

Eating Disturbances, Interpersonal Relationships, and Depressive Symptoms Among Emerging Adults

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Given the high prevalence of depression among Emerging Adults (EAs), it is important to investigate the risk factors associated with depression within this age group. Previous research highlights the association between disordered eating, insecure relationships, and depressive symptoms among adolescents. However, these relations have yet to be examined as youth develop into EAs. Thus, the current study investigated eating- and weight-related disturbances (EWRDs; e.g., emotional eating, external eating, and restrained eating) and interpersonal relationships in relation to depressive symptoms among EAs. It was hypothesized that increased EWRDs and less supportive relationships with mothers, fathers, and peers would be associated with higher depressive symptoms. The results revealed a significant relationship between eating in response to emotional arousal and depressive symptoms, as well as between maternal relationships and depressive symptoms among EAs. Implications for clinical practice are discussed.

Keywords: depressive symptoms, emerging adults, eating- and weight-related disturbances, interpersonal relationships.

In order to understand the development of depression across the lifespan, an important time period to study is emerging adulthood, which occurs between the ages of 18 to 25 in industrialized countries and is characterized by individual discovery, change, and identity exploration (Arnett, 2000). During emerging adulthood, individuals strive towards self-sufficiency, which is characterized by the ability to accept responsibility for oneself, to make independent decisions, and to be financially independent (Arnett, 1997, 1998; Greene, Wheatley, & Aldava, 1992; Scheer, Unger, & Brown, 1996). Emerging Adults (EAs) have a higher prevalence of depression than any other age group (Kessler & Walters, 1998; Klerman, 1988; Kuwabara, Van Vorhees, Gollan, & Alexander, 2007; Tanner et al., 2007; Wang et al., 2010), with one in four experiencing depression (Kessler & Walters 1998; Klerman, 1988; Klerman & Weissman, 1989). The high prevalence of depression among EAs may be due to stress associated with the assumption of greater responsibility as well as the imbalance between their psychosocial needs and available social supports (Kuwabara et al., 2007). Compared to the many school and community programs available to support

adolescents, few resources exist to help EAs navigate the rapidly changing demands of post-secondary education, romantic relationships, and vocational attainment (Rawana & Nguyen, 2010). Further, given the emphasis on independence during this stage of development, EAs may be less inclined to seek the assistance of parents (Rawana & Nguyen, 2010).

Depression among EAs is associated with significant mental and interpersonal consequences (Riggs & Han, 2009). For example, youth who experience depression are more likely to engage in disordered eating behaviors (Stice, Hayward, Cameron, Killen, & Taylor, 2000), experience suicidal ideation and anxiety (Stice & Bearman, 2001), and have low levels of educational success and career satisfaction (Kuwabara et al., 2007) compared to those without depression. The purpose of the current study was to investigate how various eating- and weight-related disturbances (EWRDs) and relationships with mothers, fathers, and peers relate to depressive symptoms among EAs.

Eating- and Weight-Related Disturbances

Eating- and weight-related disturbances

(EWRDs) are maladaptive behaviors, attitudes, and cognitions related to eating and weight (Rawana, Morgan, Nguyen, & Craig, 2010). Rierdan, Koff, and Stubbs (1989) demonstrated the link between EWRDs and depression in a seminal study concluding that body image dissatisfaction is a potential factor in determining whether depression would be transient or persistent in adolescent girls. Recent research has confirmed that EWRDs are a significant factor related to the development of and increases in the symptoms of depression compared to those not experiencing EWRDs (Stice & Bearman, 2001). That is, EWRDs may increase an adolescent's vulnerability to depression. Pressure to be thin, thin-ideal internalization, body dissatisfaction, dieting, and bulimic symptoms at baseline were shown to be significantly associated with levels of depression up to 20 months later, in a longitudinal study of adolescent girls (Stice & Bearman, 2001). Lower body image satisfaction during adolescence was found to be a significant predictor of greater levels of depression for women during early adulthood compared to those women who were satisfied with their bodies throughout adolescence (Ohring, Graber, & Brooks-Gunn, 2002). Similar results were found in a 5-year longitudinal study involving early adolescents, indicating that body dissatisfaction was a risk factor for depressed mood and low self-esteem among both girls and boys (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006).

Research that has focused on eating behaviors and cognitions in relation to depression has generally focused on eating in response to an emotional situation (i.e., emotional eating; Ouwens, van Strien, & van Leeuwe, 2009), eating based on the smell and appearance of a food (i.e., external eating; Ouwens et al., 2009), and restraining one's food intake (i.e., restrained eating; Heaven, Mulligan, Merrilees, Woods, & Fairouz, 2001). Previous research has demonstrated that depression is significantly associated with emotional eating, but not external eating among adult women ranging from 18 to 60 years (Ouwens et al., 2009). Heaven and colleagues (2001) found that restrained eating was positively correlated with depression among psychology undergraduates, although more recent research has not supported these findings (Appleton & McGowen,

2006). In contrast, Appleton and McGowen (2006) found that restrained eating might be more strongly associated with anxiety symptoms than depression symptoms among male and female EAs. Therefore, additional research is required in order to clarify the relationships between different types of EWRDs and depression symptoms among EAs.

Results from the research summarized above reveal that, in general, there is a relationship between EWRDs and depression, particularly among adolescents (Kessler, Avenevoli, & Merikangas, 2001). It is not clear, however, which specific EWRDs relate to depression (e.g., emotional and/or restrained eating), particularly among EAs. Although depression is prevalent among EAs, less research has focused on the relations among EWRDs and depression for this age group. Therefore, the current study sought to investigate the relation between emotional eating, restrained eating, external eating, and depression among EAs.

Relationships with Parents and Peers

In addition to EWRDs, interpersonal relationships with peers and parents have been shown to have an impact on the development of depression (Allen et al., 2007; Galambos, Barker, & Krahn, 2006; Prinstein, Borelli, Cheah, Simon, & Aikins, 2005). A 2007 study involving adolescents (Allen et al., 2007) examined the relationship between depression and attachment security, defined as an adolescent's ability to maintain close relationships while striving towards autonomy (Allen et al., 2003). Results indicated that less attachment security with fathers and with peers was positively related to the later development of depression (Allen et al., 2007). Research conducted with EAs revealed similar results, demonstrating that secure attachment with parents was negatively associated with depressive symptoms (Kenny & Sirin, 2006). These findings highlight the importance of examining parental relationships when investigating factors associated with depressive symptoms.

Research has considered the different significant relationships in adolescents' lives and, more specifically, which relationships are most influential. Research focusing on peer relationships found some support for a connection between adolescents' seeking of social reassurance and future depressive symptoms

(Prinstein et al., 2005). A study investigating the relative importance of five significant relationships (mother, father, most important siblings, best same-sex friend, and most important teacher) demonstrated that the best same-sex friend ranked highest in importance as a source of intimacy and companionship (Lempers & Clark-Lempers, 1992). Mothers and fathers ranked high as important sources of affection, instrumental aid, and reliable alliance, but they also ranked highly in the area of conflict (Lempers & Clark-Lempers, 1992). As previous research has demonstrated that interpersonal relationships may affect the development of depression (Allen et al., 2007; Prinstein et al., 2005), the findings by Lempers and Clark-Lempers (1992) suggest that certain relationships, such as those with one's parents, may play more significant roles in the development of depression. Longitudinal research involving EAs found that depressed individuals who reported very high levels of parental conflict showed a faster decline in depression than those individuals with average or low levels of conflict with parents (Galambos et al., 2006). This seemingly counterintuitive finding suggests that EAs may begin to place less importance on relationships with their parents and more on their peers (Galambos et al., 2006). In examining supportive relationships, characterized by closeness and affection (Furman & Buhrmester, 1992), the current study sought to determine whether less supportive relationships with parents and/or peers would be associated with higher levels of depressive symptoms in emerging adulthood.

Study Objectives and Hypotheses

The overarching goal of the current study was to determine whether higher levels of EWRDs and less supportive relationships were related to higher depressive symptoms among EAs. Based on previous research that found that EWRDs are risk factors for an increase in depressive symptoms (Rawana et al., 2010), it was hypothesized that there would be a positive correlation between EWRDs and depressive symptoms, with individuals reporting more EWRDs also reporting more depressive symptoms. Following previous literature that found less secure relationships to be associated with greater levels of depression (Allen et al., 2007; Galambos et al., 2007; Kenny & Sirin, 2006),

it was hypothesized that less supportive relationships with both parents and peers would be associated with higher levels of depressive symptoms.

The first objective of this study was to ascertain the relationship between various types of EWRDs (restrained eating, emotional eating, and external eating) and depressive symptoms. Following previous research (Ouwens et al., 2009), it was hypothesized that emotional eating would have the strongest association with depression, with high levels of emotional eating being significantly associated with high levels of depressive symptoms. The second objective was to determine whether less supportive relationships are associated with depressive symptoms above and beyond disordered eating behaviors and cognitions. The final goal was to examine the potential link between relationships with parents and peers and depression. Specifically, the researchers sought to investigate which type of relationship, with parents or with peers, would have a stronger association with depressive symptoms. Based on previous research (Galambos et al., 2006; Lempers & Clark-Lempers, 1992), it was hypothesized that peer relationships would be more significantly related to depressive symptoms than parent relationships among EAs.

Method

Participants

Participants took part in a larger study on university lifestyle and eating attitudes. Participants included 304 Emerging Adults, 71% female, with an age range of 18 to 25 years ($M_{\text{age}} = 19.82$, $SD_{\text{age}} = 1.67$). Participants were students enrolled in an Introduction to Psychology course in a large university in Southern Ontario, Canada. Regarding ethnicity, 34.9% of participants identified as Caucasian ($N = 106$), 13.2% identified as Asian ($N = 40$), 8.6% identified as African/Caribbean ($N = 26$), 3.0% identified as Hispanic or Latino ($N = 9$), 10.2% identified as Middle Eastern ($N = 31$), 20.1% identified as South Asian ($N = 61$), and 10.2% did not specify an ethnicity ($N = 31$).

Measures

Depressive symptoms. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used to determine level of

depressive symptoms. The CES-D consists of 20 items (e.g., “I felt like I could not shake off the blues even with help from my family or friends”). Participants were asked to rate the duration of their mood on a 4-point Likert scale from 0 (rarely or none of the time, less than 1 day) to 3 (most of or all of the time, 5-7 days) to determine how they felt in the past week. Higher scores indicate the presence of greater depressive symptomatology. The CES-D has been demonstrated to have good psychometric properties among ethnically diverse populations (Constantine, Okazaki, & Utsey, 2004; Stahl et al., 2008). Studies have reported that the CES-D has strong internal consistency, with Cronbach’s alpha ranging from .70 to .93 (Constantine et al., 2004; Hann, Winter, & Jacobsen, 1999; Radloff, 1977; Stahl et al., 2008).

Eating- and weight-related disturbances.

EWRDs, namely subclinical disordered eating behaviors and cognitions, were measured using the Dutch Eating Behavior Questionnaire (DEBQ; van Strien, Frijters, Bergers, & Defares, 1986). There are a total of 33-items in the DEBQ with three subscales: restrained eating, emotional eating, and external eating. Restrained eating measures the extent to which one restricts caloric intake (e.g., “How often do you try not to eat between meals because you are watching your weight?”); emotional eating consists of eating based on feelings and not on hunger (e.g., “Do you have a desire to eat when you are depressed or discouraged?”); and external eating consists of eating based on what one sees and smells, again not based on hunger (e.g., “If food smells and looks good, do you eat more than usual?”). The questionnaire was scored on a 5-point Likert scale from 1 (never) to 5 (very often). Higher scores indicate the presence of EWRDs. The DEBQ has been found to have good psychometric properties among ethnically diverse populations (Spoor, Bekker, van Strien, & van Heck, 2007; Sung, Lee, Song, Lee, Lee, 2010).

Interpersonal relationships. The Network of Relationships Inventory (NRI; Furman & Buhrmester, 1992) was used to measure interpersonal relationship qualities in the context of the participants’ views of their mother, father, and closest friend. Relationship qualities include: companionship, conflict, instrumental aid, satisfaction, intimacy, nurturance, affection, punishment, admiration, relative power, and

reliable alliance. The inventory consists of 33 items (e.g., “How much does this person really care about you?”) measured on a 5-point Likert scale ranging from 1 (little or none) to 5 (the most). Negatively worded items were reverse scored, and a total score was calculated with higher scores representing more supportive relationships, characterized by greater levels of closeness, affection, admiration, instrumental aid, companionship, intimacy, nurturance, and reliable alliance (Furman & Buhrmester, 1992). Internal consistency for the NRI ranges from moderate to high (Helgeson, Reynolds, Shestak, & Wei, 2006). In an ethnically diverse sample of EAs, Cronbach’s alpha was found to exceed .88 (Lopes, Salovey, & Straus, 2003).

Procedure

Ethics approval was obtained from the Institutional Review Board where the study was conducted. Students enrolled in the Introduction to Psychology course at the university were eligible to participate in the current study, as these students have the option to participate in research studies in exchange for course credit. Participants chose to participate in the study by selecting it from a list of available studies on an undergraduate research web site. Participants completed an electronic consent form at the beginning of the study and received course credit for their participation. Participants had the option of declining to answer any question, as well as the ability to opt out of the survey at any point.

Results

Means, standard deviations, and internal consistency for the entire sample on the variables of interest are provided in Table 1. To determine the strength of relationships between variables, bivariate correlations were computed among the constructs of interest. Table 1 displays the relationships among emotional eating, restrained eating, external eating, peer relationships, father relationships, mother relationships, and depressive symptoms. A positive, significant correlation was found between depressive symptoms and restrained eating, $r = .24, p < .001$, and depressive symptoms and emotional eating, $r = .34, p < .001$. No significant correlation was found

Table 1

Summary of Bivariate Correlations, Means, Standard Deviation Scores, and Internal Reliabilities of the CES-D, DEBQ, and NRI

Measure	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>	α
1. Depressive Symptoms	1	.34**	.24**	.11	-.22**	-.15**	-.14*	18.61	10.82	.91
2. Emotional Eating	-	-	.47**	.54**	-.09	-.02	.06	2.50	.99	.95
3. Restrained Eating	-	-	-	.12*	-.03	.02	-.08	2.31	.99	.94
4. External Eating	-	-	-	-	-.07	-.03	.13*	3.24	.58	.68
5. Relationship with Mother	-	-	-	-	-	-.50**	.36**	3.34	.78	.96
6. Relationship with Father	-	-	-	-	-	-	.27**	3.04	.82	.95
7. Relationship with Peer	-	-	-	-	-	-	-	3.23	.69	.93

Note. CES-D = Center for Epidemiologic Studies Depression Scale; DEBQ = Dutch Eating Behavior Questionnaire; NRI = Network of Relationships Inventory. 1 is the total score of the CES-D; 2, 3, and 4 are subscales of the DEBQ; 5, 6, and 7 are subscales of the NRI.

between depressive symptoms and external eating, $r = .10$, $p = .050$. Therefore, external eating was removed from all further analyses. Results revealed negative, significant correlations among depression and relationship with mother, $r = -.22$, $p < .001$; relationship with father, $r = -.15$, $p = .008$; and relationship with peers, $r = -.14$, $p = .014$.

Hierarchical Multiple Regression Analysis

A hierarchical multiple regression analysis was used in order to determine the relation among depression and the variable sets associated with both EWRDs and interpersonal relationships. The analysis was therefore carried out in two steps (see Table 2). EWRDs, including restrained and emotional eating, were entered at Step 1, as there is a strong research basis for relation between EWRDs and depressive symptoms. Given that there is less empirical research focusing on interpersonal relationships and depression, relationships with father, mother, and peers, were added at Step 2 in order to examine whether or not these relationships contributed to depression above and beyond eating behaviors. As each variable set was added to the model, the R^2 change was examined to determine whether the set added significantly to the regression. Standardized beta coefficients were used to compare the magnitude of the significance of each individual variable and determine which variables had more of an effect.

Results for Step 1 showed that EWRDs accounted for 12.0% of the variance in the sample's depressive symptoms as measured by the CES-D, $\Delta R^2 = 0.12$, $F(2, 288) = 19.32$, $p < .001$. Emotional eating was the only significant contributing variable of disordered eating (see Table 2). Step 2 results indicated that interpersonal relationships accounted for 5.0% of the variance in the sample's depressive symptoms, $\Delta R^2 = 0.05$, $F(3, 285) = 5.42$, $p < .001$. The results indicated that relationships with mothers was the only variable of the three relationships that contributed significantly to depressive symptoms (see Table 2).

Discussion

The overarching goal of this study was to examine the association between EWRDs, interpersonal relationships, and depressive symptoms among EAs. It was hypothesized that higher levels of EWRDs and less supportive relationships would be significantly associated with higher levels of depressive symptoms.

The first objective of this study was to investigate the connection between depressive symptoms and restrained eating, emotional eating, or external eating among EAs. As expected, emotional eating, or eating in response to emotional states such as anger or anxiety, was significantly associated with depressive symptoms. This implies that individuals who engage in arousal induced eating are more likely to experience depressive symptoms than those who do

Table 2
Hierarchical Multiple Regression Analysis Demonstrating the Relation Between Depressive Symptoms and Eating Disturbances in Interpersonal Relationships

Predictor	Depressive Symptoms	
	ΔR^2	β
Step 1	.12***	
Restrained Eating		.11
Emotional Eating		.27***
Step 2	.05***	
Relationship – Father		-.06
Relationship – Mother		-.13*
Relationship –Peer		-.09
Total R^2	.17	

* $p < .05$, ** $p < .01$, *** $p < .001$

not. These findings are in line with previous research by Ouwens, van Strien, and van Leeuwe (2009), who found emotional eating to precede depression. In the current study, no relations between external eating, restrained eating, and depressive symptoms were found. These results are also consistent with the work of Appleton and McGowen (2006), who found no significant association between depression and restrained eating. The current research findings may be explained by the fact that restrained and external eating are not necessarily based on negative emotions, whereas emotional eating is generally associated with stress or an unpleasant event that is often associated with depressed mood (van Strien et al., 1986).

The second objective was to examine the association between depressive symptoms and relationships with mother, father, and peers. It was hypothesized that less supportive relationships with mother, father, and peers would be associated with higher levels of depressive symptoms. As expected, less supportive relationships significantly predicted depressive symptoms above and beyond eating behaviors. However, in contrast to what was expected, disruptions in the relationship with mother was the only significant predictor of depressive

symptoms. A study (Branje, Hale, Frijns, & Meeus, 2010) involving adolescent boys and girls may help to better understanding the findings from the current study. Specifically, they found that relationship quality with mothers predicted depressive symptoms for both boys and girls, but relationship quality with fathers predicted depressive symptoms only for boys (Branje et al., 2010). These results suggest that relationships with mothers might also have a stronger impact on daughters than on sons, just as relationships between fathers and sons were more important than relationships between fathers and daughters (Branje et al., 2010). The fact that women were overrepresented in the current sample may explain why participants' relationships with their fathers were not significantly related to depressive symptoms, given that previous research suggests that women may have stronger relationships with their mothers (Branje et al., 2010). Further, it may be that a supportive relationship with one's mother is uniquely important across adolescence and emerging adulthood. Previous researchers have postulated that having a secure parental attachment provides EAs with the confidence to navigate the challenges that characterize this developmental period (Kenny, 1987), such as moving away from home and starting postsecondary education (Arnett, 1997, 1998, 2000; Greene et al., 1992; Scheer et al., 1996). Following this, in the current study, EAs who reported a secure parental attachment were less likely to endorse depressive symptoms (Kenny & Sirin, 2006). However, this research did not differentiate between maternal and paternal relationships. Given the limited research that has been done on depression and specific interpersonal relationships among EAs, it will be beneficial for future research to further explore the associations among depression and relationships with one's mother, father, and peers.

Clinical Implications

The present study has implications for clinical practice. The findings provide further evidence of the role of emotional eating in understanding depressive symptoms among EAs. Furthermore, the findings provide evidence for a positive association between less supportive relationships and depressive symptoms. Overall, the results of the present

research highlight the importance of assessing the quality of interpersonal relationships, EWRDs, and depressive symptoms when individuals present with emotional issues in university counseling centers, in order to obtain a comprehensive understanding of the presenting problem.

Strengths and Limitations

This study had a number of strengths. First, this research used a large, ethnically diverse sample. Second, well-reputed measures were utilized with the exception of external eating, which was removed from the main analyses. Further, results of this study provide additional support that the external eating subscale may not be an accurate measure of external eating. This is in line with recent research demonstrating that external eating is best measured using implicit measures, such as eye movement and brain activation to food cues, compared to self-report measures (Schembre & Geller, 2011). Last, the current research is among the first to examine the importance of EWRDs and depression within an age group that has one of the highest rates of depressive symptoms, yet remains under-studied compared to adolescent and adult populations.

This study also had some limitations. The sample was one of convenience, as it was limited to first-year undergraduate students enrolled in an Introduction to Psychology course at a large urban university and did not include community participants. Thus, the results are mainly generalizable to young men and women entering university in an urban center. The study was also cross-sectional and non-experimental. Therefore, causal relationships cannot be inferred.

Future Directions

Future research should examine the significance of emotional eating and less supportive relationships with mothers longitudinally to see whether the variables of interest temporally precede depressive symptoms. If EWRDs and relationship difficulties were found to precede depression in some individuals, this would lend support for intervention programs that target those individuals susceptible to developing depression. Future research should also examine the relative importance of supportive relationships with

each parent. For example, research could examine the theory that depressive symptoms in women may be more strongly linked to their relationships with their mothers than in men. Moreover, researchers could investigate whether there are gender differences among EAs in order to better understand how interpersonal relationships are associated with depressive symptoms among young men and women.

Conclusion

This study supports previous research by showing the significant relationship between emotional eating and depressive symptoms. Furthermore, the present findings suggest that less supportive relationships are significantly associated with higher levels of depressive symptoms in a sample of ethnically diverse EAs. In contrast to previous research that found parental and peer relationships to be of importance, the results of the current study revealed that only maternal relationships were significantly associated with depressive symptoms among EAs. Future studies should include a balanced sample of young men and women in emerging adulthood and use samples in a wide variety of settings, in order to increase the generalizability of these findings.

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