7-13-2017

The Influence of Childhood Polyvictimization on Disordered Eating Symptoms in Emerging Adulthood

Amanda Hasselle

THE INFLUENCE OF CHILDHOOD POLYVICTIMIZATION ON DISORDERED EATING SYMPTOMS IN EMERGING ADULTHOOD

by

Amanda J. Hasselle

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of Master of Science

Major: Psychology

The University of Memphis

August 2017

Abstract

Children who endure multiple victimization experiences, or "polyvictims," are vulnerable to maladaptive outcomes. Yet, little research exists evaluating the relationship between childhood polyvictimization and disordered eating symptoms (DES) in emerging adulthood. The current study examines the relationship between childhood polyvictimization and DES in emerging adults. Data were collected from 288 participants across two universities using online self-report measures. Hierarchical regression analyses revealed a significant positive relationship between number of childhood victimization experiences and DES in young adulthood (ß = .14; p = .016). Female participants were more likely to demonstrate DES (ß = .14; p = .008). Further, high levels of emotion dysregulation during young adulthood were associated with more DES (ß = .33; p < .001). Findings suggest that exposure to victimization experiences in childhood increases individuals' risk for exhibiting DES in young adulthood. Results also highlight the strong relationship between individuals' emotion regulation abilities and the presence of DES. Findings align with the theory that children who have endured high levels of victimization often feel overwhelmed by their emotions and circumstances, demonstrate emotion regulation difficulties, and may rely on maladaptive coping strategies, including disordered eating, to manage adversities. Study results emphasize the importance of considering victimization history when working with emerging adults displaying disordered eating symptomatology.

Keywords: violence exposure, disordered eating, emotion regulation, young adulthood, victimization

Table of Contents

Chapter		Page
1.	Introduction	
	Review of the Literature	1
	Disordered Eating during Emerging Adulthood	2
	Disordered Eating and Childhood Polyvictimization	3
	Mental Health Variables Associated with Disordered Eating	5
	Depression	5
	Posttraumatic Stress Disorder (PTSD) Symptoms	6
	Emotion Regulation Difficulties	6
	Current Study	7
2.	Methods	
	Participants	8
	Procedures	8
	Measures	9
	Data Analytic Plan	11
3.	Results	12
4.	Discussion	
	Discussion of Findings	14
	Clinical Implications	17
	Limitations	18
	Future Directions	19
	Conclusions	20
References		21
Appendix		
A.	Tables and Figures	30

The Influence of Childhood Polyvictimization on Disordered Eating Symptoms in Emerging Adulthood

Childhood victimization can encompass a wide range of direct and indirect experiences, including exposure to violence, child abuse, maltreatment, and bullying (Finkelhor, 2011). These forms of victimization are risk factors for a range of problematic mental health consequences among emerging adults, including disordered eating symptoms (DES) (Brown et al., 2014; Briggs-Gowan et al., 2010; Copeland, Keeler, Angold, & Costello, 2007; Dvir, Ford, Hill, & Frazier, 2014; Lejonclou, Nilsson, & Holmqvist, 2014;). DES include behaviors (e.g., binging, purging) and attitudes (e.g., belief that one is fat when others believe they are thin, preoccupation with food) consistent with the DSM-5 criteria for eating disorders (American Psychiatric Association, 2013). DES exist along a continuum: some individuals are asymptomatic, others have subclinical levels of symptomatology, and a much smaller portion of the population meet clinical criteria for an eating disorder (American Dietetic Association, 2006; American Psychiatric Assocation, 2013). Unhealthy eating behaviors and attitudes, from dieting to sporadic binging or purging to body dissatisfaction, are more prevalent than clinically significant eating disorders, and these subclinical DES may contribute to physical and psychological problems, including increased risk for eventually developing an eating disorder (American Dietetic Association, 2006; Mintz & Betz, 1988; Shriver, Wollenberg, & Gates, 2016). Thus, it is critically important to understand not only factors that contribute to full eating disorder diagnoses, but also variables associated with subclinical symptomatology.

Previous work has revealed both direct and indirect relationships between various forms of childhood adversity and DES among emerging adults (Burns, Fischer, Jackson, & Harding, 2012; Hund & Espelage, 2005; Kent & Waller, 2000; Miskinyte, Perminas, & Sinkariova, 2006;

Smolak & Murnen, 2002), while other studies have not found significant relationships between particular forms of adversity and disordered eating (Burns et al., 2012; Fischer, Stojek, & Hartzell, 2010; Kent, Waller, & Dagnan, 1999; Miskinyte, Perminas, & Sinkariova, 2006; Smolak & Murnen, 2002). All of these studies have largely focused on the effects of specific types of childhood victimization (e.g., sexual abuse, physical abuse) on DES, but have failed to consider how cumulative childhood victimization experiences (i.e., "polyvictimization") may affect disordered eating attitudes and behaviors. Polyvictimization refers to experiencing multiple types of violence (e.g., physical abuse and bullying) rather than multiple victimizations of a single type (e.g., multiple instances of bullying; Hamby & Grych, 2013), thus it assesses breadth rather than depth of adversity. Current research indicates that the consideration of polyvictimization is critical. In actuality, youth are more likely to experience multiple forms of victimization rather than any one type in isolation (Lejonclou et al., 2014). Further, exposure to multiple instances of victimization appears to have a compounding effect, as polyvictimization has been associated with increased risk for negative consequences, beyond the effects of exposure to a single traumatic event (Finkelhor, Omrod, & Turner, 2007). The current study aims to address gaps in existing literature by examining the relationship between childhood polyvictimization and emerging adults' current DES, controlling for demographic and mental health variables.

Disordered Eating during Emerging Adulthood

DES may be especially relevant to examine in emerging adulthood as these symptoms are highly prevalent during this developmental stage, which typically encompasses individuals aged 18-24 (Hudson, Hiripi, Pope, & Kessler, 2007; White, Reynolds-Malear, & Cordero, 2011). Anorexia commonly begins during adolescence or young adulthood and is often associated with

stressful events, like leaving home for college (American Psychological Association, 2013). Similarly, bulimia commonly begins in adolescence or young adulthood, with peak prevalence rates observed among this population (American Psychological Association, 2013). While less is known about the development of binge-eating, it is common among adolescent and college-age samples and typically begins in this developmental period as well (American Psychological Association, 2013). In a nationally representative, in-person survey of United States households, participants indicated that the average age of onset for anorexia, bulimia, binge eating disorder, subthreshold binge eating disorder, and "any binge eating" was 18-22. Furthermore, the majority of college women report either "intense" dieting or dieting that put them "at risk" for an eating disorder (Krahn, Kurth, Gomberg, & Drewnowski, 2004). Finally, college enrollment status is associated with more disordered eating, when comparing college students to same-aged women not currently enrolled in college (Rand & Kuldau, 1991). Such findings suggest that the emerging adulthood years are a key time to examine factors contributing to DES.

Disordered Eating and Childhood Polyvictimization

Another advantage of examining DES during the critical period of emerging adulthood is that it provides a comprehensive picture of participants' childhood victimization histories, which facilitates an understanding of the prevalence of DES in the context of a transitional period following potentially traumatic childhood experiences. Childhood victimization experiences represent an important etiological consideration when evaluating disordered eating among emerging adults, as the negative emotions associated with polyvictimization may result in the use of avoidance or escape strategies, including disordered eating (Cooper, Wells, & Todd, 2004; Corstorphine, 2006; Dansky, Brewerton, Kilpatrick, & O'Neil, 1997; Hund & Espelage, 2005; Root & Fallon, 1988).

Under the "avoidance/escape" framework, DES are conceptualized as distraction techniques that enable traumatized individuals to avoid processing their emotions (Molinari, 2001; Serpell & Treasure, 2002). Consistent findings linking childhood victimization experiences to deficits in emotional intelligence bolster this interpretation, suggesting that victimized children may not be equipped to adaptively cope with negative emotions (Dvir et al., 2014; Kim & Cicchetti, 2010; Mills, Newman, Cossar, & Murray, 2015). While this theoretical model provides a foundation to understand the relationship between victimization and DES, it has not yet been explored among youth who have experienced polyvictimization. Because polyvictimization appears to have especially pernicious effects on mental health (Finkelhor et al., 2007), its influence in the development of disordered eating, along with consideration of emotion regulation difficulties, merits further attention.

Although the literature is still nascent, a few studies point to polyvictimization as a relevant risk factor for understanding disordered eating during emerging adulthood. Smyth, Heron, Wonderlich, Crosby, and Thompson (2008) found that the number of reported childhood traumas predicted restricted eating among students entering their first year of college. Similarly, Lejonclou et al. (2014) compared victimization experiences between a Swedish female outpatient sample of adolescents/young adults meeting criteria for an eating disorder diagnosis and a nonclinical sample of young women. Using The Linkoping Youth Life Experiences Scale (LYLES), which assessed for a range of potentially traumatizing events, researchers found that frequency of repeated exposure to specific types of trauma, frequency of exposure to different types of adverse childhood circumstances, and numbers of potentially traumatic interpersonal experiences were associated with the presence of eating disorders. However, questions about the effects of polyvictimization remain because both studies were limited in their assessment or

conceptualization of potentially traumatic events during childhood. Smyth et al. (2008) assessed childhood trauma history using only six items, asking participants to indicate whether they had experienced: death of a loved one, divorce or separation, a sexual event, a violent event, a nonpersonal event, or a traumatic event that does not fall into one of these categories. While the Linkoping Youth Life Experiences Scale used in Lejonclou et al.'s (2014) study is quite comprehensive in assessing for a range of traumatic events, it lacks specificity regarding the exact number of potentially traumatic events experienced, such that "0" indicates that the event was not experienced, "1" indicates 1-5 exposures to the event, "2" indicates 6-10 exposures to the event, "3" indicates 10-99 exposures to the event, and "4" indicates 100 or more exposures to the event. Additionally, despite strong evidence that co-occurring mental health difficulties are associated with the presence of DES (Burns et al., 2012; Dubosc et al., 2012; Dvir et al., 2014; Gerke, Mazzeo, & Kliewer, 2006; Holzer, Uppala, Wonderlich, Crosby, & Simonich, 2008; Kong & Bernstein, 2009; Mills et al., 2015), neither study considered the impact of depression, posttraumatic stress symptoms, or emotion regulation.

Mental Health Variables Associated with Disordered Eating

Depression

Individuals who have experienced childhood victimization are at greater risk for exhibiting depressive symptomatology and meeting criteria for depression over the course of their lives (Chapman et al., 2004; Copeland et al., 2007; Dvir et al., 2004; Lansford et al., 2002). In addition to the relationship between victimization and depression, a positive association between depressive symptoms and DES has been well-established, with prevalence of co-occurrence between these disorders extremely high (Hudson et al., 2007; Kong & Bernstein, 2009; O'Brien & Vincent, 2003). This relationship may be explained by conceptualizing

disordered eating as a coping strategy for psychological affect modulation in the presence of depressive symptoms (Molinari, 2001; Rorty & Yager, 1996; Zerbe 1993).

Posttraumatic Stress Disorder (PTSD) Symptoms

PTSD symptoms include hypervigilance, re-experiencing of a traumatic event, avoidance of reminders/emotions related to traumatic experiences, and negative mood/cognition. Childhood victimization increases individuals' likelihood of experiencing PTSD symptoms throughout the lifespan (Copeland et al., 2007; Dvir et al., 2014; Lansford et al., 2002; Widom, 1999). Additionally, symptoms associated with PTSD have been linked to increased risk for exhibiting DES (Brewerton, 2007; Dubosc et al., 2012; Holzer et al., 2008). Again, individuals experiencing unpleasant emotions and cognitions in the aftermath of a traumatic event may rely on disordered eating as a strategy to escape those negative internal experiences (Capitaine, Rodgers, & Chabrol, 2011; Holzer et al., 2008; Hund & Espelage, 2005).

Emotion Regulation Difficulties

Emotion regulation refers to an individual's ability to recognize emotions, as well as control how emotions are felt, experienced, and expressed (Dvir et al., 2014; Mills et al., 2015). Childhood victimization experiences increase individuals' likelihood of demonstrating difficulties in emotion regulation (Dvir et al., 2014; Kim & Cicchetti, 2010; Mills et al., 2015; Shipman et al., 2007). Additionally, emotion regulation difficulties have been implicated in the development and maintenance of DES (Dvir et al., 2014; Harrison, Sullivan, Tchanturia, & Treasure, 2010; Lavender & Anderson, 2010). Indeed, DES may represent an avoidance strategy employed by individuals to dissociate from unwanted internal experiences (Dvir et al., 2014; Mills et al., 2015). McLaughlin and colleagues' (2011) findings that difficulties in emotion

regulation increased the likelihood of subsequent disordered eating suggest that these difficulties are a risk factor for, rather than a consequence of, disordered eating.

Current Study

Existing literature suggests that adverse childhood experiences are a risk factor for clinical and subclinical DES during the emerging adulthood years. However, prior work has largely examined specific types of trauma (e.g., childhood sexual abuse), ignoring the effects of cumulative adversity. Recently, researchers have begun to examine the relationship between polyvictimization and DES, but this relationship remains poorly understood, as potentially confounding mental health variables have not been considered.

The present study seeks to address several important questions regarding the relationship between childhood polyvictimization and DES in emerging adults. To our knowledge, this is the first study to examine the relationship between polyvictimization and disordered eating, while simultaneously assessing the influence of mental health and emotion regulation on concurrent DES. It is hypothesized that (1) the frequency of childhood polyvictimization experiences will be positively associated with DES in young adults. We also anticipate that (2) current symptoms of depression and posttraumatic stress, as well as higher levels of emotion regulation difficulties, will be positively related to current DES.

The current study controls for the potential influence of demographic factors on the presence of DES. Gender differences in disordered eating are well-documented, with consistent findings that women are more likely to experience body dissatisfaction, report a desire to lose weight, and restrict food intake (Connor-Greene, 1988; Drewnowski & Yee, 1987). This increased risk for disordered eating among women holds true for college students (Eisenberg, Nicklett, Roeder, & Kirz, 2011; Hudson et al., 2007). Additionally, age (Castro & Goldstein,

1995) and race (Shuttlesworth & Zotter, 2011) have been implicated as influential factors in the presence of DES, although the literature regarding these relationships is inconsistent.

Method

Participants

Participants included 288 emerging adult college students (71.8% female), age 18 to 24 (M = 19.19; SD = 1.40). A population of emerging adults was selected due to the prevalence of eating disorders among this population and the unique developmental characteristics of this transitional period, such as beginning college and gaining independence from caregivers. Participants' racial/ethnic backgrounds were somewhat diverse: 66.3% White/Caucasian, 17.4% Black/African American, 5.8% Bi-racial, 3.8% Hispanic/Latino, 3.5% Asian, and 3.2% other. Given the small number of individuals in minority racial groups, race was re-coded into a dichotomous variable, with "0" indicating non-white participants and "1" indicating white participants. More than half (51.1%) of participants were in their first year of college and 21.6% were first generation college students.

Procedure

After obtaining IRB approval, students from two universities in the United States (Midwest, Southeast) were recruited through online subject pool systems that allow undergraduate students to participate in research studies in exchange for class credit. Consent, survey administration, and debriefing were all completed online from any computer of the participant's choosing, which increased anonymity and privacy. Participants completed a battery of self-report questionnaires assessing demographic information, childhood victimization experiences, and current psychological functioning. All participants received a list of local and national mental health resources.

Measures

Polyvictimization. The Juvenile Victimization Questionnaire-Screener Sum Version-Adult Retrospective Form (JVQR2) is a 34-item self-report measure that asks adults to retrospectively report on a broad range of childhood victimization experiences (Finkelhor, Hamby, Turner, & Ormrod, 2011). For the current study, two questions reflecting peer victimization were added to the existing measure to gain a more comprehensive picture of youth victimization, resulting in 36 total items. Consistent with the conceptualization of polyvictimization, this measure seeks to gain information about the breadth of adverse experiences endured during childhood, thus respondents answer "Yes" or "No" to each item to indicate whether or not they experienced a particular type of childhood victimization. The JVQR2 includes 6 subscales representing different victimization experiences: property crime, physical assault, child maltreatment, peer/sibling victimization, witnessed/indirect victimization, and sexual victimization. Participants' polyvictimization score is calculated by summing the total number of affirmative responses to JVQR2 items. The JVQR2 has been used in several studies asking young adults to retrospectively report childhood victimization experiences (Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009; Richmond, Elliott, Pierce, Aspelmeier, & Alexander, 2008). Internal consistency is not reported for the JVQR2, as victimization experiences are not necessarily expected to intercorrelate.

Disordered Eating Symptoms. The SCOFF Questionnaire on Eating Habits (SCOFF) (Morgan, Reid, & Lacey, 1999) is a 5-item self-report measure, developed using focus groups of patients with eating disorders and specialists in eating disorders. It has demonstrated efficacy in detecting cases of eating disorders. The SCOFF assesses symptoms of disordered eating and is typically used as a screening tool, thus it is a beneficial measure to use when considering

subclinical DES. The five items inquire about purging, loss of control, dramatic weight loss, distorted body image, and perseverative thoughts about food. Respondents answer "Yes" or "No" to each of the five questions, resulting in a summed score ranging from 5 to 10. The SCOFF has good validity, demonstrating 100% sensitivity to detect anorexia and bulimia and 87.5% specificity in a control sample (Morgan, Reid, & Lacey, 1999). In a subsequent study, the SCOFF demonstrated a sensitivity of 84.6% and specificity of 89.6% when compared with a diagnostic clinical interview based on DSM-IV criteria (Hill, Reid, Morgan, & Lacey, 2010). Furthermore, the SCOFF has previously been validated in male and female college students (Cotton, Ball, & Robinson, 2003; Parker, Lyons, & Bonner, 2005). Zivin et al. (2009) found the disordered eating symptomatology assessed by the SCOFF to be relatively persistent over time (as compared to other probable diagnoses), with 59% of college students with a probable eating disorder also screening positive for a probable eating disorder two years later. The reliability of the SCOFF in the current study was $\alpha = .66$.

Depression. The Center for Epidemiological Studies Depression Scale (CES-D) is a widely used 20-item self-report measure that assesses depressed mood. Respondents report the frequency of experiencing features of depressed mood in the past week on a 4-point Likert scale, from "rarely/none of the time/less than 1 day" (0) to "most/all of the time/5-7 days." (4). Items are summed to create a total score, with higher scores indicating greater depressed mood. The CES-D has demonstrated good internal consistency ($\alpha = .84$-$.90$), moderate test-retest reliability ($r = .67$), and adequate construct and discriminant validity (Radloff, 1977). In the present study, reliability for the CES-D was $\alpha = .91$.

PTSD Symptoms. The National Stressful Events Survey PTSD Short Scale (NSESSS) is a 9-item self-report measure assessing PTSD symptom severity using DSM-5 dimensions:

hypervigilance, re-experiencing, avoidance, and negative mood/cognition. The DSM-5 (APA, 2013) task force provided the NSESSS for psychologists in research and clinical practice. In the present study, reliability for the NSESSS was α = .93.

Emotion Regulation Difficulties. The Difficulties in Emotion Regulation Scale (DERS) (Gratz & Roemer, 2004) is a 36-item self-report measure containing six subscales that reflect dimensions of emotion regulation difficulties: nonacceptance, goals, impulse, awareness, strategies, and clarity. Respondents report on the frequency of emotion regulation difficulties using a 5-point Likert scale ranging from "almost never" to "almost always." The DERS has demonstrated good internal consistency (α=.93; total-item correlations=.16-.69) and adequate construct and discriminant validity (Gratz & Roemer, 2004). In the present study, overall reliability for the DERS was α = .92.

Data Analytic Plan

All hypotheses were tested in SPSS version 22.0 using hierarchical multiple regression analyses that examined how each independent variable was uniquely related to the primary outcome of total disordered eating symptomatology, as measured by the SCOFF. Model 1 assessed the relationship between demographic control variables (i.e., gender, age, and race) and the presence of DES. Model 2 added polyvictimization, examining the relationship between the cumulative number of childhood victimization experiences and current disordered eating in emerging adulthood, controlling for demographic variables. Current depressive symptomatology, posttraumatic stress symptomatology, and emotion regulation difficulties were added in Model 3 to assess the influence of psychological dysfunction on DES in young adulthood, while simultaneously examining childhood polyvictimization and demographic variables. In the regression analyses, groups of variables were organized chronologically, with the first Model

incorporating variables present at birth, the second Model including childhood experiences, and Model 3 considering current, emerging adult psychological dysfunction. Entering variables chronologically complies with causal priority guidelines for hierarchical regression models, as the factors entered in each subsequent model potentially influence variables in the proceeding model but could not influence variables in the preceding model (Cohen, Cohen, West, & Aiken, 2003). This strategy maximizes researchers' ability to extract causal inference from the data, revealing the amount of total variance in the outcome variable uniquely accounted for by each individual predictor variable (Petrocelli, 2013).

Results

Participants reported an average of 8.39 (*SD* = 6.39) victimization incidents during childhood (see Table 1). The most frequent type of victimization was from a peer or sibling, endorsed by 82.3% of victimized participants. Peer or sibling victimization includes experiences such as being attacked by a group of children or a gang and being hit or slapped by a peer. Exposure to conventional crime, such as being hit or attacked on purpose and having things stolen from you, was also endorsed by a substantial number of participants (72.2%). Indirect victimization experiences, such as witnessing an attack on another person, were reported by 62.8% of participants. Sexual victimization (36.8%) and child maltreatment (31.3%) were the least frequently cited forms of victimization.

Participants also reported a wide range of mental health symptomatology and difficulties in emotion regulation (see Table 1). The current sample reported CES-D scores ranging from 0 to 48 (*M* = 13.78, *SD* = 10.41), with 33.9% of the sample endorsing depressive symptoms indicative of risk for clinically significant depression (total score $\geq$16; Radloff, 1977). The NSESSS scores for the current sample ranged from 9 to 45 (*M* = 16.59, *SD* = 7.94), with 30.2%

of participants reporting symptoms consistent with a possible PTSD diagnosis, as indicated by endorsement of at least one intrusion symptom, one avoidance symptom, two hypervigilance symptoms, and two symptoms representing negative alterations in mood or cognition (APA, 2013). SCOFF scores ranged from 5-10 in the current study, with a mean score of 5.72 (*SD* = 1.12); 20.3% of participants endorsed two or more items on the SCOFF, signifying a possible eating disorder (Morgan et al., 1999). DERS scores ranged from 30 to 131 (*M* = 64.19, *SD* = 21.71) Correlations between predictor variables and DES ranged from r = .20 to .43 (see Table 2).

Demographic variables entered in Model 1 of the hierarchical linear regression yielded a significant model that accounted for 4.4% of the variance in disordered eating scores, $F(3, 284) = 4.35$; $p = .005$. Being female was associated with higher levels of DES (ß = .20; $p = .001$), while age and race were not significantly associated with DES (see Table 3).

When childhood polyvictimization was added in the second model, the model was significant, $F(3, 284) = 8.28$; $p < .001$ and the amount of explained variance increased ($\Delta R^2 = 6.1\%$). In this model, polyvictimization was significantly related to current levels of DES; greater numbers of victimization experiences during childhood were associated with higher levels of emerging adults' disordered eating scores (ß = .25; $p < .001$), which supports hypothesis 2. Female gender remained significantly linked to current levels of DES (ß = .20; $p < .001$) in this model.

When factors related to current psychopathology were added in the third model, the model was significant, $F(7, 280) = 14.40$; $p < .001$, and the amount of explained variance in DES rose substantially ($\Delta R^2 = 16.0\%$). There was a significant positive relationship between levels of emotion regulation difficulties and disordered eating scores (ß = .33; $p < .001$). Neither

posttraumatic stress nor depressive symptomatology was significantly associated with DES in emerging adulthood. These findings partially support the third hypothesis, given that emotion regulation problems, but not current psychopathology, were associated with current symptoms of disordered eating. Notably, polyvictimization remained significantly related to DES in young adulthood (ß = .14; p = .016) even after adding in current mental health variables, as did female gender (ß = .14; p = .008). Variance inflation factor (VIF) values fell within the acceptable range (VIF < 3), indicating that multicollinearity is not a concern.

Discussion

This study aimed to broaden the range of victimization events assessed when examining the relationship between childhood adversities and emerging adulthood disordered eating symptomatology. Such an approach more accurately reflects the experiences of victimized youth and provides clarity about the link between childhood polyvictimization and DES. Because most research focuses on single forms of victimization and does not consistently examine the contribution of co-occurring psychopathology, it is difficult to determine whether previous mixed results are due to variation among samples, incomplete assessment of victimization history, or neglecting to control for forms of distress that may also contribute to disordered eating. The present study, therefore, adds unique value to the existing literature by conceptualizing victimization as a continuous variable accounting for exposure to a broad range of potentially traumatic events and simultaneously controlling for mental health distress. It also considers the presence of subclinical levels of DES, which are much more prevalent than clinically significant eating disorders but still carry the potential for harm in emerging adulthood - a critical time period for the occurrence of DES (Shriver et al., 2016; American Dietetic Association, 2006; Mintz & Betz, 1988). While findings are cross-sectional and retrospective,

they provide a foundation that can inform and propel large-scale, longitudinal research aiming to evaluate the etiology of DES.

A relationship was identified between the total number of childhood victimization experiences and DES in emerging adulthood. This finding, while consistent with a number of other studies (Carretero-Garcia et al., 2012; Lejonclou et al., 2014; Smyth et al., 2008), bolsters previous research by using a more comprehensive assessment of childhood victimization experiences that considers not only explicitly traumatic events but also exposure to bullying, property crime, and indirect or witnessed victimizations. Furthermore, these results reinforce the notion that childhood victimization is directly related to disordered eating, demonstrating that, even after considering current mental health functioning, victimization experiences from childhood may influence individuals' likelihood of exhibiting DES during the transition from adolescence to young adulthood. Such a finding informs the field's understanding of the etiology of disordered eating symptomatology, suggesting that adverse childhood experiences influence individuals' body image and relationship with food, even years after these events transpire. Conceptualizing disordered eating as a maladaptive stress response, the observed positive relationship between childhood polyvictimization and emerging adults' DES may reflect alterations in polyvictims' repertoire of adaptive coping responses, stemming from exposure to repeated stressors and resulting in an increased likelihood of maladaptive stress responses. This finding adds to the substantial body of literature demonstrating the pervasive and pernicious effects of childhood victimization.

In addition to revealing a direct relationship between polyvictimization and DES, results highlighted the link between current emotion regulation difficulties and DES in emerging adulthood. This finding builds upon existing literature (Dvir et al., 2014; Harrison et al., 2010;

Lavendar & Anderson, 2010) by considering not only the impact of emotion regulation, but also the effects of depressed mood and posttraumatic stress. The positive, direct relationship observed between emerging adults' emotion regulation difficulties and current DES indicates that difficulties in emotion regulation are more strongly associated with DES than are concurrent symptoms of diagnosable mental health conditions, an important consideration in conceptualizing disordered eating. Linking emotion regulation difficulties with disordered eating aligns with the theory that DES may reflect attempts to avoid unwanted experiences (Dvir et al., 2014; Lavender & Anderson, 2010; Mills et al., 2015). Under this theoretical paradigm, individuals reporting emotion regulation difficulties may not be equipped to acknowledge and process unpleasant emotions or events, making them more susceptible to disordered eating thoughts and behaviors as a distraction from their more deeply experienced emotions.

Bivariate correlations revealed findings consistent with our hypotheses that emotion regulation, polyvictimization, depressive symptomatology, and posttraumatic stress would all be significantly related to co-occurring DES. However, when simultaneously considering the impact of all variables on co-occurring DES, regression analyses revealed that depressive and posttraumatic stress symptomatology did not have an independent relationship with DES, above the effects of gender, polyvictimization, and emotion regulation difficulties. It is possible that depressive and posttraumatic stress symptomatology are more highly correlated with severe eating disorder pathology, as opposed to subclinical indicators as captured by the measure used in this study. Given that we utilized a community sample, participants may not be wholly representative of individuals with more severe psychopathology. Furthermore, previous studies detecting associations between depressive and posttraumatic stress symptomatology and co-

occurring DES may have been confounded by polyvictimization experiences and difficulties in emotion regulation.

Clinical Implications

The current study has several implications for practitioners working with young adults evincing DES and with polyvictimized youth. First, emerging adults presenting with DES should be assessed for a broad range of potentially traumatic childhood experiences, and screening protocols used by medical professionals and other providers of clinical care should include polyvictimization questionnaires. Treatment providers in all fields must consider polyvictimization as a potentially important factor contributing to disordered eating, particularly among individuals with difficulties in emotion regulation. Understanding an individual's full victimization history may enable providers to identify important, yet previously overlooked, treatment targets. Further, findings confirm the importance of early identification and treatment of children exposed to multiple types of victimization. Treatment paradigms that aim to minimize children's exposure to potentially traumatic events would be ideal; however, to the extent that eliminating victimization experiences is improbable, early interventions addressing adverse experiences may reduce polyvictims' risk for developing DES as they transition into adulthood. Additionally, campus mental health centers may better serve students by implementing assessments ensuring that students seeking treatment are evaluated for the entirety of their victimization experiences, rather than focusing solely on recent adversities. Lastly, clinicians working with individuals exhibiting DES might consider employing strategies for bolstering emotion regulation, such Dialectical Behavior Therapy (DBT) modules (e.g., mindfulness, emotion regulation, distress tolerance; Bankoff, Karpel, Forbes, & Pantalone,

2012), and addressing trauma history, such as Trauma-Focused Cognitive Behavior Therapy (TF-CBT; Cohen, Mannarion, Kliethermes, & Murray, 2012).

Limitations

Several limitations must be addressed when interpreting study findings. First, cross-sectional data collection prohibits conclusions about the causal relationships between demographic factors, psychopathology, polyvictimization, and DES. Second, retrospective data collection may result in inaccurate reporting of childhood victimization, as recalling events accurately is challenging and may be influenced by current stressors, life circumstances, or mental health functioning (Hardt & Rutter, 2004; Maughan & Rutter, 1997). Although there is some measurement error associated with retrospective reporting of childhood adversity, victimization measures assessing exposure to defined events have been judged to be sufficiently valid (Hardt & Rutter, 2004). Third, this study relied solely on self-report measures, which do not always accurately and consistently represent individuals' experiences (Organisation for Economic Co-operation and Development, 2013). The private and anonymous nature of data collection helped to minimize the likelihood of this type of reporting bias. Fourth, the primary outcome measure for the present study, the SCOFF, was developed as a screening instrument to assess specific behaviors and attitudes that may be indicative of clinical or subclinical levels of disordered eating. Despite the fact that it was developed as a screening tool, the SCOFF has been used in several investigations of college students and has consistently demonstrated good validity, converging with other measures of eating disorders (i.e., clinical interviews) and indicators of other mental health problems (i.e., anxiety, depression) that commonly co-occur with eating disorders (Cotton et al., 2003; Eisenberg et al., 2009; Luck et al., 2002; Parker et al., 2005; Zivin et al., 2009). Furthermore, subclinical indicators of eating disorders are more

prevalent than clinically significant eating disorders, they represent an important target for prevention efforts, and they have the potential to negatively impact individuals' physical and mental health. Finally, focusing solely on a college student sample limits the generalizability of the study's findings, which cannot be extended to emerging adults who did not attend college or to populations outside of this age range. Despite these limitations, the current study lays the groundwork for future research that could more thoroughly investigate the nature of the relationships between childhood polyvictimization and DES.

Future Research Directions

Findings confirm that future studies should assess a broad range of potentially traumatic experiences when investigating relationships between childhood victimization and mental health outcomes, seeking to extend the current findings to individuals who meet full clinical criteria for eating disorders. Future researchers should also aim to disentangle the relationship between childhood victimization experiences and the complex repertoire of DES, as current findings do not explain the differential effects of childhood polyvictimization on disordered eating attitudes (e.g., negative self-image or overemphasis on figure in self-evaluation) versus disordered eating behaviors (e.g., food restriction, excessive exercise, or purging). It would also be beneficial to understand how victimization experiences influence each specific eating disorder. Furthermore, longitudinal research would allow for exploration of the time gap between polyvictimization and the development of disordered eating symptomatology or specific eating disorders, informing our understanding of how symptoms change over time and why symptoms sometimes appear long after childhood victimization. Given that emotion regulation difficulties are thought to underlie a broad range of mental health difficulties, including depression and disordered eating (Berking & Wupperman, 2012), a longitudinal study would also facilitate understanding of the chronology of

victimization experiences, the development of difficulties in emotion regulation, the onset of mental health difficulties, and the emergence of DES. Longitudinal work would allow for the exploration of other possible mediating effects as well. Given established relationships between victimization experiences and lower self-esteem (Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005), as well as between lower self-esteem and DES (Cervera et al., 2002), including a measure of individuals' self-esteem may facilitate greater understanding of the association between polyvictimization experiences and DES. Thus, assessing individuals' body image-related self-esteem may prove especially beneficial. Finally, expanding the sample to include individuals from different age groups and young adults not enrolled in college would provide more generalizable results about the relationship between victimization and DES.

Conclusions

Findings from the current study provide valuable insight into the conceptualization of DES, emphasizing childhood polyvictimization as directly associated with problematic eating attitudes and behaviors. These findings serve as a useful guide for researchers and clinicians alike, who should consider victimization history when working with emerging adults displaying disordered eating symptomatology.

References

American Dietetic Association. (2006). Position of the American Dietetic Association: Nutrition intervention in the treatment of anorexia nervosa, bulimia nervosa, and other eating disorders. *Journal of the American Dietetic Association*, *106*(12), 2073.

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

Arata, C. M., Langhinrichsen-Rohling, J., Bowers, D., & O'Farrill-Swails, L. (2005). Single versus multi-type maltreatment: An examination of the long-term effects of child abuse. *Journal of Aggression, Maltreatment, & Trauma*, *11*(4), 29-52.

Bankoff, S.M., Karpel MG, Forbes HE, Pantalone DW. (2012). A systematic review of dialectical behavior therapy for the treatment of eating disorders. *Eating Disorders, 20,* 196–215.

Berg, K. C., Frazier, P., & Sherr, L. (2009). Change in eating disorder attitudes and behavior in college women: Prevalence and predictors. *Eating Behaviors*, *10*(3), 137-142.

Berking, M., & Wupperman, P. (2012). Emotion regulation and mental health: recent findings, current challenges, and future directions. *Current Opinion in Psychiatry*, *25*(2), 128-134.

Briggs-Gowan, M. J., Carter, A. S., Clark, R., Augustyn, M., McCarthy, K. J., & Ford, J. D. (2010). Exposure to potentially traumatic events in early childhood: Differential links to emergent psychopathology. *Journal of Child Psychology and Psychiatry*, *51(10),* 1132-1140.

Brown, R. C., Berenz, E. C., Aggen, S. H., Gardner, C. O., Knudsen, G. P., Reichborn-Kjennerud, T., … Amstadter, A. B. (2014). Trauma exposure and Axis I psychopathology: A cotwin control analysis in Norwegian young adults. *Psychological*

Trauma: Theory, Research, Practice, and Policy, *6*, 652-660.

Burns, E.E., Fischer, S., Jackson, J.L., & Harding, H.G. (2012). Deficits in emotion regulation mediate the relationship between childhood abuse and later eating disorder symptoms. *Child Abuse & Neglect, 36(1)*, 32-39.

Capitaine, M., Rodgers, R. F., & Chabrol, H. (2011). Unwanted sexual experiences, depressive symptoms and disordered eating among college students. *Eating Behaviors, 12*(1), 86-89.

Carretero-Garcia, A., Planell, L.S., Doval, E., Estragues, J., Escursell, R.M.R., & Vanderlinden, J. (2012). Repeated traumatic experiences in eating disorders and their association with eating symptoms. *Eating and Weight Disorders, 17(4)*, 267-273.

Castro, J. M., & Goldstein, S. J. (1995). Eating attitudes and behaviors of pre-and postpubertal females: Clues to the etiology of eating disorders. *Physiology & Behavior*, *58(1)*, 15-23.

Cervera, S., Lahortiga, F., Angel Martínez-González, M., Gual, P., Irala-Estévez, J. D., & Alonso, Y. (2003). Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *International Journal of Eating Disorders*, *33*(3), 271-280.

Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders, 82(2)*, 217-225.

Cohen J., Cohen P., West, S., Aiken L.S. (2003). Applied multiple regression/correlation analysis for the behavioral sciences. London, UK: Lawrence Erlbaum Associates.

Cohen, J. A., Mannarino, A. P., Kliethermes, M., & Murray, L. A. (2012). Trauma-focused CBT for youth with complex trauma. *Child Abuse & Neglect*, *36*(6), 528-541.

Connor-Greene, P. A. (1988). Gender differences in body weight perception and weight-loss

strategies of college students. *Women & Health, 14(2),* 27-42.

Cooper, M. J., Wells, A., & Todd, G. (2004). A cognitive model of bulimia nervosa. *British Journal of Clinical Psychology, 43(1),* 1-16.

Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry, 64(5),* 577-584.

Corstorphine, E. (2006). Cognitive–emotional–behavioural therapy for the eating disorders: Working with beliefs about emotions. *European Eating Disorders Review, 14(6),* 448-461.

Cotton, M.A., Ball, C., & Robinson, P. (2003). Four simple questions can help screen for eating disorders. *Journal of General Internal Medicine, 18,* 53–56

Dansky, B. S., Brewerton, T. D., Kilpatrick, D. G., & O'Neil, P. M. (1997). The National Women's Study: relationship of victimization and posttraumatic stress disorder to bulimia nervosa. *International Journal of Eating Disorders, 21(3),* 213-228.

Dornbusch, S.M. (2000). Transitions from adolescence: A discussion of seven articles. *Journal of Adolescent Resilience, 15,* 173–177.

Drewnowski, A., & Yee, D. K. (1987). Men and body image: are males satisfied with their body weight? *Psychosomatic Medicine, 49(6),* 626-634.

Dubosc, A., Capitaine, M., Franko, D. L., Bui, E., Brunet, A., Chabrol, H., & Rodgers, R. F. (2012). Early adult sexual assault and disordered eating: The mediating role of posttraumatic stress symptoms. *Journal of Traumatic Stress, 25(1),* 50-56.

Dvir, Y., Ford, J. D., Hill, M., & Frazier, J. A. (2014). Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities. *Harvard Review of Psychiatry, 22(3),* 149-161.

Eisenberg, D., Golberstein, E., & Hunt, J.B. (2009) Mental health and academic success in college. *The B.E. Journal of Economic Analysis & Policy, 9(1).*

Eisenberg, D., Nicklett, E. J., Roeder, K., & Kirz, N. E. (2011). Eating disorder symptoms among college students: Prevalence, persistence, correlates, and treatment-seeking. *Journal of American College Health*, *59*(8), 700-707.

Elliott, A. N., Alexander, A. A., Pierce, T. W., Aspelmeier, J. E., & Richmond, J. M. (2009). Childhood victimization, poly-victimization, and adjustment to college in women. *Child Maltreatment*, *14*(4), 330-343.

Finkelhor, D. (2011). Prevalence of child victimization, abuse, crime, and violence exposure. In J.W. White, M.P. Koss, & A.E. Kazdin (Eds.), Violence against women and children: Mapping the terrain (pp. 9-29). Washington, DC: American Psychological Association.

Finkelhor, D., Hamby, S., Turner, H., & Ormrod, R. (2011). *The Juvenile Victimization Questionnaire: 2nd Revision (JVQ-R2).* Durham, NH: Crimes Against Children Research Center).

Finkelhor, D., Omrod, R.K., & Turner, H.A. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse and Neglect*, *31*(1), 7-26.

Fischer, S., Stojek, M., & Hartzell, E. (2010) Effects of multiple forms of childhood abuse and adult sexual assault on current eating disorder symptoms. *Eating Behaviors, 11(3),* 190-192.

Gerke, C.K., Mazzeo, S.E., & Kliewer, W. (2006). The role of depression and dissociation in the relationship between childhood trauma and bulimic symptoms among ethnically diverse female undergraduates. *Child Abuse & Neglect, 30(10),* 1161-1172.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and

dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26(1),* 41-54.

Hamby, S. L., Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2004). The juvenile victimization questionnaire (JVQ): Administration and scoring manual. *Durham, NH: Crimes Against Children Research Center*.

Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry*, *45*(2), 260-273.

Harrison, A., Sullivan, S., Tchanturia, K., & Treasure, J. (2010). Emotional functioning in eating disorders: attentional bias, emotion recognition and emotion regulation. *Psychological Medicine, 40(11),* 1887-1897.

Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. (2010). SCOFF, the development of an eating disorder screening questionnaire. *International Journal of Eating Disorders, 43(4),* 344-351.

Holzer, S. R., Uppala, S., Wonderlich, S. A., Crosby, R. D., & Simonich, H. (2008). Mediational significance of PTSD in the relationship of sexual trauma and eating disorders. *Child Abuse & Neglect, 32(5),* 561-566.

Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61(3),* 348-358.

Hund, A.R., & Espelage, D.L. (2005). Childhood sexual abuse, disordered eating, alexithymia, and general distress: A mediation model. *Journal of Counseling Psychology, 52(4),* 559-

573.

Kent, A., & Waller, G. (2000). Childhood emotional abuse and eating psychopathology. *Clinical Psychology Review, 20(7),* 887-903.

Kent, A., Waller, G., & Dagnan, D. (1999). A greater role of emotional than physical or sexual abuse in predicting disordered eating attitudes: The role of mediating variables. International *Journal of Eating Disorders, 25,* 159-167.

Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry, 51*(6), 706-716.

Kong, S., & Bernstein, K. (2009). Childhood trauma as a predictor of eating psychopathology and its mediating variables in patients with eating disorders. *Journal of Clinical Nursing, 18,* 1897-1907.

Krah, D.D., Kurth, C.L., Gomberg, E., & Drewnowski, A. (2005). Pathological dieting and alcohol use in college women—a continuum of behaviors. *Eating Behaviors, 6*(1), 43-52.

Lansford, J. E., Dodge, K. A., Pettit, G. S., Bates, J. E., Crozier, J., & Kaplow, J. (2002). A 12 year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence. *Archives of Pediatrics & Adolescent Medicine, 156*(8), 824-830.

Lavender, J. M., & Anderson, D. A. (2010). Contribution of emotion regulation difficulties to disordered eating and body dissatisfaction in college men. *International Journal of Eating Disorders, 43*(4), 352-357.

Lejonclou, A., Nilsson, D., & Holmqvist, R. (2014). Variants of potentially traumatizing life events in eating disorder patients. *Psychological Trauma: Theory, Research, Practice,*

and Policy, 6(6), 661-667.

Luck, A. J., Morgan, J. F., Reid, F., O'Brien, A., Brunton, J., Price, C., ... Lacey, J. H. (2002). The SCOFF questionnaire and clinical interview for eating disorders in general practice: Comparative study. *BMJ, 325*(7367), 755-756.

Maughan, B., & Rutter, M. (1997). Retrospective reporting of childhood adversity: Issues in assessing long-term recall. *Journal of Personality Disorders, 11*(1), 19.

McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion dysregulation and adolescent psychopathology: A prospective study. *Behaviour Research and Therapy, 49(9),* 544-554.

Mills, P., Newman, E.F., Cossar, J., & Murray, G. (2015). Emotional maltreatment and disordered eating in adolescents: Testing the mediating role of emotion regulation. *Child Abuse and Neglect, 39,* 156-166.

Mintz, L. B., & Betz, N. E. (1988). Prevalence and correlates of eating disordered behaviors among undergraduate women. *Journal of Counseling Psychology, 35*(4), 463.

Miskinyte, A., Perminas, A., & Sinkariova, L. (2006). The relationship of eating behavior to body dissatisfaction and physical and psychological abuse in childhood. *Medicina* (Kaunas, Lithuania), *11,* 944–948.

Molinari, E. (2001). Eating disorders and sexual abuse. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 6*(2), 68-78.

Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: Assessment of a new screening tool for eating disorders. *BMJ, 319*(7223), 1467-1468.

O'Brien, K. M., & Vincent, N. K. (2003). Psychiatric comorbidity in anorexia and bulimia nervosa: nature, prevalence, and causal relationships. *Clinical Psychology Review, 23*(1),

57-74.

Organisation for Economic Co-operation and Development (OECD; 2013). Methodological considerations in the measurement of subjective well-being. In *OECD Guidelines on Measuring Subjective Well-being*. Paris: OECD Publishing.

Parker, S.C., Lyons, J., & Bonner, J. (2005). Eating disorders in graduate students: exploring the SCOFF questionnaire as a simple screening tool. *Journal of American College Health, 54*, 103–107.

Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling and Development, 36*(1), 9-22.

Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385-401.

Rand, C. S., & Kuldau, J. M. (1991). Restrained eating (weight concerns) in the general population and among students. *International Journal of Eating Disorders, 10*(6), 699-708.

Richmond, J. M., Elliott, A. N., Pierce, T. W., Aspelmeier, J. E., & Alexander, A. A. (2008, Online ahead of print). Polyvictimization, childhood victimization, and psychological distress in college women. *Child Maltreatment*.

Root, M. P., & Fallon, P. (1988). The incidence of victimization experiences in a bulimic sample. *Journal of Interpersonal Violence, 3*(2), 161-173.

Rorty, M., & Yager, J. (1996). Histories of childhood trauma and complex post-traumatic sequelae in women with eating disorders. *Psychiatric Clinics of North America, 19*(4), 773-791.

Serpell, L., & Treasure, J. (2002). Bulimia nervosa: Friend or foe? The pros and cons of bulimia nervosa. *International Journal of Eating Disorders, 32*(2), 164-170.

Shipman, K. L., Schneider, R., Fitzgerald, M. M., Sims, C., Swisher, L., & Edwards, A. (2007). Maternal Emotion Socialization in Maltreating and Non-maltreating Families: Implications for Children's Emotion Regulation. *Social Development, 16*(2), 268-285.

Shriver, L. H., Wollenberg, G., & Gates, G. E. (2016). Prevalence of Disordered Eating and Its Association with Emotion Regulation in Female College Athletes. *International Journal of Sport Nutrition & Exercise Metabolism*, *26*(3).

Shuttlesworth, M. E., & Zotter, D. (2011). Disordered eating in African American and Caucasian women: The role of ethnic identity. *Journal of Black Studies*, *42*(6), 906-922.

Smolak, L., & Murnen, S. K. (2002). A meta-analytic examination of the relationship between child sexual abuse and eating disorders. *The International Journal of Eating Disorders*, *2*, 136-150.

Smyth, J.M., Heron, K.E., Wonderlich, S.A., Crosby, R.D., & Thompson, K.M. (2008). The influence of reported trauma and adverse events on eating disturbance in young adults. *The International Journal of Eating Disorders*, *41*, 195-202.

White, S., Reynolds-Malear, J. B., & Cordero, E. (2011). Disordered eating and the use of unhealthy weight control methods in college students: 1995, 2002, and 2008. *Eating Disorders*, *19*(4), 323-334.

Widom, C. S. (1999). Posttraumatic stress disorder in abused and neglected children grown up. *American Journal of Psychiatry*, *156*(8), 1223-1229.

Zerbe, K. J. (1993). Whose body is it anyway? Understanding and treating psychosomatic aspects of eating disorders. *Bulletin of the Menninger Clinic*.

Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders*, *117*(3), 180-185.

Appendix A: Tables and Figures

Table 1

Descriptive Statistics for Study Measures

Measure	Mean	SD	Minimum	Maximum	Cronbach's alpha (α)
SCOFF Total	5.72	1.12	5	10	.66
CES-D Total	13.78	10.41	0	48	.91
NSESSS Total	16.59	7.939	9	45	.93
DERS Total	64.19	21.71	30	131	.92
JVQR2 Total	8.39	6.39	0	36	-

Note. N=288; CES-D, Center for Epidemiological Studies Depression Scale; NSESS, National Stressful Events Survey PTSD Short Scale; DERS, Difficulties in Emotion Regulation Scale; JVQR2, Juvenile Victimization Questionnaire-Adult Retrospective.

Table 2

Correlations between Study Variables

Measure	1	2	3	4	5	6	7
1. Age	-	-	-	-	-	-	-
2. Gender	-.10	-	-	-	-	-	-
3. Race	-.07	-.06	-	-	-	-	-
4. Polyvictimization	.04	-.01	-.09	-	-	-	-
5. PTSD Symptoms	.01	.12*	-.06	.35**	-	-	-
6. Depression	.04	.19**	-.10	.27**	.62**	-	-
7. Difficulties in Emotion Regulation	-.07	.10	.01	.20**	.53**	.70**	-
8. Eating Disorder Symptoms	-.04	.22**	-.07	.20**	.32**	.41**	.43**

Note. *p<.05. **p<.001.

Table 3

Summary of Hierarchical Regression Analysis Predicting Disordered Eating

Variable	Disordered Eating				
	ß	t	R^2	ΔR^2	F
Model 1					
Age	.008	.130	.044	--	4.347**
Race	-.064	-1.099			
Gender	.197	3.362**			
Model 2					
Age	-.003	-.048	.105	.061	8.284***
Race	-.041	-.716			
Gender	.202	3.562***			
Childhood Polyvictimization	.248	4.388***			
Model 3					
Age	.010	.197	.265	.160	14.404***
Race	-.032	-.624			
Gender	.141	2.656**			
Childhood Polyvictimization	.135	2.415*			
Depression	.098	1.149			
PTSD	.023	.320			
Emotion Regulation Difficulties	.331	4.389***			

Note: Race was dichotomized into “white” (1) and “minority” (0) groups. Gender was coded as “male” (1) or “female” (2). *p<.05. **p<.01. ***p<.001.