beck et al., 2005).

God Attachment, Emotion Regulation and Binge Eating

Both the compensational and corresponding elements of attachment to God that have been found to emerge in those with insecure parent attachment history are an important link between attachment to God and emotional regulation (Granqvist & Hagekull, 2003). This is particularly important in view of the fact that fluctuation in romantic adult attachment relationships tend to drive someone with insecure attachment history to and from their relationship with God as the need for emotion regulation surfaces or subsides, in a compensational sense, as well as the fact that insecure attachment patterns from childhood then emerge as the relationship with God endures, in a corresponding sense (Beck et al., 2005; Beck & McDonald, 2004; Granqvist & Hagekull, 2003).

In fact, those with secure attachments to God exhibit less anxiety, loneliness and depression, lower levels of psychological distress and lower levels of eating disorder risk factors, as well as higher levels of satisfaction with life (Bradshaw, Ellison, & Marcum, 2010; Homan & Boyatzis, 2010). Women with avoidant God attachments have shown higher levels of body dissatisfaction (Homan & Boyatzis, 2010) and ED symptomology (Wheeler, 2008), while those with anxious attachments to God show higher levels of multiple eating disorder risk factors such as thin-ideal internalization, body dissatisfaction and dietary restraint (Homan & Boyatzis, 2010).

But no studies to date have investigated a link between binge eating, emotion regulation, and attachment styles with romantic partners and God. Considering the previously discussed relationships between the variables in this study, it seems to be a reasonable expansion to hypothesize that someone who is binge eating to regulate negative affect would exhibit not only insecure attachment organization first with parents and then romantic partners, but in their relationship with God as well (if that relationship indeed exists). Beyond that, it could be logically inferred that God attachment distress and insecurity would then add to the negative affective states that drive binge eating behavior, a unique contribution from God attachment insecurity toward disordered eating levels. This study attempted to answer these questions.

Chapter Summary

Binge eating is a serious problem that affects a population of mostly women in a detrimental way (Ginsburg, 2007; Madeley, 2009). Important implications for treatment could stem from a deeper understanding of the etiological course that starts with attachment insecurity (Kenny & Hart, 1992), emotion regulation difficulties (Whiteside et al., 2007), and chronic negative affect (Polivy & Herman, 1993), leads to body dissatisfaction and dieting (Stice, 2001) and then turns into a cyclical way to relieve unbearable emotional dysphoria (Polivy & Herman, 1993). For women with this problem who also have a personal relationship with God, a deeper etiological understanding was hypothesized and investigated to determine whether insecure God attachment distress added to the overall emotional dysregulation driving the binge cycle. The following chapters will explain the results and implications of those findings.

CHAPTER THREE: METHODS

This study empirically examined whether attachment insecurity, a factor known to contribute to the etiology of binge eating through negative affect and emotion regulation difficulties (Dinero et al., 2008; Ginsberg, 2007; Wheeler et al., 2005; Wheeler, Greiner & Boulton, 2005; Whiteside et al., 2007), extended beyond romantic relationships to include attachment insecurity with God as a unique contributor to the chronic cycle of binge eating. This chapter will describe the research methods that were used to investigate these variables, including the selected population, assessments, design limitations and a brief explanation of the type of statistical analyses chosen for this study.

Research Design

According to Kazdin (2003), because this study aimed to uncover potential pre-existing relationships between variables, as opposed to testing or comparing groups, a cross-sectional design was an appropriate choice to carry out the purpose of confirming theoretical hypotheses. The main null hypothesis stated that God attachment insecurity would not correlate or contribute variability toward the emotion regulation cycle of binge eating for college women. Since this hypothesis was testing a pre-existing relationship that could be assessed at any point, a one-time (Time 1) data-collection was suitable. For the purpose of this data collection, self-report

measures were administered, chosen for the variables of this study because of the subjective, experiential nature of the factors being addressed (Kazdin, 2003).

Selection of Participants

Participants were be recruited from an undergraduate population of women at a private, Christian university in the southeastern region of the United States during the fall semester of 2011. A pool of 175 females within the age range of 18-28 participated in the assessment. The gender and age specificity was based on the fact that undergraduate college aged women struggle with binge-eating symptoms at a much higher rate than college-aged males, and this struggle is often most prevalent during the undergraduate years when most are developmentally at the end of adolescence or beginning young adulthood (Madeley, 2009; Whiteside et al., 2007). The context specificity of a Christian school was chosen because students at an explicitly religious college are more likely to place importance on a relationship with God (Railsback, 2006). Students were invited to participate by filling out a packet of assessments administered during a psychology class, some with the incentive of extra credit points (as allowed by individual professors).

Measures

Self-report instruments were used to measure the four variables in this study, which were binge eating, emotion regulation, God attachment style, and adult attachment style. Background

demographic information was collected along with the other data in order to give a detailed overview of the sample being assessed.

Background and Demographic Information

Students were asked to give date of birth, race, gender, school status (i.e. freshman, sophomore, etc.), academic major and minor, religious affiliation/denomination and attendance, etc. Data was gathered in an anonymous fashion (without asking for first or last names), and each packet was numbered for the purpose of keeping the identity of each student separate along with birth date to allow for a second method of participant differentiation and reduce the chance of redundant information. Background information was also gathered regarding past or current mental health diagnoses or issues, as well as current pharmacological and/or psychotherapeutic treatment (see Appendix A).

Binge Eating

Binge eating is a symptom found within every diagnostic eating disorder (ED) category in the DSM-IV, specifically Anorexia Nervosa – Binge-eating/Purging type, Bulimia Nervosa, Binge-Eating Disorder, and Eating Disorder – Not Otherwise Specified (APA, 2000). Because this symptom is found within all of the ED categories, it was beneficial to use a measure that would assess binge eating within each category.

Eating Disorder Diagnostic Scale

Many of the diagnostic measures used to assess eating disorder symptoms and severity levels are completed through lengthy psychiatric interviews within a clinical setting. On the other end, many of the more convenient brief, self-report measures used for ED assessment have fallen short because they target only Bulimia Nervosa and/or Anorexia Nervosa (Stice, Telch, & Rizvi, 2000), since Binge-Eating Disorder is still classified as a disorder that needs further research and is not found within the established ED diagnostic section of the DSM-IV (APA, 2000). The Eating Disorder Diagnostic Scale (EDDI) was created with the previous factors in mind, to be used as a brief, self-report diagnostic tool that assesses all three ED diagnoses, at threshold and subthreshhold levels (Stice, Telch, & Rizvi, 2000). Subthreshhold levels are especially pertinent to the current study considering the use of a non-clinical population, which could show a full range of binge eating severity (from no symptoms to a full ED diagnosis).

The EDDS items were adapted from two well-established and validated measures, the Eating Disorder Examination (Fairburn & Cooper, 1993) and the Structured Clinical Interview for DSM (Spitzer, Williams, Gibbon, & First, 1990), both of which are structured psychiatric interviews. EDDS questions were intentionally created to mirror and descriptively represent all of the DSM-IV diagnostic criteria found in Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge-Eating Disorder (BED). Criterion are assessed with 22 items, using Likert scales (0-6), frequency Likert scales (times per day or week), yes/no questions and fill-in responses for height and weight (Stice, Telch, & Rizvi, 2000).

In the pilot study for the EDDS, a heterogeneous population of females (N=367) were given this measure, along with other well-established eating disorder interviews. The one-week test-retest kappa coefficient for AN was .95 (overall accuracy rate = .98), for BN was .71 (overall accuracy rate = .91) and for BED was .75 (overall accuracy rate = .89). The overall test-retest for the entire measure was .87. Internal consistency within the symptom composite was measured with a Cronbach's alpha of .91 for the entire sample. Criterion validity was shown by comparing how well the EDDS distinguished participants with and without ED diagnoses, as compared to the longer psychiatric interview measures. Overall agreement between measures was .93 for AN, .81 for BN and .74 for BED (Stice, Telch, & Rizvi, 2000).

Attachment Styles

A relationship between binge eating and insecure adult attachment styles has been previously established in research literature (Brennan & Shaver, 1995; Tasca et al., 2006), and the present study intended to extend this to also portray a link between binge eating and insecure attachment styles to God. Because romantic attachment in adulthood has been shown to correlate with a person's attachment to God (Beck & McDonald, 2004), adult attachment must also be assessed and statistically controlled in order to examine potential unique variance of God attachment styles in this research.

Experiences in Close Relationships

The Experiences in Close Relationships (ECR) scale was the first self-report measure of romantic adult attachment that offered a continuous *and* typological dimension for the measurement of this construct, as the previous scales were categorical-only and less precise. The ECR uses two subscales of Avoidance (of intimacy) and Anxiety (fear of abandonment/rejection) that yield continuous data from 36 items, answered on a Likert scale from 1 (disagree strongly) to 7 (agree strongly). This can then be classified onto a four-fold typological grid taken from Bartholomew (1990) that breaks down the continuous data into categories of "secure" (low on Avoidance and Anxiety), "fearful" (high on Avoidance and Anxiety), "dismissing" (high on Avoidance/low on Anxiety) and "preoccupied" (low on Avoidance/high on Anxiety) (Brennan et al., 1998).

Brennan and associates (1998) assessed college students (N=1,086) and narrowed 323 items down to a simple pair of 18-item subscales in the pilot study. With the original pool of undergraduate students, the scale showed high internal consistency (alpha = .94 for Avoidance/alpha = .91 for Anxiety). Follow-up studies that also used the ECR with undergraduate college students showed high internal consistency as well, with an alpha range of .89 to .91 for the Anxiety scale and an alpha range of .91 to .95 for the Avoidance scale (see Wei, Russell, Mallinkrodt & Vogel, 2007).

Attachment to God Inventory

Components of the relationship between individuals and God have been conceptualized as an attachment relationship similar to the parent/child attachment process (Kirkpatrick, 1999). The Attachment to God Inventory (Beck & McDonald, 2004) assesses this with 28 self-report items divided into two subscales that measure continuous dimensions of intimacy avoidance and abandonment anxiety, which was derived in a straightforward manner from the Experiences in Close Relationships inventory (Brennan, Clark, & Shaver, 1998). Just like the ECR, the constructs are assessed in a continuous fashion which can also be used typologically, with a fourfold break-down of Secure, Preoccupied, Fearful or Avoidant categories (Bartholomew, 1990; Beck & McDonald, 2004). The continuous subscales allow participants to rate answers from Strongly Disagree to Strongly Agree on a Likert Scale from 1 through 7. Both of the dimensions on the AGI correlated positively with both subscales on the ECR, though it showed only a weak relationship between adult romantic attachments and God attachments (Beck & McDonald, 2004).

In the original study conducted by Beck and McDonald (2004) three samples were used, two taken from college students and one from the community. Overall, there was stable factor structure, good internal consistency (alpha = .80 for AGI-Anxiety; alpha = .84 for AGI-Avoidance), as well as good construct validity. The Anxiety scale showed a total of 17.9% of item variance, while the Avoidance scale's accounted item variance was 15.4%; together, the subscales only shared 1.4% (r = .12) of variance.

Emotion Regulation

Binge eating is viewed as a form of emotion regulation, or a behavior that gives a short-term alleviation of negative affect, serving the role of dulling, escaping and/or regulating what are perceived as intolerable mood states (Heatherton & Baumeister, 1991; Polivy & Herman, 1993; Whiteside et al., 2007). Common negative affective states related to binge eating have been described as lonely, anxious, angry, bored, stressed and/or sad (Ginsburg, 2007). Therefore, in order to measure affect for the purposes of this study, it was most helpful to use an instrument that assessed a variety of specifically labeled mood states (as opposed to mood traits) as they were experienced over a consecutive period of time because of the typically chronic nature of binge eating.

Positive and Negative Affect Schedule

Positive affect and negative affect have been shown to be two distinct dimensions of mood, meaning they are orthogonal spectrums of affect that have very little overlap and do not represent opposite dimensions as previously theorized. Positive affect is described as a person's level of activity, enthusiasm and alertness; high levels are marked by an abundance of concentration and energy, as well as enjoyable interactions with others, while low levels of positive affect include sad and lethargic moods. Negative affect includes a spectrum of distressful and aversive moods, with little enjoyment from interactions with others; higher levels

encompass moods such as anger, disgust, and anxiety, with low levels marked by calm and peacefulness (Watson, Clark, & Tellegen, 1988).

The Positive and Negative Affect Schedule (PANAS) by Watson, Clark, and Tellegen (1988) is a brief, self-report measure that has two 10-item subscales (a negative affect scale and a positive affect scale), as well as seven possible time instructions that span from the current moment to an ongoing mood state (ex. "Indicate to what extent you feel this way right now, that is, at the present moment"). Each item is comprised of a one-word mood adjective (such as "interested" or "ashamed"), which are rated according to the time instruction on a Likert scale from 1 ("very slightly or not at all") to 5 ("extremely") (Watson et al., 1988).

These 20 items were originally narrowed down through factor analysis from a composite of 50 mood adjectives taken from other affect measures. Compared to other similar mood scales, in order to assess how well the items tapped into the intended underlying moods, convergent correlations ranged from .89 to .95. Each of the seven time instructions were validated with large participant pools of undergraduate college students, with internal consistency reliabilities ranging from .84 to .89 for both subscales. Specifically for the present study, the "few weeks" time instruction will be given ("Indicate to what extent you have felt this way during the past few weeks"); the alpha reliability for the Positive Affect subscale for this time instruction was .87, for the Negative affect subscale it was .87, and the inter-correlation for both was -.22 (Watson et al., 1988).

Procedures

The Institutional Review Board (IRB) was petitioned and this study was approved in April of 2011 for the following procedures. Each participant was given a packet of assessments (see Appendix A), which had an informed-consent statement with details about voluntary participation (this form adapted directly from guidelines by Kazdin, 2003, pp.516). A signature was required for further participation to document informed consent, and beyond this point anonymity was guarded for each person. Each packet was numbered and this identification was used to differentiate each participant, along with birth date. Background and demographic information was gathered, along with data from 4 assessments, including the Eating Disorder Diagnostic Scale (Stice, Telch, & Rizvi, 2000), Attachment to God Inventory (Beck & McDonald, 2004), Experiences in Close Relationships (Brennan et al., 1998), and the Positive and Negative Affect Schedule (Watson, Clark & Tellegen, 1988). This data was collected and analyzed only for research purposes pertaining to this study.

Other ethical considerations, besides anonymity for participants, included several items. Prior to the administration of the assessments, an explanation of the university's counseling services was described, in the case that assessment questions prompted a distressful reaction for any of the students. Confidentiality was discussed, to assure participants that individual assessment scores would not be shared with any outside parties that were not relevant to this research. Also, the assessment process was described briefly, and follow-up information was

offered and contact information given for any participants that would like further explanation about the purposes of the study (ethical guidelines obtained from Kazdin, 2003).

Data Processing and Analysis

The first research question asked whether a correlational relationship existed between binge eating severity, emotion regulation difficulty, and attachment styles with romantic partners and God. This was addressed using bivariate correlations within a correlation matrix, determining the directionality of relationships within the subscales of the variables in order to test each hypothesis within this research question. EDDS scores were comprised of one composite number for each participant, which excluded the questions regarding height/weight and birth control and gave this information in the form of continuous data. This was necessary because of the various question types within this inventory and was recommended by the authors, who gave the SPSS code used to derive the composite scores giving the choice of using either raw data or z scores (Stice, Fisher, & Martinez, 2004). Raw data was used for the composite scores in all of the statistical tests in this study. The EDDS also gave subthreshhold and threshold diagnostic categories for Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder and no diagnosis, with the subthreshhold area categorizing the Eating Disorder Not Otherwise Specified diagnostic type (Stice, Fisher, & Martinez, 2004; Stice, Telch, & Rizvi, 2000). Because this study was focusing on binge eating symptomology within the various diagnostic categories, data that fell into the category of Anorexia Nervosa (non-binge/purge subtype) was excluded.

EDDS composite scores were correlated with each assessment subscale, which included the two dimensions of attachment style with God from the AGI (anxious and avoidant), two dimensions of attachment style with romantic partners from the ECR (anxious and avoidant), and the 2 subscales of positive and negative affect from the PANAS. Correlations were one-tailed, since each prediction specified directionality, and were set at a .05 significance level. The predicted research hypotheses and the corresponding null hypotheses included:

Hypothesis 1 – EDDS scores will positively correlate with the negative affect subscale of the PANAS.

Null Hypothesis 1 – EDDS scores will not correlate with the negative affect subscale of the PANAS.

Hypothesis 2 – EDDS scores will negatively correlate with the positive affect subscale of the PANAS.

Null Hypothesis 2 – EDDS scores will not negatively correlate with the positive affect subscale of the PANAS.

Hypothesis 3 – EDDS scores will positively correlate with anxious ECR subscale scores.

Null Hypothesis 3 – EDDS scores will not correlate with anxious ECR subscale scores.

Hypothesis 4 – EDDS scores will positively correlate with avoidant ECR subscale scores.

Null Hypothesis 4 – EDDS scores will not correlate with avoidant ECR subscale scores.

Hypothesis 5 – EDDS scores will positively correlate with anxious AGI subscale scores.

Null Hypothesis 5 – EDDS scores will not correlate with anxious AGI subscale scores.

Hypothesis 6 – EDDS scores will positively correlate with avoidant AGI subscale scores.

Null Hypothesis 6 – EDDS scores will not correlate with avoidant AGI subscale scores.

The second research question was addressed using a hierarchical multiple regression model, designed to find potential unique variance from insecure God attachment styles that were attributable to binge eating behavior, after unique and overlapping variance of affect regulation and romantic attachment were accounted for by the ordered regression. The composite scores from the EDDS were first regressed onto data from the PANAS subscales, followed by ECR subscales (anxiety and avoidance), and finally the AGI subscales (anxious and avoidant). The software SPSS 16.0 was used (statistical format for both research questions modeled after data analyses used by Corsini, 2009).

Chapter Summary

The current study used a cross-sectional, self-report research design to confirm previously established relationships between binge eating, emotion regulation of negative affect and insecure romantic attachment styles in college women, as well as investigate a theorized link between all of these variables and attachment to God. Beyond this, any unique contribution an insecure attachment to God contributed to the use of binge eating as a form of emotion regulation was examined. These findings are beneficial to the growing literature on spirituality and eating disorders.

CHAPTER FOUR: DATA ANALYSIS AND RESULTS

Restatement of the Purpose

The purpose of the current study was to use a cross-sectional research design to investigate theorized relationships between binge eating, adult attachment insecurity, emotion regulation and God attachment insecurity. Data was collected using four self-report assessments and a demographic questionnaire, given to college women between the ages of 18-28 at a private Christian university. The first research question asked whether a relationship existed between the four variables, attempting to confirm the link found in the literature between binge eating, adult attachment insecurity and emotion regulation (see chapter 2 for an in-depth discussion of prior research about the relationship between these variables), and seeking to extend this to God attachment insecurity. This question was answered by using a correlation matrix with one-tailed Pearson correlations between each assessment subscale and composite eating disorder scores. The second question asked whether God attachment insecurity specifically contributed to the binge eating cycle, and was answered using a hierarchical multiple regression model that first accounted for emotion regulation and adult attachment, then showed whether unique variance occurred from God attachment scores (statistics for this research were modeled after Corsini, 2009).

For the specific purposes of this study, participants were recruited from an undergraduate population of women at a private, Christian university in the southeastern region of the United

States during the fall semester of 2011. A population of 185 women participated in the assessment. Eight participants were immediately excluded because they were outside of the age range of 18-28, and two were eventually excluded prior to analysis because they were in the Anorexia Nervosa/restricting category and this study is limited to ED symptomology related to binge eating. The gender and age specificity was based on the fact that undergraduate college aged women struggle with binge-eating symptoms at a much higher rate than college-aged males, and this struggle is often most prevalent during the undergraduate years when most are developmentally at the end of adolescence or beginning young adulthood (Madeley, 2009; Whiteside et al., 2007). The Christian context was chosen because students at an explicitly religious college are more likely to place importance on a relationship with God (Railsback, 2006). Students were invited to voluntarily participate by filling out a packet of assessments, given in some classes with the incentive of extra credit points (as allowed by individual professors).

The group (n=175) was comprised of students taking undergraduate psychology courses, administered on the first day of eight different classes. While ages ranged from 18-28, the majority (84.6%) was concentrated within the traditional undergraduate ages of 18 (18.3%), 19 (23.4%) 20 (25.7%) and 21(17.1%); school status had a similar breakdown of freshmen (17.2%), sophomore (27%), Junior (27.6%), senior (27%) and graduate/other (1.1%). Ethnicity held two large majority groups of Caucasian (58%) and African-American (31.6%). Most participants endorsed a marital status of 'single, never married' (94.3%). The majority of the group was religiously affiliated with Protestant Christianity (89.7%) of various denominations such as Baptist (54.7%), Methodist (10.1%) and Nondenominational (23.6%), and a majority described

themselves as having a personal relationship with God (89.1%). A small percentage of subjects were currently in therapy (4.6%) and/or taking some form of antidepressants, anti-anxiety or mood stabilizer (8.6%). See Table 1 for a further breakdown of the age, school status, ethnicity, marital status and religious affiliation demographics.

Table 1

Demographics on Age, School Status, Ethnicity, Marital Status & Religious Affiliation

Demographic	Type	n	Percentage
Age	18	32	18.3%
	19	41	23.4%
	20	45	25.7%
	21	30	17.1%
	22	9	5.1%
	23	5	2.9%
	24	5	2.9%
	25	5	2.9%
	27	2	1.1%
	28	1	.6%
School Status	Freshman	30	17.2%
	Sophomore	47	27%
	Junior	48	27.6%
	Senior	47	27%
	Graduate/Other	2	1.1%
Ethnicity	African-American	55	31.6%
	Asian	1.7	1.7%
	Caucasian	101	58.0%
	Hispanic	14	8.0%
	Other	1	.6%
Marital Status	Single/never married	164	94.3%
	Married	9	5.2%
	Separated	1	.6%
Religious Affiliation	Christianity/Protestant	148	89.7%
J	Christianity/Catholic	15	9.1%
	Judaism	1	.6%
	Atheist	1	.6%

This chapter will first give a breakdown of the various eating disorder diagnostic categories the participant pool was grouped into by the EDDS, and address the resulting data exclusions. Then the statistical results of both main research questions will be given, starting with the six null and alternative hypotheses in question one and the relevant statistical results of each. Then the second research question will be addressed with an in-depth analysis of the various output sections of the hierarchical multiple regression.

Diagnostic Category Results

Composite scores from the EDDS were calculated from raw data using the SPSS code given by Stice (2004), which also incorporated the creation of categories the author called "tentative diagnoses" (p.70) of no diagnosis, full threshold anorexia nervosa, full threshold bulimia nervosa, full threshold binge eating disorder, subthreshold anorexia nervosa, subthreshold bulimia nervosa, subthreshold binge eating disorder. There were three participants identified within the AN categories and two were excluded (n=2), keeping one subject because she fell within the AN/binge-purge type. It is important to note that composite scores, used for the statistical tests in this research, gave continuous data of eating disorder symptoms and so many participants that may have been classified in the 'no diagnosis' category still exhibited various levels of different binge eating symptoms. Those within the diagnostic categories encompass the more extreme levels of symptomology, making up 12.4% of the data pool. See Table 2 for a frequency table of the ED categories for this population, depicting a breakdown of data prior to the exclusions of the AN/restricting-type.

Table 2

Frequency Table of Eating Disorder Diagnostic Categories

Total <i>n</i> =177	n	Percentage	
No Diagnosis	155	87.6%	
Full Threshold AN	2	1%	
Full Threshold BN	12	6.8%	
Full Threshold BED	3	1.7%	
Subthreshold AN	1	.6%	
Subthreshold BN	4	2.3%	
Subthreshold BED	0	0%	

Note. AN=Anorexia Nervosa; BN=Bulimia Nervosa; BED=Binge Eating Disorder.

Research Question One

The first research question was answered using a correlation matrix conducted using SPSS 16.0. Composite scores from the EDDS were correlated with the two scales from the PANAS (positive affect scale and negative affect scale), two scales from the ECR (anxious attachment scale and avoidant attachment scale) and two scales from the AGI (anxious attachment scale and avoidant attachment scale). All six research hypotheses were statistically confirmed and all six null hypotheses were rejected (see Table 2 for a full summary of the correlation matrix results).

Binge Eating and Emotion Regulation

Hypothesis 1 stated that EDDS scores would positively correlate with the negative affect subscale of the PANAS. This was confirmed with a one-tailed correlation of .437 (p=.000). Hypothesis 2 stated that EDDS scores would negatively correlate with the positive affect subscale of the PANAS, and was also supported with a one-tailed negative correlation of -.264 (p=.000). This meant participants with higher levels of ED binging symptoms reported experiencing higher levels of negative affect (marked by moods such as anger, disgust, and anxiety), and lower levels of positive affect (which includes sadness and lethargy) (Watson, Clark, & Tellegen, 1988).

Binge Eating and Adult Attachment Insecurity

Hypothesis 3 stated that EDDS scores would positively correlate with anxious ECR subscale scores. This was confirmed with a one-tailed correlation of .451 (p=.000), which was the strongest correlation with EDDS scores. Hypothesis 4 stated that EDDS scores would positively correlate with avoidant ECR subscale scores and was confirmed with a one-tailed correlation of .265 (p=.000). This showed that higher levels of ED binging symptoms were related to romantic attachment insecurity of both anxious (fear of rejection) and avoidant (fear of intimacy) types, particularly attachment anxiety.

Binge Eating and God Attachment Insecurity

Hypothesis 5 stated that EDDS scores would positively correlate with anxious AGI subscale scores, which was supported with a one-tailed correlation (r=.166, p=.016). Hypothesis 6 stated that EDDS scores would positively correlate with avoidant AGI subscale scores, and was confirmed with a 1-tailed correlation of .133 (p=.043). Though the correlations were both weak, particularly for the avoidant scale, there was a relationship between higher levels of ED symptoms and God attachment insecurity of both anxious (fear of God's rejection) and avoidant (fear of intimacy with God) types.

Subsequent Analysis of Hypothesis 6

Because the correlation was weak for Hypothesis 6, subsequent analysis was conducted. It must be noted that when using a more conservative two-tailed Pearson correlation, the AGI avoidant scale did not significantly correlate with EDDS scores (r=.135, p=.080). Also, when an alternate correlation matrix was conducted using EDDS composite z scores (instead of the raw data composite scores used for the original matrix), the only difference in hypotheses results between the two matrixes was that EDDS z scores and the AGI avoidant scale did not significantly correlate (r=.117, p=.065). So the rejection of null hypothesis 6 was done cautiously and with those factors in mind.

Table 3

Correlation Matrix Results for EDDS, PANAS, ECR & AGI

	PA	NA	AD/ANX	AD/AV	G/ANX	G/AV
EDDS	264**	.437**	.451**	.265**	.166*	.133*
PA	1	204**	167*	147*	084	202**
NA	204**	1	.437**	.205**	.247**	.146*
AD/ANX	167*	.437**	1	.244**	.453**	.049
AD/AV	147*	.205**	.244**	1	.189**	.130*
G/ANX	084	.247**	.453**	.189**	1	.157*
G/AV	202**	.146*	.049	.130*	.157*	1

Note. PA = Positive Affect Scale; NA=Negative Affect Scale; AD/ANX=Adult Attachment
Anxiety Scale; AD/AV= Adult Attachment Avoidant Scale; G/ANX=God Attachment Anxiety
Scale; G/AV=God Attachment Avoidant Scale

* $p \le .05$, one-tailed; ** $p \le .01$, one-tailed.

Research Question Two

The second research question asked whether God attachment insecurity contributed unique variance to binge eating symptoms after controlling for emotion regulation and adult attachment insecurity, which was answered using a hierarchical multiple regression model conducted by SPSS 16.0. Cases with missing data among any of the variables were automatically excluded by the software prior to the analysis, which eliminated 13 participants (*n*=162). The null hypothesis for the second research question was confirmed; there was no significant unique variance from God attachment insecurity toward binge eating symptoms.

The hierarchical multiple regression model had three sequences. First, EDDS composite scores (the dependent variable) were regressed onto the PANAS (both the positive affect scale and negative affect scale) to identify the amount of variance contributed from emotion regulation toward binge eating symptoms, which was 22% (R^2 =.222, F Change=22.699, p=.000). Then ECR scores (avoidant and anxious scales) were added in the next sequence of the regression to identify the amount of variance shared between adult attachment insecurity and emotion regulation, as well as to show unique variance attributable to adult attachment insecurity. Together, adult attachment insecurity and emotion regulation accounted for 31.7% of variance in binge eating symptoms (R^2 =.317), and adult attachment insecurity alone added 9.5% (R^2 Change=.095), which was statistically significant (F Change=10.898, p=.000). In the third sequence, AGI scores were added (anxious and avoidant scales) to first account for shared variance between the PANAS, ECR and AGI scores, then finally identify whether AGI scores

showed any unique variance in EDDS scores. Together, emotion regulation, adult attachment insecurity and God attachment insecurity accounted for 32.3% of variance in binge eating symptoms (R^2 =.323). The addition of the AGI scales accounted for a very small and statistically insignificant amount of variance (R^2 Change=.006, F Change=.707, p=.494).

Table 4

Hierarchical Multiple Regression for Research Question Two

Predictors	R	R ²	ΔR^2	F Change	
Sequence 1	.471	.222	.222	22.699***	
PANAS					
Sequence 2	.563	.317	.095	10.898***	
PANAS/ECR					
Sequence 3	.568	.323	.006	.707	
PANAS/ECR/AGI					

Note. Dependant Variable=Eating Disorder Diagnostic Scale Composite Scores;

PANAS=Positive Affect Negative Affect Schedule; ECR=Experiences in Close Relationships Scale; AGI=Attachment to God Inventory.

*** $p \le .001$

The ANOVA table reported whether a linear relationship existed between the EDDS composite scores (the dependent variable) and the other independent variables in each of the three sequences of the model (Mertler & Vannatta, 2005). In the first sequence, the PANAS scales significantly predicted EDDS scores (F=22.699, p=.000). In the second sequence, the PANAS scales and ECR scales together significantly predicted EDDS scores (F=18.211, p=.000). Finally, the third sequence included all independent variables (PANAS scales, ECR scales and AGI scales) and significantly predicted EDDS scores (F=12.331, p=.000). This shows that all three combinations of the independent variables significantly predicted binge eating symptoms in a linear manner.

Finally, the standardized beta weights (β) were reviewed for a more in-depth understanding of how each independent variable was predictive of change in binge eating symptoms. In the final sequence of the regression that included all independent variables, only negative affect (β =.253, p=.001) and adult attachment anxiety (β =.331, p=.000) predicted significant changes in EDDS scores. This meant that as negative affect scores went up one standard deviation, EDDS scores increased by .253 or 25.3% of a standard deviation after controlling for all other variables (meaning other IV's remained the same). Similarly, as adult attachment anxiety went up one standard deviation, EDDS scores also increased by .33 or 33% of a standard deviation after accounting for the other independent variables. See Table 5 for a complete description of Beta weights for the third multiple regression sequence that included all of the independent variables.

Table 5

Hierarchical Multiple Regression - Standardized Regression Coefficients

Independent Variables	Beta	t	p
Sequence 3			
PA	122	-1.737	.084
NA	.253	3.345	.001***
AD/ANX	.331	4.094	.000***
AD/AV	.134	1.919	.057
G/ANX	086	-1.145	.254
G/AV	.032	.463	.644

Note. PA = Positive Affect Scale; NA=Negative Affect Scale; AD/ANX=Adult Attachment Anxiety Scale; AD/AV= Adult Attachment Avoidant Scale; G/ANX=God Attachment Anxiety Scale; G/AV=God Attachment Avoidant Scale.

^{***} *p* ≤ .001

Chapter Summary

The first research question in this study used a correlation matrix to confirm a relationship between the four main variables in this study. All six null hypotheses were rejected as a result of significant correlations between binge eating symptoms, emotion regulation, and attachment insecurities from romantic and God relationships. The second research question used a hierarchical multiple regression to determine whether God attachment insecurity contributed unique variance toward binge eating symptoms. For this question, the null hypothesis was confirmed and results showed that God attachment insecurity accounted for a very small and statistically insignificant amount of variance after controlling for emotion regulation and adult attachment insecurity.

The next chapter will summarize these findings and how the results impacted each research hypothesis. It will also offer a discussion of how the results fit within relevant literature reviewed in chapter two, and conclude with implications for future research.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This final chapter will summarize the goals, methods and findings of the current research. Conclusions will be described in regard to research hypotheses, along with implications for clinical practice and future research. Limitations of these conclusions and research design will also be addressed.

Summary

This study investigated binge eating symptoms among college women in relationship to emotion regulation and attachment insecurity with romantic partners and God. The role of God attachment insecurity was also specifically examined, to determine whether distress from insecure attachment processes with God uniquely contributed to the binge eating cycle. A cross-sectional research design utilized self-report instruments to gather data in a one-time assessment, using a background/demographic questionnaire, the Eating Disorder Diagnostic Scale (Stice, Telch, & Rizvi, 2000), Attachment to God Inventory (Beck & McDonald, 2004), Experiences in Close Relationships (Brennan et al., 1998), and the Positive and Negative Affect Schedule (Watson, Clark & Tellegen, 1988).

Participants were 175 college women between the ages of 18-28 at a private, Christian university in the Southeastern United States taking undergraduate psychology courses, the majority (84.6%) of which was concentrated within the ages of 18-21. Ethnicity had two

majority groups of Caucasian (58%) and African-American (31.6%), and most participants had a marital status of 'single, never married' (94.3%). Most participants were religiously affiliated with Protestant Christianity (89.7%) of assorted denominations such as Baptist (54.7%), Nondenominational (23.6%) and Methodist (10.1%), with most participants affirming a personal relationship with God (89.1%). See Table 1 in Chapter Four for a further breakdown of the age, school status, ethnicity, marital status and religious affiliation demographics.

A Pearson correlation matrix was first created, which as hypothesized confirmed significant relationships between binge eating symptoms, emotion regulation, adult attachment insecurity and God attachment insecurity. Notably, God attachment insecurity was correlated with emotion regulation and adult attachment insecurity, and was significantly but weakly linked to binge eating symptoms. A hierarchical multiple regression model was conducted and did not support the second research hypothesis, showing that God attachment insecurity does not contribute unique variance toward binge eating severity after controlling for emotion regulation and adult attachment insecurity. These results suggest that while God attachment insecurity exists in relationship with the other variables found with binge eating symptoms, it does not have a direct role in the binge eating cycle.

Conclusions

This research produced interesting results that add to a more in-depth understanding of how binge eating symptoms are related to emotion regulation and different attachment processes.

Relationships previously established in literature explaining the binge eating cycle (Gilbert,

2007; Ginsberg, 2007; Kenny & Hart, 1992; Ringer & Crittenden, 2007; Wheeler, Greiner & Boulton, 2005; Whiteside et al., 2007) were supported in this study, as binge eating symptoms were highly correlated with higher levels of negative affect, lower levels of positive affect, and both anxious and avoidant romantic attachment styles. In fact, these variables together contributed a great deal of variance toward ED symptoms (R^2 =.317, or 31.7%). While there was a significant albeit weak relationship directly linking eating disorder symptoms and both anxious and avoidant God attachment insecurity, there was no direct contribution from God attachment insecurity that predicted binge eating symptoms after the influences of emotion regulation and adult attachment insecurity were factored out. An in-depth discussion of each research hypothesis and other relevant research will help to shed light on how to interpret these findings.

Research Question One

Binge eating and Emotion Regulation

The first research hypothesis stated that binge eating symptoms would positively correlate with higher levels of negative affect, which was confirmed. Negative affect in this study included distressing emotions such as anger, disgust, shame and anxiety (Watson, Clark, & Tellegen, 1988), which were predictive of symptoms related to binge eating such as extreme overeating with an out-of-control feeling, body image disturbance, dietary restraint and/or compensational actions such as vomiting, laxative use, and over-exercise. In fact, this was a particularly strong correlation of .437 (p=.000), a relationship that gave support to the theoretical framework in this study of viewing binge eating as a way to emotionally regulate negative

affective states. Also in support of this theoretical line of thinking is confirmation of the second research hypothesis, which showed an inverse correlation between binge eating symptoms and positive affect. As positive affect decreased and gave way to feelings of sadness and lethargy (Watson et al.), binge eating symptomology increased.

In fact, negative affect positively and significantly correlated with all attachment variables in this study as well, showing a link between higher levels of distressing and negative emotion to higher levels of attachment insecurity with romantic partners and God, both anxious and avoidant types. Also, negative affective levels were negatively correlated with positive affect, meaning that as distressing negative emotion increased it was joined by the sadness and lethargy that marks lower levels of positive affect. This is consistent with research suggesting women with insecure adult attachment styles may become vulnerable to the development of an eating disorder in part because of how attachment distress leads to negative affect (Tasca et al., 2006).

Binge Eating and Adult Attachment Insecurity

The third and fourth hypotheses from research question one stated that binge eating symptoms would positively correlate with both anxious and avoidant romantic attachment insecurity, both of which were confirmed. This means that higher levels of attachment insecurity predicted higher levels of binge eating symptoms, particularly the anxious adult attachment style. The correlation between anxious attachment styles and ED symptoms was one of the strongest relationships found between any of the variables in this study (r=.451, p=.000), though the

relationship between avoidant scores and binge eating symptoms was quite significant as well (r=.265, p=.000).

As stated before, both anxious and avoidant adult attachment styles were also significantly correlated to lower positive affect and higher negative affect, therefore as the results unfold they reveal a broader significant relationship between binge eating symptoms, emotion regulation and adult attachment insecurity. This supports literature showing how either type of secondary attachment strategy can lead to emotion regulation difficulties, regardless of whether attachment insecurity manifests as reactivity (anxiety) or deactivation (avoidance) (Wei et al., 2005). Both anxious and avoidant attachment insecurity styles inhibit emotion regulation development and lead to more fully developed negative affect states with less effective response modulation strategies (Gross & Thompson, 2007; Mikulincer, Shaver & Pereg, 2003; Shaver & Mikulincer, 2007). Women with these less sophisticated emotion regulation skills and difficulty understanding or changing negative affective moods will often try to temporarily alleviate emotions with actions like binge eating behavior (Whitesides et al., 2007). While this study is limited to the portrayal of cross-sectional relationships between these variables, the significant links between binge eating symptoms, both types of attachment insecurity and emotion regulation found in this study's population of college women is quite supportive of this conceptualization of how secondary attachment strategies can lead to the use of binge eating to emotionally regulate negative affect.

Binge Eating and God Attachment Insecurity

The fifth and sixth hypotheses stated that binge eating symptoms would positively correlate with both anxious and avoidant God attachment insecurity, both of which were confirmed with weak yet significant results. It must be noted that avoidant God attachment showed the weakest significant correlation to binge eating symptoms, and in fact after subsequent analysis did not correlate significantly when using a two-tailed test or eating disorder z scores. This gives insight into the nature of these relationships, meaning that as anxious and avoidant God attachment levels increased, there was only a mild prediction of increase in binge eating symptoms. In addition, both types of God attachment insecurity exhibited significant relationships to negative affect, in fact somewhat stronger correlations than found between God attachment and binge eating symptoms. This shows that an increase in God attachment insecurity of both types predicted more of an increase in negative affect than binge eating symptoms.

There was an interesting relationship between adult and God attachment insecurity, which was supportive of a correspondence theory of God attachment among this study's population. Anxious God attachment insecurity was strongly correlated to both anxious and avoidant adult attachment insecurity, with the link between anxious God attachment and anxious adult attachment showing the strongest relationship between any two variables in the study (r=.453, p=.000). Avoidant God attachment was then weakly but significantly linked to avoidant adult attachment. This correspondence of attachment styles showed that secondary attachment strategies were used mostly in a similar fashion in both romantic relationships and in relationship

with God, and that as adult attachment insecurity levels increased so did insecurity in the God relationship.

Research Question Two

The second research question specifically investigated the role of God attachment insecurity in relation to the binge eating cycle. It was hypothesized that God attachment insecurity would independently contribute to an increase in binge eating symptoms, which was not found to be true. There is still valuable information to be gained from this part of the study, however, in a continued attempt to understand how God attachment processes factor into the overall picture of binge symptomology.

The hierarchical multiple regression used for this research question produced three sequences. The first sequence showed that emotion dysregulation accounted for 22% of variance in binge eating symptoms. The second sequence added adult attachment, and together emotion regulation and adult attachment insecurity contributed 31.7% of variance, 9.5% uniquely from adult attachment. In the third sequence, God attachment insecurity was added and together with emotion regulation and adult attachment insecurity the factors all together contributed 32.3% of variance in binge eating symptoms, only .06% of which came directly from God attachment insecurity and this was statistically insignificant. Therefore it can be suggested that God attachment insecurity does not play a direct role in contributing to binge eating symptoms for women in a Christian, non-clinical population. It must be considered, however, that God attachment insecurity is indeed apparent in this population, and as shown in the first research

question is interconnected to other factors that do seem to have a more direct role in ED symptoms.

To synthesize this information, it is important to see from the first research question that insecure God attachment is linked to negative affect, adult attachment insecurity and binge eating symptoms, though as the second research question in this study shows there is no unique contribution from God attachment toward ED symptoms. Previous research suggests adult attachment insecurity indirectly leads to negative affect through secondary attachment strategies (Wei at al., 2005), and indirectly leads to binge eating in part through negative affect (Tasca et al., 2006). In the same vein, for women in a relationship with God, perhaps God attachment insecurity may only indirectly impact binge eating through variable relationships with negative affect and adult attachment insecurity, particularly considering how in this study God attachment insecurity has a stronger correlation to negative affect and adult attachment anxiety than to binge eating symptoms. While this possibility obviously cannot be concluded by this study and is only an attempt to make sense of these findings, it is a worthwhile question to be asked by future research.

Implications for Practice

For treatment purposes, this study gives valuable insight into clinical elements that might be focused on within a population of Christian women struggling with binge eating symptomology. Clearly, emotional processing and negative affect dysregulation are key components to address (Wheeler, Greiner & Boulton, 2005), particularly as they are related to

and stemming from attachment insecurity (Roberts, Gotlib & Kassel, 1996; Tasca et al., 2006). For women with a relationship with God, it might be helpful to address the core beliefs of self and others in relation to both romantic partners and God. A fear of intimacy (avoidance) and fear of abandonment (anxiety) are found in both insecure attachment styles for adult and God relationships (Beck & McDonald, 2004), and are distressing factors that could increase negative affective levels that in turn feed into the binge eating cycle (Rowatt & Kirkpatrick, 2002; Tasca et al., 2006). Considering how the current study's population showed a general correspondence between adult and God attachment insecurity, the clinical process of fostering movement toward a secure attachment to God could serve as a stabilizing and compensational form of emotion regulation (Beck & McDonald., 2004) for Christian women using binge eating to modulate negative affect.

Implications for Research

There are many suggestions for future research that stem from the present study. First, it would be worthwhile to investigate the role of God attachment insecurity in binge eating symptomology within a clinical sample of women, specifically those seeking treatment for an eating disorder with binge eating symptoms. Since the relationship between God attachment insecurity and binge eating was weak in this non-clinical population, it would be helpful to know whether women with more severe binge eating issues show a stronger relationship between these variables, and whether a unique contribution from God attachment insecurity would then be statistically significant.

Second, it would be insightful to see the relationship between the variables in this study in younger and older populations of women who have a relationship with God. Also, staying within the same age group this study investigated, it would be interesting to see if there were distinct differences between college women populations at Christian schools versus schools without a religious component. The homogeneity of this current Christian population could have produced a lack of variance regarding God attachment scores, and the addition of a non-Christian school sample would potentially obtain more variance in God attachment scores.

Finally, though men are much less likely to suffer from binge eating symptoms (Madeley, 2009), for those who do fall into this category and also have a relationship with God, it would be helpful if future research was to uncover whether emotion regulation and adult and God attachment processes have a relationship to symptomology.

Recommendations

Based on the current study, there are several recommendations for future research on these topics. To begin, it would be helpful to statistically investigate the four variables in this study in a less general manner statistically, for instance to address the question of whether the relationship between binge eating and God attachment insecurity is weak because there is an indirect impact through negative affect, and what this path would uncover in regard to how the variables interact with each other. It is recommended to investigate these variables in-depth at several points in time, to see if relationships endure. For instance, to examine within a population

of college women whether these correlations endure over the course of a semester and/or school year, also potential changes over the course of several years of college.

Though it would be time-consuming, it would be an important addition to this body of research to assess binge eating, emotion regulation and/or attachment processes through diagnostic interviews as opposed to self-report assessments when attempting to uncover these relationships in more depth. Also, when considering a more complex research design, future researchers might opt for a mixed design by adding a qualitative component. It would be an important extension of the current study to give interviews and delve into how a college woman actually experiences the distress of binge eating symptoms, emotion regulation, and attachment insecurity with romantic partners and God, giving more depth and understanding than correlation relationships can offer from a qualitative research design.

Finally, it is recommended to delve more deeply into the Christian population, looking at the level of commitment participants have toward their faith and specifically assessing those who place a great deal of importance on their relationship with God. A comparison could be made, as well, between those who describe shallow religiosity and those who place emphasis on a growing relationship with God.

Limitations of the Study

There were many limitations of this study to be taken into account when considering the previous conclusions, mainly found within the cross-sectional, self-report research design.

Because data was collected from this population only once, it cannot be determined whether the same relationships would endure between variables and exist at a later date. Also, this study used

a very specific non-clinical population of college women between the ages of 18-28 at a private, Christian university. These results, therefore, may not generalize to a clinical population of women, men in general, college women at a secular university, college women who do not take Psychology courses, girls younger than 18 or women older than 28. Also, the use of self-report assessments makes the accuracy of the data dependent upon constructs that are often difficult for an individual to self-evaluate, such as attachment processes (Fraley, Waller & Brennan, 2000). Self-report data is also dependent upon the honesty of each participant, and while these topics were highly personal participants were encouraged to be candid because data was taken anonymously. Finally, this study was limited to finding pre-existing linear relationships between variables by the use of Pearson correlations and a multiple regression model, excluding conclusions of causality.

Chapter Summary

This research used a cross-sectional, self-report design to investigate and confirm relationships between binge eating symptoms, emotion regulation and attachment insecurity in adult and God relationships within a population of college women at a Christian university. Also the specific role of God attachment insecurity was examined, which showed there is no unique contribution from this variable toward binge eating symptoms. This information adds to the body of research regarding the treatment and understanding of eating disorders from a bio-psychosocial-spiritual perspective, specifically the impact of spirituality on binge eating and a more indepth understanding of how a relationship with God might play a role in recovery.

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APPENDIX A

Informed Consent

Overview

The goal of this research is to find possible links between several areas, which are eating disorder symptoms, emotion regulation and relationships with romantic partners and with God. This study is being conducted as part of a doctoral dissertation for Liberty University; Angel Charpia Weaver is solely responsible for this study. You are encouraged to ask questions, obtain further information or voice concerns during this assessment session or any time in the future. This can be done now or by calling Mrs. Weaver at (843)771-3893 or emailing angelweaver@hotmail.com.

Description of Procedure

All assessment procedures will be conducted during this one session. There is a background form and four different assessments pertaining to this study. This will be the only time you will be asked to fill out these forms. Please read the instructions carefully and fill out each question to the best of your ability. There is no right or wrong answer, and your participation is greatly appreciated.

Risks and Inconveniences

Because the assessments you will complete are of a personal nature, if you feel uncomfortable or have any distress during this session, it is your right to stop the assessment process and leave. If you are uncomfortable or distressed afterward, you are encouraged to call the CSU Counseling Office at (843) 863-8010 and make an appointment with a counselor. Another option is to call the local counseling hotline (211).

Benefits

By participating in this study you have an opportunity to help further research in areas important to the well-being of college women.

Confidentiality

Information gathered from you during this session is confidential. Your assessment data will be coded with your packet number and birth date for the purpose of keeping participant information separate and to make sure each person only participates in the assessment once. Your individual assessment scores may be viewed by others involved directly in this study, such as someone working on the statistical analysis of this project, but your name will not be included in this data and they will be held to the same level of confidentiality. Your anonymous assessments will be stored in a locked filing cabinet and then shredded after this study is complete. Any publication of this study will only include overall data scores and demographic information.

Voluntary Participation

Participation in this study is voluntary, and you may leave before or during this assessment at any time without penalty. By signing below, you acknowledge that you have read the above information, have addressed any questions or concerns you may have, and voluntarily agree to complete the background form and four assessments in the packet:

Signature of Participant	Signature of Researcher

Informed Consent (Participant Copy)

Overview

The goal of this research is to find possible links between several areas, which are eating disorder symptoms (particularly binge eating), emotion regulation (mood) and relationships with romantic partners and with God among college women. This study is being conducted as part of a doctoral dissertation for Liberty University; Angel Charpia Weaver is solely responsible for this study. You are encouraged to ask questions, obtain further information or voice concerns at any time in the future. This can be done by calling Mrs. Weaver at (843)771-3893 or emailing angelweaver@hotmail.com.

All assessment procedures for this study are conducted during one session for each participating class, and this will be the only time you will be asked to fill out these forms. There is no right or wrong answer to the questions you answered, and your participation was greatly appreciated.

Risks and Inconveniences

Because the questionnaires and personal information form you completed were all of a personal nature, if you feel uncomfortable or have any distress as a result of this assessment session now or in the future, you are encouraged to call the CSU Counseling Office at (843) 863-8010 and make an appointment with a counselor. Another option is to call the local counseling hotline (211).

Benefits

By participating in this study you helped to help further research in areas important to the well-being of college women.

Confidentiality

Information gathered from you during this session is confidential. Your assessment data will be coded with your packet number and birth date for the purpose of keeping participant information separate and to make sure each person only participates in the assessment once. Your individual assessment scores may be viewed by others involved directly in this study, such as someone working on the statistical analysis of this project, but your name is not included in this data and they will be held to the same level of confidentiality. Your anonymous assessments will be stored in a locked filing cabinet and then shredded after this study is complete. Any publication of this study will only include overall data scores and demographic information.

Background Information

Today's Date:
Age: Date of Birth: Gender:Male Female
Ethnicity: African-American Asian Caucasian Hispanic Other:
School Status: Freshman Sophomore Junior Senior Graduate/other:
Academic Major: Minor: GPA:
Marital status: single/never married married separated divorced widowed
Do you have a religious affiliation? yes no
If yes, what is your primary religion? Christianity/ProtestantChristianity/Catholic
Islam Judaism Hinduism Other:
If Christian/Protestant, what denomination are you? Baptist Methodist Episcopalian
Presbyterian Lutheran Nondenominational Interdenominational Other
How often do you attend? weekly regularly but not every week sporadically rarely never
Do you consider yourself to have a personal relationship with God? yes no
Are you currently in a romantic relationship? yes no If yes, how long have you been in this relationship? several daysseveral weeksseveral monthsseveral years
Have you experienced the end of a romantic relationship? yes no If yes, how long has it been since the end of the last relationship? several days several weeks several months several years
Are you currently in counseling/therapy for any reason? yes no
Have you ever been in counseling/therapy for any reason? yes no
Have you ever received a mental health diagnosis from a counselor or mental health professional? yes no
If yes, what was the diagnosis(es)?
Specifically, have you ever been diagnosed with an eating disorder? yes no
If yes, which one? Bulimia Nervosa Anorexia Nervosa Binge Eating Disorder
Eating Disorder Not Otherwise Specified
Are you currently taking any medications? yes no
If yes, please list all medications:

Disagree strongly

AGI

The following statements concern how you feel about your relationship with God. We are interested in how you generally experience your relationship with God, not just in what is happening in that relationship currently. Respond to each statement by indicating how much you agree or disagree with it. Write the number in the space provided, using the following rating scale:

Neutral/mixed

Agree strongly

Disag	gree subligity		1	Neumai/IIIIXe	u		Agree shongry
	1	2	3	4	5	6	7
	_ 1. I worry a lo						
	2. I just don't fo						
	3. If I can't see (4. I am totally o						
	5. I am jealous						
	6. It is uncomm				nan ioi inc.		
	7. Sometimes I						
	8. My experien				al.		
	9. I am jealous						
	10. I prefer not	to depend too	much on God.				
	11. I often worr	•	-				
	12. I am uncom	_		•			
	13. Even if I fai						
	14. My prayers					C	
	15. Almost daily "cold."	y i feel that m	y relationship v	with God goes i	back and forth	from not to	
	16. I am uncom	fortable with	emotional displ	ave of affection	n to God		
	17. I fear God d				i to God.		
	18. Without Go			wrong.			
	19. I often feel a			nding to me wh	nen I want.		
	20. I believe ped					or themselves	. .
	21. I crave reass	surance from (God that God lo	oves me.			
	22. Daily I discu						
	23. I am jealous						
	24. I am uncom		_	• 1	•		
	25. I worry a lot			iship with God.	•		
	26. My prayers		•	but forgate abo	uit ma		
	27. I get upset w 28. I let God ma		-	-	out me.		
	20. I ICI OUU IIIa	ive illost of fil	e decisions in i	ny me.			

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The Eating Disorder Diagnostic Scale (Stice, Telch, & Rizvi, 2000), Experiences in Close Relationships (Brennan et al., 1998), and Positive and Negative Affect Schedule (Watson, Clark & Tellegen, 1988) are not included in this appendix due to copyright restrictions.