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Research report

Are childhood trauma exposures predictive of anxiety sensitivity in school attending youth?

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ABSTRACT

Background: Stressful life events in adolescents have been found to be longitudinally associated with higher anxiety sensitivity (AS). A question that has not been addressed is whether AS in adolescence is associated with different childhood adversity exposures.
Methods: School attending adolescents ($n=1149$) completed measures of anxiety sensitivity (CASI), trait anxiety (STAI-T), childhood trauma (CTQ), depression (CES-DC), alcohol (AUDIT) and drug use (DUDIT), and resilience (CD-RISC) and coping orientation (A-COPE).
Results: There was no significant gender difference in childhood trauma exposure, resilience levels or coping orientation. Gender differences were evident in terms of AS, trait anxiety, depression, alcohol and drug use. Depression, trait anxiety and alcohol use mediated the relationship between the amount of childhood trauma and AS and played a role in the relationship between certain childhood trauma types and AS. Neither resilience nor coping orientation had a moderating effect on the relationship between the amount of childhood trauma and AS.
Limitations: Cross-sectional study, over- or under-reporting of data due to use of self-report instruments, and use of a retrospective measure of childhood trauma (CTQ) that is subject to recall bias.
Conclusions: Girls are at greater risk than boys for early onset anxiety disorders as girls have higher rates of AS, trait anxiety and depression despite the same rates of childhood trauma, coping orientation and resilience. Our findings, in the context of childhood trauma, underscore the influence of depression, trait anxiety and alcohol use as risk factors for the development of AS in youth.

1. Introduction

Anxiety disorders are one of the most frequently diagnosed conditions among adolescents (Kessler et al., 2012) with lifetime rates for “any anxiety disorder” in the order of 15–20% (Beesdo et al., 2009). Data from twin studies indicate that both genetic influences and environmental effects substantially contribute to the variance in anxiety symptoms (Topolski et al., 1997) and anxiety-related temperamental traits, such as, trait anxiety (Legrand et al., 1999) and anxiety sensitivity (AS) (Stein et al., 1999). AS and trait anxiety are commonly elevated in individuals with anxiety disorders in comparison with non-clinical controls (Olatunji and Wolitzky-Taylor, 2009; Kiliç et al., 2008).

AS and trait anxiety are empirically and conceptually distinct (McNally, 1996). AS is considered a dispositional characteristic (McNally, 2002) and an established cognitive risk factor for the development of anxiety in children and adolescents (McLaughlin and Hatzenbuehler, 2009). AS refers to the fear of anxiety-related bodily sensations and symptoms based on the individual's beliefs that these sensations and symptoms have harmful physical, psychological and/or social consequences (Reiss, 1991; Reiss and McNally, 1985) and these fears are thought to intensify pre-existing anxiety (Reiss, 1991). Trait anxiety denotes the tendency to respond fearfully to stressors in general (McNally, 1989) and has been shown to uniquely predict PTSD symptoms and generalised anxiety disorder symptoms in traumatised children and youths (Hensley and Varela, 2008; Weems et al., 2007). Significantly higher levels of trait anxiety have been reported in adult outpatients with histories of childhood physical and sexual abuse in comparison with non-abused outpatients (Handa et al., 2008). Moreover, there is evidence for the onset and persistence of psychopathology due to adversities experienced in childhood, as these are associated with adolescent and adult psychopathology (Benjet et al., 2010; Clark et al., 2010). Individuals with histories of early life stressor exposure have been shown to have significantly

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higher anxiety and depression symptom scores, in comparison with those without such histories (Chu et al., 2013). Childhood maltreatment and adversity is also associated with greater drug and alcohol use (Arata et al., 2007; Danielson et al., 2009), and in adolescents, childhood adversity is associated with the opportunity to use alcohol, alcohol use and alcohol abuse/dependence and illicit drugs, actual drug use, and drug abuse and dependence (Benjet et al., 2013). Danielson et al. (2009) found that over 60% of adolescents with past-year abuse or dependence of alcohol, marijuana, and/or other hard drugs, reported a history of childhood physical and/or sexual assault.

In a community sample of adolescents, McLaughlin and Hatzenbuehler (2009) found that stressful life events (i.e. stressors related to health and family discord) were significantly associated with anxiety symptoms at follow-up and were also shown to be longitudinally associated with increases in AS (McLaughlin and Hatzenbuehler, 2009). Childhood emotional maltreatment has been reported to be associated with higher levels of AS in young adults, with parental threatening behaviour playing the strongest role in predicting overall AS (Scher and Stein, 2003). These findings highlight the role of environmental factors in the development of AS.

Taken together, it appears reasonable that childhood trauma, shown to be associated with anxiety and depressive symptoms (Hovens et al., 2010), could be an important risk factor for increased levels of AS. To better understand the factors that contribute to AS, we investigated the role of childhood trauma amount and type (i.e. emotional, physical and sexual abuse; and emotional and physical neglect) in the prediction of AS; and the role of protective (i.e. resilience and coping) and risk (i.e. trait anxiety, depression, alcohol and drug use) factors as moderators and mediators, respectively, in this relationship.

2. Methods

2.1. Participants

Participants comprised 1149 randomly selected school-attending youths from a representative sample of secondary schools ($n=29$) from Cape Town, South Africa. The mean age of the sample was 16.24 years (range = 13–23, SD = 1.95). The majority were girls (689/1149, 59.97%) and the mean level of education was grade 9 (range = 8–12, SD = 1.30). Most youths identified themselves as Black (68.9%, 792/1149).

2.2. Procedure

Permission to access secondary schools was provided by the Western Cape Education Department and the Health Research Ethics Committee at Stellenbosch University provided ethical approval. Secondary schools were randomly selected from all public schools in Cape Town. These schools were approached and those that agreed to participate were requested to provide names of all learners from grades 8 to 12. Thereafter, a sample of 20 learners per grade was randomly selected from the list of learners' names issued by the individual schools. Written informed consent was obtained from parents/guardians and written assent was obtained from the learners themselves, who were then administered study questionnaires. This was completed at the schools, on a single occasion, at a time indicated by the school head.

2.3. Measures

The Childhood Anxiety Sensitivity Index (CASI, Silverman et al., 1991) is an 18-item self-report questionnaire designed for use with school-age children and adolescents. The CASI measures the fear of anxiety on a 3-point scale by asking participants to rate the extent to which they believe the experience of anxiety will result in negative consequences, comprising physical, psychological and social concerns. The CASI has a range of 18–54 with higher scores reflecting higher levels of AS. In the current study, the CASI had good internal consistency ($\alpha=0.81$).

The State-Trait Anxiety Inventory (STAI, Spielberger, 1973). The trait version of the STAI is a 20-item self-report measure that assesses an individual's trait anxiety (i.e. the tendency to respond fearfully to stressors in general) (McNally, 1989) and thus participants are asked to respond to the items in terms of how they generally feel. Items are rated on a 4-point scale and scores can range between 20 and 80, with higher scores reflecting higher levels of trait anxiety (Spielberger, 1973). Internal consistency of the STAI-T in the current study was relatively poor ($\alpha=0.62$).

The Childhood Trauma Questionnaire (CTQ, Bernstein and Fink, 1998) is a 28-item retrospective self-report measure of the frequency of and severity of different types of childhood trauma, namely, abuse (i.e. emotional, physical and sexual) and neglect (i.e. emotional and physical) experienced prior to the age of 18. Participants respond to each item in the context of "when you were growing up" and answer according to a 5-point Likert scale. CTQ scores can range from 25 to 125, with scores for each trauma scale (i.e. emotional, physical and sexual abuse and emotional and physical neglect) ranging from 5 to 25. The CTQ also includes a 3-item Minimisation/Denial scale that indicates the potential underreporting of maltreatment (Bernstein and Fink, 1998). Internal consistency in the current study for the CTQ total was good ($\alpha=0.86$) and ranged from $\alpha=0.53$ (physical neglect subscale) to $\alpha=0.80$ (sexual abuse subscale) for the CTQ trauma types.

The Centre for Epidemiological Studies Depression Scale for Children (CES-DC, Faulstich et al., 1986; Weissman et al., 1980) is a 20-item self-report measure of past week depressive symptoms. Items are rated on a 5-point scale (scores ranging from 0 to 60) with higher scores indicating increasing levels of depression. In the current study, the CES-DC had good internal consistency ($\alpha=0.87$).

The Alcohol Use Disorders Identification Test (AUDIT, Babor et al., 2001; Saunders et al., 1993) is a 10-item self-report measure used to identify hazardous and harmful patterns of alcohol consumption in the past year. Items are rated on a 5-point scale (score range 0–40). Higher scores are indicative of potential hazardous and harmful alcohol use. Internal consistency of the AUDIT in the current study was good ($\alpha=0.87$).

The Drug Use Disorders Identification Test (DUDIT, Berman et al., 2005) is an 11-item self-report measure (score range 0–44) used to identify drug use patterns and various drug-related problems, with higher scores indicative of possible drug-related problems. Internal consistency of the DUDIT in the current study was very good ($\alpha=0.89$).

The Connor–Davidson Resilience Scale (CD-RISC, Connor and Davidson, 2003) is a 25-item self-report measure that assesses the level of stress coping ability over the past month. Responses are coded on a 5-point Likert scale and the total score can range from 0 to 100 with higher scores indicating greater levels of resilience. Internal consistency of the CD-RISC in the current study was excellent ($\alpha=0.92$).

Adolescent Coping Orientation for Problem Experiences (A-COPE, Patterson and McCubbin, 1987) is a 54-item self-report coping inventory used to measure the behaviours and patterns that adolescents find helpful in managing problems or difficult situations. Responses to items are coded on a 5-point Likert scale. The total score can be used as an overall measure of coping and has a range of 54–270, with higher scores indicating better levels of coping behaviours and patterns. Internal consistency in the current study for the A-COPE was good ($\alpha=0.84$).