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Original article

Childhood physical maltreatment with physical injuries is associated with higher adult psychopathology symptoms

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ABSTRACT

Background: Previous research has neglected the distinction between childhood physical maltreatment (CPM) behaviors and the physical sequelae resulting from CPM. Prior empirical work has combined CPM behaviors (e.g., beat, hit with a belt) and CPM physical sequelae (e.g., bruises, fractures) into a single conceptual category to predict adverse psychological consequences in adults. This is preventing the examination whether specific subgroups of CPM exposure may report a higher risk of psychopathology symptoms in adulthood. The aim of this study was to examine whether distinct experiences of CPM histories (no physical maltreatment, physical maltreatment only, and physical maltreatment with physical sequelae) would be differentially associated with specific psychopathology dimensions in adulthood. symptoms

Method: Data were drawn from the Portuguese National Representative Study of Psychosocial Context of Child Abuse and Neglect (N = 941). Participants completed the Childhood History Questionnaire and the Brief Symptom Inventory.

Results: Three groups were created based on participants' experience of CPM assessed by the Childhood History Questionnaire. Participants who reported that suffered physical sequelae of the CPM exhibited significantly higher symptoms in all psychopathology dimensions than participants with no history of CPM and participants that were exposed to physical maltreatment without sequelae.

Conclusions: These findings suggest that clinicians should discriminate CPM behavior from CPM physical sequelae in order to increase effectiveness of mental health treatment with adults with history of CPM. Our findings are discussed in light of the evolutionary-developmental frameworks of adaptative development and cumulative risk hypothesis.

1. Introduction

Child Physical Maltreatment (CPM) is a global public health issue, with 23% of the European adult population reporting having been physically maltreated in childhood [1]. CPM is defined as violence perpetrated by a household member (usually a parent or a primary caregiver) towards the child. CPM includes the child being beaten, kicked, burnt, hit with belts or other objects, or being threatened with knives or other weapons [2]. These violent behaviors substantially increase the risk of physical harm and the infliction of non-accidental physical injury to a child, including bruises, bites, bone fractures, cuts, welts, and burns [2]. The presence of physical injury resulting from a violent behavior toward the child is considered as an operational marker of the CPM severity [3–5]. In accordance with the widely-adopted Modified Maltreatment Classification System, CMP severity is operationalized as a dimensional construct that describes different levels of the seriousness of a given act of maltreatment in function of the harmfulness of physical sequelae caused by the violent behavior [4,6]. CMP severity might range from dangerous behaviors but with no physical injuries or marks indicated (the lowest level of severity) to permanent disability, scarring, disfigurement, or fatality (the highest level of severity) [6].

Strong relationships between criteria of CPM classification (such as CPM type, frequency, chronicity) and psychopathology symptoms and/or psychiatric disorders in adults have been described in literature [7,8]. In particular, the frequency and chronicity of CPM exposure are being associated with an increased risk of earlier onset and higher severity of psychopathology symptoms, including depression, anxiety, alcohol dependence, psychotic symptoms, posttraumatic symptoms, and suicidal behaviors [9–11]. Despite these well-established findings,

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differential associations between distinct CPM patterns and the emergence of specific psychological problems in adulthood have remained surprisingly unexplored at an empirical level [8]. Little is known about whether specific subgroups of CPM exposure may report a higher risk of psychopathology symptoms in adulthood.

This limitation might be partially explained through methodological reasons. Previous research has neglected the potential clinical utility of discriminating CPM behaviors from the physical sequelae resulting from CPM. Prior empirical work has combined the presence and/or frequency of CPM behaviors (e.g., beat, hit with a belt) and CPM physical sequelae (e.g., bruises, fractures) into a single conceptual category to predict adverse psychological consequences in adults [12–14]. This methodological option is preventing the detection of differential associations between distinct CPM histories and psychopathology symptoms in adulthood. This is particularly critical since prior research in other types of child abuse suggest that the presence of abuse-related physical sequelae is associated with a heightened risk of adult psychiatric disorders [15,16]. In particular, some studies show that adults who were exposed to severe forms of sexual abuse (e.g., injuries related to sexual abuse) reported higher prevalence of mental health problems than non-exposed or low-severity exposed adults [17–19]. These findings in sexual abuse suggest that a similar pattern of associations in CPM may emerge, in which a more detrimental association between the history of CPM with physical sequelae and later psychopathology symptoms might be expected.

To our knowledge, no previous research has tested this hypothesis directly. However, this assumption is conceptually supported. First, as physical sequelae are more likely to occur during more violent episodes of maltreatment, they are likely to be perceived as significant and real threats to survival. According to the evolutionary-developmental frameworks of adaptative development [20,21], children facing life-threatening environments develop and activate a pattern of physiological, behavioral, and emotional responses to monitorize and respond to an environment of imminent and inescapable threat. The continual activation of these responses is adaptive to competently survive in violent contexts, but it has long-term developmental costs, adversely affecting the development of the nervous, neuroendocrine, and immune systems [22]. More specifically, children exposed to highly-threatening environments develop overtime altered nervous and neuroendocrine functional activity characterized by high responsivity and basal activity in both the hypothalamic-pituitary-adrenal axis (HPA-axis) and the sympathetic nervous system (SNS), as well as by a low tone and responsivity of the parasympathetic nervous system (PNS) [21]. This pattern of stress reactivity functioning is thought to be the major mechanism linking highly adverse experiences (e.g., exposure to physical sequelae CPM) and risk of psychopathology [23].

The exposure to the physical sequelae of CPM might also induce children to interpret the parenting subsystem as an even more threating, unpredictable, and harmful environment [24]. The emotional security theory suggests that such a stressful nurturing environment undermines children's sense of emotional security and safety in parent-child relationships, impairing children's internal representations of the abusive parent as a reliable caregiver to fulfill their instrumental and emotional needs [24,25]. This may lead to a disturbance in attachment security and development of hypo and overreactive emotional and behavioral strategies to cope with such adverse parenting outcomes [20]. As a result, these emotional and behavioral difficulties exert a deleterious impact on individuals' abilities to successfully negotiate subsequent developmental tasks, increasing the risk of later psychopathology symptoms [26].

To provide additional insight into the associations between the history of CPM and psychopathology symptoms in adulthood, it is also crucial to consider that distinct associations may occur between CPM (with and without sequelae) and different psychopathology dimensions. Past research has mainly examined the association between CPM and depression and anxiety disorders [27]. In addition, previous studies tested primarily this association in clinical samples, using almost exclusively golden-standard measures to diagnose psychiatric disorders [28,29]. This categorical approach based on the notion of the presence or absence of psychopathology symptoms [30] precludes, however, the possibility of different histories of CPM exposure being associated with the co-occurrence of distinct types of clinical symptoms. Therefore, a dimensional approach to psychopathology allows a more fine-grained analysis of the full-range presence of symptoms, regardless of whether the formal criteria of diagnosis have been met [30,31]. In particular, by assuming a continuum in psychopathology intensity, this approach provides additional insights into the comorbidity of symptoms, as well as whether and to what extent the psychopathology grouping of symptoms varies under distinct consequences of CPM.

In order to address these limitations, this study sought to examine differential associations between three types of histories of CPM and psychopathology symptoms in adulthood. Consistent with our rationale, we hypothesized that adults with no history of CPM would show the lowest levels of psychopathology when compared with adults exposed to CPM with or without physical sequelae. We also hypothesized that, among adults exposed to CPM, those who reported CPM-related physical sequelae would exhibit the highest levels of symptoms across all assessed psychopathological dimensions.

2. Method

2.1. Participants and procedure

This cross-sectional study is a secondary analysis of existing data of the Portuguese National Representative Study of Psychosocial Context of Child Abuse (PNRSAB). The total sample of the PNRSAB The primary research goals of the PNRSAB were to describe the prevalence of child physical maltreatment and to examine the associations between CPM and psychopathology symptoms.

The total sample comprised 941 adults (55% women). Participants were mothers and fathers of children randomly selected in five public elementary schools in Northern Portugal (sample selection procedures are described in-depth to follow [32]). After being informed about the research aims and ethical procedures, adults who consented to participate completed and returned the assessment protocols and the letters of informed consent in sealed envelopes provided by the research team. This community school-based survey received ethical approval from the regional education authorities (Direcção Regional da Educação do Norte). A comparison to the national population statistics for marital status, education level, and income in the year that participants' data were collected revealed that the current sample is representative of the Northern Portuguese population [33].

The participants' mean age was 37.15 years (SD = 6.26; range = 22–59). With respect to marital status, 91.3% of the sample were married or in cohabitation, and 8.7% were divorced, single, or widowed. Five hundred and ninety-seven (63.4%) participants had until a 9th-grade compulsory education level, and 344 (36.6%) participants had a high school or college degree. Most mothers (66.5%) reported an income lower than the average national salary (765 €).

2.2. Measures

CPM perpetrated by a parent or a primary caregiver during childhood and/or adolescence (0–18 years) was assessed with the