Journal of Psychiatric Research xxx (2015) 1–7

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/psychires

# What doesn't kill you makes you stronger and weaker: How childhood trauma relates to temperament traits

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ARTICLE INFO

*Article history:*
Received 6 September 2014
Received in revised form
27 November 2014
Accepted 8 January 2015

*Keywords:*
Childhood trauma
Abuse
Neglect
Temperament
Traits
Personality

ABSTRACT

Childhood trauma arises from damaging experiences and the absence of a secure and reliable environment for child development. Despite many studies on the risk for developing psychiatric disorders, much less is known on the relationship between traumatic experiences and personality traits. A total of 10,800 participants (mean age 27.7 ± 7.8 years old, 69.8% women) anonymously answered the Childhood Trauma Questionnaire (CTQ) and the Affective and Emotional Composite Temperament Scale (AFECTS) in the Brazilian Internet Study on Temperament and Psychopathology (BRAINSTEP). The results showed that total trauma score was associated with lower levels of positive traits (volition, control, coping, and stability), higher scores of negative traits (sensitivity, anger, anxiety) and a higher frequency of depressive and cyclothymic temperaments. Linear regression analysis showed similar findings for emotional abuse and neglect, whereas physical abuse and neglect were positively associated with more volition and coping as well as less fear, sensitivity and anxiety traits, especially in men. This study has a cross-sectional design and the sole use of self-reporting as the main limitations. In conclusion, dysfunctional temperament profiles were associated mainly with emotional trauma and sexual abuse. Some adaptive traits were associated with physical abuse and neglect, especially in men. These results reinforce the negative impact of emotional trauma and people's resilience to physical trauma, which may even translate into adaptive trait expression in males particularly. We propose that the "context-dependent nature" of stress should be further studied to break down the influence of specific types and contexts of adversity on psychological and psychiatric outcomes.



## 1. Introduction

Childhood trauma arises from harmful experiences and from the absence of a supporting and reliable environment that fosters child development. Early traumatic events have been widely associated with a diversity of negative outcomes related to psychological maladjustment and psychiatric conditions, such as mood and personality disorders (Afifi et al., 2011; Allen and Lauterbach, 2007; Flory et al., 2009; Heins et al., 2011; McGloin and Widom, 2001; Sansone et al., 2006; Tucci et al., 2010; Widom et al., 2007). Nevertheless, these evidence are mainly based on case-control study designs, which are known to be subjective to selection biases (Gordis, 2010), as clinical/case groups tend to be composed of treatment-seeking individuals, which are not representative of all cases within the trauma exposed population and controls that either healthy or have been exposed to very few traumatic events. Also, case-control methodologies are more suitable for rare conditions, which is not the case for abuse and negligence exposure in childhood (Bassani et al., 2009; Briere and Elliott, 2003; Costa et al., 2007).

Another possible limitation regarding abuse and neglect research is unreliable reporting. Most studies rely on classic paper-and-pencil self-report, telephone or face-to-face interviews and, although scientific work guarantees anonymity in publications, participants may feel vulnerable and exposed when dealing directly with research staff. In this regard, computer-based data collection has important advantages over the aforementioned

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http://dx.doi.org/10.1016/j.jpsychires.2015.01.001
0022-3956/

methodologies even when both methods are applied anonymously (Gosling et al., 2004; Turner et al., 1998; Couper, 2000). Moreover, volunteers voluntarily and anonymously accessing their private computers probably feel even less concerned about how they appear to others. This is particularly relevant when answering questions on sensitive issues, such as problems of intimate relationships, illicit drug use, sexual experiences, and traumatic events. In addition, the Internet allows the collection of large research samples at a low cost and with little data loss. Thus, internet assisted methods can enhance response reliability and the acquisition of a diverse sample, although selection biases also apply.

Despite the common understanding that traumatic life events and psychological maladjustment are intimately connected, few studies have addressed the relationship between childhood traumatic experiences and personality traits. This gap result from the emphasis on categorical diagnosis in the last few decades and from the view that personality is a construct designed mostly to index normal and social behavioral liabilities (Bornstein et al., 2010; Mathews et al., 2003). Nevertheless, using the Five Factor Model of personality, Allen and Lauterbach (2007) reported that people who have gone through early life trauma present higher scores on neuroticism and openness to new experience than controls. Furthermore, individuals who reported a single traumatic experience in early life showed lower scores than controls on interpersonal dependency, while individuals who reported repeated and prolonged traumatic involvement showed higher scores on interpersonal dependency than controls. Rademaker et al. (2008), using Cloninger Psychobiological Model of Personality (Cloninger et al., 1993), showed significant negative associations between traumatic events and character dimensions of self-directedness and cooperativeness in a military sample, which emphasized the deleterious relationship between trauma and psychological traits. Lastly, Li et al. (2014) found significant positive correlations between emotional and sexual abuse scores in the Childhood Trauma Checklist with neuroticism and psychoticism from Eysenck's personality model. Taken together, these findings suggest that traumatic events not only influence psychopathologies, but also have deleterious effects on traits.

We have recently developed the Affective and Emotional Composite Temperament (AFECT) model (Lara et al., 2012a), an integrative temperament model that combines specific dimensional traits and global affective temperaments. It is the evolution of the previous “fear and anger” model (Lara and Akiskal, 2006; Lara et al., 2006). The AFECT model comprises twelve affective temperaments (depressive, anxious, apathetic, cyclothymic, dysphoric, volatile, obsessive, euthymic, hyperthymic, irritable, disinhibited and euphoric), which represent specific configurations of the ten emotional traits (volition, desire, anger, fear, caution, emotional sensitivity, coping, control, and the two recently added traits of anxiety and stability). Using the AFECT scale (AFECTS; Lara et al., 2012a; De Carvalho et al., 2013), we recently showed a global impairment of these traits proportionally to time of exposure to bullying. Bullying victims showed lower Volition, Coping and Control scores, and more Emotional Sensitivity, Anger and Fear (Frizzo et al., 2013). Regarding affective temperaments, being bullied was associated with a lower frequency of the healthy euthymic and hyperthymic types, and a higher proportion of depressive and cyclothymic types.

The aim of the current study is to advance in the understanding of how childhood trauma relates to emotional traits and affective temperaments using a different methodology from other studies. More specifically, we evaluated the relationship between the AFECTS parameters with indicators of childhood trauma (emotional, physical and sexual) assessed retrospectively in a cross-sectional web survey. Our initial hypothesis was that all types of childhood trauma would be associated with maladaptive scores in emotional traits and types of affective temperaments in a similar fashion as observed with being bullied.

## 2. Methods

### 2.1. Participants

The BRAINSTEP web survey (Lara et al., 2012b) was broadcasted in National media (TV news, major newspapers) for recruiting volunteers (18 yrs or older) to answer several psychiatric and psychological scales and questionnaires. The participation and honesty of volunteers was stimulated by the incentive of receiving a brief report on their temperament profile (i.e., traits levels of volition, fear, anger, control and sensitivity, as well as a description of their affective temperament), and the chance of having a psychiatric disorder based on their answers to screening instruments for 19 disorders.

Before responding to the questionnaires included in the site (www.temperamento.com.br), respondents gave their electronically informed consent. Their participation was voluntary and they could cancel it at any moment, with no justification necessary. This form fulfills the requirements of the National Health Council of Brazil (Resolution 196/1996) and the Code of Ethics of the World Medical Association (Declaration of Helsinki). The Institutional Review Board of the Hospital São Lucas from Pontifícia Universidade Católica do Rio Grande do Sul approved the study's protocol.

Age limit was set at 50 years. Reliability of the data was ensured by attention checking questions inserted within the instrument, and throughout the system. Furthermore, volunteers had to deal with specific questions on the degree of attention and sincerity presented while completing the instrument. The initial sample was 16,027 volunteers, only 10,800 passed all of these validity checks.

### 2.2. Instruments

#### 2.2.1. Assessment of childhood trauma

Childhood trauma was evaluated through the CTQ version translated and validated to Brazilian Portuguese (Bernstein et al., 1994; Grassi-Oliveira et al., 2006). This scale is a self-report inventory that can be administrated to adults and adolescents in order to identify traumatic experiences in infancy. Its 25 questions cover 5 types of trauma: physical abuse, sexual abuse, emotional abuse, physical neglect and emotional neglect. Each of these trauma types is dimensionally evaluated through a 5-point Likert scale, ranging from “never” to “frequently”. Thus, these subscales generate scores ranging from 5 (no trauma) to 25 (extreme trauma), and a total scale score varies from 25 (no trauma) to 125 (extreme trauma in all subscales). For the statistical analysis, the total trauma score was divided in quintiles, with the following cut points: 33, 39, 46 and 57.

The severity of trauma was categorized according to Tucci et al. (2010): emotional abuse: $\leq 8$ = minimal, from 9 to 12 = low, 13 to 15 = moderate, $>15$ = severe; emotional neglect: $\leq 9$ = minimal, 10 to 14 = low, 15 to 17 = moderate, $>17$ = severe; physical abuse: $\leq 7$ = minimal, 8 to 9 = low, 10 to 12 = moderate, $>12$ = severe; physical neglect: $\leq 7$ = minimal, 8 to 9 = low, 10 to 12 = moderate, $>12$ = severe; sexual abuse: $\leq 5$ = minimal, 6 to 7 = low, 8 to 12 = moderate, $>12$ = severe.

Please cite this article in press as: Sudbrack R, et al., What doesn't kill you makes you stronger and weaker: How childhood trauma relates to temperament traits, Journal of Psychiatric Research (2015), http://dx.doi.org/10.1016/j.jpsychires.2015.01.001