Research report

Bullying victimization is associated with dysfunctional emotional traits and affective temperaments

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ABSTRACT

Background: Being bullied has been increasingly recognized as a risk factor for the development of psychiatric disorders, but there is very limited evidence on the association of bullying with temperament.
Methods: The data was collected in a large web-survey on psychological and psychiatric measures (BRAIN-STEP). Bullying was assessed with a question on time exposed to bullying (none, < 1 year, 1–3 years and > 3 years) during childhood and adolescence. Emotional traits and affective temperaments were evaluated with the Affective and Emotional Composite Temperament Scale (AFECTS). The final sample consisted of 50,882 subjects (mean age 30.8 ± 10.4 years, 73.4% females) with valid answers.
Results: About half of the sample reported exposure to bullying and ~10% reported being victimized by peers for longer than 3 years. Longer exposure to bullying was associated with lower Volition, Coping and Control scores, and more Emotional Sensitivity, Anger and Fear, with statistical significance between all groups. To a lower degree, exposure to bullying was associated with lower Caution and higher Desire scores. Bullying victimization was also associated with a much lower proportion of euthymic and hyperthymic types in both genders, which was compensated by an increase mainly in the proportion of depressive, cyclothymic and volatile types.
Limitations: Retrospective assessment of bullying with a single question on time exposed to bullying and use of self-report instruments only.
Conclusions: Being bullied was associated with a broad and profound impact on emotional and cognitive domains in all dimensions of emotional traits, and with internalized and unstable affective temperaments.

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1. Introduction

Bullying refers to persistent and repetitive verbal and physical actions deliberately performed by one or more children towards another child (Arseneault et al., 2010). Although bullying, harassment, and victimization can take many forms (e.g., threatening, spreading rumours, pushing), the core elements of this behavior are repetition, aggression, and a relationship with an imbalance of power in which victims perceive themselves as unable to retaliate (Olweus, 1994; Smith et al., 1999).

Being a victim of bullying has been associated with longlasting effects and severe symptoms of mental health problems, including depression, anxiety, suicidal ideation, self-harm, binge eating disorder, violent behavior and psychotic symptoms (Salmon et al., 1998; Kaltiala-Heino et al., 1999b; Kaltiala-Heino et al., 2000; Striegel-Moore et al., 2002; Dake et al., 2003; Arseneault et al.,

2010). They also more often complain from sleep disturbances, enuresis, abdominal pain and headaches than children who are not bullied (Williams et al., 1996; Rigby, 1999). A history of being bullied has also been associated with symptoms of borderline personality disorder (Sansone et al., 2012; Wolke et al., 2010). Despite these findings, to our knowledge there is little evidence on the association of being bullied during childhood and adolescence with temperament and personality traits in adulthood.

We have recently developed an integrative temperament model combining specific emotional traits and global affective temperaments, named the Affective and Emotional Composite Temperament (AFECT) model (Lara et al., 2012a), which is the evolution of the previous "fear and anger" model (Lara and Akiskal, 2006; Lara et al., 2006). The emotional traits are represented by Volition (positive affect, motivation, energy), Desire (impulses, indulgence), Anger (emotional intensity and aggressive behavior), Fear (worry, shyness, fearfulness), Caution (prudence, carefulness, risk-avoidance), Emotional Sensitivity (to interpersonal attrition such criticism, rejection and to events), Coping (maturity to face and solve problematic situations) and Control (attention, focus, sense of duty, discipline, planning). These are independent but interactive emotional traits

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which produce the general affective temperament, which can be classified into twelve types: depressive, anxious, apathetic (internalized types), cyclothymic, dysphoric, volatile (unstable types), obsessive, euthymic, hyperthymic (stable types), irritable, disinhibited, and euphoric (externalized types) (for further details see (Lara et al., 2012a). Such concepts of affective temperaments derived from the seminal work on underlying traits related to mood disorders proposed by Akiskal et al. (2005), but extended to represent other possible variations. To study our model, we have recently developed and validated a brief self-reporting scale for the simultaneous assessment of these emotional and affective temperaments, the Affective and Emotional Composite Temperament Scale (AFECTS) (Lara et al., 2012a).

We have designed a large web-survey to collect data on psychological and psychiatric measures called the Brazilian Internet Study on Temperament and Psychopathology (BRAINSTEP) (Lara et al., 2012b). This web research system contains several scales, questionnaires and behavioral measures, starting with demographic characteristics and the AFECTS. For the present study, our aim was to evaluate how emotional traits and affective temperaments, evaluated with the AFECTS, were associated with being exposed to bullying during childhood and adolescence in a large sample from the general population.

2. Methods

2.1. Participants

All participants gave their electronic informed consent before completing the scale. This form was elaborated to fulfill 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). Their participation was voluntary and they could cancel their participation at any moment without justification. The study was approved by the Institutional Review Board of Hospital São Lucas from Pontifícia Universidade Católica do Rio Grande do Sul.

The data presented is part of a large web-based survey BRAINSTEP. Volunteers answered by Internet (www.tempera mento.com.br) the AFECTS, and questions on demographic variables, among various other scales and questionnaires. To ensure the reliability of the data, questions checking for attention were inserted within the instruments and throughout the system. Also, at the end of the system, there were two specific questions on the degree of attention and sincerity of the volunteer while completing the instruments. Only those who stated being attentive and sincere throughout the study and had correct answers in the attention validity items were included. The initial sample was 63,345 volunteers who completed all the measures, but only 50,882 passed all of these validity checks.

2.2. Instruments

2.2.1. Affective and Emotional Composite Temperament Scale (AFECTS)

The AFECTS (see Lara et al., 2012a, for the complete scale) consists of the following sections:

(1) Emotional section: 52 seven-item multiple choice questions for the emotional traits of Volition, Anger, Emotional Sensitivity, Coping, and Control (8 items each) and Fear, Caution and Desire (4 items). The questions are scored from 1 to 7 and the total score of each dimension is the sum of the scores of their respective questions. Except for the Desire dimension, each emotional dimension is composed by two facets of four

questions as follows: Volition (positivity and energy), Anger (intensity and irritability), Inhibition (fear and caution), Sensitivity (interpersonal and to events), Coping (facing and solving), and Control (focus and order).

(2) Affective Section: short descriptions of the twelve affective temperaments (depressive, anxious, apathetic, cyclothymic, dysphoric, volatile, obsessive, euthymic, hyperthymic, irritable, disinhibited, and euphoric) are presented with a 5-item Likert scale, from 'nothing like me' (rated as 1) to 'exactly like me' (rated as 5). This is the quantitative assessment of affective temperament. After these twelve descriptions, the subject has to select which of these profiles is the most suitable to represent his/her temperament. This allows for a categorical evaluation of affective temperament.

2.2.2. Assessment of being a victim of bullying

Given the lack of very short scales for assessment of bullying, we included the following question in our assessment: "During your childhood or adolescence, have you been a victim of intentional harmful acts (insults, humiliation, isolation, discrimination or physical aggression) in a repeated fashion by peers, with no obvious reason?" The following four possible answers were offered: no; yes, for less than 1 year; yes, between 1 and 3 years; and yes, for more than 3 years.

2.3. Statistical analysis

Age differences between bullying groups were analyzed with ANOVA. The proportion of males and females in relation to being exposed to bullying was analyzed with a chi-square test. Since preliminary analysis of emotional dimensions showed overall similar results for males and females, the mean scores of AFECTS emotional dimensions were analyzed with a multivariate analysis of variance with Bonferroni confidence interval adjustment, considering age and gender as covariates. Differences in proportions of affective temperaments according to involvement in bullying were analyzed with the chi-square test for males and females separately. SPSS 18.0 software was used for all analyses, and a statistical significance was considered if $p < 0.05$.

3. Results

The final sample consisted of 13,520 males (26.6%, mean age$=30.8 \pm 10.8$ years) and 37,362 females (73.4%, mean age$=30.8 \pm 10.1$ years). The distribution according to bullying groups and gender is shown in Table 1. There were significantly more females with no bullying than males and significantly more males in all bullying groups. Age was significantly higher in the no bullying group when compared to all bullying groups ($F=160.162$, $p < 0.05$, ANOVA) and significantly higher in bullying $1 < 3$ years when compared to another's bullying groups.

Regarding emotional traits, the most robust differences were found for the dimensions of Emotional Sensitivity ($F=715.9$, $p < 0.001$), Volition ($F=587.4$, $p < 0.001$), Coping ($F=423.5$, $p < 0.001$), Control ($F=381.9$, $p < 0.001$) and Anger ($F=181.3$, $p < 0.001$), with smaller differences for Desire ($F=65.2$, $p < 0.001$), Caution ($F=56.9$, $p < 0.001$) and Fear ($F=107.4$, $p < 0.001$).

As shown in Fig. 1, the longer the exposure to bullying the lower the Volition, Coping and Control scores, with statistical significance between all groups. Also, longer exposure to bullying was associated with more Emotional Sensitivity, Anger and Fear, also with statistical significance between all groups. To a lower degree, more exposure to bullying was associated with lower Caution and higher Desire scores.