ATTACHMENT INSECURITY AND EATING BEHAVIOR: THE MEDIATING ROLE OF DIFFICULTIES IN EMOTION REGULATION

by
Myriam Claire Baker

A thesis
submitted in partial fulfillment of the requirements
for the degree of Master of Arts
to the Department of Psychology
of the Faculty of Social and Behavioral Sciences
at Hagiazian University.

Beirut, Lebanon
May 2021

THESIS RELEASE FORM

I, Myriam Claire Ali Yaacoub Baker

✓Authorize Haigazian University to supply copies of my thesis to libraries or individuals upon request.

☐ Do not authorize Haigazian University to supply copies of my thesis to libraries or individuals for a period of two years starting with the date of thesis defense.

Signature

___May 18, 2021___
Date

A Thesis

Entitled

Attachment Insecurity and Eating Behavior: The Mediating Role of Difficulties in Emotion Regulation

By

Myriam Claire Baker

is accepted by the Graduate Thesis Committee as satisfying the thesis requirements for the degree Master of Arts.

Date 10-05-2021

Signature of Thesis Committee Chairperson

Hanine Hout

Date 10-05-2021

Signature of Thesis Committee Member

Date 10-05-2021

Signature of Thesis Committee Member

Ghena Ismail

Haigazian University

June 2021

ACKNOWLEDGEMENTS

This thesis would not have been possible without the support and guidance of a number of individuals to whom I am grateful.

First, I would like to thank my advisor Ms. Lucy Tavitian for all her guidance and support throughout. I'm grateful for having had the opportunity to work on my thesis under your supervision. You turned this process into a very valuable learning experience, one that I thoroughly enjoyed and gained a lot from. Thank you for taking me on as an advisee and for investing your time in teaching me skills that are crucial for carrying out robust research work. Your guidance has instilled in me a sense of confidence in my academic work that will remain with me going forward, and I am very appreciative of that. Thank you again for this.

I would also like to extend my gratitude to my thesis committee members, Dr. Hanine Hout and Dr. Ghena Ismail. Thank you for accepting to be on my committee and for taking the time to review my work. Your constructive feedback has helped me improve my work. Thank you Dr. Hout for showing genuine interest in my research topic. I appreciated having you as a teacher in my graduate studies. Also, thank you Dr. Ismail for coming on board and sharing your expertise. I am very grateful for having had you both on my committee.

I would also like to show my appreciation for both Youmna and Anas who generously gave their time to translate, not one, but two of the tools used in this study. I truly appreciated your dedicated and sincere efforts in the discussions carried out; you have added quality to this thesis, and for that I am thankful.

To everyone at the Anti-Racism Movement, this thesis wouldn't have been possible without your support and flexibility. I feel lucky to have been a part of this group – may we continue to fight against systemic oppressions and towards the abolishment of kafala.

To my friends and family a few words of love and appreciation. Thank you, Anas, for being a dear friend and a great colleague. You have been a source of great support throughout. Thank you to Mortada, who listened at length when I first thought about this topic back in undergrad. To Hadi, for his support and curiosity. To the irreplaceable Jamal, for her unconditional love. To Assil, who has been my source of strength – you've pushed me to dream big. Last but not least, to my father, thank you for trusting my decisions and supporting me in pursuing what I want.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER I

INTRODUCTION

From increased mortality rates, resistance to treatment, to lifelong health risks, eating disorders (EDs), together with disordered eating behavior, continue to burden affected individuals, families, and healthcare providers. Given the diverse and intricate factors, symptoms, and prognoses observed, guiding future research on interventions and prevention becomes a challenging task (Rikani et al., 2013). Correspondingly, eating behavior in the general population continues to manifest unhealthy behaviors with the constant influence of social norms, peer behavior, and the media (Eisenberg et al., 2005; Ball et al., 2010). There is empirical support for a dimensional structure underlying eating pathology (Luo et al., 2016); indeed, subthreshold ED symptoms were found to be significant risk factors of later eating pathology (Stice et al., 2009).

The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) adopts a categorical approach in its nosology, and its current 5th edition includes diagnostic criteria for six different feeding and eating disorders. Out of the six are three diagnoses for adults, anorexia nervosa (AN), bulimia nervosa (BN), and the added binge eating disorder (BED), other specified feeding or eating disorder (OSFED) and unspecified feeding or eating disorder (USFED). However, the categorical approach to nosology adopted by the DSM has been a source of controversy and criticism. From catchall diagnoses to arbitrarily delineated categorical boundaries, and intradiagnostic heterogeneity, the shortfalls of this classification system leak into both the clinical and research realms, hindering the progression of knowledge on disordered eating. Like all psychological phenomena, disordered eating is complex, and is developed and maintained through an intricate set of factors. Studying both

clinical and non-clinical phenomena at the level of the symptom, rather than the diagnosis, might enhance research looking at the etiologies of EDs.

Over, approximately, the last two decades, an association between insecure attachment and psychopathology has been well established in the literature (Mikulincer & Shaver, 2007; Bakermans-Kranenburg, & van IJzendoorn, 2009). In particular, research looking at eating behavior from an attachment lens has found a burgeoning link between insecure attachment and maladaptive eating behaviors, in both clinical (Jakovina et al., 2018; Tasca et al., 2009; De Paoli et al., 2017) and non-clinical (Alexander & Siegel, 2013; Han & Pistole, 2014; Ty & Francis, 2013; Stapleton & Mackay, 2014) samples. Despite the paucity of studies looking at the pathways from attachment to eating behaviors, some mediating factors have emerged (Cortes-Garcia et al., 2019). Out of the several mediating mechanisms explored, emotion regulation emerged as the most robust nexus, with the second being depressive symptoms (Cortes-Garcia et al., 2019). The proposed study below builds on the above by examining the mediating mechanism of emotion regulation on the relationship between specific subtypes of insecure attachment and eating behavior in a non-clinical sample.

First posited by Bowlby (1969; 1973; 1980), attachment theory is a theory of development and psychopathology offering empirical conceptualizations of social and emotional development. It is a prominent theory in clinical literature that looks at the effects of early child-parent relationships, close relationships, and bereavement (Cassidy & Shaver, 2016). It has also informed clinical interventions on several aspects such as the working alliance, and the influence of both the patient's and therapist's attachment style on psychotherapeutic process and outcome, among others (Slade, 2016).

Observing and working with maladjusted boys, Bowlby became convinced that major disruptions in the mother-child relationship are factors for later psychopathology (Cassidy & Shaver, 2016). Initially, the child attaches emotionally to their caregiver, or their attachment figure. From an evolutionary and biological perspective, the child engages in a set of behaviors, called attachment behaviors, which have the set end goal of increasing proximity to the mother. When the attachment figure is attuned and responsive to the child's needs, the attachment figure serves as a secure base from which the infant can explore their environment, or resort back to in times of distress (Ainsworth, 1963). These attachment behaviors comprise what Bowlby (1982) called the attachment behavioral system (Slade, 2016) developing based on a series of interactions between the infant and the caregiver. In contexts such as distress or fear, the attachment system is thought to be activated until the set-goal – proximity to the caregiver – is met. Repeated interactions between the infant and their caregiver are "encoded, processed, and stored" as mental representations of the self and others which form the cognitive framework of one's attachment orientation (Mikulincer & Shaver, 2016, p. 147).

Ainsworth et al., (1978) delineated three different attachment styles based on the Strange Situation experiment. A secure attachment style, which is characterized by a positive view of the self and others, is theorized to develop from a pattern of consistent and sensitive responsiveness to the child's needs and regulation of distress. In the case of caregivers being inconsistent or neglectful, an insecure attachment is posited to develop with the former resulting in an insecure anxious style, and the latter in an insecure avoidant style (Ainsworth et al., 1978). According to Mikulincer and Shaver (2016), these attachment patterns could from then "be conceptualized as regions in a two-dimen sional space, the two dimensions being avoidance and anxiety" (p. 78). These attachment styles, or working models of self and other, are likely to be sustained across

the lifespan due to the tendency to perceive and remember attachment interactions in ways that match one's beliefs and expectations (Bowlby, 1973). This, in turn, has its implications for adult social relationships, emotions, and emotion regulation (Mikulincer & Shaver, 2016).

In an attempt to understand the attachment system's implications on emotion regulation, Bowlby (1973;1980) looked at the causes and consequences of emotions such as love and joy; anxiety and anger; sadness and despair aroused by attachment related circumstances such as security, separation, and loss, respectively (Mikulincer & Shaver, 2019). Moreover, he delineated the impact of early interpersonal experiences on the different emotion regulation strategies adopted in individuals (Mikulincer & Shaver, 2003). Shaver and Mikulincer (2002) outlined a model that explains the activation and functioning of the attachment system in relation to emotion regulation; the model is comprised of three components: the first component, which is responsible for the system's activation, includes monitoring and appraisal of threatening or distress-evoking events. The second component also includes monitoring and appraisal but of attachment figure availability and responsiveness in satisfying attachment needs, providing support and relief, building inner resources, and broadening the individual's thought-action repertoire. This is posited as the critical point for developing a secure base. The third component, in turn, includes the monitoring and appraisal of whether proximity-seeking behaviors are viable as means of coping with distress and insecurity. This component differentiates between the emotion regulation strategies employed by individuals with different attachment orientations (Shaver & Mikulincer, 2002). To start with, security-based strategies are the result of appraising the attachment figure as, literally, or symbolically, available, and are characteristic of a secure attachment style. These strategies aim to alleviate distress and strengthen personal adjustment through adaptive mechanisms (Mikulincer & Shaver, 2003). On the other hand, when the

attachment figure is not perceived as available rendering proximity seeking behaviors as unviable means for soothing and comfort, secondary strategies are turned to. Two secondary strategies, characteristic of an insecure attachment style, are hyperactivating and deactivating strategies. The hyperactivating strategy is characteristic of an anxious attachment style, and it carries the main goal of getting the attachment figure, who is perceived or internalized as inconsistent and insufficiently responsive, to provide protection or support or to pay more attention. It is considered an exaggeration of the normative primary attachment strategy. The deactivating strategy is characteristic of an avoidant attachment style and is employed when an attachment figure is perceived or internalized as unavailable, rendering proximity seeking as a failing or threatening strategy (Mikulincer & Shaver, 2003). It is considered as the downregulation of the primary attachment strategy. Even though such strategies might be adaptive when they were initially adopted in infancy, their continuity into adulthood with its varying contexts is deemed to be maladaptive. Keeping in mind that emotion regulation is a necessity for mental health and is found to be deficient in most forms of psychopathology, having an insecure attachment style seems to be a contributor to general psychopathology.

Rationale

Finally, Zachrisson and Skarderud (2010) and Mikulincer and Shaver (2012) propose four interconnected mechanisms by which attachment and psychopathology could be related: general vulnerability, interpersonal difficulties, poor self-representation, and an inability to regulate emotions. The general vulnerability is more of a perspective rather than a mechanism. This view holds that insecure people fare worse than secure people on aspects such as mental and physical health (Zachrisson & Skarderud, 2010) as they lack secure and stable mental foundations; they tend to have a reduced resilience and a predisposition to suffer greatly under distress (Mikulincer

& Shaver, 2012). Meanwhile, of the well documented associations with insecure attachment is that of eating symptoms in both clinical and nonclinical samples (Tasca, 2019; Zachrisson & Skarderud, 2010; Cortes-Garcia et al., 2019; Faber et al., 2018). Similar to other dysfunctional behavioral patterns and psychopathology, emotion regulation capacities seem to also be deficient in eating psychopathology and disordered eating symptoms (Keating et al., 2019; Wilkinson et al., 2018; van Durme et al., 2015; Goossens et al., 2018; Jakovina et al., 2018; Taube-Schiff et al., 2015).

Despite the mechanisms proposed above, and despite the established direct relationships between attachment, emotion regulation difficulties, and problem eating behavior, there remains a paucity of studies looking at processes of attachment insecurity as pathways leading to dysfunctional eating behavior. In fact, mediation analyses of this sort are still in their early stages. Going further, current empirical findings remain inadequate in elucidating the relationships between specific subtypes of attachment insecurity on one hand, and particular eating symptoms on the other. Lastly, studies on eating disordered behavior is a burgeoning field in Lebanon yet plenty of research areas remain uncharted.

Significance

Considering eating disorders' grim prognoses and health-related consequences (Faber et al., 2018), together with the increasing toll obesity and weight-related distress take on public health, elucidating both predisposing and maintenance factors of maladaptive eating behavior is bound to be fruitful in guiding future research and interventions. With the use of a non-clinical sample, the results could also help guide prevention programs for eating-related maladaptive behavior. Moreover, findings will allow for a preliminary exploration of the cross-cultural

component of the relationship between each of disordered eating behavior, emotion regulation, and insecure attachment.

Therefore, the hereby proposed study aims to look at the potential mediating role of emotion regulation between attachment insecurity and disordered eating behavior in a nonclinical sample. Precisely, the study aims to look at the mediating role of difficulties in emotion regulation in associations between certain attachment dimensions (anxiety and avoidance) and particular eating behaviors (binge eating and restricting).

In the literature review below, disordered eating and critiques of the current classification of EDs is first presented, followed by the theoretical framework of attachment theory, its basic concepts, respective measures, and its universality across cultures. Subsequently, a discussion on findings related to attachment, emotion regulation, and eating behaviors is provided. Finally, the aims and hypotheses of this research proposal are presented.

CHAPTER II

LITERATURE REVIEW

Eating disorders are amongst the most morbid and debilitating clinical conditions, taking a considerable toll on the different facets of one's functioning (Treasure et al., 2020). In fact, anorexia nervosa (AN) has the highest mortality rate out of all psychiatric illnesses (Mehler, 2018). The nutritional compromise instigated by AN's set of symptoms jeopardizes the body with potentially life-threatening medical conditions which affect a number of major organ systems (American Psychiatric Association, 2013), with some damages being irreversible (Mehler, 2018). Eating disorders often have comorbidities with mood and anxiety disorders. Indeed, the majority of individuals with bulimia nervosa (BN) experience at least one other psychiatric condition, which some ascribe to BN itself. For example, a significant 30% of individuals with BN, at least, are diagnosable with substance use, often as means to control appetite and weight (American Psychiatric Association, 2013).

The repercussions of eating disorders extend beyond the individual, affecting families and healthcare systems. Given that the onset of eating disorders is typically during adolescence, the responsibility of providing care often falls on caregivers within the family (Lancet & Palazzo, 2016; Anastasiadou et al., 2016). As developmental milestones are impeded, many individuals with eating disorders remain dependents, leaving a significant interpersonal impact on the family. In turn, support and care from the caregivers impact the course of the condition (Lancet & Palazzo, 2016). Healthcare systems also carry the costs of eating disorders. Eating disorders are a real challenge to healthcare personnel and public health systems, as they have been on the rise worldwide with a weighted mean prevalence increasing from 3.5% between the year 2000 and 2006, to 7.8% between 2013 and 2018 (Galmiche et al., 2019). Together with the

increased prevalence, all three forms of eating disorders, AN, BN, and binge-eating disorder (BED) are linked to a high frequency of emergency room visits, outpatient care, and hospitalization (Agh et al., 2016).

Classification of Eating Disorders

While the evidence that eating disorders pose a significant burden on affected individuals, their families, and healthcare systems is clear, the classification of these disorders remains a subject of controversy among researchers and clinicians alike. Across diagnoses, eating disorders are characterized by persistent disordered eating behaviors that are manifest in different forms. In its present edition, the DSM-5 six different diagnostic categories for eating disorders, each with its set criteria required to warrant a clinical diagnosis. Often, however, individuals engage in disordered eating behavior without meeting full criteria for an eating disorder, whereby they would be placed under the catchall categories of 'other specified feeding or eating disorder' (OSFED) or the 'unspecified feelings or eating disorder' (UFED). A primary cause of criticism for the DSM's eating disorder nosology, these catchall categories' usefulness for clinical or research purposes were practically nil given the great heterogeneity within categories (Smolak & Levine, 2015). This intradiagnostic heterogeneity, however, is not limited to OSFED and UFED, but is also found within the different diagnostic categories. Moreover, the categorical approach employed by the DSM falls short as taxometric analyses of AN-restrictive type (AN-R), AN-binge pure (AN-BP), and BN did not reveal any qualitative difference between them. That is, AN-R, AN-BP, and BN are not categorically distinct from each other.

In response to the shortfalls described above, one of the proposed alternative diagnostic models (Gordon et al., 2018), the three-dimensional model (Williamson et al., 2005) incorporates three factors posited to underlie the different disordered eating presentations. The first factor,

binge eating, is hypothesized as taxonomic whereas, the second and third factors, drive for thinness and fear of fatness or inappropriate compensatory behaviors are hypothesized as dimensional. Williamson et al.'s (2005) model outlines eating behaviors with respect to the presence (e.g. BN, AN-BP, BED) or absence (AN-R) of binge eating, such that, for example, AN-R is considered qualitatively distinct from AN-BP. Variation within each of the categories (bingeing vs. non-bingeing) is then delineated according to the severity of drive for thinness and fear of fatness. The second alternative model is the transdiagnostic model (Gordon et al., 2018) proposed by Fairburn et al. (2003; 2008) which posits EDs as falling under a single diagnostic entity. They point out the overlap of key symptoms across diagnoses in support of their proposition. Indeed, binge eating, for example, is observed under both AN, in the AN-BP subtype, and BN. Restriction is the main clinical feature in AN-R and is also observed in BN. Alternative models allow for the clinical recognition of what would, under the current diagnostic system, be called partial syndromes or subclinical disordered eating behavior. Attending to these clusters in both the research and clinical fields is indispensable for advancing the understanding and prevention of disordered eating across its ranges of severity.

Although the proposed alternative models above address the shortcomings of the DSM such as its arbitrariness in delineating categorical boundaries, it is still far from clear as to what classification model would be the best option with respect to incremental validity and clinical utility (Gordon et al., 2018). Of relevance here is the distinction between the clinical and research domains. While the DSM's primary purpose is to inform clinicians in clinical practice, researchers continuously adopt rigid DSM definitions of pathologies in their research. Given the shortfalls described above, it is expected that this way of operationalizing eating disorders has hindered the understanding of their etiology and, by consequence, treatment development and

outcomes (Gordon et al., 2018). As a matter of fact, almost a decade prior to the release of the DSM's 5th edition, Kupfer et al. (2002) called for clinicians, as well as researchers, to stop reifying the DSM.

In line with the above, Andreescu (2015) points out how research on eating disorders is often conducted cross-diagnostically, however, even then, researchers operationalize their variables based on specific disordered behaviors that are common across diagnoses and across degrees of severity including subclinical levels. Consequently, endorsing an approach of target behaviors, rather than heterogenous diagnostic entities, could help enhance generalizability across diagnoses and different levels of severity. This, in turn, can promote the understanding of disordered eating in terms of its etiology, maintenance factors, and treatment outcomes. In addition, incorporating partial syndromes, or subclinical levels of disordered eating, which are overlooked in research due to their placement in catchall diagnostic categories, can guide prevention programs in thwarting the development of severe and chronic eating pathologies (Patton et al., 2008). Even if such symptoms are not to develop into their more severe forms, research attention is warranted as future social and health problems correlate with even partial or milder syndromes of disordered eating (Patton et al., 2008).

Etiologies and Risk Factors of Disordered Eating

A number of theoretical approaches conceptualize, from their own perspective, the etiology of disordered eating. In brief, the biopsychiatric theory accounts for disordered eating by abnormalities in the processing of emotions and reward (Madden, 2015). Cognitive behavioral theories posit that irrational beliefs about eating and weight constitute the core of disordered eating psychopathology (Vitousek & Brown, 2015). Psychodynamic theory, on the other hand, ascertains a range of interpersonal and intrapsychic factors in the development of

disordered eating which includes, but is not limited to childhood maltreatment and abuse, developmental hurdles, and self-regulation and interpersonal problems (Zerbe, 2015). Two other approaches are sociocultural and feminist theories. Feminist theories implicate Western ideal and culture in their posited etiologies (Myers, 2015). In parallel, sociocultural theories emphasize one's immediate and contextual experiences which are posited to influence physical self-perception, social comparison, and internalized ideals (Ata et al., 2015). Such theories highlight the relevance and importance of attending to cross-cultural similarities and differences. Disordered eating across cultures will be addressed in sections to follow. Certainly, the best conceptualization is one that acknowledges the intricacies involved in the development of psychological phenomena by adopting an integrative approach, such as the biopsychosocial one.

A number of risk factors for disordered eating have been identified in the literature. Starting with the most closely entwined factor, a disturbed body image has been found to be a predictor of both the onset and maintenance of disordered eating (Kearney-Cooke & Tieger, 2015). Meanwhile, although specific genes have not been identified yet, there's preliminary support for the influence of genetic factors on the pathophysiology of eating disorders. Such genetic factors are expected to be involved in multiple aspects such vulnerability to and severity of the disorder, and possibly its response to treatment (Baker et al., 2018; Baroska et al., 2017). Other risk factors of a predispositional nature are personality traits such as perfectionism, negative affect, low self-esteem which have been linked to the prospective development of both eating disorders or disordered eating over time (Lavender et al., 2018). In addition, adversity, trauma, and stress are significant risk factors for EDs. In a study conducted by Brewton (2004), 84% of women with BN and a history of rape had their first rape at an age earlier than the age of first binge episode, while 100% had rape occurring during their childhood (as cited in Brewton,

2018). A longitudinal study by Johnson et al. (2002) documented other forms of childhood adversities, in addition to child sexual abuse, including physical abuse and neglect (as cited in Brewton, 2018). Indeed, childhood adversities have been substantially validated as predictors of later disordered eating behaviors. Lastly, two risk factors that are intertwined and often considered as transdiagnostic risk factors are emotion regulation (Aldao et al., 2010) and insecure attachment (Crowther et al., 2018; Faber et al., 2018). While disordered eating behaviors are thought to be maladaptive emotion regulation strategies, insecure attachment is posited to predispose individuals to this emotion regulation maladaptation. Interestingly, studies by Ringer and Crittenden (2007) and Zachrisson and Kulbotten (2006) found a prevalence rate of a 100% for insecure attachment in samples with eating disorders (as cited in Crowther et al., 2018). Put forth by Bowlby (1982) and Ainsworth (1978), attachment theory is a theory of not only development but also psychopathology.

Attachment Theory

Attachment theory came about in a time where drive and learning theories prevailed in their formulations of the infant-mother relationship; they posited that through feeding the infant, the pleasure obtained from satiety becomes associated with the mother (Cassidy, 2016) which allows for the emergence of the infant-mother relationship. In formulating attachment theory, Bowlby took note of Harlow's (1958) experiments which largely disproved the prevailing cupboard theories of attachment. Working with rhesus monkeys, Harlow (1958) found that the monkeys still chose physical contact to the cloth mother monkey that did not provide food over the wired mother monkey that provided food. Convinced of a need for an alternative, Bowlby drew on several fields including evolutionary biology, developmental psychology, control systems, and cognitive science (Cassidy, 2016). Making use of ethology's concept of behavioral

system – an evolved, universal, and innate biological neural program which governs behavior in a way that increases species' chances of survival and reproduction – Bowlby conceptualized the attachment behavioral system.

The Attachment Behavioral System

The attachment behavioral system is hardwired and comprised of six components (Mikulincer & Shaver, 2016). The first component is biological and manifests in the propensity to seek and maintain proximity to the attachment figure for protection. This natural tendency then allowed for its corresponding genes to be selected and passed on. The second component comprises triggers which activate the attachment behavioral system. This entails both attachment-related and attachment-unrelated sources of threat; the former is characterized by a lack of access to, impending or actual separation from, or loss of an attachment figure, and the latter by natural indications of potential danger such as dark and loud noises, among others (Mikulincer & Shaver, 2016). Following such triggers, the third component comes into play whereby the natural and primary attachment strategy – proximity seeking – becomes activated through the implementation of a wide variety of behaviors which have the same function. The fourth component encompasses the deactivation or activation of the attachment system depending on the achievement, or lack thereof, respectively, of the set-goal of the attachment system. The set-goal of the attachment system is the establishment of a sense of security and protection which usually terminates the attachment system's activation (Mikulincer & Shaver, 2016). Interestingly, the set-goal can be met through reestablishing actual or symbolic proximity to an attachment figure. Through the repetition of this cycle of seeking the comfort and protection of an attachment figure upon experiencing threat or distress, together with the successful experiencing of safety and stress reduction forms a prototype for successful regulation

of emotions and of interpersonal closeness. Last, the sixth component accounting for the system's goal-corrected manner of operation is the cognitive component. It allows for the monitoring and appraising of threatening events, one's internal state, and the caregiver's response to proximity-seeking behaviors, and, by consequence, their utility (Mikulincer & Shaver, 2016). This allows for the adjustment of future attachment behaviors. In turn, Bowlby (1982) posited that, for this to be possible, attachment-behavior must rely on mental representations – or working models – which store relevant information on transactions between the person and their environment. Therefore, through the repeated interactions, two types of working models develop; a 'working model of others' includes representations of attachment figure's responses, whereas 'working models of self' include representations of one's own value and efficacy, or lack thereof (Mikulincer & Shaver, 2016).

Attachment Security

When an attachment figure is readily available, responsive, and attuned to proximity-seeking behaviors, the child is likely to experience the attachment figure as a 'safe haven' inducing a sense of security in the child. The attachment figure is also then experienced as a secure base from which the child can pursue nonattachment goals or, in other words, explore the world around them (Mikulincer & Shaver, 2016). In such a case, a well-functioning attachment system provides a sense of reliability and effectiveness towards proximity-seeking as an emotion regulation strategy. Consequently, the individual acquires procedural knowledge on how to manage distress (Mikulincer & Shaver, 2016). Yet, attachment figure availability and attunement can, in other cases, be experienced as inadequate in providing a sense of safety and distress reduction.

The failure to experience the attachment figure as available and attuned renders the primary attachment strategy as ineffective in accomplishing its set-goal. As previously mentioned, the attachment system is activated once a threat is detected, and then deactivated once the set-goal is met. In cases where the set-goal is not met, the attachment system is posited to remain in a continuously activated state which then interferes with other behavioral systems' functioning (Mikulincer & Shaver, 2016). In fact, Cassidy and Kobak (1988) and Main (1990) laid out secondary attachment strategies that seem to be adopted in cases where the set-goal is not met that are based on the fight-flight physiological reactions (as cited in Mikulincer & Shaver, 2016, p. 20). Those two strategies are the deactivation or hyperactivation of the attachment system. The goal of hyperactivation strategies – the 'fight' response – is to get the attachment figure, who is viewed as unreliable, to respond to attachment needs. Deactivation strategies' – the 'flight' response – goal is to keep the attachment system down-regulated to avoid any frustration caused by an unavailable attachment figure. This will be further elaborated on in the coming sections on attachment and emotional regulation.

Individual Differences

The individual attachment differences laid out above form the basis of what was later to be called an attachment style. Ainsworth et al. (1978) used the Strange Situation assessment to study infants' responses upon separation from and reuniting with their caregivers. Three different patterns of responding emerged which were categorized as secure, avoidant, and resistant/ambivalent (for convenience, referred to as anxious). The secure type displayed distress when separated from their caregiver, however, were quick to return to baseline and continued exploring their environment. Upon reuniting with their mothers, secure infants responded positively after which they returned to exploring their environment. Secure infants are therefore

posited to have working models of proximity seeking behaviors that are successful in attaining a sense of security. Avoidantly attached infants, avoided their caregivers upon reunion and displayed little distress upon separation. Such a pattern is a manifestation of the deactivating strategies described above. Infants who displayed the most distress upon both separation and reunion with the caregiver were of the anxious type. These infants also struggled to be comforted by their caregivers upon reuniting with them. This identified pattern corresponds to the hyperactivating strategies described above. Therefore, an unavailable attachment figure elicits a deactivation of the attachment system in avoidant infants and, a hyperactivation in anxious infants in hope of a more reliable response from the attachment figure.

Main and Solomon (1990), aware that a certain pattern emerging in infants' responding that did not fit in either of the initially proposed three categories, presented characteristics for a fourth category in infant attachment – the disorganized attachment style. Such infants did not have a fixed attachment strategy but rather seemed to oscillate between hyperactivating and deactivating strategies while at the same time exhibiting bizarre behaviors upon their separation and reunion with their caregivers.

Adult Attachment

Meanwhile, while the work of Ainsworth (1978) and others set the stage for attachment style assessment, others extended their work to adult attachment.

Stability and Change

One of Bowlby's (1979) often cited quotes says that attachment characterizes humans "from the cradle to the grave" (p. 129). At the time, Bowlby hypothesized that working models shaped by early experiences are likely to be sustained into adulthood. A number of mechanisms were posited to allow for that to happen. First, that individuals process information around them in a manner that is likely to conform to their already internalized beliefs about the self and

expectations of others. Consequently, individuals' behavior is expected to complement those beliefs and expectations. In turn, responses elicited by such behavior will serve to reinforce those beliefs and expectations (Mikulincer & Shaver, 2016). Yet, with the development of attachment theory more factors were added to Bowlby's (1973) and Ainsworth et al.'s (1978) theorizing, accounting for both stability and change.

Indeed, longitudinal studies assessing attachment over time support the 'prototype' view of attachment patterns. This view acknowledges the influence of current working models, yet it holds that working models formed by early experiences continue to exert significant influence on one's attachment patterns across the lifetime. In line with the above, a meta-analysis of 23 longitudinal studies assessing attachment security at 12 months with follow-ups ranging from one month to 21 years later, found a moderate degree of correlation ($r = 0.39$) for stability of attachment security (Fraley, 2002). A more recent meta-analysis (Pinquart et al., 2013) included 127 longitudinal studies of attachment stability with intervals ranging from half a month to 29 years. The overall coefficient ($r = .39$) also showed medium stability of attachment security.

Measurement of Adult Attachment

Attachment literature contains a variety of attachment measures including interviews and self-report measures adopting either categorical, dimensional, or a mix of both approaches to measurement. Mary Main – Ainsworth's student – and her colleagues used the Strange Situation coding system as they devised the Adult Attachment Interview (AAI; Main, Kaplan, and Cassidy, 1985). Respondents describe memories of their parents during childhood while also describing them as either available or unavailable. Classification was then made based on Ainsworth et al.'s (1978) three categories. Another categorical measure was also developed around the same time; Hazan and Shaver (1987) were the first to assess adult attachment in terms of its representation

in adult romantic relationships. The measure was a self-report one instead of an interview and it relied on a forced-choice answer to a single question.

From Categorical to Continuous Measures

As research into self-report measures progressed, it became clear that attachment insecurity is best measured across two dimensions, that of avoidance and anxiety (Mikulincer & Shaver, 2016). Attachment-related avoidance is characterized by discomfort with closeness, discomfort in depending on others, a preference for self-reliance and an emotional distance from others. It is also characterized by a tendency to use deactivating strategies to regulate insecure emotions and distress. On the other hand, attachment-related anxiety is characterized by the use of hyperactivating strategies to deal with insecurity and distress, and a strong desire for protection and closeness from the partner. It is also characterized by intense worries over the partner's availability, together with their worth to the partner (Mikulincer & Shaver, 2016). A different combination of scores is possible; people who score low on both dimensions are considered to have a secure attachment. Those who score high on both or either one of the dimensions are considered to have an insecure attachment style.

Conceptualization of Attachment Dimensions

Two different conceptualizations of the dimensions of anxiety and avoidance were posited by Bortholomew (1990; Bortholomew & Horowitz, 1991) and Hazan and Shaver (1987). Bortholomew (1990) conceptualized the measured dimensions according to the concept of working models of the self and other. She posited that the attachment anxiety dimension can be posited as a working model of the self, while attachment avoidance as working model of others. Each working model could be either positive or negative, producing four distinct attachment patterns in the two-dimensional space of attachment avoidance and anxiety. On the other hand,

Hazan and Shaver (1987) conceptualized them as measures of attachment-system functioning in close relationships. That is, they measure one's tendency to either hyperactivate and/or deactivate their attachment system when the attachment figure's availability is doubted.

Attachment Across Cultures

The universality of infant attachment was adopted as a basic premise in attachment theory. Ainsworth first conducted naturalistic observations of infant-mother interactions at homes during her stay in the non-Western context of Uganda (Ainsworth, 1967). She then replicated these findings in the Baltimore study (Ainsworth et al., 1974) which, in turn, set the foundations for her well-known Strange Situation classification system of infant attachment (Ainsworth et al., 1978). Meanwhile, Bowlby (1982) theorized the attachment system from an ethological perspective rendering attachment as a product of evolution that serves survival. In fact, the universality hypothesis was supported by cross-cultural studies showing that infants from across cultures, where multiple caregivers are common form, showed unique attachment to their primary caregivers (Mesman et al., 2016). Other hypotheses have received attention in cross-cultural attachment research. The normativity hypothesis which posits that infants in contexts that are nonthreatening to human survival and health are securely attached. To start with, Ainsworth's initial findings of secure attachment were in her Uganda study, which she then replicated in Baltimore. Moreover, Posada (2013) compared theoretical notions of a secure base phenomenon with maternal beliefs of a child's ideal behavior, and maternal descriptions of children's behavior, and found considerable overlap.

Yet, despite evidence for the normative development of secure attachment across cultures, the distribution of secure attachment differs across cultures. Particularly low rates of attachment security were found in contexts of low socioeconomic contexts. For example,

Gojman et al. (2012) and Valenzuela (1997) found considerably low rates of attachment security among a poor rural Mexican sample and a malnourished Chilean sample, respectively (as cited in Mesman et al., 2016). Such findings shed light on the role of socioeconomic factors in shaping parenting styles and the family life, whereby stressors interfere with parenting and, subsequently, with the child's development of a secure base. Therefore, the normativity hypothesis is supported across cultures when accounting for socioeconomic status. Distributions of insecure attachment subtypes, however, also show different cross-cultural prevalence rates. For example, Mesman et al. (2016) hypothesize that non-Western cultures that emphasize relatedness could explain low rates of avoidance among infants due to highly proximal and indulgent parenting. In fact, significant associations were found between attachment pattern distribution and the individualism score of participants' nations (van Ijzendoorn & Kroonenberg, 1988). For example, anxious attachment was more prevalent among participants from collectivistic cultures in comparison to those from individualist ones (Schmitt et al., 2004; Rothbaum, Weisz et al., 2000). In further support of the above hypothesis, in a Lebanese sample of undergraduate students ($N = 334$), Hijazi (2004) found a significantly higher rate of anxious attachment compared to avoidant attachment ($p < .01$).

The sensitivity hypothesis of attachment theory holds that sensitive caregiving, including swift responsiveness to attachment signals, is an antecedent for attachment security (Mesman et al., 2016). Taking socioeconomic variables into account, the presence of a proper socioeconomic context allows for sensitive care allowing for attachment security. Attachment studies that have looked at sensitive caregiving cross-culturally have found that different parenting behaviors can carry the same functions across different cultural contexts (Mesman et al., 2016). Therefore, caregiving sensitivity cannot be captured in predetermined sets of behaviors measures across

cultures. That is, what might be sensitive caregiving in one culture is not necessarily characteristic of other cultures. For example, some cultures respond to infant vocalizations by touch or stroking, whereas others respond by vocal mimicking or smiling (as cited in Mesman et al., 2016). Interestingly, an attempt to soothe distressed infants that is more common to non-Western cultures than Western ones is soothing through nursing or feeding (True et al., 2001). Finally, the competence hypothesis has received support from only a small number of cross-cultural studies which, according to Mesman et al. (2016) corresponds to also a lack of Western studies on the matter. The authors report only four longitudinal studies looking at secure attachment and future functioning conducted in Israel (Mesman et al., 2016). In sum, attachment research points towards a balance between universal attachment trends and contextual factors. Finally, the repertoire of studies from non-Western cultures is yet to be considered representative.

Attachment and Health

Attachment seems to also be implicated in health outcomes. There is now growing evidence that insecure attachment is a potential risk factor for the development and prognoses of disease and chronic illness (McWilliams & Bailey, 2010). Indeed, Maunder and Hunter (2001) examined preexisting evidence of associations between insecure attachment and disease. In turn, they delineated three potential mechanisms through which attachment can influence disease. The first mechanism entailed a physiological aspect explaining the relationship between attachment insecurity and stress. They posited that individuals with insecure attachment may be vulnerable to an increase in their perception of threat and in the intensity and duration of the physiological response of stress. Moreover, one's attachment style could have a significant impact on the efficacy of social support in mitigating distress. The second mechanism proposed in the model is based on the well-backed association between insecure attachment and difficulties in emotion

regulation; they posited that insecure individual's tendency to use external means to regulate their emotions puts them at risk of developing diseases related to alcohol use, smoking, use of psychoactive drugs, over-eating, and under-eating. The third, and final, mechanism proposed pertains to protective factors. The model suggests that people with an insecure attachment are less likely to adhere to their treatment and manifest more symptoms compared to securely attached individuals with the same disease. The mechanisms outlined above have had increasing support. Ciechanowski et al. (2004) examined the relationship between diabetes patients' attachment style and their self-management of their illness. Insecurely attached patients who were high on avoidance (dismissing attachment) were significantly less likely to adhere to treatment recommendations whereby they less likely exercised and less likely maintained a healthy diet. George-Levi et al. (2020) examined cardiac patients' attachment style, their ability to receive care from their partners, together with their anxiety levels during hospitalizations and 6 months after discharge. Anxiously attached patients had lower reductions in anxiety levels 6 months post hospitalization, regardless of the type of care received (sensitive, deemed positive versus compulsive, deemed negative, caregiving) from their partners.

It is important to note that the model outlined above explains possible mechanisms by which insecure attachment influences the formation or manifestation of an illness and not a higher prevalence of illness or disease in persons with insecure attachment. To address this gap, McWilliams and Bailey (2010) used data from a community subsample of a nation-wide survey by Kessler and Merikangas (2004); the subsample used was still representative of the U.S. population (N = 5,645) (as cited in McWilliams and Bailey, 2010). Insecure attachment was positively correlated with around half of the health conditions investigated. Generally, anxious attachment correlated with more, and more strongly with health conditions than avoidant

attachment, whereas avoidant attachment initially correlated only with conditions related to chronic pain (e.g. back or neck issues, frequent severe headaches, arthritis). Going further, McWilliams and Bailey (2010) examined the unique variance of attachment styles in health conditions. That is, given that previous studies have showed that psychopathology positively correlates with both insecure attachment and health conditions, the authors conducted a second analysis examining the unique variance in health conditions accounted for by insecure attachment. Interestingly, after adjusting for a history of psychiatric disorders, only one association between insecure attachment, anxious attachment in particular, and high blood pressure remained significant. Meanwhile, attachment orientations significantly correlated with all psychiatric disorders (depressive, anxiety, and alcohol and substance use); both insecure attachments correlated positively whereas secure attachment correlated negatively. With such findings, the association between insecure attachment and psychopathology is now turned to.

Attachment and Psychopathology

Strong empirical evidence supports the link between attachment insecurity and psychopathology. Mikulincer and Shaver (2016) reviewed hundreds of studies that looked at the relationship between attachment anxiety and avoidance and their relationship with a range of mental disorders including negative affect or neuroticism, depression, anxiety, post-traumatic stress disorder, suicidal tendencies, eating disorders, substance abuse, criminal behavior, personality disorders, and dissociative disorders.

In light of these findings, Mikulincer and Shaver (2012) propose four interconnected mechanisms by which insecure attachment and psychopathology could be related: a) general vulnerability, b) poor self-representation, c) emotion regulation, d) interpersonal difficulties. The general vulnerability is more of a perspective rather than a mechanism that could be traced back

to Bowlby's (1988) formulation that a disruption to the development of a secure base leads to reduced resilience and an increased tendency for one to suffer under distress; thus, it holds that insecure people fare worse on issues such as mental and physical health. The second mechanism of poor self-representation is accounted for by a lack of sensitive, responsive, and reliable interactions with one's caregivers which then contributes to the development of doubts about one's coherence and continuity, struggles with self-esteem, and an increased need for validation (Mikulincer & Shaver, 2012). Moreover, people with insecure attachment tend to be overly critical of themselves, have self-doubts, and be perfectionists in a dysfunctional manner in order to fend off inner feelings of worthlessness. Such self-representations may put individuals at risk of psychopathologies. Difficulties in emotion regulation is another mechanism through which the relationship between insecure attachment and psychopathology can be explained. Having a sense of security from consistent and sensitive caregiving is theorized as the foundation of acquiring effective emotion regulation skills. Through repeated interactions with an attuned caregiver and accessible caregiver, the child develops a repertoire of skills and strategies needed to regulate one's emotions (Mikulincer & Shaver, 2012). Upon repeated failings of the primary attachment strategy of proximity seeking, people with insecure attachment turn to secondary strategies which, although they might have served a purpose during infancy, are bound to become dysfunctional. Emotion regulation difficulties are considered to be a major risk factor in most psychopathologies. Finally, the fourth mechanism proposed is insecure attachment and problems with interpersonal relations. Given that people with insecure attachment experienced repeated failures in sustaining a sense of security hindering their emotion regulation strategies, interpersonal difficulties are said to arise. That is, insecure attachment could explain relational

issues related to lack of emotional expression and nurturance in avoidant people, and over emotionality in anxious people.

To reiterate, the model presented above does not assume that attachment insecurity results in psychopathology, but merely the mechanisms through which attachment insecurity can lead to psychopathology. In fact, according to the proponents of the model, beyond disorders related to separation anxiety and complex grief, attachment insecurity is unlikely to be a cause of psychopathology by itself (Mikulincer & Shaver, 2012). A host of converging processes, such as environmental and genetic factors, are involved in the development of the complex phenomena of clinical disorders (Mikulincer & Shaver, 2016).

Attachment and Emotion Regulation

Emotion regulation, one of the pathways to psychopathology highlighted above, is central in attachment theory. In fact, the attachment system is proposed as a regulatory device itself. The degree to which one is either securely or insecurely attached, together with the subtype of attachment insecurity influence one's emotional regulatory efforts. A conceptualization of the different attachment styles' influence on emotion regulation strategies is first offered and then supplemented by longitudinal and experimental empirical evidence.

Attachment Security and Emotion Regulation

Upon repeated interactions with caregivers who are attuned and responsive to bids for support and protection, people with secure attachment garner a repertoire of constructive emotion regulation strategies in the form of secure-base scripts entailing if-then statements (Waters & Waters, 2006). For example, they learn that support seeking attempts are likely to be fruitful as attachment figures are expected to be responsive and supportive. This, in turn, makes it easier to ask for support during times of distress. Having a secure-base script for emotion

regulation also enhances capacities for problem solving (Mikulincer & Shaver, 2016). With the implicit belief that support is attainable, securely attached people are more able to explore options without struggling with the anxieties of uncertainty. Moreover, cognitive reappraisal of threats into benign challenges is posited to be allowed for through the internalized positive views about the self and the world (Mikulincer & Shaver, 2016). As they learn that they are able to manage distress and hindrances well, secure people do not need to rely on regulatory efforts that alter or suppress parts of the emotional process (Mikulincer & Shaver, 2016). For that, secure people usually remain able to experience their emotions fully and are able to express and communicate them accurately with others. This, on the other hand, is not the case for insecurely attached individuals.

Attachment Insecurity and Emotion Regulation

Repeated failed attempts to attain security and regulate distress inhibits the development of proper internal resources needed for emotional regulation upon facing subsequent stressors. Secondary attachment strategies are then adopted and employed, but what might have at first been an adaptive strategy within a certain relational context becomes maladaptive and a potential risk factor for psychopathologies (Mikulincer & Shaver, 2019).

Avoidant Attachment and Emotion Regulation. Those with an avoidant attachment style tend to employ deactivating strategies with the goal of keeping the attachment system deactivated. Deactivating strategies are directed at both positive and negative emotions since both activate the attachment system (Mikulincer & Shaver, 2016). Negative emotions such as anger might give off the impression of emotional involvement, just like joy and happiness to do. This, in turn, threatens an avoidant individual's sense of self-reliance. Moreover, avoidant individuals bypass emotional reactions related to rejection, separation, or loss to avoid any sense

of neediness and dependence in themselves (Mikulincer & Shaver, 2016). While both secure and avoidant people tend to suppress negative emotions, secure people's suppression allows for constructive communication and maintenance of relationships, whereas avoidant people's use of the strategy usually jeopardizes the relationship they are in. Such an emotion regulation strategy usually inhibit support seeking behaviors and cognitive reappraisals during times of distress (Mikulincer & Shaver, 2016). Support seeking behaviors are hindered since there is great emphasis on self-reliance, while cognitive reappraisal is not possible due to suppression or dissociation from the emotional experience and its byproducts of thoughts, feelings, and behaviors.

Anxious Attachment and Emotion Regulation. In contrast to securely or avoidantly attached individuals, people with an anxious attachment orientation tend to perceive an activated attachment system as goal-congruent and, as a consequence, keep it activated (Mikulincer & Shaver, 2016). With the unconscious wish to get their attachment figure's attention and protection, the attachment system is kept active or even intensified – thus the term hyperactivating strategies. Individuals with anxious attachment rely on what Ein-Dor et al. (2011a) call "sentinel mental script" (as cited in Mikulincer & Shaver, p. 191) when dealing with distress or threats in their environment. As the name suggests, such internalized scripts keep the individual on high vigilance for any impending threats to oneself or others. Also, ironically, problem-solving is rarely an actual goal for those with anxious attachment, as the perpetuation of the problem seems to run against their internalized representations of themselves, which is often that of helplessness and incompetence (Mikulincer & Shaver, 2016). Meanwhile, despite what seems to be a dire request for support, anxiously attached individuals can still struggle with support-seeking behaviors due to their preconditioned fear of rejection.

Empirical Evidence for the Differential Use of Emotion Regulation Strategies

Mikulincer and Shaver (2012; 2019) continued to supplement their model with empirical evidence, especially for the proposed mechanism of emotion regulation. For example, in a longitudinal study by Pascuzzo, Cyr, and Moss (2012), a sample of 56 individuals completed self-report measures of attachment and emotion regulation at 14 years of age and, 8 years later, at 22 years. The study found that greater attachment insecurity to parents and peers in adolescents predicted greater use of emotion-oriented regulation strategies in adulthood ($\beta = .28$, $p < .05$; $\beta = .27$; $p < .05$, respectively). Such findings support the assumption that earlier emotion strategies adopted are internalized and serve as a repertoire for future emotion regulation efforts. Moreover, measures of adult anxious attachment predicted higher emotion-focused regulation strategies ($\beta = .49$, $p <$ and lower task-oriented strategies. This falls in line with the hyperactivation strategies proposed above. In fact, in further support of the hyperactivating regulation strategies implicated in anxiously attached individuals, De Wall et al. (2012) found significantly heightened distress hyperactivation in response to a simulation of social exclusion in brain regions of anxiously attached individuals whereas those who are avoidantly attached had less activity in those brain regions.

In an experimental study of emotional memory, Dykas et al. (2014) recruited a sample of 189 adolescents to assess their memory for emotionally significant childhood events, for positive and negative events related to their mothers and fathers, and memory for general parent-related positive and negative emotions that are not specific to the participants' own parents. Significant links between dismissive (as measured by the adult attachment interview, i.e., avoidant) attachment and a deactivating strategy with respect to recall of emotionally laden events from childhood, whereby recall time was significantly large ($b = 1.44$, $SE = .38$) and the memories

recalled occurred at an older age (b = .34, SE = .15). Moreover, avoidantly attached adolescents had trouble recalling negative events related to their parents (b = -.04, SE = .02), whereas no significant findings were found for positive events. This supports theory and previous empirical findings suggesting that avoidant individuals have a decreased ability to access attachment-related memories. The reverse was true for recollections pertaining to parenting in general, and not avoidantly attached participants' own parents (b = -.17, SE = .07). Dykas et al. (2014) suggest that when negative parent-related information is specific to participants' parents it is experienced as threatening, whereas it is not experienced as such when it is related to parents in general. Thus, only the former is deactivated. Meanwhile, individuals who scored higher on preoccupied attachment reported more intense nondominant memories (b = .11, SE = .05) and remembered memories from younger ages (b = -.59, SE = .24). No significant findings emerged between preoccupied attachment and parent-relevant information, irrespective of whether the parents in general or participants' parents. All in all, these findings support the employment of deactivating strategies in avoidantly attached individuals and hyperactivating strategies in anxiously attached individuals when accessing attachment-related memories.

As for the association between maladaptive emotion regulation strategies and psychopathology, Aldao et al. (2010) conducted a meta-analysis of 241 effect sizes from 114 studies looking at relationships between emotion regulation and psychopathology (anxiety, depression, substance-related, and eating disorders). Interestingly, the maladaptive strategy of rumination, characteristic of the hyperactivating strategies described above, had a large effect size (r = .49, k = 89, 95% CI = [.45; .52]) when collapsed across the cluster of disorders. Similarly, avoidance and suppression, which are characteristic of the deactivating strategies described above, had medium to large effect sizes (r = .38; k = 37; 95% CI = [.33; .44]) when

collapsed across the cluster of disorders. More will be presented on maladaptive emotion regulation's role further on.

Conclusion

Attachment theory has from the start been a theory of psychopathology. As outlined above, disruptions to the formation of a secure base, the internalization of negatively distorted representations of the self and the other, together with dysfunctional ways of regulating one's emotions are predispositions for distress, general vulnerability, and disordered behavior. Attachment insecurity has been widely documented as a risk factor for psychopathology. Of the disordered behaviors or psychopathologies that are of interest here are disordered eating behaviors.

Attachment, Emotion Regulation, and Eating Behavior

Attachment and Eating Behavior

Multiple theoretical formulations for the association of insecure attachment and eating pathologies have been proposed. Cole-Detke and Kobak (1996) had posited that disordered eating is the result of negative interactions with the primary caregiver and that eating symptoms serve as means to turn away from attachment-related issues and counteract feelings of helplessness by attempting to control weight and food intake (as cited in Mikulincer & Shaver, 2016, p. 430). Some view eating disorders as the symbolic attainment of love and care from unavailable caregivers, or as maintaining a dependent position by remaining small and childlike (Orzolek-Kronner, 2002; Masterson, 1977). Mikulincer and Shaver (2016) concur that eating disordered behavior might have implicit goals of perpetuating dependency and externalizing attachment-related problems, however, they posit that such a distinction in goals would rest on the individual's predisposition to use either of the deactivating or hyperactivating strategies.

Empirical findings have supported a correlation between insecure attachment, and eating disorders, or disordered eating behavior, in both clinical and nonclinical samples (Mikulincer & Shaver, 2016; Zachrisson & Skarderud, 2010). For example, in a clinical sample study of outpatients with eating disorders ($N = 586$) , need for approval, a characteristic feature of anxious attachment, predicted higher body dissatisfaction in the following groups: anorexia nervosa, restrictive subtype ($\beta = 0.342$, $p < 0.007$); anorexia nervosa, binge/purge subtype (AN-BP) ($\beta = 0.338$, $p < 0.043$); bulimia nervosa (BN) group ($\beta = 0.193$, $p < 0.040$); and in the eating disorder not otherwise specified ($\beta = 0.396$, $p < 0.001$) (Abbate-Daga, Gramaglia, Amianto, Marzola, & Fassino, 2010). Around the same time, Illing et al. (2010) recruited a clinical sample of women diagnosed with AN/R ($N = 49$), AN-BP ($N = 71$), and BN ($N = 123$), and a non-eating disordered women comparison sample ($N = 137$). All three eating disorder groups had significantly higher scores on all attachment measures of insecurity than the non-eating disordered group ($p < 0.001$). The AN-BP group scored significantly higher on attachment avoidance, as measured by discomfort with closeness subscale, than AN/R group ($p = 0.026$), and BN group ($p = 0.008$). Yet, the AN-BP group scored significantly higher on attachment anxiety, as measured by need for approval subscale, than the BN group ($p = 0.019$). Post-treatment analysis showed that high need for approval subscale scores correlated with poorer treatment outcome, after controlling for the variance accounted for by diagnostic category (Illing et al., 2010). Such associations between maladaptive eating behaviors and attachment insecurity were also found in non-clinical populations (see Alexander & Siegel, 2013; Han & Pistole, 2014; Wilkinson et al., 2010).

Going beyond the general associations between insecure attachment and disordered eating, some literature has explored the possible associations between specific attachment

insecurity subtypes and specific eating disorders – an area of research that remains inconclusive (Zachrisson & Skarderud, 2010; Faber et al., 2018; Tasca, 2019).

In a study conducted on a sample of college students (N = 381), Han and Pistole (2014) found that insecure attachment significantly predicted binge eating (β = .37, p < .001), with insecure attachment accounting for 14% of the variance in binge eating. Going further, a significant association between both attachment subtypes (anxiety and, to a lesser extent, avoidance) and binge eating was found. While the association between attachment anxiety and binge eating has been previously supported in the literature, findings on the relationship between attachment avoidance and binge eating have been mixed (Han & Pistole, 2014). Self-report dimensional measures were used to operationalize attachment (avoidance, anxiety) and binge eating.

In another study, Alexander and Siegel (2013) examined a range of disordered eating behavior's association with attachment. A sample of 97 students with a BMI range of 16 to 35 was recruited. Significant moderate correlations were found between anxious attachment and the following: binge eating (r = .462, p < .001); bulimic symptoms (r = .392, p < .05); disinhibited eating (r = .400, p < .001); perceived hunger (r = .299, p < .01); emotional eating due to anxiety (r = .257, p < .05); and emotional eating due to depressed mood (r = .289, p < .01). Meanwhile, a weaker but significant correlation was found between avoidant attachment and perceived hunger (r = .213, p < .05).

Wilkinson et al., (2010) found attachment anxiety (but not avoidance) to be significantly correlated with disinhibited eating in a sample of 200 university students. Similarly, in an experimental study conducted by Wilkinson et al. (2013) a non-clinical sample of 21 female university students were primed with attachment security and attachment anxiety on separate

occasions and given access to snack food. Priming attachment anxiety led to significantly higher snacking than when priming attachment security (F (1, 18) = 7.06, p = .016, η_p^2 = .28).

In their review of research, Tasca and Balfour (2014) speculated that those who engage in bingeing and purging might show greater attachment anxiety whereas those who engage in dietary restriction might show avoidant attachment based on hyperactivating or deactivating the attachment system, respectively. In line with such a speculation, Ward et al. (2001) found a 79% prevalence of dismissive attachment style (i.e., avoidant attachment as measured by the AAI) in a sample of 20 female patients diagnosed with anorexia nervosa. Similarly, Calvo and Battistella (2003) found that a group of 30 subjects diagnosed with anorexia nervosa had a predominantly avoidant attachment style compared to healthy controls (χ^2 (2, N = 60) = 24.25; p = .001). Finally, in a nine-month longitudinal study of 2055 freshman university students, attachment anxiety at time 1 predicted future bulimic behaviors at time 2 whereas attachment avoidance at time 1 fully predicted dieting behaviors at time 2 (Dakanalis et al., 2016).

To conclude, there is ample evidence supporting the association between attachment insecurity, and disordered eating. Yet, the literature on the relationships between specific subtypes of insecure attachment and specific eating disorder subtypes remains inconclusive.

Emotion Regulation and Eating Behavior

The emotion regulation process, together with normative and secondary emotion regulation strategies with respect to attachment are already described in sections above. In this section, Gratz and Roemer's (2004) conceptualization of emotion regulation, which will be applied in the current study, will be elaborated upon. After a thorough review of the different and diverging conceptualizations of emotion regulation and dysregulation, Gratz and Roemer (2004) arrived at a comprehensive conceptualization of emotion regulation which they operationalized

in the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) along the following dimensions: 1) awareness and 2) understanding of emotions; 3) acceptance of emotions; ability to engage in 4) goal-directed behavior while refraining from engaging in 5) impulsive behavior when experiencing negative affect; and access to perceived effective emotion regulation 6) strategies.

The relationship between maladaptive emotion regulation strategies and eating pathology has been documented in both clinical (Aldao et al., 2010) and nonclinical (Prefit et al., 2019) samples. In fact, some posit that disordered eating behaviors are in themselves maladaptive means to regulate distressing emotions (Prefit et al., 2019). In an aim to assess emotion regulation (ER) difficulties in women with eating disorders, Mallorquí-Bagué et al., (2018) recruited a healthy control sample (n = 126) and a treatment seeking sample of 438 women diagnosed with the following eating disorders: anorexia nervosa-restrictive subtype (AN-R) (n = 57); anorexia nervosa binge-eating/purging (n = 44); bulimia nervosa (BN) (n = 168); binge-eating disorder (BED) (n = 62); and other specified feeding or eating disorder (OSFED) (n = 107). The group with AN-R had a lower score than the BN, BED, and OSFED group on ER-related difficulties pertaining to acceptance of emotional response, impulse control, and emotional clarity. That is, compared to the AN-R group, the BN, BED, and OSFED groups struggle more when it comes to accepting emotions, clarity of emotions, and controlling their impulse. Also, the AN-R group had a lower score than the AN-BP group in difficulties related to impulse control, emotional clarity, and global DERS scores. Moreover, the BN group had more difficulties in acceptance and accessing emotion regulation strategies in comparison to the AN-BP group, and more impulse control difficulties in comparison to both BED and OSFED group. The BED group had more difficulties in emotional awareness than did the OSFED group.

Finally, there were no statistically significant differences between the AN-BP, BED, and OSFED group on any of the DERS subscales.

In another study on a female sample of 120 patients with different eating disorder subtypes of AN-R, AN-BP, BN, and BED and 89 healthy controls (normal and over-weight), AN-R, AN-BP, and BN had greater overall difficulties in emotion regulation compared to normal weight controls (Brockmeyer et. al, 2014). Also, the BED group showed greater emotion regulation difficulty than over-weight controls. Going further, AN-R, AN-BP, and BN did not differ on any of the dimensions laid out by Gratz and Roemer (2004) except for impulse control. These differences emerged as AN-BP had significantly more impulse control difficulties than AN-R (Brockmeyer et al., 2014). Racine and Wildes (2013) found similar impulse control difficulties pertaining to the bingeing and purging behaviors of a clinical sample diagnosed with AN. In another study, Anderson et al. (2018) found that patients with AN-BP and BN displayed greater overall emotion regulation difficulties than AN-R. They suggest that the presence of bingeing and purging might reflect greater ER difficulties. Further in, their findings also corroborate previous taxometric analyses indicating that AN-BN and BN fall within the same cluster (Anderson et al., 2018). Meanwhile, Haynos et al. (2018) looked at ER difficulties in restrictive eating behavior in a non-clinical sample. The authors make the distinction between intention to restrict eating – a construct often looked at in the literature under "dieting" and "dietary restraint" – and actual restrictive eating behavior which they intended to examine in their study. Controlling for intention to restrict, individuals who endorsed restrictive eating had elevated scores on the DERS Total score (Wald χ^2 (1) = 7.66, B = 0.16, SE = 0.06, p = .006), Impulse (Wald χ^2 (1) = 7.84, B = 0.19, SE = 0.07, p = .005), Strategy (Wald χ^2 (1) = 6.57, B = 0.24, SE = 0.09, p = .010), and Clarity subscales (Wald χ^2 (1) = 6.57, B = 0.20, SE = 0.08, p

= .011). Interestingly, dietary restraint (the intention to restrict food intake) was not significantly associated with the DERS total score nor any of the DERS subscale when controlling for restrictive eating. That is, individuals who endorse restrictive eating behaviors (rather than mere intent) have global difficulties in emotion regulation; more specifically, they have difficulties in controlling their impulse, accessing adaptive emotion regulation strategies, and having emotional clarity. In contrast to previous conceptualizations of restrictive eating relating to problems of emotion over control, the study authors speculated that restrictive eating might have the same function of binge eating among non-clinical individuals (Haynos et al., 2018).

In a non-clinical sample of 53 women, Mikhail and Kring (2019) found that difficulties in engaging in adaptive emotion regulation strategies (i.e., engaging in maladaptive strategies) and greater attentional deployment was associated with a greater frequency of food restriction. Mikhail and King (2019) speculate that turning attention away from emotions (deployment) could "reflect avoidance of emotions in the context of disordered eating", drawing on similar reasonings behind binge eating whereby the behavior is maintained by allowing people to temporarily avoid unpleasant emotions. Interestingly, such findings are further corroborated by a study conducted by Meule et al. (2019) on emotion regulation and emotional eating in a sample of women with AN-R (n = 54) and BN (n = 47) and a control group (n = 68). In their study, Meule et al. (2019) argue for the construct of emotional eating to entail "any alteration in food intake (which can include eating less or eating more than usual) in response to any affective state (which can include positive and negative emotions)." To start with, findings were supportive of the view that emotion regulation difficulties present a transdiagnostic risk factor across ED diagnoses. However, the AN-R and BN groups showed opposite patterns of emotional eating. While the BN group reported eating more when experiencing negative affect (sad, angry,

anxious, stressed) and eating less when experiencing positive affect (happy). On the contrary, those with AN-R reported eating more when experiencing positive affect and eating less when experiencing negative affect (Meule, 2018). Such a finding goes in line with Mikhail and King's (2019) speculation around the function of restricting mimicking that of binge eating in that such disordered eating behaviors are means to regulate one's emotions.

All in all, the association between emotion regulation difficulties and eating disorder symptoms has been widely established in the literature, with some suggesting it as a transdiagnostic risk factor across eating disorder diagnoses. Given the well-established associations between insecure attachment, emotion regulation difficulties, and disordered eating behavior, studies have begun looking at the potential mediating role of emotion regulation in the relationship between insecure attachment and disordered eating behavior. Recently, Cortes-Garcia et al.'s (2019) conducted a meta-analytic systematic review of studies looking at different mediators of the relationship between insecure attachment and eating symptoms, in both clinical and non-clinical populations, and found emotion regulation to be one of the two most robust mediators in the studies reviewed.

Attachment, Emotion Regulation, and Eating Behavior

The mediational role of emotion regulation in the relationship between attachment dimensions and eating disorder symptoms was first studied by Tasca et al. (2009). In a sample of 310 women seeking treatment for an ED (AN, $n = 74$; BN, $n = 138$, EDNOS, $n = 98$), eating disorder symptomatology was measured on the level of body dissatisfaction, bulimia, and drive for thinness, while emotion regulation was measured along the subscales of emotional reactivity and emotional cutoff, corresponding to hyperactivation and deactivation strategies, respectively. Emotional reactivity mediated the relationship between attachment anxiety and ED symptoms,

whereas a non-significant effect was found for emotional deactivation on the relationship between attachment avoidance to ED symptoms.

Examining such associations at the level of the symptom, Han and Pistole (2014) conducted a study with a sample of (N = 381) students to assess the mediating role of emotion regulation in the link between attachment insecurity and binge eating. They first found that insecure attachment was related to binge eating (B = .37, p < .001). Then, upon factoring in emotion regulation as a mediator, the insecure attachment – binge eating relationship became non-significant (B = .01, p = .97), while direct paths of insecure attachment – emotion regulation, and emotion regulation – binge eating relationships became significant (B = .79, p < .001 and B = .44, p < .001, respectively). As hypothesized, emotion regulation fully mediated the relationship between insecure attachment and binge eating, with emotion regulation accounting for 12.25% of the variance in binge eating. Going further, consistent with the literature, Han and Pistole's (2014) findings show a positive association between attachment anxiety and binge eating (r = .21, p < .01); results also supported a positive, but smaller, association between attachment avoidance and binge eating (r = .13, p < .01), an association that has mixed findings in the literature.

In another study, Taube-Schiff et al. (2015) recruited a sample of 1,393 of adult bariatric surgery candidates in an attempt to evaluate the mediating mechanism of emotion regulation between attachment style and emotional eating. When controlling for variables such as age, gender, BMI, depression, anxiety, and other eating disordered behaviors, anxious attachment had a significant direct effect on emotional eating out of anger (β =.08, p < .001), whereas avoidant attachment had a significant negative direct effect on emotional eating out of anger (β = -0.5, p < .01). That is, individuals with avoidant attachment ate less in response to the negative affect of

anger. Meanwhile, both avoidant and anxious attachment had significant direct effects on DERS scores (β = .51, $p < 0.001$; and β = 0.5, $p < 0.001$). Similarly, DERS scores had significant direct effects on high emotional eating from anger, anxiety, and depression (β = .10, $p < .001$; β = .07, $p < .001$; β = .04, $p < .001$; respectively). Finally, all indirect paths were significant (*ab* ranged from *.02* to *.05*, *ps* < .001). Difficulties in emotion regulation fully mediated the effects of insecure attachment on emotional eating, except in the cases of attachment anxiety and emotional eating out of anger, and in the case of attachment avoidance's effect on emotional eating out of anxiety, where both direct and indirect effects were found.

Conclusion

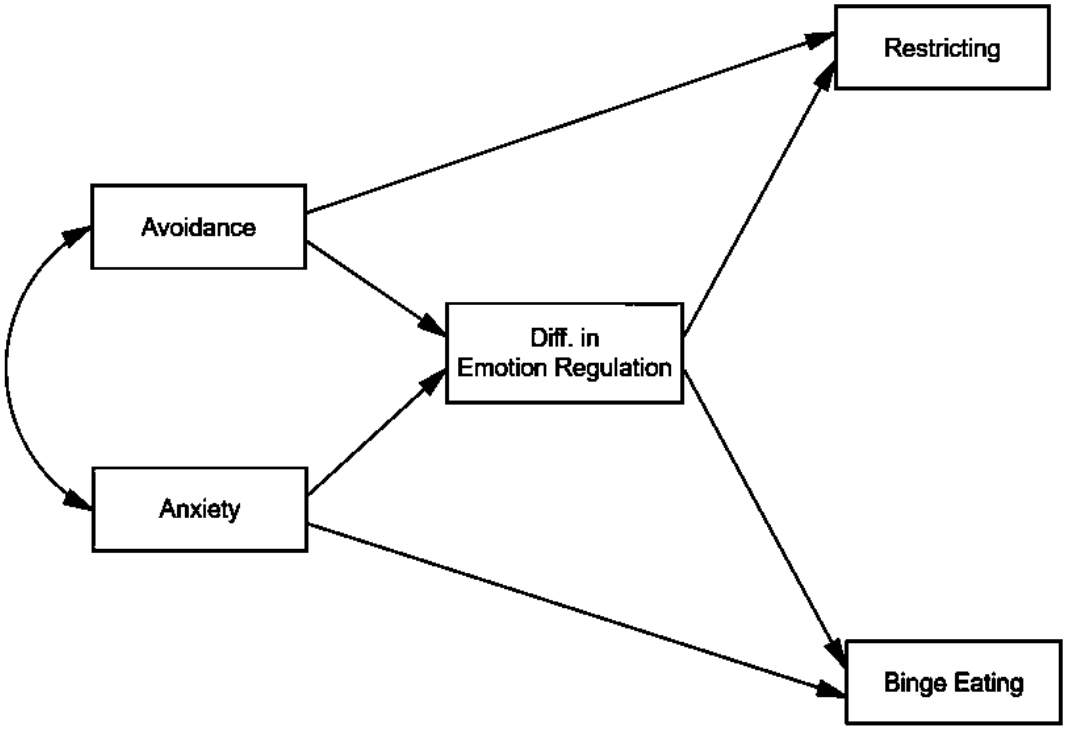
In conclusion, while there is support for the mediating role of emotion regulation in the relationship between insecure attachment and disordered eating symptoms, the research is still in its early stages, and further corroboration of results is needed (Cortes-Garcia et al., 2019). Moreover, associations between specific attachment styles and eating disorder subtypes remain elusive. While some argue for the relevance of attachment insecurity as a transdiagnostic risk factor in light of the inconsistent findings, we argue that the heterogenous operationalization of eating disorder symptomatology might account for the inconsistencies in the literature. That is, as research on clinical samples adopts cross diagnostic comparisons, the intradiagnostic heterogeneity of EDs, together with the overlap in symptoms across diagnoses might be a reason behind contradictory findings. In this regard, research looking at the level of eating disorder symptoms, rather than diagnosis, might help elucidate the etiologies of eating disorder symptomatology. Moreover, studying specific behaviors' maintenance factors allows for greater generalizability across diagnoses. Therefore, conducting mediation analyses differentiating between specific subtypes of attachment and eating symptoms will help shed light on the

different indirect effects of emotion regulation – the most powerful nexus in the relationship between attachment and eating (Cortes-Garcia et al., 2019). Lastly, such associations have not yet been put to the test in non-Western cultures such as Lebanon, undermining their cross-cultural validity.

CHAPTER III

Aims and Hypotheses

Figure 1.
Conceptual Model



In sum, this study aims to test the mediating role of emotion regulation on the relationship between the insecure attachment dimensions of avoidance and anxiety, and maladaptive eating behaviors of binge eating and restricting. Given that each of attachment anxiety and avoidance are characterized by hyperactivating and deactivating the attachment system, respectively, and also given that eating behaviors are increasingly conceptualized as maladaptive means to regulate one's emotions, we position the two diverging eating behaviors (restricting, binge eating) to examine possible differential paths in the model proposed. Therefore, we hypothesize the following:

Hypotheses One

H1a: It is hypothesized that attachment anxiety will have a positive total effect on binge eating.

H1b: It is hypothesized that attachment anxiety will have a positive direct effect on emotion regulation difficulty.

H1c: It is hypothesized that emotion regulation difficulty will have a positive direct effect on binge eating.

H1d: It is hypothesized that emotion regulation difficulty will mediate the relationship between anxious attachment and binge eating through a significant positive indirect effect.

Hypotheses Two

H2a: It is hypothesized that attachment avoidance will have a positive total effect on restrictive eating.

H2b: It is hypothesized that attachment avoidance will have a positive direct effect on emotion regulation difficulties.

H2c: It is hypothesized that emotion regulation difficulties will have a significant positive direct effect on restrictive eating.

H2d: It is hypothesized that emotion regulation difficulties will mediate the relationship between avoidant attachment and restrictive eating through a significant positive indirect effect.

CHAPTER IV

METHODOLOGY

Participants

Using snowball convenience sampling, six hundred and forty-four individuals participated in the online survey. A total of 287 responses were removed. Of those, 52 did not meet eligibility criteria (being 18 years and older and residing in Lebanon or have left less than 2 years ago), whereas 235 skipped more than 50% of the entire survey. The final sample included in the study was 357 where 297 responses were in English while the rest completed the translated Arabic version. The data collection was conducted between February 14, 2021 and March 15, 2021. The age of participants ranged from 18 to 71 years (M = 28.46, SD = 7.69) (*Median* = 27). Age was non-normally distributed, with a standardized skewness value of 15.5 which is greater than the absolute value of 1.96, significant at the 95th confidence interval. Individuals identified their gender identity as either women (n = 244), men (n = 93), non-binary (n = 10), or uncertain (n = 6). The sample consisted of approximately 35.7% university students, of which approximately 58% were graduate students. The remaining of the sample had degrees ranging from an intermediate to a doctorate level, the majority of which (approximately 42%) had masters level degrees. The BMI of the sample ranged from underweight at 15.94 to obese at 63.61 (M = 24.38, SD = 4.93) (*Median* = 23.51). Nationalities amongst the sample were distributed as follows: 88% were Lebanese (n = 314), 3.1% (n = 11) were Syrian, 1.1% (n = 4) were Palestinian, while 5.9% (n = 21) had other nationalities. The longest duration participants have been in an intimate relationship ranged from 1 to 480 months (M = 47.50, SD = 60.31). Participants had the option to enter a raffle for a chance to win 1 out of 3 vouchers from a local supermarket. The number of missing values per demographic variable are listed in Table 1.

Based on Kline's (1998) recommendations, the minimum sample size required to run the

path analysis for this study is based on 20 parameters multiplied by 10 = 200. The parameters are exogenous variables (n = 2), variance of exogenous variables (n = 5), endogenous variables (n = 3), error of variance of endogenous variables (n = 3), direct effects (n = 6), and double headed arrows (n = 1).

Table 1
Number of Missing Values for Demographic Variables

Variable	Missing Values
Age	34
Gender	4
Education	4
BMI	13

Design and Procedure

The present study employed a quantitative cross-sectional survey design with the following variables measured: attachment insecurity subtypes as predictors, emotion regulation as mediator, binge eating, and restrictive eating as outcome variables. Convenience snowball sampling was employed in order to reach to target sample size, whereby the investigator and a group of graduate students disseminated the study link within their social networks through WhatsApp, Facebook, and other social media platforms. The measures were counterbalanced and participants had the option to choose between English and Arabic as their preferred survey language.

Measures

Sociodemographic Data

A demographics questionnaire will be used to obtain the following information: age, gender identity, nationality, weight, height, relationship status, longest relationship duration, and whether they have sought mental health services for eating-related concerns.

Experiences in Close Relationships Scale

The Experiences in Close Relationships Questionnaire – Revised (ECR-R; Fraley et al., 2000) is composed of a total of 36 items divided into two 18-item subscales measuring attachment anxiety and attachment avoidance. Items include "I find it difficult to allow myself to depend on romantic partners" and "I'm afraid I will lose my partner's love," rated on a 7-point Likert scale which ranges from disagree strongly to agree strongly. Items that reflect secure attachment are reverse scored, and higher scores on the subscales reflect greater anxious or avoidant attachment (i.e., attachment insecurity). The ECR-R scale has been widely used. Sibley et al. (2005) found a test-retest reliability for ECR-R over a three-week period of *rs* = .90. Cronbach's alpha exceeded .90 for both scales (Fraley et al., 2000). Moreover, in a meta-analysis of 150 studies using the ECR-R, average internal consistencies were .9 for the anxiety subscale and .91 for the avoidance subscale indicating good internal consistency (Graham & Unterschute, 2015). In their meta-analysis, Cameron et al. (2012) found significant differences between subscale correlation of the ECR and ECR-R; the ECR-R had a significant weak to moderate positive correlation between the attachment subscales (r (46) = .41, $p < 0.001$) whereas the ECR had a significant but weak correlation between its subscales (r (196) = .15, $p < 0.001$); the average effect size across both tools was .2 ($p < 0.001$). The sample of studies had a high variability in correlations between subscales ranging from -.22 to .68 across studies. Based on such findings, Cameron et al. (2012) called into question the implicit assumption of the orthogonality of attachment dimensions and then provides implications for future statistical analyses involving the scales, especially the ECR-R. Such findings were replicated in Lebanese samples.

In a Lebanese university student sample (n = 85), the correlation between attachment avoidance and attachment anxiety subscales of the ECR-R was nonsignificant at .05 (Kazarian &

Martin, 2004). Similarly, Kazarian (2003) explored the factor structure of the ECR-R in a sample of 90 Lebanese individuals with findings supporting the two attachment dimensions. The two subscales had a small nonsignificant correlation of .03. However, around the same time, Hijazi (2004) translated the ECR-R into Arabic followed by a principal component analysis. As results supported the dual-factor structure of the Arabic version of the ECR-R, Hijazi (2004) found a significant positive correlation between the two subscales ($r = .26$, $p < 0.01$) which suggests an overlap in what the two subscales of avoidance and anxiety measure. Nonetheless, the two-dimensional factor structure of the ECR-R is supported and replicable in the Lebanese context.

Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a self-report 36-item measure of adaptive and maladaptive emotional regulation consisting of six subscales: non-acceptance of one's feelings through a negative emotional reaction to the feeling (6 items; e.g. "When I am upset, I feel guilty for feeling that 'way'"); difficulties engaging in goal-oriented behavior when experiencing negative emotions (5 items; e.g. "When I am upset, I have difficulty concentrating"); difficulty remaining in control of behavior while experiencing negative emotions (6 items; e.g. "When I am upset, I lose control over my behaviors"); lack of emotional awareness (6 items; e.g. "When I am upset, I pay attention to my feelings," score reversed); limited access to emotion regulation strategies (8 items; e.g. "When I am upset, I believe that there is nothing I can do to make myself feel better"); lacking emotional clarity when upset (5 items; e.g. "I have no idea how I am feeling"). The items on the DERS were phrased in a way that measures difficulties in emotion regulation during times of distress. Items are rated on a 5-point Likert scale which ranges from almost never to almost always with higher scores reflecting more maladaptive emotion regulation. DERS scores negatively correlated (from -.69 to

-.34) with Generalized Expectancy for Negative Mood Regulation Scale (Catanzaro & Mearns, 1990) which abides by the construct defined by Franko et al. (1985) as "an expectancy that some overt behavior or cognition will alleviate a negative state or induce a positive one" (p. 210). Gratz & Roemer (2004) showed high reliability (α = .93) and predictive validity for the DERS.

Eating Pathology Symptoms Inventory

The Eating Pathology Symptoms Inventory (EPSI; Forbush et al., 2013) is a 45-item self-report measure consisting of 8 subscales: Binge Eating, Cognitive Restraint, Body Dissatisfaction, Restricting, Purging, Excessive Exercise, Negative Attitudes toward Obesity and Muscle Building. Items are rated on a 5-point Likert-type (0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often) scale to reflect how well each item describes the respondents' experiences during the last two weeks. As the study aimed to look at general tendencies in a non-clinical population, the items were adapted to assess general habits rather than frequency during the last 2 weeks. Only the Binge eating and Restricting subscales were used for the purpose of this study.

Binge Eating. The Binge Eating subscale of the EPSI consists of 8 items and measures binge eating behavior. An example item is "I ate when I was not hungry".

Restricting. The Restricting subscale of the EPSI consists of 6 items measuring actual limited food intake. An example item is "People told me that I do not eat very much".

Translation and Adaptation

Study participants had the option of choosing between English and Arabic survey versions. Both the DERS and Binge Eating and Restricting subscales of the EPSI were translated into Arabic using the forward and committee approach to translation. Two graduate students who are well-versed in Arabic translated the scales from English into Arabic each. A committee

consisting of three faculty members, the investigator, and the two translators was formed to review and refine the translated versions, coming up with a final adopted version. The EPSI subscale items were modified to measure habits in general instead of the originally measured frequency within the last two weeks. While the ECR-R has already been translated into English by Hijazi (2004), a committee approach was also adopted to assess the translated version for any dialect that might not be well grasped by the respondents in a way that reflects the original items. Moreover, the committee examined the integrity of the translation in regard to maintaining the original gender-free English items.

Pilot

To assess for the tools' construct validity, following the ethics committee approval, a pilot study entailing 5 cognitive interviews was conducted with 5 volunteers. The interviews (3 for the Arabic version and 2 for the English version) assessed the extent to which respondents have understood the measures administered to them and their conceptualization of their responses. For that purpose, they were asked to first fill the survey. Then, question by question, they were asked to think-out-loud what they thought the questions inquire about. No conceptualization issues came up during the interviews for both survey languages. Furthermore, the pilot was used to estimate survey completion time, which was around 15 minutes.

CHAPTER V

RESULTS

Preliminary Analysis

Missing Value Analysis

Out of the 644 responses, 235 were deleted because they had skipped one of the scales in full or more than 50% of the entire survey. Following the removal of these cases, a missing value analysis (MWA) was conducted per scale to assess the percentage of missing values among the variables. Except for variables in English Restricting scale and both languages of the Binge Eating scale which had no missing values, all other scale variables had missing values in quantities less than 5% of the total sample. Little MCAR's value was non-significant at the .05 level for the following scales ECR Avoidance Arabic ($\chi^2(50) = 60.56$, $p = .15$), ECR Anxiety English ($\chi^2(34) = 32.04$, $p = .56$), ECR Anxiety Arabic ($\chi^2(17) = 21.78$, $p = .19$), DERS Arabic ($\chi^2(102) = 97.07$, $p = .62$), and Restricting Arabic ($\chi^2(4) = 5.227$, $p = .27$). Two significant Little MCAR's values were found for the ECR Avoidance English ($\chi^2(51) = 75.95$, $p = .013$) and the DERS English ($\chi^2(134) = 185.58$, $p = .002$) scales. The missing values on these scales were subsequently examined and no consistent pattern for the missing values was found. Moving forward, the missing values were replaced using the expectation maximization method (Tabachnick & Fidell, 2013).

Psychometrics

Outliers. Univariate outliers were examined by generating standard scores (z-scores) for all the main continuous variables. All z-scores were assessed based on the cut off value of |2.58| significant at the 99th confidence interval. According to Fields (2018), it is expected to have, in a normal distribution, about 1% of the responses crossing the value of |2.58|. Table 2 shows the number of outliers per scale based on the |2.58| cutoff value and their corresponding percentage

out of the total 357 responses. Only the DERS and Binge Eating scale had outliers slightly greater than 1%.

Table 2

Number and percentage of outliers per scale

Scale	Number of Outliers	Percentage per scale
Avoidance	3	0.84%
Anxiety	0	0%
Difficulties in Emotion Regulation	4	1.12%
Restricting	3	0.84%
Binge Eating	6	1.68%

Note. Outliers were tested at the 99th confidence interval.

Reliability Analysis. Reliability analysis was conducted for all scales, separately for each language and also overall per scale. Cronbach's alpha is represented in Table 3.

Table 3

Reliability Coefficients of Scales per Study Sample

Scale	Number of Items	Cronbach's α
Avoidance	18	.92
English	18	.94
Arabic	18	.83
Anxiety	18	.92
English	18	.93
Arabic	18	.84
Difficulties in Emotion Regulation	36	.95
English	36	.95
Arabic	36	.94
Binge Eating	8	.87
English	8	.87
Arabic	8	.90
Restricting	6	.81
English	6	.80
Arabic	6	.83

Normality

Initially, to assess for normality, the standardized skewness statistic was calculated and assessed as significant based on the 99th confidence interval. Nonetheless, as skewness is likely to be significant in large samples (Fields, 2018) standardized skewness scores were considered

only when corroborated by a visual inspection of the shape of the distribution d using histograms and probability – probability plots (p-p plots). The inspection did not reveal any notable deviation from normality. Finally, given the large same size ($N = 357$), in accordance with the central limit theorem, no transformations were made (Fields, 2018).

Descriptive Statistics

Scale Descriptive Statistics

The mean score on the ECR Avoidance subscale showed the sample to be low on attachment avoidance ($M = 2.93$, $SD = 1.10$) but showed higher attachment anxiety ($M = 3.71$, $SD = 1.25$) on the ECR Anxiety subscale, hovering around the mid-point of the 7-point Likert type scale. The mean score of the DERS scale also hovered around the mid-point of the 5-point Likert type scale ($M = 2.57$, $SD = .72$) indicating that the sample faces difficulties in emotion regulation some of the time. Mean restricting ($M = 2.44$, $SD = .86$) and binge eating ($M = 2.57$, $SD = .81$) scores also hovered around the mid-point with a slightly higher score for binge eating indicating some prevalence of the examined eating behaviors in the sample.

Intercorrelations

The correlation matrix (Table 4) revealed multiple significant correlations between the main study variables, age, BMI, and longest relationship duration. Significant Pearson's coefficients ranged from small ($r = .107$) to large ($r = .700$). The demographic variables showed significant correlations with the main study variables. Age had a small negative correlation with all of the main study variables of attachment avoidance ($r = -.108$, $p = < .05$), attachment anxiety ($r = -.219$, $p = < .01$), difficulty in emotion regulation ($r = -.287$, $p = < .05$), and binge eating ($r = -.11$, $p = < .05$). BMI had a moderate negative correlation with restricting ($r = -.252$, $p = < .01$), a

moderate positive correlation with binge eating (r =.306, p = < .01), and a small positive correlation with age (r = .143, p = < .01). Lastly, relationship duration was negatively correlated with attachment avoidance (r = -.185, p = < .01) and, to a higher degree, with attachment anxiety (r = -.265, p = < .01). It also had a small negative correlation with difficulties in emotion regulation (r = -.241, p = < .01). That is, longer relationship duration is associated with less emotion regulation difficulties. Lastly, as relationship duration increased a small decrease in restricting eating was observed (r = -.107, p = < .05). Although differences have emerged at the level of age and relationship duration, these were not included in the main analysis as they were not accounted for in the sample size.

Table 4
General Intercorrelations Matrix

Measure	1	2	3	4	5	6	7	8
1. Avoidance	1							
2. Anxiety	.519**	1						
3. Difficulties in Emotion Regulation	.386**	.559**	1					
4. Restricting	.067	.195**	.159**	1				
5. Binge Eating	.176**	.282**	.364**	-.199**	1			
6. Age	-.108*	-.219**	-.287**	-.067	-.110*	1		
7. BMI	.037	.074	.064	-.252**	.306**	.143**	1	
8. Longest relationship duration	-.185**	-.265**	-.241**	-.107*	-.072	.700**	.063	1

Note. **. Correlation is significant at the 0.01 level (1-tailed).
*. Correlation is significant at the 0.05 level (1-tailed).

Gender Differences

To assess for gender differences across the main study variables, a one-way analysis of variance (ANOVA) was conducted (Table 5) followed by a Games-Howell post-hoc test. No

significant effect of gender was observed on attachment avoidance $F(3, 349) = .80$, $p = .49$; anxiety $F(3, 349) = 1.80$, $p = .15$; difficulties in emotion regulation $F(3, 349) = 2.18$, $p = .09$; restricting $F(3, 349) = .151$, $p = .93$; and binge eating $F(3, 349) = 1.31$, $p = .27$. Given the non-significant group differences between gender identities, the following analyses were performed on the sample as a whole.

Table 5
Means and Standard Deviations of Main Variables per Gender

	Mean (SD)			
Variable	Women	Men	Non-Binary	Uncertain
Avoidance	2.95 (1.11)	2.86 (1.09)	2.97 (.78)	3.56 (1.09)
Anxiety	3.8 (1.24)	3.45 (1.27)	3.95 (1.27)	3.65 (1.12)
Difficulties in Emotion Regulation	2.56 (.72)	2.45 (.68)	2.64 (.81)	3.15 (.67)
Restricting	2.45 (.87)	2.40 (.87)	2.32 (.62)	2.47 (.99)
Binge Eating	2.57 (.83)	2.49 (.76)	2.63 (.78)	3.14 (.84)

Note. Gender sub-samples were: Women (*n = 244*), Men (*n = 93*), Non-binary (*n = 10*), Uncertain (*n = 6*).

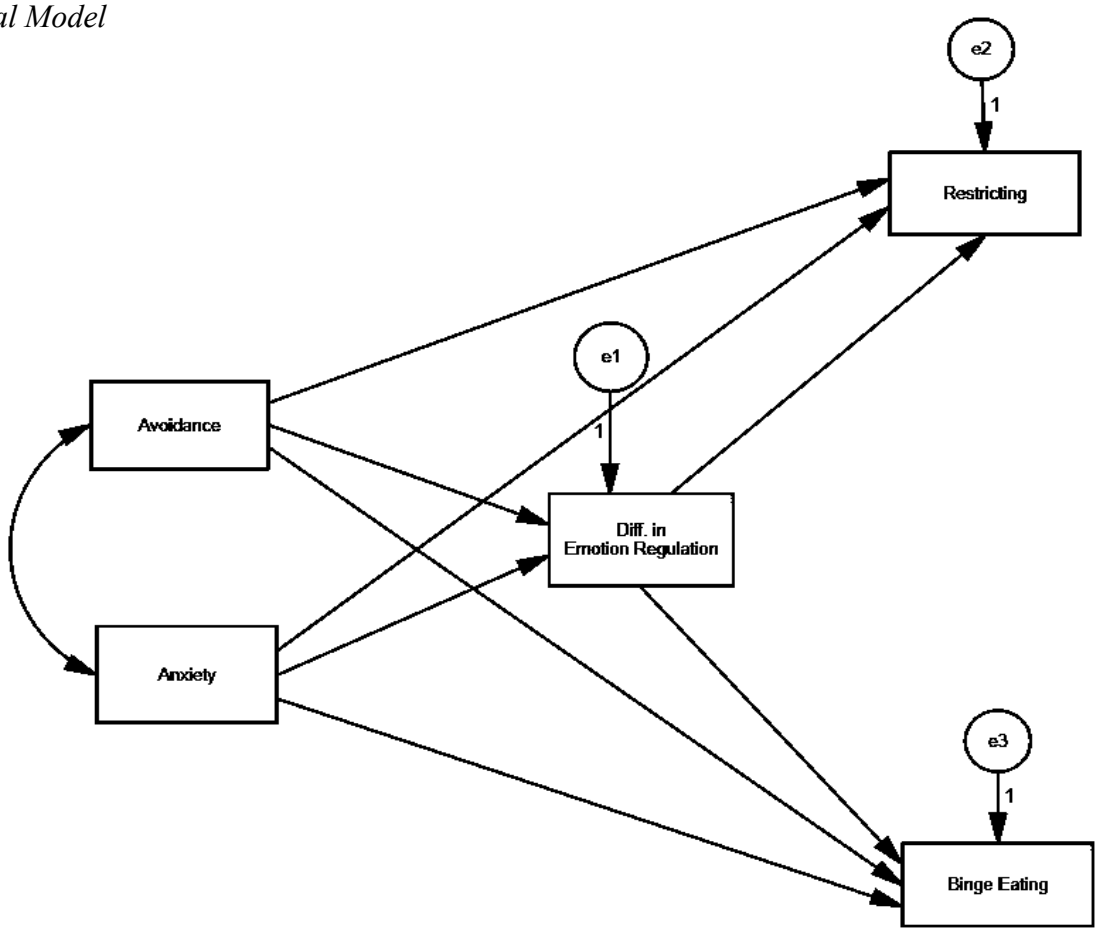
Main Analysis

The study's hypotheses were tested based on the path model represented in Figure 2. The analysis was performed using AMOS 23.0 statistical package (Arbuckle, 2014).

Model Fit

The goodness of fit of the proposed model was assessed using fit indexes. The model chi-square was significant $X^2(1) = 32.87$, $p < 0.01$, rejecting the null hypothesis which indicates good model fit. However, the chi-square index has a known sensitivity to sample size. More specifically, in large sample sizes, such as this one (N = 357), the chi-square is likely to be

Figure 2.
Statistical Model



significant despite slight differences between observed and predicted covariances (Kline, 2015; Byrne, 2016). Therefore, other fit indices are deemed more appropriate to assess model fit. While

the Root Mean Square Error of Approximation (RMSEA) did not demonstrate a good model fit (RMSEA = .299 > 0.08) with a value above the recommended cut-off (values closer to zero represent a good fit), the Comparative Fit Index (CFI) and Goodness of Fit (GFI) indices were above their recommended cut-off values, showing acceptable fit (CFI = .908 > .9; GFI = .966 > .95). In conclusion, an acceptable model fit was assumed as indicated by the CFI and GFI values.

Total Effects

A significant total effect was found for attachment anxiety on difficulties in emotion regulation (β =.49, p = .01) and restricting (β =.219, p = .01). Also, confirming H1a, attachment anxiety had a significant total effect on binge eating (β =.262, p = .01). Meanwhile, attachment avoidant had a significant total effect on difficulties in emotion regulation (β =.132, p = .018), while the total effect on restricting came out as non-significant (β =-.046, p = .429), rejecting hypothesis H2a.

Direct Effects

No significant direct effect was found for attachment anxiety on binge eating (β =.115, p = .093), whereas a direct effect of attachment anxiety on restricting was found to be significant (β =.179, p =.01) indicating that higher levels of attachment anxiety are associated with higher levels of restricting eating behavior. Moreover, attachment anxiety had a significant direct effect on difficulties in emotion regulation (β =.49, p =.0.01), indicating that higher levels of attachment anxiety are associated with higher levels of difficulties in emotion regulation, confirming H1b. Meanwhile, difficulties in emotion regulation had a significant direct effect on binge eating (β =.299, p =.01) but not on restricting (β =.081, p =.212), confirming H1c but

rejecting H2c. That is, higher levels of difficulties in emotion regulation are associated with higher levels of binge eating but not with restricting eating behavior.

The direct effect of attachment avoidance on difficulties in emotion regulation (β =.132, p =.018) was found to be significant, whereas its direct effect on both binge eating (β =.001, p =.938) and restricting (β =-.057, p =.344) were found to be non-significant. That is, higher attachment avoidance is associated with higher levels of difficulties in emotion regulation but not higher levels of binge eating and restricting eating behavior.

Indirect Effects

The indirect effects of the subtypes of attachment insecurity (anxiety, avoidance) on types of eating behavior (binge eating and restricting) were examined. Testing hypothesis 1d, a significant indirect effect from attachment anxiety to binge eating was found (β =.147, p =.01). That is, an anxious attachment style is associated with higher binge eating behavior through the effect of having difficulties in regulating one's emotions. Given that the direct effect from attachment anxiety to binge eating was found to be non-significant, the significant indirect effect indicates that the association between attachment anxiety and binge eating is fully mediated by difficulties in emotion regulation.

A smaller, but significant, indirect effect of attachment avoidance on binge eating (β =.039, p =.018) was also found. Therefore, having an avoidant attachment style is associated with increased binge eating behavior through the effect of difficulties in emotion regulation. Similarly, with the direct effect of attachment avoidance on binge eating being non-significant, the significant indirect effect found indicates that difficulties in emotion regulation fully mediates the relationship between attachment avoidance and binge eating.

No significant indirect effect was found between attachment anxiety and restricting (β =.039, p =.212), indicating that the total effect found between these two variables is irrespective of the mediator. Also, the indirect effect of attachment avoidance on restricting turned out as nonsignificant (β =.11, p =.222), rejecting H2d.

CHAPTER V

DISCUSSION

This study examined the associations between subtypes of insecure attachment and specific eating disorder symptoms in a non-clinical sample in Lebanon. More specifically, the study aimed to assess the potential mediating role of difficulties in emotion regulation in the emerging associations. As stated earlier, the literature on the relationship between specific attachment subtypes and eating disorder symptoms remains inconclusive. Moreover, the mediating role of emotion regulation has emerged as a powerful nexus in the relationship between attachment and ED symptoms; yet there remains a paucity of studies (Shakory et al. 2015, Jakovina et al., 2018) to draw strong conclusions on the mediating effect of emotion regulation on the specific associations between attachment subtypes and specific eating symptoms (Cortes-Garcia et al., 2019). Therefore, this study aimed to look at (1) particular associations between insecure attachment subtypes and certain disordered eating behavior and (2) the mediating role of emotion regulation difficulties in the emerging associations.

Some of the speculations over the inconsistencies stir away from specific associations between attachment style and ED subtype to point to the role of attachment insecurity in the severity of ED symptoms instead (Tasca, 2019). Yet, some methodological considerations of the literature on attachment and eating are warranted. As delineated in Chapter II, the intradiagnostic heterogeneity of EDs, the frequent cross over between ED subtypes, and the corresponding methods of operationalization in research, are proposed to have hindered the understanding of ED etiology (Gordon et al., 2018). Following the same logic, examining links between attachment styles and ED subtypes at the categorical level may explain the inconsistent findings. In contrast to the current prevailing literature, this study examined the links between attachment

avoidance, attachment anxiety, and the common behavioral ED symptoms of restricting and binge eating. Going further, this study also assessed the mediating role of difficulties in emotion regulation in these associations. It is speculated that binge eating is a manifestation of maladaptive hyperactivating emotion regulation strategies whereas restricting behaviors are a manifestation of maladaptive but down-regulating emotion regulation strategies (Tasca & Balfour, 2014).

Review of Results

Attachment Anxiety, Emotion Regulation, and Binge Eating

The first set of hypotheses (H1) posited relationships between attachment anxiety, emotion regulation, and binge eating. The first hypothesis (H1a) was that attachment anxiety will have a positive total effect on binge eating. Findings confirmed this hypothesis where higher attachment anxiety was associated with higher levels of binge eating. This falls in line with previous findings whereby such significant associations were found in samples of university students (Han & Pistole, 2014; Keating et al., 2019) and bariatric surgery candidates (Shakory et al., 2015).

The significant positive association found between attachment anxiety and difficulties in emotion regulation also goes in line with both theoretical formulations and previous empirical findings, confirming the second hypothesis (H1b). Attachment theory posits that those with attachment anxiety hyperactivate the attachment system which, in turn, manifests in the employment of maladaptive emotion regulation strategies (Ty & Francis, 2013; Aldao et al., 2010; Faber et al., 2018).

The third hypothesis (H1c) was also confirmed as difficulties in emotion regulation was positively associated with binge eating. That is, when difficulties in emotion regulation increases,

binge eating increases. This also falls in line with previous well-established findings (Mallorquí-Bagué et al., 2018; Aldao et al., 2010) whereby binge eating is posited to function as a maladaptive emotion regulation itself. More specifically, binge eating is speculated to serve as means to turn away from, or down regulate, intense emotions (Heatherton & Baumeister, 1991; Meule et al. 2019).

Lastly, as the direct effect from attachment anxiety to binge eating was nonsignificant, difficulties in emotion regulation fully mediated the association between attachment anxiety and binge eating, confirming the mediation hypothesis (H1d; significant indirect effect). Meaning, the association between attachment anxiety and binge eating is fully explained through the effect of difficulties in emotion regulation. Such a result corroborates the research finding by Jakovina et al. (2018) where a mediation effect for emotion regulation between attachment anxiety, specifically, and BN symptoms was found. Other research has found a similar effect for emotion regulation on binge eating but at the level of attachment insecurity in general, rather than the specific attachment insecurity dimension of attachment anxiety (Han & Pistole, 2014).

Attachment Avoidance, Emotion Regulation, and Restricting.

The second set of hypotheses (H2) posited relationships between attachment avoidance, emotion regulation difficulties, and restricting. To start with, the first hypothesis (H2a) was not confirmed as avoidant attachment did not have a total effect on restricting. To our knowledge, no other study has looked at the relationship between attachment avoidance and the behavioral symptom of restricting (i.e., reduced calorie intake). In fact, Haynos (2015) argued that there's a lack of measures that capture the behavioral component of restriction versus the cognitive component of intention to restrict; most of these measures do not correlate with objective short- and long-term measures of calorie intake. Moreover, the author adds that the predominant

measures of restriction "may be measuring ''relative restriction'' (eating less than preferred) or other cognitive, rather than behavioral, aspects of restriction" (Haynos, 2015, p. 406). Instead, closely linked operationalizations in the literature entail ED subtype (i.e., AN-R) in clinical samples (Illing et al., 2010; Abbate-Daga et al., 2010), and subthreshold symptoms such as restrained eating (which comprises the cognitive component of intent, rather than the actual behavior of limiting food intake). Theoretically, attachment avoidance might be linked to restricting eating behaviors as means to turn away from attachment-related distress (Cole-Detke & Kobak, 1966). More specifically, restricting eating is posited as maladaptive means of turning away from emotions, a manifestation of downregulating the attachment system, a characteristic of avoidant attachment.

Moving forward, the association between attachment avoidance and difficulties in emotion regulation was found to be significant and positive, confirming our hypothesis (H2b). This finding echoes the theoretical formulations of attachment insecurity and is also backed by empirical evidence. According to attachment theory, those with an avoidant attachment style have a goal of keeping the attachment system deactivated and that goal is reached by inhibiting or suppressing emotional experience (Mikulincer & Shaver, 2016). This conceptualization has received ample empirical support whereby attachment avoidance was associated with measures of maladaptive ER such as emotional deactivation (Tasca et al., 2009) and global maladaptive ER strategies (van Durme et al., 2015; Ty & Francis, 2013; Han & Pistole, 2014).

The third path from difficulties in emotion regulation to restricting eating behavior turned out as non-significant, rejecting our hypothesis (H2c). This stands in contrast to findings in a clinical sample of AN-R, whereby individuals in the AN-R group ate less when experiencing negative affect (Meule, 2019). Significant results were also found in non-clinical samples,

whereby higher restrictive eating (while controlling for the cognitive component of intent) was associated with higher scores on both DERS total score, and the Impulse and Strategy subscales (Haynos et al., 2018). Moreover, Mikhail and King (2019) also found an association between restricting food and both the DERS strategies subscale and the use of attentional deployment as a daily emotion regulation strategy. Perhaps that the use of the aggregate DERS score was inadequate in capturing the association with restricting, wherein the relationship lies at the level of the DERS subscales instead, such as the results found in Mikhail and King's (2019) study. Furthermore, it could be that the effect of ER difficulties on restricting is less pronounced in a non-clinical sample. Indeed, even in a clinical sample, patients engaging in restrictive behaviors (i.e., AN-R subtype) displayed lower ER difficulties in comparison to patients engaging in binge-related behaviors (Mallorquí-Bagué et al., 2018).

Lastly, the mediation (indirect) effect from avoidance to restricting through difficulties in emotion regulation was nonsignificant, rejecting the hypothesis H2d. To our knowledge, no other study has looked at this path specifically. While some mediation studies examined paths between attachment insecurity and the target behavior of binge eating (Han & Pistole, 2014) and bulimic symptoms (van Durme et al., 2015; Jakovina et al., 2018), no studies have, to our knowledge examined the role of emotion regulation in the path from attachment avoidance to restricting, specifically. While the attachment insecurity and unhealthy (or disordered) eating relationship is significant in both clinical samples and the general population, the effect sizes found in clinical samples were always larger than those in the general population (Faber et al., 2018). It could be that the indirect effect of attachment avoidance on restricting was not detectable due to the use of a non-clinical general community sample. Moreover, the study did not measure or account for any weight- or body-related concerns, which might moderate this relationship. On the other

hand, it could also be that the indirect effect of emotion regulation difficulties has a greater more pronounced impact on binge eating behaviors, and not restricting (Cortes-Garcia et al., 2019).

Other Effects

Initially, based on the conceptual model in Figure 1, only two mediation paths were intentionally drawn. As an artefact, paths from attachment anxiety to restricting, and from attachment avoidance to binge eating were also tested without prior hypothesizing. To start with, a significant indirect effect was found from attachment avoidance to binge eating through difficulties in emotion regulation. Since the direct effect from avoidance to binge eating was nonsignificant, a full mediation can be interpreted. Yet, the total effect from avoidance to binge eating was non-significant. According to Rucker et al. (2011), a significant total effect of the independent variable on the dependent variable is not a necessary prerequisite for mediation. Moving forward, the ER difficulty variable can be viewed as a mediator (and not a suppressor) since the indirect effect has the same sign as the total effect (Rucker et al., 2011). That is, while attachment avoidance did not predict binge eating, the association is found only through ER difficulties. Similar yet somewhat contradictory results were found in Shakory et al.'s (2015) study in a sample of bariatric surgery candidates. The study found 1) a nonsignificant total effect of attachment avoidance on binge eating, 2) a significant negative direct effect of attachment avoidance on binge eating and 3) a significant positive indirect effect of attachment avoidance on binge eating through difficulties in emotion regulation. While our and Shakory et al.'s (2015) study both found a nonsignificant total effect and a significant positive indirect one, the present study did not find a significant direct effect of attachment avoidance on binge eating. Perhaps not controlling for attachment anxiety in the model might account for such discrepancies. In fact, Shakory et al. (2015) had contradictory results between Pearson's correlations (significant

positive association between attachment avoidance and binge eating; similar to present study's results) and results arrived at when controlling for attachment anxiety and bootstrapping. Shakory et al. (2015) concluded that while there is an indirect effect of attachment avoidance on binge eating through difficulties in ER, another facet of attachment avoidance seems to negatively associate with binge eating. Such a result is consistent with the rationale of attachment avoidance and deactivation strategies not manifesting in binge eating behavior. For example, in a sample of female patients with BN, Jakovina (2018) found that attachment avoidance did not predict binge eating in a multivariate model also including attachment anxiety. Yet, Han & Pistole (2014) did find that attachment avoidance associated with binge eating; however, this result was arrived at without controlling for attachment anxiety – a well-established predictor of binge eating.

Another significant effect in the model was a direct effect of attachment anxiety on restricting. Such a finding indicates that attachment anxiety impacts restricting behavior through mechanisms distinct from difficulties in emotion regulation. To an extent, this finding corroborates our reasoning of how attachment anxiety's influence on emotion regulation translates into eating behavior. Going further, while there are no studies examining this path specifically, attachment anxiety, in particular, has been shown to have a consistent transdiagnostic influence on eating symptom severity (Illing et al., 2010), which could explain the significant direct effect found.

Limitations and Future Directions

This study was not without its limitations. To start with, the study employed a cross-sectional design which limits the inference of causal and temporal relationships between the variables examined. That is, no causal relationship of attachment on emotion regulation, and of

emotion regulation on disordered eating behavior can be extrapolated. It could be that, for example, eating behaviors influence maladaptive emotion regulation. Instead, future research should adopt longitudinal designs, establishing temporal precedence, allowing for better inference of causality of attachment on emotion regulation, and of emotion regulation on eating behavior.

Second, data was collected online through convenience snowball sampling. As stated in the methods section, the investigator and a group of graduate students disseminated the study link online within their social networks. Inherent in this form of data collection is its susceptibility to response bias. Given that the subject at hand was explicated in the consent form, it is possible that those with a preexisting interest in the study's variables have self-selected into the study. More importantly, despite the assumed dimensional structure of eating pathology (Luo et al., 2016), our use of a non-clinical sample warrants caution in extrapolating results to ED populations.

Third, we had initially intended to recruit undergraduate university students. However, when it was clear that our target sample size could not be attainable by recruiting undergraduate students only, we decided to open up recruitment to the general population and disseminated the link through social media channels. This, in turn, implicated age as a potential confounding variable. Such a variable was not accounted for in sample size calculation and, as a consequence, was not controlled for in the main analysis. To start with, the sample had a wide age range with an unequal distribution. While modestly higher DERS scores correlated with older patients in a clinical sample with chronic EDs (Anderson et al., 2018), the relationships are reversed in a non-clinical sample. In the general population, general psychological functioning tends to improve with age (Rohde et al., 2017). Meanwhile, significantly greater emotion regulation difficulties (F

= 10.67, p = 0.00) were found in healthy young adults (M = 13.67, SD = 3.01) compared to healthy older individuals (M = 11.83, SD = 1.89) (Orgeta, 2009). Indeed, Pearson's correlation revealed significant negative correlations between age and all main study variables. Therefore,

Fourth, while the study aimed to assess the role of difficulties in emotion regulation in the relationships between specific attachment dimensions and certain eating behaviors, the use of the aggregate score on the DERS scale have likely not captured the intricacies of the different facets of emotion regulation. Precisely, while attachment influences emotion regulation, each attachment dimension has its particular influence on emotion regulation that might be better captured through the inspection of the DERS subscales instead. This might account for the lack of significant results in the path from ER difficulties to restricting despite significant findings in the literature (Mikhail & King, 2019; Haynos et al., 2018).

Future research should explore the effects of depressive symptoms on ED symptoms – the mediator that emerged as the second strongest at the sub-clinical level in the meta-analysis conducted by Cortes-Garcia et al. (2019). Given that emotion regulation and depressive symptoms are likely to be interlinked (Tasca et al., 2009; Cortes-Garcia et al., 2019), it would be informative to explore the significance of their interaction in predicting ED symptoms. For example, maladaptive eating behaviors are posited as self-regulatory means to deal with negative emotions, while depressive symptoms have been found to predict subsequent binge eating regardless of one's attachment anxiety level in an ecological momentary assessment (Keating, Mills, & Rawana, 2019).

In addition, while attachment-related differences in emotion regulation have been well-documented in the literature (Mikulincer & Shaver, 2019), the impact of avoidant or anxious attachment on specific facets of emotion regulation has not been sufficiently explored yet. Future

research can examine how the different subscale of the DERS map onto each attachment dimension, and how that changes when individuals are high on both avoidant and anxious attachment dimensions. In turn, the literature remains unclear on whether there are significant emotion regulation differences between ED types (Prefit et al., 2019; Mallorquí-Bagué et al., 2018) yet future research can, instead, examine emotion regulation difficulties with respect to ED symptoms – an approach that might help disentangle the relationships at play between the different variables.

Finally, future research should assess the efficacy of ED interventions which target the effects of attachment anxiety and avoidance on emotion regulation difficulties and, subsequently, disordered eating behavior.

Clinical Implications

Despite the limitations addressed above, the study findings have practical implications. In elucidating the associations between attachment insecurity, disordered eating behavior, and emotion regulation, ED interventions will be better equipped in targeting and counteracting the underlying factors of specific ED symptoms. That is, rather than focusing only on the eating symptoms, interventions can target the mechanisms by which these symptoms are maintained through insecure attachment and maladaptive emotion regulation.

The current findings underscore the importance of targeting emotion regulation in both prevention of and intervention ED programs. While specific facets of maladaptive ER's relationship to ED symptoms remains inconclusive, interventions can focus on promoting adaptive ER such as emotional acceptance and regulation strategies (Mallorquí-Bagué et al., 2018). It is noteworthy that current CBT approaches to CBT do not specifically focus on emotion regulation (Murphy et al., 2010). Adding a special focus on emotion regulation in cognitive-

behavioral therapy (CBT) to EDs is expected to enhance treatment outcomes. Of relevance here is also the role of attachment on the therapeutic relationship in the treatment of EDs – an aspect that has been largely ignored in the CBT approach (Leahy, 2008).

Further support for the role of attachment and its implications on the therapeutic relationship is highlighted by Tasca (2019). Tasca (2019) lays out a conceptual model implicating attachment research in the treatment of ED symptoms. For example, Daniel et al. (2015) found significant interactions between therapy type and patients' attachment style on therapists' reactions. Based on that, Tasca (2019) inferred that attachment avoidance may be associated with lower therapeutic alliance from the patient's side, resulting in a greater likelihood for the psychoanalytic therapist to feel bored or disengaged. Meanwhile, attachment anxiety may be associated with higher therapeutic alliance but with a cognitive-behavioral therapist feeling overwhelmed (Tasca, 2019). It is speculated that patients with attachment avoidance may provide too little material for psychodynamic therapists to work with; on the other hand, patients with attachment anxiety may cause a cognitive-behavioral therapist to feel frustrated given that their approach may be less emotionally oriented and more task oriented. While such findings do not warrant a conclusion on efficacies of treatment modalities, they do suggest that patients' attachment styles should be taken into consideration when matching BN patients with treatment modalities. Going further, the same authors conducted a randomized trial to assess whether patients' attachment prior to treatment moderates treatment outcome in a sample of patients diagnosed with BN. Daniel et al. (2016) found that a reduction in binge eating was related to an increase in attachment security in psychoanalytic psychotherapy but not in cognitive behavioral therapy. This suggests that the mechanism of change in psychodynamic psychotherapy for BN is partially through the fostering of a secure attachment. While cognitive behavioral therapy did

reduce binge eating, the mechanism of change was not related to attachment-related changes (Daniel et al., 2016). To conclude, Tasca (2019) suggests that ED treatment for patients with attachment anxiety may be improved through reducing anxious patients' preoccupation with relationships and ability to regulate emotions. Meanwhile, for patients with avoidant attachment, treatment may be enhanced by reducing tendencies to dismiss relationships and deactivate emotions.

Lastly, addressing both attachment insecurity and emotion regulation difficulties' contribution to disordered eating behavior may help ED patients gain insight about (1) the attachment function inherent in food and eating, and (2) the emotion regulatory function of disordered eating behavior (Han & Kahn, 2017).

CHAPTER V

CONCLUSION

To summarize, this study examined associations between attachment dimensions and eating behavior through the indirect effect of emotion regulation. While the literature remains inconsistent on whether specific attachment dimensions are linked to specific ED subtype, some have shifted to view attachment insecurity as conferring greater symptom severity transdiagnostically. Yet, while most of the ED literature has adopted a cross diagnostic comparison approach to studying disordered eating, the current study operationalized eating phenomena at the level of the symptom instead. In particular, the present study looked at the associations between each attachment dimension (anxiety, avoidance) and binge eating and restricting. In addition, the indirect effect of emotion regulation was tested in each of these paths. First, results showed that attachment anxiety had a significant total effect on binge eating which was fully mediated by emotion regulation difficulties. Attachment anxiety also had a direct effect on restricting but not through emotion regulation difficulties. Moreover, emotion regulation fully mediated the relationship between attachment avoidance and binge eating, in that attachment avoidance alone did not predict binge eating unless through difficulties in emotion regulation. Therefore, attachment-related constructs are deemed valuable in informing targeted ED treatment approaches. Finally, attachment is a complex and multifaceted construct. While this study's findings support the transdiagnostic view, looking at the particular effects of attachment dimensions requires disentangling and controlling for the multiple factors that are potentially at play.

References

Abbate-Daga, G., Gramaglia, C., Amianto, F., Marzola, E., & Fassino, S. (2010). Attachment insecurity, personality, and body dissatisfaction in eating disorders. *The Journal of Nervous and Mental Disease*, 198(7), 520-524.

Afifi, T. O., Sareen, J., Fortier, J., Taillieu, T., Turner, S., Cheung, K., & Henriksen, C. A. (2017). Child maltreatment and eating disorders among men and women in adulthood: Results from a nationally representative United States sample. *International Journal of Eating Disorders*, 50(11), 1281-1296.

Agh, T., Kovács, G., Supina, D., Pawaskar, M., Herman, B. K., Vokó, Z., & Sheehan, D. V. (2016). A systematic review of the health-related quality of life and economic burdens of anorexia nervosa, bulimia nervosa, and binge eating disorder. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, 21(3), 353-364.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30(2), 217-237.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: Author.

Anastasiadou, D., Sepulveda, A. R., Sánchez, J. C., Parks, M., Álvarez, T., & Graell, M. (2016). Family functioning and quality of life among families in eating disorders: A comparison with substance-related disorders and healthy controls. *European Eating Disorders Review*, 24(4), 294-303.

Anderson, L. K., Claudat, K., Cusack, A., Brown, T. A., Trim, J., Rockwell, R., ... & Kaye, W. H. (2018). Differences in emotion regulation difficulties among adults and adolescents across eating disorder diagnoses. *Journal of Clinical Psychology*, *74*(10), 1867-1873.

Andreescu, A. C. (2015). Emotion Processing Deficits in Disordered Eating Behaviours. (Unpublished doctoral dissertation). University of Windsor, Windsor, Ontario, Canada

Arbuckle, J. L. (2014). Amos (Version 23.0) [Computer Program]. Chicago: IBM SPSS.

Aspen, V., Weisman, H., Vannucci, A., Nafiz, N., Gredysa, D., Kass, A. E., ... & Taylor, C. B. (2014). Psychiatric co-morbidity in women presenting across the continuum of disordered eating. *Eating Behaviors*, 15(4), 686-693.

Ata, R.N., Schaefer, L.M., Thompson, J.K. (2015). Sociocultural Theories of Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 269 – 282). John Wiley & Sons.

Baker, J. H., Janson, L., Trace, S. E., Bulik, C. M. (2015). Genetic Risk Factors for Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 367 – 378). John Wiley & Sons.

Baños, R. M., Cebolla, A., Moragrega, I., Van Strien, T., Fernández-Aranda, F., Agoura, Z., ... & Frühbeck, G. (2014). Relationship between eating styles and temperament in an Anorexia Nervosa, Healthy Control, and Morbid Obesity female sample. *Appetite*, 76, 76-83.

Beck, A. T., & Haigh, E. A. (2014). Advances in cognitive theory and therapy: The generic cognitive model. *Annual Review of Clinical Psychology*, 10, 1-24.

Brockmeyer, T., Skunde, M., Wu, M., Bresslein, E., Rudofsky, G., Herzog, W., & Friederich, H. C. (2014). Difficulties in emotion regulation across the spectrum of eating disorders. *Comprehensive Psychiatry*, *55*(3), 565-571.

Brummer, L., Stopa, L., & Bucks, R. (2014). The influence of age on emotion regulation strategies and psychological distress. *Behavioural and Cognitive Psychotherapy*, 42(6), 668-681.

Bowlby, J. (1982). *Attachment and Loss: Attachment* Basic Books (AZ).

Born, J. M., Lemmens, S. G., Martens, M. J., Formisano, E., Goebel, R., & Westerterp-Plantenga, M. S. (2011). Differences between liking and wanting signals in the human brain and relations with cognitive dietary restraint and body mass index. *The American Journal of Clinical Nutrition,* 94(2), 392-403.

Byrne, B. M. (2016). *Structural Equation Modeling with AMOS: Basic concepts, applications, and programming*, third edition. Taylor and Francis.

Cameron, J. J., Finnegan, H., & Morry, M. M. (2012). Orthogonal dreams in an oblique world: A meta-analysis of the association between attachment anxiety and avoidance. *Journal of Research in Personality*, 46(5), 472-476.

Cantón-Cortés, D., Cortés, M. R., & Cantón, J. (2015). Child sexual abuse, attachment style, and depression: The role of the characteristics of abuse. *Journal of Interpersonal Violence*, 30(3), 420-436.

Cassidy, J. (2016). The Nature of the Child's Ties. In Cassidy, J., & Shaver, P. R. (Eds). *Handbook of attachment: Theory, research, and clinical applications* (Third ed.). (pp. 3 – 24). New York, NY: The Guilford Press.

Cassidy, J., & Shaver, P. R. (2016). *Handbook of attachment: Theory, research, and clinical applications* (Third ed.). New York, NY: The Guilford Press.

Celio, A. A., Wilfley, D. E., Crow, S. J., Mitchell, J., & Walsh, B. T. (2004). A comparison of the binge eating scale, questionnaire for eating and weight patterns-revised, and eating disorder examination questionnaire with instructions with the eating disorder examination in the assessment of binge eating disorder and its symptoms. *International Journal of Eating Disorders*, 36(4), 434-444.

Chris Fraley, R. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, *6*(2), 123-151.

Cole-Detke, H., & Kobak, R. (1996). Attachment processes in eating disorder and depression. *Journal of Consulting and Clinical Psychology*, *64*(2), 282.

Cortes-Garcia, L., Takkouche, B., Seoane, G., & Senra, C. (2019). Mediators linking insecure attachment to eating symptoms: A systematic review and meta-analysis. *PloS one*, 14(3).

Crowther, J., Smith, K. E., Williams, A. G. (2018). Familiar Risk Factors and Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 338 – 351). John Wiley & Sons.

Dakanalis, A., Clerici, M., & Carrà, G. (2016). Narcissistic vulnerability and grandiosity as mediators between insecure attachment and future eating disordered behaviors: a prospective analysis of over 2,000 freshmen. *Journal of Clinical Psychology*, 72(3), 279-292.

Daniel, S. I. F., Lunn, S., & Poulsen, S. (2015). Client attachment and therapist feelings in the treatment of bulimia nervosa. *Psychotherapy*, *52*(2), 247.

Daniel, S. I. F., Poulsen, S., & Lunn, S. (2016). Client attachment in a randomized clinical trial of psychoanalytic and cognitive-behavioral psychotherapy for bulimia nervosa: Outcome moderation and change. *Psychotherapy*, *53*(2), 174.

DeWall, C. N., Masten, C. L., Powell, C., Combs, D., Schurtz, D. R., & Eisenberger, N. I. (2012). Do neural responses to rejection depend on attachment style? An fMRI study. *Social Cognitive and Affective Neuroscience*, 7(2), 184-192.

Duncan, L., Yilmaz, Z., Walters, R., Goldstein, J., Anttila, V., Bulik-Sullivan, B., & Ripke, S. (2017). Genome-wide association study reveals first locus for anorexia nervosa and metabolic correlations. *The American Journal of Psychiatry*, 174(9), 850.

Dykas, M. J., Woodhouse, S. S., Jones, J. D., & Cassidy, J. (2014). Attachment-related biases in adolescents' memory. *Child Development*, 85(6), 2185-2201.

Faber, A., Dube, L., & Knaeuper, B. (2018). Attachment and eating: A meta-analytic review of the relevance of attachment for unhealthy and healthy eating behaviors in the general population. *Appetite*, 123, 410-438.

Field, A. P. (2018). *Discovering statistics using IBM SPSS statistics (5th ed.)*. SAGE Publications.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, 78(2), 350.

Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000–2018 period: a systematic literature review. *The American Journal of Clinical Nutrition*, 109(5), 1402-1413.

Gordon, K. H., Holm-Denoma, M. J., Douglas, V.J., Crosby, R., and Wonderlich, S.A. (2018). In Agras, W. S., & Robinson, A. (Eds). *The Oxford Handbook of Eating Disorders* (Second ed.). (pp. 10 – 21). New York, NY: Oxford University Press.

Gormally, J., Black, S., Daston, S., & Rardin, D. (1982). The assessment of binge eating severity among obese persons. *Addictive Behaviors*, 7(1), 47-55.

Graham, J. M., & Unterschute, M. S. (2015). A reliability generalization meta-analysis of self-report measures of adult attachment. Journal of Personality Assessment, 97(1), 31-41.

Gratz, K. L., Kiel, E. J., Latzman, R. D., Moore, S. A., Elkin, T. D., Megason, G. C., & Tull, M. T. (2015). Complex interrelations of trait vulnerabilities in mothers and their infants. *Infancy*, 20(3), 306-338.

Illing, V., Tasca, G. A., Balfour, L., & Bissada, H. (2010). Attachment insecurity predicts eating disorder symptoms and treatment outcomes in a clinical sample of women. *The Journal of Nervous and Mental Disease*, 198(9), 653-659.

Ivarsson, T., Granqvist, P., Gillberg, C., & Broberg, A. G. (2010). Attachment states of mind in adolescents with obsessive compulsive disorder and/or depressive disorders: A controlled study. *European Child and Adolescent Psychiatry*, 19, 845–853.

Kazarian, S. S., & Martin, R. A. (2004). Humour styles, personality, and well-being among Lebanese university students. *European Journal of Personality*, 18(3), 209-219.

Kearney-Cooke, A., Tieger, D. (2015). Body Image Disturbance and the Development of Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 283 – 296). John Wiley & Sons.

Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling*. Guilford publications.

Han, S., & Kahn, J. H. (2017). Attachment, emotion regulation difficulties, and disordered eating among college women and men. *The Counseling Psychologist*, *45*(8), 1066-1090.

Han, S., & Pistole, M. C. (2014). College student binge eating: Insecure attachment and emotion regulation. *Journal of College Student Development*, 55(1), 16-29.

Haynos, A. F., Roberto, C. A., & Attia, E. (2015). Examining the associations between emotion regulation difficulties, anxiety, and eating disorder severity among inpatients with anorexia nervosa. *Comprehensive Psychiatry*, *60*, 93-98.

Haynos, A. F., Wang, S. B., & Fruzzetti, A. E. (2018). Restrictive eating is associated with emotion regulation difficulties in a non-clinical sample. *Eating Disorders*, *26*(1), 5-12.

Holmberg, D., Lomore, C. D., Takacs, T. A., & Price, E. L. (2011). Adult attachment styles and stressor severity as moderators of the coping sequence. *Personal Relationships*, 18(3), 502-517.

Hsiao, F. H., Jow, G. M., Kuo, W. H., Huang, C. S., Lai, Y. M., Liu, Y. F., & Chang, K. J. (2014). The partner's insecure attachment, depression, and psychological well-being as predictors of diurnal cortisol patterns for breast cancer survivors and their spouses. *Stress*, 17(2), 169-175.

Treasure, J., & Nazar, B. P. (2016). Interventions for the carers of patients with eating disorders. *Current Psychiatry Reports*, 18(2), 16.

Larsen, J. T., Munk-Olsen, T., Bulik, C. M., Thornton, L. M., Koch, S. V., Mortensen, P. B., & Petersen, L. (2017). Early childhood adversities and risk of eating disorders in women: A Danish register-based cohort study. *International Journal of Eating Disorders*, 50(12), 1404-1412.

Lavender, J. M., Wonderlich, S. A., Peterson, C. B., Crosby, R. D., Engel, S. G., Mitchell, J. E., ... & Berg, K. C. (2014). Dimensions of emotion dysregulation in bulimia nervosa. *European Eating Disorders Review*, 22(3), 212-216.

Leahy, R. L. (2008). The therapeutic relationship in cognitive-behavioral therapy. *Behavioural and Cognitive Psychotherapy*, 36(6), 769.

Luo, X., Donnellan, M. B., Burt, S. A., & Klump, K. L. (2016). The dimensional nature of eating pathology: Evidence from a direct comparison of categorical, dimensional, and hybrid models. *Journal of Abnormal Psychology*, *125*(5), 715.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. *Attachment in the preschool years: Theory, Research, and Intervention*, *1*, 121-160.

Madden, S. (2015). Biopsychiatric Theories of Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 209 – 221). John Wiley & Sons.

Mallorquí-Bagué, N., Vintró-Alcaraz, C., Sánchez, I., Riesco, N., Agüera, Z., Granero, R., ... & Fernández-Aranda, F. (2018). Emotion regulation as a transdiagnostic feature among eating disorders: Cross-sectional and longitudinal approach. *European Eating Disorders Review*, 26(1), 53-61.

McWilliams, L. A., & Bailey, S. J. (2010). Associations between adult attachment ratings and health conditions: Evidence from the National Comorbidity Survey Replication. *Health Psychology*, 29(4), 446.

Mehler, P., (2018). Medical Complications of Anorexia Nervosa and Bulimia Nervosa. In Agras, W. S., & Robinson, A. (Eds). The Oxford Handbook of Eating Disorders (Second ed.). (pp. 223 – 227). New York, NY: Oxford University Press.

Mesman, J., van IJzendoorn, M. H., & Sagi-Schwartz, A. (2016). Cross-Cultural Patterns of Attachment: Universal and Contextual Dimensions. In Cassidy, J., & Shaver, P. R. (Eds). *Handbook of Attachment: Theory, Research, and Clinical Applications* (Third ed.). (pp. 852 – 877). New York, NY: The Guilford Press.

Mikulincer, M., & Shaver, P. R. (2016). *Attachment in Adulthood: Structure, dynamics, and change* (Second, paperback ed.). New York: Guilford Press.

Mikulincer, M., & Shaver, P. R. (2019). Attachment orientations and emotion regulation. *Current Opinion in Psychology*, *25*, 6-10.

Mikulincer, M., Shaver, P. R., Sapir-Lavid, Y., & Avihou-Kanza, N. (2009). What's inside the minds of securely and insecurely attached people? The secure-base script and its associations with attachment-style dimensions. *Journal of Personality and Social Psychology*, 97, 615–633.

Murphy, R., Straebler, S., Cooper, Z., & Fairburn, C. G. (2010). Cognitive behavioral therapy for eating disorders. *The Psychiatric Clinics of North America*, 33(3), 611.

Myers, T. (2015). Feminist Theories of Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 238 – 252). John Wiley & Sons.

Neumark-Sztainer, D., Wall, M., Guo, J., Story, M., Haines, J., & Eisenberg, M. (2006). Obesity, disordered eating, and eating disorders in a longitudinal study of adolescents: how do dieters fare 5 years later? *Journal of the American Dietetic Association*, 106(4), 559-568.

Orgeta, V. (2009). Specificity of age differences in emotion regulation. *Aging and Mental Health*, 13(6), 818-826.

Orzolek-Kronner, C. (2002). The effect of attachment theory in the development of eating disorders: Can symptoms be proximity-seeking?. *Child and Adolescent Social Work Journal*, *19*(6), 421-435.

Pascuzzo, K., Cyr, C., & Moss, E. (2013). Longitudinal association between adolescent attachment, adult romantic attachment, and emotion regulation strategies. *Attachment & Human Development*, 15(1), 83-103.

Patton, G. C., Coffey, C., Carlin, J. B., Sanci, L., & Sawyer, S. (2008). Prognosis of adolescent partial syndromes of eating disorder. *The British Journal of Psychiatry*, 192(4), 294-299.

Pinquart, M., Feußner, C., & Ahnert, L. (2013). Meta-analytic evidence for stability in attachments from infancy to early adulthood. *Attachment & Human Development*, 15(2), 189-218.

Prefit, A. B., Cândea, D. M., & Szentagotai-Tătar, A. (2019). Emotion regulation across eating pathology: A meta-analysis. *Appetite*, 104438.

Racine, S. E., & Wildes, J. E. (2013). Emotion dysregulation and symptoms of anorexia nervosa: The unique roles of lack of emotional awareness and impulse control difficulties when upset. *International Journal of Eating Disorders*, 46(7), 713-720.

Rohde, P., Stice, E., Shaw, H., Gau, J. M., & Ohls, O. C. (2017). Age effects in eating disorder baseline risk factors and prevention intervention effects. *International Journal of Eating Disorders*, 50(11), 1273-1280.

Rothbaum, F., Weisz, J., Pott, M., Miyake, K., & Morelli, G. (2000). Attachment and culture: Security in the United States and Japan. *American Psychologist*, 55(10), 1093.

Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, *5*(6), 359-371.

Saade, S., Hallit, S., Haddad, C., Hallit, R., Akel, M., Honein, K., ... & Obeid, S. (2019). Factors associated with restrained eating and validation of the Arabic version of the restrained eating scale among an adult representative sample of the Lebanese population: a cross-sectional study. *Journal of Eating Disorders*, 7(1), 24.

Schiffrin, H. H. (2014). Positive psychology and attachment: Positive affect as a mediator of developmental outcomes. *Journal of Child and Family Studies*, 23(6), 1062-1072.

Schmitt, D. P., Alcalay, L., Allensworth, M., Allik, J., Ault, L., Austers, I., ... & Braeckman, J. (2004). Patterns and universals of adult romantic attachment across 62 cultural regions: Are models of self and of other pancultural constructs? *Journal of Cross-Cultural Psychology*, 35(4), 367-402.

Shakory, S., Van Exan, J., Mills, J. S., Sockalingam, S., Keating, L., & Taube-Schiff, M. (2015). Binge eating in bariatric surgery candidates: The role of insecure attachment and emotion regulation. *Appetite*, 91, 69-75.

Shelton, K. H., & Harold, G. T. (2008). Interparental conflict, negative parenting, and children's adjustment: Bridging links between parents' depression and children's psychological distress. *Journal of Family Psychology*, 22(5), 712.

Sibley, C. G., Fischer, R., & Liu, J. H. (2005). Reliability and validity of the revised experiences in close relationships (ECR-R) self-report measure of adult romantic attachment. *Personality and Social Psychology Bulletin*, 31(11), 1524-1536.

Sibley, C., & Liu, J. (2004). Short-term temporal stability and factor structure of the revised experiences in close relationships (ECR-R) measure of adult attachment. *Personality and Individual Differences*, 36, 969-975.

Slade, A. (2016). Attachment and Adult Psychotherapy: Theory, Research, and Practice. In Cassidy, J., & Shaver, P. R. (Eds). *Handbook of attachment: Theory, research, and clinical applications* (Third ed.). (pp. 759 – 779). New York, NY: The Guilford Press.

Smolak, L., & Levine, M. P. (2015). *The Wiley Handbook of Eating Disorders.* John Wiley & Sons.

Stice, E., Marti, C. N., Shaw, H., & Jaconis, M. (2009). An 8-year longitudinal study of the natural history of threshold, subthreshold, and partial eating disorders from a community sample of adolescents. *Journal of Abnormal Psychology*, *118*(3), 587.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. Boston: Pearson Education.

Tasca, G. A. (2019). Attachment and eating disorders: a research update. *Current Opinion in Psychology*, *25*, 59-64.

Tasca, G. A., & Balfour, L. (2014). Attachment and eating disorders: A review of current research. *International Journal of Eating Disorders*, 47(7), 710-717.

Tasca, G. A., Szadkowski, L., Illing, V., Trinneer, A., Grenon, R., Demidenko, N., ... & Bissada, H. (2009). Adult attachment, depression, and eating disorder symptoms: The mediating role of affect regulation strategies. *Personality and individual differences*, *47*(6), 662-667.

Troxel, W. M., Cyranowski, J. M., Hall, M., Frank, E., & Buysse, D. J. (2007). Attachment anxiety, relationship context, and sleep in women with recurrent major depression. *Psychosomatic Medicine*, *69*(7), 692.

Van Durme, K., Braet, C., & Goossens, L. (2015). Insecure attachment and eating pathology in early adolescence: Role of emotion regulation. *The Journal of Early Adolescence*, 35(1), 54-78.

Van Durme, K., Goossens, L., Bosmans, G., & Braet, C. (2018). The role of attachment and maladaptive emotion regulation strategies in the development of bulimic symptoms in adolescents. *Journal of Abnormal Child Psychology*, 46(4), 881-893.

Van Ijzendoorn, M. H., & Kroonenberg, P. M. (1988). Cross-cultural patterns of attachment: A meta-analysis of the strange situation. *Child Development*, 147-156.

Van Strien, T., Frijters, J. E., Van Staveren, W. A., Defares, P. B., & Deurenberg, P. (1986). The predictive validity of the Dutch restrained eating scale. *International Journal of Eating Disorders*, 5(4), 747-755.

Vilchinsky, N., Dekel, R., Revenson, T. A., Liberman, G., & Mosseri, M. (2015). Caregivers' burden and depressive symptoms: The moderational role of attachment orientations. *Health Psychology*, 34(3), 262.

Vitousek, K. M., Brown, K. E. (2015). Cognitive-Behavioral Theory of Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 222 – 237). John Wiley & Sons.

Watson, H. J., Yilmaz, Z., Thornton, L. M., Hübel, C., Coleman, J. R., Gaspar, H. A., ... & Medland, S. E. (2019). Genome-wide association study identifies eight risk loci and implicates metabo-psychiatric origins for anorexia nervosa. *Nature Genetics*, 51(8), 1207-1214.

Wilkinson, L. L., Rowe, A. C., Bishop, R. J., & Brunstrom, J. M. (2010). Attachment anxiety, disinhibited eating, and body mass index in adulthood. *International Journal of Obesity*, *34*(9), 1442-1445.

Wilkinson, L. L., Rowe, A. C., Robinson, E., & Hardman, C. A. (2018). Explaining the relationship between attachment anxiety, eating behaviour and BMI. *Appetite*, *127*, 214-222.

Winham, K. M., Engstrom, M., Golder, S., Renn, T., Higgins, G. E., & Logan, T. K. (2015). Childhood victimization, attachment, psychological distress, and substance use among women on probation and parole. *American Journal of Orthopsychiatry*, 85(2), 145.

Zachrisson, H. D., & Skårderud, F. (2010). Feelings of insecurity: Review of attachment and eating disorders. European Eating Disorders Review: *The Professional Journal of the Eating Disorders Association*, 18(2), 97-106.

Zech, E., De Ree, F., Berenschot, F., & Stroebe, M. (2006). Depressive affect among health care seekers: How it is related to attachment style, emotional disclosure, and health complaints. Psychology, Health & Medicine, 11(1), 7-19.

Zeidan, R. K., Haddad, C., Hallit, R., Akel, M., Honein, K., Akiki, M., ... & Obeid, S. (2019). Validation of the Arabic version of the binge eating scale and correlates of binge eating disorder among a sample of the Lebanese population. *Journal of Eating Disorders*, 7(1), 40.

Zerbe, K. (2015). Psychodynamic Theory of Eating Disorders. In Smolak, L., & Levine, M. P. (Eds). *The Wiley Handbook of Eating Disorders.* (pp. 252 – 268). John Wiley & Sons.

APPENDIX A
Participant Information Letter

Title of Research Study: **Attachment Insecurity and Eating Behavior: The Mediating Role of Emotion Regulation.**

Principal Investigator: **Myriam Claire Baker**, Faculty of Social and Behavioral Sciences, Haigazian University, baker.myriamclaire@gmail.com.

Faculty Advisor: **Ms. Lucy Tavitian**, Faculty of Social and Behavioral Sciences, Haigazian University, Telefax: +9611353010/1/2 (ext. 309).

Dear Participant,

My name is Myriam Claire Baker and I'm a master's student in Clinical Psychology. I am conducting a study on the relationship between insecure attachment, emotion regulation, and eating behavior.

This is a consent form for your participation in a research study approved by the ethics committee at Haigazian University. Before you decide to participate, please consider the information below. **Participation in this study is entirely voluntary.**

Purpose of the Research Study
You are invited to participate in a study that will look at the relationship between insecure attachment and eating behavior and the possible mediating role of emotion regulation.

The study aims to illuminate whether emotion regulation is a mechanism through which insecure attachment is linked to eating behavior. Study findings might aid in the development of more targeted interventions.

This study will contribute towards the partial fulfillment of my master's degree requirements.

What will I be asked to do?
If you choose to take part in this study, you will be asked to fill in a questionnaire. The questionnaire consists of a list of items that you will have to rate and a demographic form. We expect this process to take about 15 mins. You can withdraw for any reason and at any point during the survey.

What are my rights?
Participation in this study is entirely voluntary, anonymous, and confidential. No identifying information will be recorded nor stored at any point.

Data you provide along with data from all other participants will be stored in aggregate on a password-protected computer. The data will also be analyzed and results reported

in aggregate. Only the principal investigator and faculty advisor of this study will have access to the compiled data, which will be stored for a period of 10 years post data collection. During this time, you have the right to access your data.

What are the risks and benefits of participation?
Participation in this study does not involve any physical or emotional risk to you beyond the risks of daily life. Answering questions about intimate relationships, emotions, and eating behavior may cause you to feel uncomfortable. We predict that this discomfort will subside within a short while.

In the unlikely case that discomfort due to answering questions does not quickly fade away, you will be referred to Embrace's Lifeline on 1564 for short-term support.

Participating in this study may not benefit you directly, but its findings may help us illuminate possible pathways to disordered eating behavior, a burgeoning topic that remains unexplored in the region.

Will I receive anything for participating in this study?
After completing the questionnaire, you may enter an **anonymized** raffle to win one of three Spinneys gift cards worth 100,000 L.B.P each. If you decide to enter the draw, you will be asked to create a unique anonymous code. After data collection is complete, the unique code will be announced on the study's Facebook page: www.facebook.com/AttachmentAndEatingBehavior. The codes are anonymous and are not linked to survey responses.

If you have any questions or concerns, you may contact the research team at the contact information provided above.

APPENDIX B
Consent Form

Please read through the following statements.

o I have read the information letter and I am aware that I am being asked consent to participate in a research study.

o I am aware that participation is voluntary and that I am free to withdraw at any point and for any reason.

o I understand that my participation entails filling out a questionnaire which is estimated to take between 15 and 20 minutes.

o I understand that all data will be anonymous and will be stored on the principal investigator's password-protected computer for up to 10 years after the end of the study. I am aware that I have the right to access my data at any time.

o I have read and fully understood the information letter and consent form provided.

o I, voluntarily, agree to take part in this research study.

By clicking Next, you are consenting to take part in this study.

APPENDIX C
بيان معلومات المشاركة

عنوان الدراسة: **أسلوب التعلق غير الآمن وعادات الأكل: تنظيم المشاعر كوسيط.**
الباحث الرئيسي: **ميريم كلير باقر**، كلية العلوم الاجتماعية والسلوكية، جامعة هايكازيانbaker.myriamclaire@gmail.com
مستشارة الكلية: **السيدة لوسي تافيتيان**، كلية العلوم الاجتماعية والسلوكية، جامعة هايكازيان، تلفاكس: (309) الرقم الداخلي (+9611353010/1/2) :

عزيزي/تي المشارك/ة،
ميريام كلير باقر وأنا طالبة ماجستير في علم النفس العيادي. أجري دراسة حول العلاقة بين أسلوب التعلق غير الآمن أدعى وتنظيم المشاعر وعادات الأكل.
هذا نموذج موافقة لمشاركتك/ي في دراسة بحثية تمت الموافقة عليها من قبل لجنة الأخلاقيات في جامعة هايكازيان. قبل أن تقرر/ي المشاركة، يرجى قراءة المعلومات الواردة أدناه. المشاركة في هذه الدراسة طوعية بالكامل.

ما الغرض من هذه الدراسة البحثية؟
أنت مدعو/ة للمشاركة في دراسة تبحث في العلاقة بين التعلق غير الآمن وسلوك الأكل والدور الوسيط المحتمل لتنظيم المشاعر.
تهدف الدراسة إلى إلقاء الضوء على ما إذا كان تنظيم المشاعر آلية يتم من خلالها ربط التعلق غير الآمن بعادات الأكل. قد تساعد نتائج الدراسة في تطوير المزيد من التدخلات العلاجية الأكثر دقة.
تساهم هذه الدراسة في الإيفاء الجزئي لمتطلبات درجة الماجستير.

ماذا سيُطلب مني أن أفعل؟
إذا اخترت/ي المشاركة في هذه الدراسة، فسيُطلب منك/ي ملء استبيان. يتكون الاستبيان من قائمة من العبارات التي يجب عليك/ي الإجابة عليها وأسئلة ديموغرافية. نتوقع أن تستغرق هذه العملية حوالي 15 دقيقة. يمكنك الانسحاب لأي سبب وفي أي وقت أثناء المشاركة.

ما هي حقوقي؟
المشاركة في هذه الدراسة طوعية بالكامل وستبقى هويتك مجهولة واجاباتك سرية. لن يتم تسجيل أي معلومات تعريفية أو تخزينها في أي وقت.
سيتم تخزين بياناتك بيانات جميع المشاركين الآخرين سويةً على جهاز حاسوب محمي بكلمة مرور. سيتم أيضاً تحليل البيانات والإبلاغ عن النتائج بشكل إجمالي. ستتمكن الباحثات المذكورات أعلاه فقط من الوصول إلى البيانات المجمعة، والتي سيتم تخزينها لمدة 10 سنوات بعد جمع البيانات. خلال هذا الوقت، لديك الحق في الوصول إلى بياناتك.

ما هي أخطار وفوائد المشاركة؟
لا تنطوي المشاركة في هذه الدراسة على أي أخطار جسدية أو عاطفية عليك تفوق مخاطر الحياة اليومية. قد تجعلك الإجابة عن أسئلة حول العلاقات الحميمة والعواطف وعادات الأكل تشعر/ي بعدم الارتياح. نتوقع أن يزول هذا الانزعاج في غضون فترة قصيرة.
في الحالة غير المحتملة التي لا يتلاشى فيها الشعور بعدم الراحة بسبب الإجابة عن الأسئلة بسرعة، سوف تتم إحالتك إلى الخط الساخن لإمبرايس على 1564 للحصول على دعم نفسي قصير المدى.
قد لا تفيدك المشاركة في هذه الدراسة بشكل مباشر، ولكن نتائجها قد تساعدنا في إلقاء الضوء على المسارات المحتملة لسلوك الأكل المضطرب، وهو موضوع متنامي لم يتم إجراء البحوث عليه في المنطقة.

هل سأتلقى أي شيء مقابل المشاركة في هذه الدراسة؟
بعد إكمال الاستبيان، يمكنك إدخال سحب مجهول (يانصيب) للفوز بواحدة من ثلاث بطاقات هدايا سبينيس تبلغ قيمتها 100,000 ليرة لبنانية لكل منها. إذا قررت الدخول في السحب، فسيُطلب منك إنشاء رمز مجهول فريد. بعد اكتمال

جمع البيانات، سيتم الإعلان عن الرمز الفريد على صفحة الدراسة على فيسبوك. الرموز مجهولة المصدر وليست بردود الاستطلاع مرتبطة
www.facebook.com/AttachmentAndEatingBehavior

إذا كانت لديك أي أسئلة أو مخاوف، فيمكنك الاتصال بالباحثات على معلومات الاتصال الواردة أعلاه.

APPENDIX D
نموذج الموافقة

يرجى قراءة البيانات التالية

- لقد قرأت بيان المعلومات وأدرك أنه طُلب مني الموافقة على المشاركة في دراسة بحثية.
- أدرك أن المشاركة طوعية وأنني حر/ة في الانسحاب في أي وقت ولأي سبب.
- أفهم أن مشاركتي تستلزم ملء استبيان يقدر أن يستغرق ما بين 15 و20 دقيقة.
- أفهم أن جميع البيانات ستكون مجهولة المصدر وسيتم تخزينها على الحاسوب المحمي بكلمة مرور للباحثه الرئيسية لمدة تصل إلى 10 سنوات بعد انتهاء الدراسة. أدرك أن لدي الحق في الوصول إلى بياناتي في أي وقت.
- لقد قرأت وفهمت تمامًا خطاب المعلومات ونموذج الموافقة المقدمين.
- أوافق طواعية على المشاركة في هذه الدراسة البحثية.

بالنقر على التالي، فإنك توافق/ي على المشاركة في هذه الدراسة.

APPENDIX E
Experiences in Close Relationships Scale – Revised

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you <u>generally</u> experience relationships, not just in what is happening in a current relationship. Respond to each statement by selecting a number to indicate how much you agree or disagree with the statement.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

1	I am afraid that I will lose my partner's love
2	I prefer not to show my partner how I feel deep dow
3	I often worry that my partner will not want to stay with me
4	I feel comfortable sharing my private thoughts and feelings with my partner
5	I often worry that my partner does not really love me
6	I find it difficult to allow my self to depend on my partner
7	I worry that my partner will not care about me as much as I care about him/her
8	I am very comfortable being close to my partner
9	I often wish that my partner's feelings for me were as strong as my feelings for him/her
10	I don't feel comfortable opening up to my partner
11	I worry a lot about my relationships
12	I prefer not to be too close to my partner
13	When my partner is out of sight, I worry that she/he might become interested in someone else
14	I get uncomfortable when my partner wants to be very close
15	When I show my feelings for my partner, I am afraid she/he will not feel the same about me
16	I find it relatively easy to get close to my partner
17	I rarely worry about my partner leaving me

18	**It’s not difficult for me to get close to my partner**
19	**My partner makes me doubt myself**
20	**I usually discuss my problems and concerns with my partner**
21	**I do not often worry about being abandoned**
22	**It helps me to turn to my partner in times of need**
23	**I find that my partner does not want me to get as close as I would like**
24	**I tell my partner just about everything**
25	**Sometimes my partner changes his/her feelings about me for no apparent reason**
26	**I talk things over with my partner**
27	**My desire to be very close sometimes scares my partner away**
28	**I am nervous when my partner gets too close to me**
29	**I am afraid that once my partner gets to know me, she/he will not like who I really am**
30	**I feel comfortable depending on my partner**
31	**It makes me mad that I don’t get the affection and support I need from my partner**
32	**I find it easy to depend on my partner**
33	**I worry that I won’t measure up to other people**
34	**It’s easy for me to be affectionate with my partner**
35	**My partner only seems to notice me when I am angry**
36	**My partner really understands me and my needs**

APPENDIX F
Experiences in Close Relationships Scale – Revised - ARABIC

تتعلق العبارات الواردة أدناه بمشاعرك في العلاقات الرومنسية. ما يهمنا هنا هو كيف تخوض تجربة العلاقات الرومنسية عامة وليس ما يحدث فقط في علاقة تختبرها الآن. أجب بناءً على مدى موافقتك أو عدم موافقتك على كل من العبارات باختيار الرقم المناسب.

	7	6	5	4	3	2	1
	أوافق بشدة	وافق الى حد ما	وافق الى حد بسيط	لا أوافق ولا أعارض	لا اوافق الى حد بسيط	لا اوافق الى حد ما	أعارض بشدة
1	أخشى فقدان حب شريكي						
2	أفضّل ألا أظهر لشريكي مشاعري الحقيقية						
3	أقلق مراراً ألا يرغب شريكي في البقاء معي						
4	أرتاح في مشاركة أفكاري ومشاعري الخاصة مع شريكي						
5	أقلق مراراً أن شريكي لا يحبّني حقّاً						
6	أجد صعوبة في السماح لنفسي الاعتماد على شريكي						
7	أقلق أن شريكي لا يهتم بأمري بقدر ما أهتم بأمره						
8	كوني قريب من شريكي يشعرني بالكثير من الراحة						
9	أتمنى مراراً لو كانت مشاعر شريكي اتجاهي قوية بقدر قوة مشاعري اتجاهه						
10	لا أشعر بالارتياح بمصارحة شريكي بمشاعري						
11	أقلق كثيرا بشأن علاقاتي						
12	أفضل ألا أتقرب كثيرا من شريكي						
13	عندما يكون شريكي بعيد عني، أخشى أن يبدي اهتمامه بشخص آخر						
14	أتضايق حينما يرغب شريكي في التقرب مني كثيراً						
15	عندما اعبر عن مشاعري لشريكي اخاف ألا يبادلني تلك المشاعر						
16	أجد من السهل عادةً التقرب من شريكي						
17	نادراً ما أخشى أن يتركني شريكي						
18	لا أجد صعوبة في التقرب من شريكي						
19	يجعلني شريكي أن أشك بنفسي						
20	عادة ما أناقش مشاكلي ومخاوفي مع شريكي						
21	قليلا ما أخشى أن يهجرني شريكي						
22	يساعدني اللجوء إلى شريكي عند الضيق						

23	اشعر ان شريكتي لا ترغب في التقرب مني بقدر ما اود
24	أخبر شريكتي عن كل شيء تقريباً
25	أحياناً يغيّر شريكي مشاعره اتجاهي بدون أي سبب واضح
26	أتناقش مع شريكي حول الأمور
27	رغبتي في التقرب الشديد من شريكي تخيفه وتدفعه عنّي أحيانا
28	أتوتر عندما يتقرب شريكي كثيرا مني
29	أخشى ألا يحبني شريكي عندما يتعرف علي عن كثب
30	ارتاح في الاعتماد على شريكي
31	أغضب عندما لا أحصل على الدعم والعطف الذين أحتاج إليهما من شريكي
32	من السهل على أن أعتمد على شريكي
33	أخشى أن أكون دون مستوى الآخرين
34	من السهل على إظهار حناني لشريكي
35	يبدو أن شريكي لا يلاحظني إلا عندما أغضب
36	يفهمني شريكي ويفهم حاجاتي حقاً

APPENDIX G
Difficulties in Emotion Regulation Scale

	Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.				
	1	2	3	4	5
	Almost never	Sometimes	About half the time	Most of the time	Almost always
	0-10%	11-35%	36-56%	66-90%	91-100%
1	I am clear about my feelings.				
2	I pay attention to how I feel.				
3	I experience my emotions as overwhelming and out of control.				
4	I have no idea how I am feeling.				
5	I have difficulty making sense out of my feelings.				
6	I am attentive to my feelings.				
7	I know exactly how I am feeling.				
8	I care about what I am feeling.				
9	I am confused about how I feel.				
10	When I'm upset, I acknowledge my emotions.				
11	When I'm upset, I become angry with myself for feeling that way.				
12	When I'm upset, I become embarrassed for feeling that way.				
13	When I'm upset, I have difficulty getting work done.				
14	When I'm upset, I become out of control.				
15	When I'm upset, I believe that I will remain that way for a long time.				
16	When I'm upset, I believe that I will end up feeling very depressed.				
17	When I'm upset, I believe that my feelings are valid and important.				
18	When I'm upset, I have difficulty focusing on other things.				
19	When I'm upset, I feel out of control.				
20	When I'm upset, I can still get things done.				
21	When I'm upset, I feel ashamed at myself for feeling that way.				
22	When I'm upset, I know that I can find a way to eventually feel better.				
23	When I'm upset, I feel like I am weak.				
24	When I'm upset, I feel like I can remain in control of my behaviors.				
25	When I'm upset, I feel guilty for feeling that way.				

26	When I’m upset, I have difficulty concentrating.
27	When I’m upset, I have difficulty controlling my behaviors.
28	When I’m upset, I believe there is nothing I can do to make myself feel better.
29	When I’m upset, I become irritated with myself for feeling that way.
30	When I’m upset, I start to feel very bad about myself.
31	When I’m upset, I believe that wallowing in it is all I can do.
32	When I’m upset, I lose control over my behavior.
33	When I’m upset, I have difficulty thinking about anything else.
34	When I’m upset I take time to figure out what I’m really feeling.
35	When I’m upset, it takes me a long time to feel better.
36	When I’m upset, my emotions feel overwhelming.

APPENDIX H
مقياس صعوبة تنظيم المشاعر

	يرجى توضيح عدد المرات التي تنطبق عليك العبارات التالية عن طريق اختيار الرقم المناسب من المقياس أدناه.				
	5	4	3	2	1
	كل الوقت تقريباً	معظم الوقت	نصف الوقت تقريباً	أحياناً	تقريباً أبداً
	91-100%	66-90%	36-56%	11-35%	0-10%
	ITEMS				
1	مشاعري واضحة بالنسبة لي				
2	انتبه لما أشعر به				
3	أعيش مشاعري وكأنها غامرة وخارجة عن السيطرة				
4	ليس لدي أي فكرة عما أشعر به				
5	أجد صعوبة في فهم مشاعري				
6	أنا متنبّه لمشاعري				
7	أغرف بالضبط كيف أشعر				
8	أعير مشاعري الاهتمام				
9	ارتبك بمشاعري				
10	أقر بمشاعري عندما أشعر بالاستياء				
11	عننما أشعر بالاستياء أغضب من نفسي بسبب ذلك				
12	عندما أشعر بالاستياء أشعر بالإحراج من ذلك				
13	أجد صعوبة في إنجاز العمل عندما أشعر بالاستياء				
14	عندما أشعر بالاستياء، أفقد السيطرة على نفسي				
15	عندما أشعر بالاستياء أعتقد أني سأبقى هكذا لفترة طويلة				
16	عندما أشعر بالاستياء أعتقد أن سينتهي بي المطاف مكتئباً				
17	عندما أشعر بالاستياء أعتقد أن مشاعري محقة ومهمة				
18	أحد صعوبة في التركيز على أمور أخرى عندما أشعر بالاستياء				
19	عندما أشعر بالاستياء أشعر أيضاً بفقدان السيطرة				
20	لا يزال بإمكاني إنجاز الأمور عندا أشعر بالاستياء				
21	عندما أشعر بالاستياء، أخجل من نفسي لذلك				
22	عندما أشعر بالاستياء أعلم انه بإمكاني إيجاد طريقة لتخفيف ذلك (والشعور بتحسن)				
23	أشعر بالضعف نتيجة شعوري بالاستياء				
24	عندما أشعر بالاستياء يبقى بإمكاني التحكم بتصرفاتي				
25	أشعر بالذنب إزاء شعوري بالاستياء				
26	عندما أشعر بالاستياء، أجد صعوبة في التركيز				
27	عندما أشعر بالاستياء أجد صعوبة في التحكم بتصرفاتي				
28	عندما أشعر بالاستياء أعتقد ان ليس بإمكاني تخفيف ذلك (والشعور بالتحسن)				
29	عندما أشعر بالاستياء، أغتاظ من نفسي لشعوري بذلك				
30	عندما أشعر بالاستياء، اشعر بالسوء تجاه نفسي				
31	عندما أشعر بالاستياء أعتقد أن لا يمكنني سوى التخبط في هذا الشعور				
32	عندما أشعر بالاستياء، أفقد السيطرة على تصرفاتي				

33	عندما أشعر بالاستياء، أجد صعوبة في التفكير بأي شيء آخر
34	عندما أشعر بالاستياء، أستغرق بعض الوقت لمعرفة مشاعري
35	عندما أشعر بالاستياء، استغرق الكثير من الوقت لتتحسن مشاعري
36	عندما أشعر بالاستياء، تصبح مشاعري غامرة

APPENDIX I
The Eating Pathology Symptoms Inventory (EPSI)

	Below is a list of experiences that people sometimes have. Read each item to determine how well it describes your experiences. Then select the option that best describes **how frequently** each statement applies to you **in general.**				
	Use this scale when answering:				
	0	1	2	3	4
	Never	**Rarely**	**Sometimes**	**Often**	**Very Often**
#	**ITEMS**				
3	I eat when I am not hungry				
4	People tell me that I do not eat very much				
6	People would be surprised if they knew how little I ate				
9	I snack throughout the evening without realizing it				
10	I get full more easily than most people				
19	I eat until I am uncomfortably full				
28	I do not notice how much I eat until I finish eating				
33	I get full after eating what most people would consider a small amount of food				
36	People encourage me to eat more				
37	If someone offers me food, I feel that I can not resist eating it				
39	I stuff myself with food to the point of feeling sick				
43	I skip two meals in a row				
44	I eat as if I am on auto-pilot				
45	I eat a very large amount of food in a short period of time (e.g., within 2 hours)				

APPENDIX J
The Eating Pathology Symptoms Inventory (EPSI) - ARABIC

ستجد في الأسفل مجموعة من التجارب التي يمر بها الناس أحياناً. قم بقراءة كل جملة وحدد مدى انطباقها على تجاربك، ثم اختر الجواب الذي يصف بأدق صورة كم مرة تنطبق عليك كل عبارة خلال الأسابيع الأربعة الأخيرة بما فيها اليوم.				
استخدم هذا المقياس عند الإجابة				
4	**3**	**2**	**1**	**0**
كثير ما	غالباً	أحياناً	نادراً	أبداً
ITEMS				
آكل دون أن أكون جائعاً				
يقول لي الناس أني لا آكل كثيراً				
يتفاجئ الناس بالكمية القليلة التي آكلها				
تناولت وجبات صغيرة طوال المساء من دون وعي				
أشبع بسهولة مقارنةً مع معظم الناس				
آكل حتى التخمة				
لا ألحظ كم آكل إلا بعد انتهائي من الأكل				
أشبع بعد تناولي كمية يعتبرها معظم الناس صغيرة				
يشجعني الناس على تناول المزيد من الطعام				
إذا عُرض علي الطعام أجد صعوبة في مقاومة تناوله				
أكلت بشراهة لدرجة الشعور بالغثيان				
أفوّت تناول وجبتين على التوالي				
آكل وكأني فاقد التحكم				
أكلت كمية كبيرة من الطعام في فترة زمنية قصيرة (ضمن ساعتين مثلاً)				