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CHILDHOOD EMOTIONAL MALTREATMENT AND ANXIETY: THE EFFECT OF ENGAGING IN A HEALTHY LIFESTYLE

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CHILDHOOD EMOTIONAL MALTREATMENT AND ANXIETY:

THE EFFECT OF ENGAGING IN A HEALTHY LIFESTYLE

BY

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OF

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ABSTRACT

Childhood emotional maltreatment (CEM) represents a major public health concern, and the consequences of CEM are understudied. Emotional maltreatment is comprised of both emotional abuse (EA) and emotional neglect (EN). Although the link between CEM and overall psychological distress is well established, less is known about the mechanisms through which a history of CEM can influence symptoms of anxiety. The current study hypothesized that engagement in a healthy lifestyle would mediate the relationship between CEM and symptoms of anxiety. It was also hypothesized that gender would moderate this relationship. The current study analyzed EA and EN separately. Results indicated that engaging in a healthy lifestyle partially mediated the relationship between EN and anxiety. The mediating effect of lifestyle behaviors on EA and anxiety was not significant. In addition, gender was not found to moderate EA or EN and symptoms of anxiety. Limitations of the current study and future directions are discussed.

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Introduction

Statement of Problem

It is well recognized that childhood maltreatment represents a major public health concern (Chamberland, Fallon, Black, & Trocmé, 2011; Gilbert et al., 2012). Although the long-term mental health impacts of physical and sexual abuse are well established (Paolucci, Genuis, & Violato, 2001; Fergusson, Boden, & Horwood, 2008), the long-term consequences of emotional maltreatment continue to be understudied (Ackner, Skeate, Patterson, & Neal, 2013). Research has found that emotional maltreatment is reported nearly twice as often as physical or sexual abuse (Chamberland et al., 2011), and therefore, the possible mental health impacts of childhood emotional maltreatment are especially important to consider.

Although the legal definitions of emotional or psychological maltreatment vary considerably, the U.S. Department of Health and Human Services defines psychological or emotional maltreatment as "acts or omissions—other than physical abuse or sexual abuse—that caused or could have caused—conduct, cognitive, affective, or other behavioral or mental disorders" (2016). A variety of studies suggest that childhood emotional maltreatment (CEM) has been associated with a host of psychological problems at emerging adulthood (e.g., Braver, Bumberry, Green, & Rawson, 1992; Rekart, Mineka, Zinbarg, & Griffith, 2007). Emerging adulthood is a stressful time in and of itself, and a history of childhood maltreatment complicates this developmental period. Childhood maltreatment history has been found to be associated with increases in symptoms of depression (Mazzeo & Espelage, 2002; Turner & Butler, 2003) as well as an increased likelihood of dropping out of college (Duncan, 2000). Furthermore, it has

been found that experiencing emotional maltreatment as a child acts as a predictor of anxiety symptoms in college (Wright, Crawford, & Del Castillo, 2009).

Research has shown that the engagement in a healthy lifestyle has been found to have a positive effect on mental health (Velten et al., 2014) and, specifically, anxiety (Shahar et al., 2015; Hamilton et al., 2013). Although the link between childhood maltreatment and overall psychological distress is well-documented, relatively little is known about the mechanisms through which a history of childhood maltreatment can influence symptoms of anxiety later in life. This gap in the literature is particularly concerning given the fact that the engagement in a healthy lifestyle may actually act as a protective factor in the development of anxiety among victims of childhood maltreatment. Therefore, the present study aims to examine healthy lifestyle behaviors as a possible mediator in the relationship between CEM and symptoms of anxiety. Gender will also be explored as a possible moderator in the relationship between CEM and symptoms of anxiety.

Review of the Literature

Childhood maltreatment is a serious concern that is well acknowledged in the United States and has received increasing public attention over the past decade (U.S. Department of Health & Human Services, 2016). The United States acknowledges four primary forms of child maltreatment, which include neglect, physical abuse, psychological or emotional maltreatment, and sexual abuse (U.S. Department of Health & Human Services, 2016).

Emotional maltreatment consists of emotionally abusive and emotionally neglectful caregiving behaviors (McGee & Wolfe, 1991). More specifically, emotional

abuse refers to verbal attacks on a child's sense of worth or wellbeing, while emotional *neglect* consists of failure to provide a child's basic psychological and emotional needs (Bernstein & Fink, 1998). It is speculated that emotional maltreatment is a core component underlying the other forms of child maltreatment, and that it has equivalent, if not greater, developmental consequences (Chamberland et al., 2011; Vachon, Krueger, Rogosch, & Cicchetti, 2015; Taillieu, Brownridge, Sareen, & Afifi, 2016). According to the National Child Abuse and Neglect Data System, an estimated 37,859 children experienced psychological or emotional maltreatment in 2016 alone (NCANDS, 2016).

Outcomes Associated with Childhood Emotional Maltreatment. Childhood maltreatment, in any form, has been found to be a strong predictor of psychological disorders during adolescence and throughout the life span (e.g., Alloy, Abramson, Smith, Gibb, & Neeren, 2006; Kim & Cicchetti, 2010). As noted above, emotional abuse and neglect are thought to be underlying components of the other forms of maltreatment and may lead to greater developmental consequences (Chamberland et al., 2011; Vachon et al., 2015; Taillieu et al., 2016). More specifically, emotional maltreatment seems to be particularly relevant for the development of depression and anxiety (Calvete, 2014; Gibb, Chelminski, & Zimmerman, 2007; Hamilton et al., 2013). Research has also indicated that emotional abuse and neglect are stronger predictors for alcohol dependency than other forms of childhood maltreatment (Schwandt, Heilig, Hommer, George, & Ramchandani, 2013). Therefore, although emotional maltreatment is often overlooked, the considerable psychological harm imposed by it should not be ignored.

In terms of age, Wright and colleagues (2009) theorized that the consequences of childhood emotional maltreatment might become salient for emerging adults in

particular, especially in the context of transitioning to college. This may result from being away from the home for the first time and feeling able to safely explore traumatic family experiences (Wright et al., 2009). Further, college students who have experienced childhood maltreatment may be using maladaptive coping strategies as a way to cope with the effects of their traumatic experiences (Briere & Scott, 2006; Lee, & Puig, 2006).

Although all victims of childhood maltreatment are susceptible to negative outcomes, research has indicated that males and females may be differentially impacted by adverse childhood events (Cullerton-Sen et al., 2008; Thompson, Kingree, & Desai, 2004). Studies have shown that females may experience emotional forms of maltreatment more often than males (Edwards, Holden, Felitti, & Anda, 2003), with some research suggesting that the effects of maltreatment may be more prominent for females as well (Gallo, Munhoz, Loret de Mola, & Murray, 2018). Furthermore, females appear to experience more mental health problems in response to emotional maltreatment even though men report a higher prevalence of abuse (Hagborg, Tidefors, & Fahlke, 2017). This finding implies that the negative impacts of emotional maltreatment on mental health may have to do with females' stronger reactions to maltreatment and may not be attributable to prevalence rates. Additionally, research has found that female victims of maltreatment are more likely than male victims who have experienced maltreatment to struggle with internalizing disorders, such as anxiety and depression (Harper & Arias, 2004; Thompson, Kingree, & Desai, 2004).

Childhood Emotional Maltreatment and Anxiety. Many factors have been found to contribute to the development of anxiety, including having experienced emotional forms of maltreatment during childhood. Researchers have theorized multiple

pathways in which CEM contributes to anxiety, and it has been suggested that symptoms of anxiety in those who have experienced emotional maltreatment may occur through the development of shame and self-criticism (Shahar et al., 2015). Additionally, other research has found that hopelessness acts as a mediator in this relationship (Hamilton et al., 2013).

Gender Differences in Anxiety. According to epidemiological surveys, one third of the population is affected by an anxiety disorder during their lifetime, making them the most prevalent psychiatric disorders (Bandelow & Michaelis, 2015). In the general population, females have consistently higher prevalence rates of anxiety disorders (Kessler et al., 2005; McLean, Asnaani, Litz, & Hofmann, 2011). Research suggests that males and females also differ in their presentation of anxiety across the lifespan, in which females evidence an earlier age of onset and report more somatic anxiety symptoms (Steiner et al., 2005).

The Influence of Lifestyle Behaviors. Research has consistently shown that engaging in healthy behaviors can have a positive impact on mental wellbeing (Velten et al., 2014; Walsh, 2011). Maintaining a healthy lifestyle can include behaviors such as promoting good health and wellness practices, eating a well-balanced diet, abstaining from alcohol and tobacco products, getting sufficient amounts of sleep, engaging in physical exercise, and using effective stress reduction techniques. Evidence indicates that engaging in such lifestyle factors can have a positive effect on the psychological domain, leading to lower levels of depression, anxiety, and stress (Velten et al., 2014).

Existing literature has also suggested that lifestyle behaviors among college students tend to differ by gender. Females have been found to have healthier habits

related to alcohol consumption and nutrition compared to males, but they also tend to show higher levels of stress (Von Bothmer & Fridlund, 2005). In addition, females are nearly twice as likely as males to be considered consistently healthy, meaning they are more likely to be nonsmokers, low to moderate binge drinkers, non-obese, and less sedentary (Daw, Margolis, & Wright, 2017).

Although research is limited, some studies have suggested that lifestyle behaviors may influence the relationship between adverse childhood events and later *physical* health difficulties. Skarupski and colleagues (2016) found that in a sample of prison inmates, adverse experiences during childhood were associated with long-term, deleterious physical health impacts later in life, due in part to a combination of lifestyle factors such as poor diet, stress, and substance abuse. Another study found that health risk behaviors, such as smoking and alcohol consumption, mediated the relationship between childhood abuse and adult physical health (Chartier, Walker, & Naimark, 2009). No studies to date have investigated the impact of healthy lifestyle behaviors on *mental* health outcomes in individuals who have experienced emotional maltreatment, and it is possible that engaging in healthy lifestyle behaviors may inhibit such negative outcomes.

Although the association between CEM and anxiety has been well established, no studies to date have examined the effects of healthy lifestyle behaviors and gender on this relationship. Therefore, the present study aimed to test the following hypotheses in regards to childhood emotional maltreatment, gender, lifestyle, and anxiety: 1) Healthy lifestyle behaviors will mediate the relationship between childhood emotional maltreatment severity and anxiety (See Figure 1); and 2) Gender will moderate the relationship between CEM and symptoms of anxiety (See Figure 2). In terms of CEM,

the present study will consider emotional abuse (EA) and emotional neglect (EN)

separately.

Figure 1. *Conceptual Model for the relationships between EA, EN, Lifestyle, and Anxiety*

```
                    ┌──────────────┐
                    │   Healthy    │
                    │  Lifestyle   │
                    └──────────────┘
                   ↗                ↘
   ┌──────────┐                      ┌──────────┐
   │  EA/EN   │ ───────────────────→ │ Anxiety  │
   └──────────┘                      └──────────┘
```
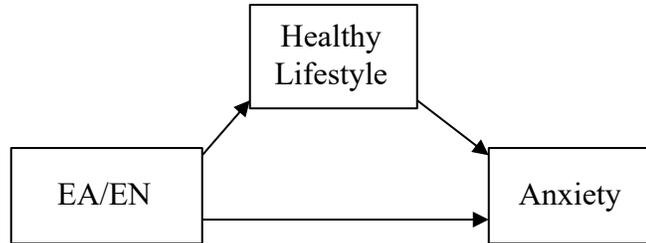
Figure 2. *Conceptual Model for the relationships between EA, EN, Gender, and Anxiety*

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                    ┌──────────────┐
                    │    Gender    │
                    └──────────────┘
                           │
                           ↓
   ┌──────────┐                      ┌──────────┐
   │  EA/EN   │ ───────────────────→ │ Anxiety  │
   └──────────┘                      └──────────┘
```
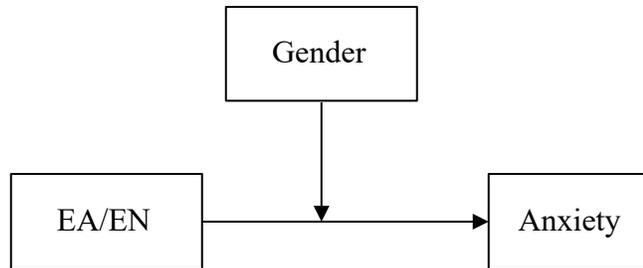
Method

Participants

Participants ($n = 213$) were undergraduate students recruited in 2005 from

introductory psychology courses at a medium-sized public university in the Northeast.

They were provided extra credit in their college course for their participation. Of the

participants, 62.9% were female. Seventy-seven percent were 18-19 years old, 20% were

20-25 years old, and 3% were 26 and older. Additional demographic information is

displayed in Table 1.

Participants in this study completed a packet of self-report questionnaires that

were compiled for use in a separate study. The questionnaires took approximately 30

minutes to complete and included questions about demographics, developmental and

lifestyle factors, childhood trauma, mood and anxiety disorders, and coping styles.

Table 1. *Demographic Information of Overall Sample*

Variable	N	%
Gender		
Male	77	36.20
Female	134	62.90
No report	2	0.90
Race		
White	194	91.10
Black	3	1.40
Asian	9	4.20
Other	2	0.90
No report	5	2.30
Ethnicity		
Hispanic	7	3.30
Non-Hispanic	133	62.40
No report	73	34.30

Measures

Childhood Trauma Questionnaire (CTQ) – Emotional Maltreatment Scales.

The CTQ (Bernstein & Fink, 1998) is a 28-item retrospective self-report measure that

includes five scales that assess various types of childhood maltreatment, including

emotional, sexual, and physical abuse, as well as emotional and physical neglect. Each of

the five scales includes five items that are rated on a 5-point Likert-type scale with values

ranging from 1 ("Never True") to 5 ("Very Often True"). The CTQ also includes a

minimization/denial scale, which contains three items and is used to detect the

underreporting of maltreatment experiences. The CTQ is one of the most commonly used

measures for examining child abuse and neglect in both adolescents and adults, and it has

been well-validated across numerous diverse samples (Bernstein & Fink, 1998; Forde et al., 2012; Karos et al., 2014). Research has consistently demonstrated that the CTQ has both high internal consistency and test-retest reliability (Bernstein & Fink, 1998).

The current study used the five-item emotional abuse subscale (CTQ-EA) and the five-item emotional neglect subscale (CTQ-EN). Both emotional subscales have demonstrated a high degree of internal consistency (α = .86 for CTQ-EA and α =.91 for CTQ-EN) (Baker & Festinger, 2011). Based on the scoring manual for the CTQ, each subtest is divided into four levels of severity. For EA, scores between 5 and 8 represent "none", scores between 9 and 12 represent "low" levels of abuse, scores between 13 and 15 represent "moderate" levels of abuse, and scores above 16 represent "severe" levels of abuse (Bernstein and Fink, 1998). For EN, scores between 5 and 9 represent "none", scores between 10 and 14 represent "low" levels of neglect, scores between 15 and 17 represent "moderate" levels of neglect, and scores above 18 represent "severe" levels of neglect (Bernstein and Fink, 1998). Means, standard deviations, and ranges of the current sample for the CTQ are displayed in Table 2.

Taylor Manifest Anxiety Scale (MAS). The MAS (Taylor, 1953) is a 50-item, multidimensional measure of general or manifest anxiety. The MAS includes 50 statements about anxiety, such as "I frequently find myself worrying about something" that participants are asked to rate as true or false. The current study used the Total Manifest Anxiety Scale, which is a composite score of all 50 items and has demonstrated a high degree of internal consistency (α = .89; Taylor, 1953). Scores on the MAS can range from 0-50, with higher scores representing higher levels of anxiety. For the purpose of the current study, scores on the MAS were divided into three even categories; low,

moderate, and severe. Scores between 1 and 16 represent "low" levels of anxiety, scores between 17 and 34 represent "moderate" levels of anxiety, and scores between 35 and 49 represent "severe" levels of anxiety. Means, standard deviations, and ranges of the current sample for the MAS are displayed in Table 2.

Student Developmental Task and Lifestyle Assessment (SDTLA) – Salubrious Lifestyle Scale. The SDTLA (Winston, Miller, & Cooper, 1999) is an instrument that includes four scales that assess psychosocial development among traditional-aged college students. The current study used the 17-item Salubrious Lifestyle Subscale of the SDTLA, which assesses the degree to which a student's lifestyle is consistent with or promotes good health and wellness practices. Scores on the Salubrious Lifestyle Scale range from 0-100, with scores below 45 representing less engagement in healthy behaviors and scores above 65 representing more engagement in healthy behaviors. The Salubrious Lifestyle Scale of the SDTLA has demonstrated a sufficient degree of reliability ($r = .74$; Winston et al., 1999). Means, standard deviations, and ranges of the current sample for the SDTLA are displayed in Table 2.

Table 2. *Ranges, Means, and Standard Deviations for Primary Scales in Overall Sample.*

Variable	Possible Range	Sample Range	Mean	SD
Emotional Abuse	0-25	5-23	7.82	3.51
Emotional Neglect	0-25	5-21	8.29	3.72
Anxiety	0-50	2-43	19.42	8.21
Healthy Lifestyle Behaviors	0-100	18.10-46.36	33.62	5.56

Results

Preliminary Analyses

In the present sample, scores ranged from "none" to "severe" for EA ($M = 7.82$, $SD = 3.51$; see Table 3) and for EN ($M = 8.29$, $SD = 3.72$; see Table 3). For anxiety, scores on the MAS ranged from "low" to "severe," while the mean ($M = 19.42$, $SD = 8.21$) fell into the "moderate" range; see Table 4. For healthy lifestyle behaviors, scores on the SDTLA ranged from "low" to "moderate" ($M = 33.62$, $SD = 5.56$; see Table 5), with the majority of the sample exhibiting "low" engagement in healthy behaviors.

Table 3. *Percentages of CEM Severity Levels as Measured by the CTQ.*

EA	%(N)	EN	%(N)
None	67.3 (138)	None	69.4 (143)
Low	21.0 (43)	Low	22.8 (47)
Moderate	7.8 (16)	Moderate	1.0 (2)
Severe	3.9 (8)	Severe	6.8 (14)

Table 4. *Percentages of Anxiety Severity Levels as Measured by the MAS.*

Descriptor	% (N)
Low Anxiety	37.5 (75)
Moderate Anxiety	59.5 (119)
Severe Anxiety	3.0 (6)

Table 5. *Percentages of Engagement in Healthy Lifestyle Behaviors as Measured by the SDTLA.*

Descriptor	% (N)
Low Engagement	99.2 (127)
Moderate Engagement	0.8 (1)
High Engagement	0.0 (0)

Significant correlations were observed among the primary variables of interest. As depicted in Table 6, EA (M = 7.82 SD = 3.51) and EN (M = 8.29 SD = 3.71) were significantly and positively associated with one another (r = .68, $p<.01$). EA (M = 7.82

SD = 3.51) was significantly related to anxiety (M = 19.42 SD = 8.21) such that

individuals who reported higher degrees of EA were more likely to report higher levels of

anxiety (r = .28, $p < .01$). Similarly, EN (M = 8.29 SD = 3.71) was significantly related to

anxiety (M = 19.42 SD = 8.21) with individuals reporting higher degrees of EN also

reporting higher levels of anxiety (r = .22, $p<.01$). EN (M = 8.29 SD = 3.71) was also

significantly related to healthy lifestyle behaviors (M = 33.62 SD = 5.56) such that those

reporting higher levels of EN were less likely to engage in healthy lifestyle behaviors (r =

-.242, $p<.01$). The association between EA and healthy lifestyle was not significant.

Lastly, healthy lifestyle behaviors (M = 33.62 SD = 5.56) were negatively associated

with anxiety (M = 19.42 SD = 8.21) such that individuals who engaged in fewer healthy

behaviors were more likely to report higher levels of anxiety (r = -.200, $p < .01$).

Table 6. *Correlation Matrix of Primary Variables*

	M (SD)	Range	1	2	3	4
1. EA	7.82 (3.51)	5-23	-			
2. EN	8.29 (3.71)	5-21	.682**	-		
3. Anxiety	19.42 (8.21)	2-43	.282**	.220**	-	
4. Healthy Lifestyle	33.62 (5.56)	18.10-46.36	-.115	-.242**	-.200**	-

Note. N=213, *$p < .05$, ** $p < .01$

Results from independent sample t-tests indicated that there was a significant

difference between genders for emotional neglect (t(202) = 2.13, p<.05), such that men

reported higher levels of emotional neglect. No significant difference in gender was

found for emotional abuse (t(201) = 1.45, p=.15). Results indicated a significant

difference in gender for anxiety severity (t(196) = 196, p<.05) in which females reported

higher levels of anxiety than males. No significant difference between males' and

females' engagement in healthy behaviors was found (t(198) = -.67, p=.51).

Table 7. *Means and Standard Deviations for Study Variables by Gender*

Variable	Males (n= 77)			Females (n = 134)		
	Mean	SD	Level	Mean	SD	Level
Emotional Abuse	8.30	4.06	"None"	7.82	3.18	"None"
Emotional Neglect	9.03	3.97	"None"	7.87	3.55	"None"
Anxiety	17.38	8.13	"Moderate"	20.47	8.07	"Moderate"
Healthy Lifestyle	34.37	5.62	"Low"	32.87	5.51	"Low"

Mediation Analyses

As depicted in Figure 3, regression analyses were used to investigate the hypothesis that lifestyle behaviors mediate the relationship between EA and anxiety. In step 1 of the mediation model, the regression of EA on anxiety was significant, $\beta =.64$, $p<.001$. Step 2 showed that the regression of EA on the mediator, lifestyle behaviors, was not significant. Therefore, contrary to study hypotheses, healthy lifestyle behaviors did not mediate the relationship between EA and anxiety.

As depicted in Figure 4, regression analyses were used to investigate the hypothesis that lifestyle behaviors mediate the relationship between EN on anxiety. In step 1 of the mediation model, the regression of EN on anxiety was significant, $\beta=.51$, $p<.001$. Step 2 showed that the regression of EN on the mediator, lifestyle behaviors, was also significant, $\beta=-.02$, $p<.001$. Step 3 of the mediation process showed that the regression of lifestyle behaviors on anxiety (while controlling for EN) was significant, $\beta=-3.72$, $p<.05$. Step 4 of the analyses revealed that, when including lifestyle behaviors in the regression analysis, EN was still a significant predictor of anxiety $\beta=.43$, $p<.01$. Therefore, lifestyle was shown to partially mediate the relationship between EN and anxiety.

Figure 3. *Results of Hierarchical Regression Analyses for the relationships between EA, Lifestyle, and Anxiety*

Note. *$p < .05$, **$p < .01$
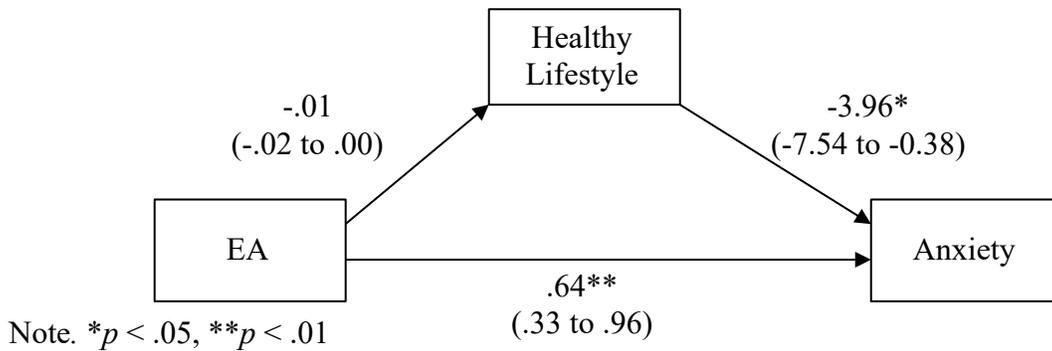
Figure 4. *Results of Hierarchical Regression Analyses for the relationships between EN, Lifestyle, and Anxiety*

Note. *$p < .05$, **$p < .01$
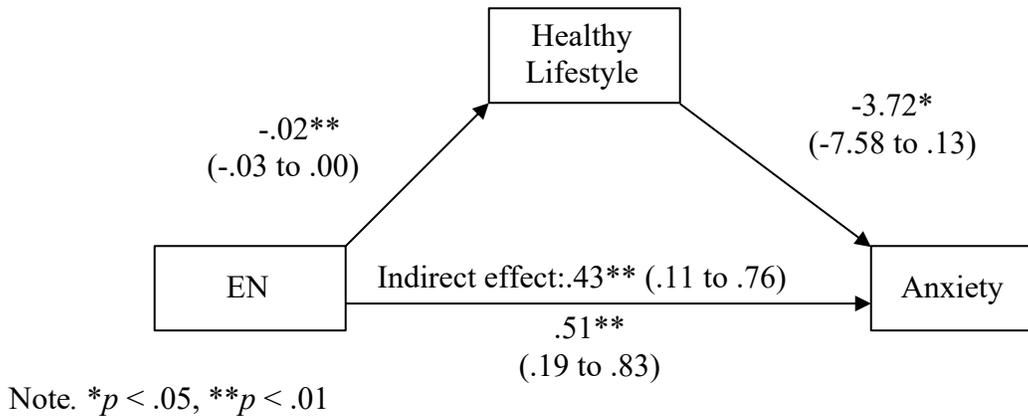
Moderation Analyses

Regression analyses were conducted to examine the moderating effects of gender on the relationship between EA and anxiety. In Step 1, EA (IV) and gender (M) were regressed on anxiety (DV). Step 1 of the hierarchical multiple regression yielded statistically significant results and indicated that EA and gender accounted for

approximately 11% of the variance in anxiety ($R^2 = .11$, $F(3, 188) = 11.32$, $p < .001$). EA

(IV) was a significant predictor, but the moderator, gender, was not significant (see Table

8).

In Step 2, the interaction term between EA and gender was added to the

regression model. Results indicated that the interaction between EA and gender was not

significant and did not significantly change R2, indicating that moderation is not

occurring. A summary of the hierarchical multiple regression results with gender as a

moderator is displayed in Table 9.

Table 8. *Summary of Hierarchical Multiple Regression for EA with Gender as a Moderator*

Variable	Step 1					Step 2				
	B	SE B	β	t	p	B	SE B	β	t	p
EA	0.67	0.16	0.29	4.29	.00	0.39	0.51	0.17	0.76	0.45
Gender	2.78	1.16	0.17	2.40	.02	1.31	2.78	0.08	0.48	0.64
EA*Gender						0.18	0.32	0.15	0.58	0.56
R^2	0.11					0.11				
ΔR^2	0.10					0.00				
Δp	0.00					0.56				

Note. DV = Anxiety

Regression analyses were also conducted to examine the moderating effects of

gender on the relationship between EN and anxiety. In Step 1, EN (IV) and gender

(moderator) were regressed on anxiety (DV). Step 1 of the hierarchical multiple

regression yielded statistically significant results and indicated that EN and gender

accounted for approximately 8% of the variance in anxiety ($R^2 = .09$, $F(3, 188) = 6.00$, p

$< .001$). EN (IV) was a significant predictor, but the moderator, gender, was not

significant (see Table 9).

In Step 2, the interaction term between EN and gender was added to the regression model. Results indicated that the interaction between EN and gender was not significant and did not significantly change R2, indicating that moderation is not occurring. A summary of the hierarchical multiple regression results with gender as a moderator is displayed in Table 9.

Table 9. *Summary of Hierarchical Multiple Regression for EN with Gender as a Moderator*

Variable	Step 1					Step 2				
	B	SE B	β	t	p	B	SE B	β	t	p
EN	0.54	0.15	0.25	3.53	0.00	0.55	0.52	0.26	1.07	0.29
Gender	3.45	1.20	0.20	2.88	0.00	3.54	2.94	0.21	1.20	0.23
EN*Gender						-0.01	0.31	0.00	-0.03	0.97
R^2	0.09					0.09				
ΔR^2	0.09					0.00				
Δp	0.00					0.97				

Note: DV = Anxiety

Discussion

The current study is the first to test the hypothesis that engagement in healthy lifestyle behaviors may be a mechanism for helping to further explain the link between CEM and anxiety. Based upon previous research, it was anticipated that lifestyle behaviors would act as a mechanism by which experiencing CEM confers risk for anxiety later in life. It was hypothesized that emotional abuse and emotional neglect would be associated with less engagement in healthy lifestyle behaviors which, in turn, would be associated with elevated levels of anxiety. Given that previous research has identified gender differences in CEM and anxiety (e.g., Edwards et al., 2003; Kessler et al., 2005), it was also hypothesized that gender would moderate the relationship between CEM severity and anxiety.

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While healthy lifestyle behaviors were not found to mediate the relationship between emotional abuse and anxiety, they were found to partially mediate the relationship between emotional neglect and anxiety. This discrepancy may suggest an important difference in outcomes for children who experience emotional abuse versus neglect. In the current study, items measuring emotional abuse consisted of five true or false statements such as "people in my family said hurtful or insulting things to me," while items measuring emotional neglect consisted of five true or false statements such as "I felt loved," which were reverse coded. Therefore, emotional abuse may be thought of as an act, whereas emotional neglect is a *failure* to act. It may be that because emotional abuse may be more outwardly observable, it is addressed earlier in a child's life. In contrast, emotional neglect may go unnoticed, and children may suffer from more deleterious behavioral health effects as a result of the ongoing stress they experience.

In addition, results revealed that gender was significantly related to emotional neglect, but not emotional abuse. However, gender was not found to moderate the relationship between either EA or EN, and anxiety. These findings may have emerged as a result of the study's small sample size and the higher number of female participants. Therefore, further studies are required to confirm or reject the hypothesis that gender serves to moderate the relationship between CEM and anxiety.

Furthermore, this study's sample exhibited particularly low rates of both EA and EN. This finding may be attributable to the lack of diversity in the current sample (i.e., primarily 18-22-year-old college students). Therefore, future research might consider larger and more diverse samples, and may also consider comparing those high and low in EA and EN when looking at healthy behaviors as a moderator.

Surprisingly, a majority of the sample exhibited very low engagement in healthy behaviors in comparison with the measure's normative sample. Ninety-nine percent of the current sample fell into the low engagement in healthy behaviors category, and no participants endorsed high engagement. This finding may have occurred as a result of the current study's definition of healthy behaviors. The SDTLA's Salubrious Lifestyle Scale used true or false items such as "I have personal habits that are potentially dangerous for my health" and "I plan my activities to make sure that I have adequate time for sleep." A college student sample may be one that is more prone to these specific unhealthy lifestyle behaviors. This extreme lack of engagement in healthy behaviors may help to explain the finding that healthy lifestyle did not significantly explain the relationship between CEM and anxiety.

Limitations

When considering the results of this study, there are several limitations that should be noted. First, CEM was assessed using the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), which is a retrospective self-report measure that requires participants to recall memories from childhood. Although this measure has been validated across a wide range of populations, including college students, and has demonstrated a high degree of internal consistency, it is possible that participants' memories of their childhood were biased or simply inaccurate. Actual reports by informants such as health professionals or child protective services may be more accurate. Using structured clinical interviews to assess for a history of CEM may have been useful as the interviewer would be able to ask questions in order to decipher whether information is consistent with CEM or not. In addition, a prospective research design following children into adolescence and

adulthood may allow for a more accurate investigation as it would not be reliant upon memory.

Next, the Taylor Manifest Anxiety Scale (MAS; Taylor, 1953) was the only measure used to assess anxiety severity in the present study. Although the MAS contains 50 items and has demonstrated a high degree of internal consistency across populations, it is possible that it did not fully capture participants' experiences of anxiety. Anxiety is multi-faceted and includes cognitive, affective and behavioral components. Therefore, the MAS may not have addressed the components of anxiety that may be specifically associated with healthy lifestyles as a mediator between CEM and anxiety. Furthermore, recently developed measures may be more accurate in assessing symptoms of anxiety as older measures (such as the MAS) are based on outdated diagnostic criteria.

In addition, the measurement of lifestyle behaviors may have limited the findings of this study. It may have been beneficial to use an objective index of healthy behaviors rather than a subjective one. It is possible that there is a bias against reporting engagement in healthy behaviors within this particular population. For instance, college students may be more likely to report alcohol and tobacco use because of self-presentational concerns (e.g., wanting to look "cool"). Research has found that the desire to impress others and to achieve peer acceptance are reasons for older adolescents' use of unhealthy and potentially dangerous behaviors (Martin & Leary, 2001), which may explain our finding of surprisingly unhealthy behaviors.

Additional limitations pertain to the sample's lack of diversity. The number of males (n = 77) and females (n = 134) differed significantly, which may have jeopardized the psychometric robustness of results. To address this issue, future research may benefit

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from utilizing random sampling to ensure that the proportion of males and females included in the sample is equivalent. In addition, the present study utilized a convenience sample and only included undergraduate students from an introductory psychology course. As a result, the overall sample was largely homogenous, and the majority of participants self-identified as White, non-Hispanic, female, and between the ages of 18- and 22-years-old. In addition, the majority of the sample also reported no experience of CEM. The lack of diversity in the current sample limits the generalizability of these findings. Thus, when interpreting the results of the present study, it is critical to take into consideration the fact that this sample may not be representative of all emerging adults in the United States.

Future Directions

Although the current study has provided a meaningful starting point for examining the relationship between CEM, lifestyle behaviors, and anxiety, there are numerous ways that future researchers can improve and expand upon the current findings. Future studies should utilize a more diverse sample that is representative of the general population in terms of gender identities, race/ethnicity, and educational level.

Researchers who are interested in furthering this line of research might benefit by incorporating data that does not rely solely on self-report measures. Looking into individuals' past medical and mental health records may be a useful way to gain more information about individuals' experiences with CEM, symptoms of anxiety, and lifestyle behaviors. Additionally, assessing CEM experiences during childhood and following up with the same participants at early adulthood may be beneficial for ensuring reliable data.

In addition, collecting information from outside informants such as relatives or caregivers would likely result in more reliable data as well.

Future research should explore other potential mediators and moderators of the relationship between CEM and subsequent anxiety. For example, maintaining positive peer relationships or having a high degree of social support may act as protective factors for the development of anxiety in individuals with a history of CEM.

While lifestyle behaviors were found to partially mediate the relationship between EN and anxiety, but not EA and anxiety, living a healthy lifestyle might serve as a mediating factor for CEM predicting to depression or other mental health outcomes. Similarly, it might be that lifestyle is a mediator for other forms of childhood abuse (i.e., physical or sexual) in relation to later anxiety.

Conclusion

In sum, findings indicated that both EA and EN were directly associated with higher symptoms of anxiety, but the engagement in lifestyle behaviors only partially explains the relationship between EN and anxiety. These findings support the notion that EA and EN are related but distinct forms of emotional maltreatment. Future research should explore other possible mechanisms by which CEM may lead to anxiety (e.g., lack of social support) in order to identify treatment components for an at-risk group (i.e., individuals with a history of CEM). Replication of the current findings with longitudinal designs, as well as with larger samples, will help to further define the relationship between childhood emotional maltreatment and anxiety. These findings are imperative to help to identify preventive and intervention efforts to reduce the numbers of individuals who experience anxiety disorders following exposure to maltreatment in childhood.

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