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Research paper

Anxiety among adults with a history of childhood adversity: Psychological resilience moderates the indirect effect of emotion dysregulation

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ABSTRACT

Background: Adverse childhood experiences (ACEs) have been widely identified as risk factors for increased symptoms of anxiety across the lifespan. Little is known, however, about the processes by which ACEs set the stage for increased symptoms of anxiety in adulthood. The current study evaluated whether emotion dysregulation and psychological resilience influence the association between ACEs and symptoms of anxiety.
Methods: A sample of adult primary care patients (N=4006) completed self-report measures related to ACEs, symptoms of anxiety, emotion dysregulation, and psychological resilience.
Results: A moderated mediation analysis showed that emotion dysregulation mediated the association between ACEs and anxiety symptoms, and that the strength of this effect varied as a function of psychological resilience. Specifically, the influence of ACEs on emotional dysregulation was stronger among individuals with low levels of psychological resilience than among those with high levels of psychological resilience. These findings remained significant when controlling for a range of sociodemographic variables in the model.
Limitations: Cross-sectional designs preclude inferences about causality and self-report data may be susceptible to reporting biases. Other psychological variables that may be relevant to the current results, such as protective factors in childhood, were not assessed.
Conclusions: These results have implications for the conceptualization of ACEs, emotion dysregulation, and psychological resilience in etiological models of anxiety. They also highlight the relevance of ACEs, emotion dysregulation, and psychological resilience to the detection, treatment, and prevention of anxiety disorders.

1. Introduction

Anxiety disorders are common in the general population, with 12-month and lifetime rates of 18.1% and 28.8%, respectively (Kessler et al., 2005a, 2005b). Anxiety disorders are characterized by excessive fear/worry and subsequent avoidance (American Psychiatric Association, 2013) and are often chronic and re-occurring (Moffitt et al., 2007). Elevated symptoms of anxiety represent a significant public health concern, as they are associated with substantial functional impairment (Löwe et al., 2008), high rates of comorbidity (Roy-Byrne et al., 2008), reduced work productivity, and increased health care costs and utilization (Wittchen et al., 2002; Wittchen, 2002). In the United States alone, anxiety disorders are estimated to cost $44 billion dollars per year in indirect and direct costs (Greenberg et al., 1999).

Although the consequences associated with anxiety disorders have received increased recognition in recent years, further research is needed to clarify the etiology of anxiety. Results of twin and family studies suggest that the magnitude of heritable influences on anxiety disorders is relatively moderate (see Hettema et al., 2001 for a review), indicating that psychosocial factors may be especially relevant in the etiology of anxiety disorders. One factor that theorists and researchers have emphasized to be relevant to the development of anxiety disorders throughout the lifespan is childhood exposure to adversity.

2. Adverse childhood experiences

Adverse childhood experiences (ACEs) are defined as exposure to emotional, physical, and sexual abuse, emotional and physical neglect, and household dysfunction (i.e., household substance abuse, mental illness, and criminal behavior; intraparental violence; parental separation or divorce) prior to the age of 18 years. Approximately two in every three American adults report a history of at least one ACE, and 12% report at least four types of ACEs (Dube et al., 2001). ACEs have consistently been shown to place individuals at increased risk for a broad range of poor health outcomes, including anxiety disorders

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(Hovens et al., 2010; Kessler et al., 2010; McLaughlin et al., 2010; McCauley et al., 1997; Spinhoven et al., 2010).

The association between ACEs and anxiety disorders in adulthood is relatively well established. Among a large sample of adults from the Netherlands, those who reported multiple exposures to emotional neglect, physical abuse, or sexual abuse as children were each more than two times as likely to report a current anxiety disorder than those with no history of childhood adversity (Hovens et al., 2010). Based on findings from an international survey of over 50,000 adults, the WHO suggested that the eradication of ACEs would lead to a 31% reduction in anxiety disorders worldwide (Kessler et al., 2010). Little is known, however, about the mechanisms by which ACEs set the stage for increased symptoms of anxiety in adulthood.

2.1. The mediating role of emotion dysregulation

Theoretical frameworks have proposed that ACEs increase the risk for anxiety, as individuals who grow up in turbulent or unpredictable environments may not learn to effectively identify, interpret, and/or regulate their emotions. Emotion dysregulation is conceptualized as difficulties in identifying, monitoring, and/or responding to emotional experiences given the demands of a specific context or set of goals (Gratz and Roemer, 2004). Individuals with emotion dysregulation may utilize worry to control, avoid, or minimize negative emotional experiences and thus be vulnerable to a range of anxiety disorders (Mennin et al., 2002).

Research studies have provided preliminary empirical support for theories that implicate ACEs in the development of emotion dysregulation. As compared to adults with no history of childhood adversity, those with a history of ACEs tend to report elevated emotion dysregulation, such as heightened emotional reactivity to daily life stress (Glaser et al., 2006), lower levels of emotional understanding (Shipman et al., 2000), and greater non-acceptance of emotions (Gratz et al., 2007). In turn, emotion dysregulation seems to serve as a risk factor for increased anxiety, as individuals with anxiety disorders tend to report broad deficits in emotion regulation (Etkin et al., 2010; Mennin et al., 2002, 2005). Previous research suggests that specific emotion regulation deficits, such as reduced ability to engage in goal-pursuit behavior and diminished access to effective emotion regulation strategies when distressed, are associated with generalized anxiety disorder (GAD) and chronic worry (Salters-Pedneault et al., 2006).

A recent study found that emotion dysregulation mediated the association between childhood emotional abuse and GAD among a sample of undergraduate students (Soenke et al., 2010). Interestingly, GAD was not associated with either sexual or physical abuse and, consequently, the role of emotion dysregulation as a mediator of these relationships was not evaluated. The results that sexual abuse and physical abuse were not associated with GAD are inconsistent with previous research that had identified associations between a range of ACEs and increased anxiety in adulthood (Kessler et al., 1997; Safren et al., 2002). Thus, while there is support for the mediating role of emotion dysregulation in the relationship between childhood emotional abuse and GAD, important questions remain unanswered regarding the mechanisms by which childhood adversity exerts its influence on symptoms of anxiety.

2.2. The protective role of psychological resilience

Not everyone who experiences childhood adversity will develop emotion dysregulation and/or symptoms of anxiety. Indeed, there is significant variability in mental health outcomes among adults with a history of childhood adversity (Hovens et al., 2010). Individuals who demonstrate positive adaptation following experiences of adversity are commonly referred to as resilient. Generally, resilience is defined as the ability to maintain adaptive functioning following experiences of stress or trauma (Luthar et al., 2000). Psychological resilience is a multidimensional construct that consists of factors such as positive self-concept, self-confidence in one's strengths and abilities, and effective problem-solving skills. Individuals high in psychological resilience tend to exhibit dispositional optimism and positive emotions (Charney, 2004; Ong et al., 2006), utilize active and adaptive coping strategies (Southwick et al., 2005), and express a sense of purpose in life (Alim et al., 2008; Southwick et al., 2005).

Previous research has found lower levels of resilience among individuals with a history of ACEs (e.g., Campbell-Sills et al., 2009) and among individuals with anxiety disorders (e.g., Min et al., 2012; Hjemdal et al., 2011). Min et al. (2012) found that, after controlling for demographic variables and trauma history, severity of trait anxiety was associated with psychological resilience in a sample of outpatients who had been diagnosed with depression and/or anxiety disorders. Specifically, individuals who reported low and medium levels of resilience reported greater severity of trait anxiety as compared to the high-resilience group. Similarly, Hjemdal et al. (2011) found that higher resilience scores predicted lower scores on a measure of anxiety in a sample of Norwegian adolescents. Although no research has simultaneously evaluated the role of psychological resilience as a moderator of the relationship between ACEs and anxiety disorders, previous research has shown that psychological resilience moderates the association between ACEs and other mental health concerns, such as psychiatric and depressive symptoms (Campbell-Sills and Stein, 2007; Poole et al., 2017).

The current study proposed that psychological resilience would moderate the indirect relationship between ACEs and anxiety, such that the degree to which ACEs increase symptoms of anxiety via emotion dysregulation would vary as a function of psychological resilience. In this way, characteristics of psychological resilience may serve as a protective factor among those who experience ACEs because they foster the use of adaptive emotion regulation skills and reduce the use of maladaptive emotion regulation skills. Specifically, it was proposed that the indirect association between ACEs and anxiety symptoms via emotion dysregulation would hold only for individuals with low levels of psychological resilience, but not for those with high levels of psychological resilience.

2.3. Overview of the current research

The current study evaluated the mechanisms by which ACEs are associated with symptoms of anxiety in adulthood in a large sample of primary care patients. Primary care patients represent a highly relevant sample to the objectives of the current research for two main reasons. First, rates of anxiety disorders are higher among patients in primary care clinics than in the general population (Roy-Byrne and Wagner, 2004). Second, anxiety disorders represent one of the most common mental health problems seen in general medical settings (Kroenke et al., 2007).

The current study evaluated three primary hypotheses. First, it was hypothesized that there would be a positive association between total ACE score and symptoms of anxiety. Second, it was hypothesized that increased exposure to childhood adversity would predict increased anxiety symptoms indirectly through increased emotion dysregulation. Third, it was hypothesized that this indirect effect would hold only for individuals with low levels of psychological resilience, and not for those with high levels of psychological resilience. To examine the second and third hypotheses, a moderated mediation model was utilized (see Fig. 1). In this model, it was hypothesized that greater ACEs predict increased anxiety symptoms via increased emotion dysregulation, but that this indirect relationship would vary as a function of psychological resilience.