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Mother, father and child traumatic stress reactions after paediatric burn: Within-family co-occurrence and parent-child discrepancies in appraisals of child stress

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ABSTRACT

Aim: The current study examined occurrence and within-family associations of traumatic stress reactions after child burn injury, while in the same model addressing the role of parents' own symptoms in their reports of child symptoms.
Methods: One-hundred children (8–18 years old), and their mothers (n=90) and fathers (n=74) were assessed within the first month (T1) and three months (T2) after burn. Parents and children rated child traumatic stress reactions on the Children's Responses to Trauma Inventory (CRTI) and parents rated their own reactions on the Impact of Event Scale (IES). Cross-sectional associations at the two occasions were examined using a structural equation model.
Results: Occurrence of traumatic stress symptoms in the clinical range was higher in parents (T1: 24–50%; T2: 14–31%) than children (T1: 0–11%; T2: 3–5%, depending on whether children, mothers or fathers reported on symptoms). Traumatic stress symptoms of mothers at T1 and of both parents at T2 were significantly related to child self-reported symptoms. Moreover, mothers who experienced higher stress symptoms themselves gave higher ratings of their child's symptoms at both time points, while for fathers, this was only found at T2.
Conclusions: The current study demonstrates the impact of pediatric burn injury on the family level, and shows simultaneous existence of within-family interrelatedness of traumatic stress and an influence of parents' own symptoms on their perception of child symptoms. Findings highlight the need for trauma symptom screening in all family members and for considering informants' symptoms to understand the child's functioning in particular.

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1. Introduction

Burn events are potentially traumatizing for children and adolescents. Besides the burn event and injury itself, potential stressors include treatment-related factors such as pain, repeated wound care and skin grafting procedures. Clinically relevant acute stress reactions appear to be present in 25–31% of children [1–3]. Although symptoms after pediatric injury generally tend to decline over time, they persist in a subgroup [4], indicating the necessity to identify children in need of psychological support.

To assess child traumatic stress reactions, both the child and its parents can be a source of information. However, child assessment is complicated because parent and child symptoms may co-occur as both can be affected by the traumatic event and parents' own symptoms may influence their observation of child symptoms [5]. Evidence for the co-existence of these two phenomena was provided by a previous cross-sectional study, showing an association between maternal and child self-reported traumatic stress symptoms after war exposure, as well as a distortion in maternal reports of their child behavior, related to their own traumatic stress symptoms [6]. The current study aims to further unravel the complexity of underlying family systemic influences and to especially examine the role of fathers, thereby enhancing insight into the underlying interdependency and discrepancy between mothers, fathers and children.

The concept of 'relational PTSD' refers to the co-occurrence of parent and (young) children's stress symptoms after a traumatic event [7]. Within this model, it is assumed that the parent's symptoms exacerbate the child's symptoms and vice versa. The interrelatedness of parent and child symptoms is also emphasized within the Integrative (Trajectory) Model of Pediatric Medical Traumatic Stress [8,9]. Indeed, several studies have shown parents' higher initial stress reactions to increase the risk of (later) child traumatic stress symptoms [2,10,11]. However, research has indicated that the strength of the association between child and parent symptoms may depend on the timing of the assessments, as well as on the age of the child; with stronger relationships for younger, compared to older children [12].

Over and above the actual co-occurrence of child- and parent reactions, parents' own traumatic stress symptoms potentially influence the way in which they perceive their child's reactions to the trauma. Several studies have shown that parents with more stress symptoms themselves report higher symptoms in their child, suggesting that parents with higher traumatic stress are more prone to overestimate the child's stress symptoms [5,13–15]. This phenomenon is suggested to be one of the explanations for the observed discrepancy between child self-reports and parental reports of child symptoms, which has been shown in various trauma populations [5,14,16].

To fully understand traumatic stress reactions within the family, assessing both parents is essential. Women have been indicated to be more vulnerable to develop posttraumatic stress disorder (e.g., [17]), which is supported by the observation of higher levels of stress symptoms after burn injury in mothers compared to fathers [18]. Moreover, mothers' traumatic stress symptoms generally have a stronger association with child symptoms, compared to fathers' stress symptoms [19]. This was confirmed in a recent study in preschool children with burns, where maternal symptoms of acute stress were associated with child acute stress, while paternal symptoms were not [20]. However, whether this stronger association for mothers also applies to longer term symptoms and older children with burns is unknown. Also, it is unclear whether a potential influence of parents' own symptoms on reports of child stress symptoms will be different between mothers and fathers, as no previous studies have made comparisons. A previous study in child anxiety showed that mothers' reports of child anxiety were related to mothers' depressive symptoms, while this was not the case for fathers [21]. This suggests that comparing mothers and fathers is relevant and might inform clinical practice regarding the potential consequences of maternal and paternal involvement in assessment of child symptoms.

The main aim of the current study was to examine associations between child (8–18 years old) and parent traumatic stress symptoms and the potential impact of parents' own symptoms on reports of their child's symptoms. Prior to examining these associations in one model, parent–child agreement on child stress symptoms within the first month and three months after the burn event was investigated. It was hypothesized that parent-child agreement regarding child stress symptoms would be low to moderate [5]. In the final model, a significant association between child self-reported stress reactions and parents' stress reactions was expected [9]. In addition, parents with higher levels of traumatic stress were hypothesized to report more stress symptoms in their child, while accounting for the child's self-rated symptoms [5,6,14]. The model was examined for associations within the first month after burn. Next, data collected three months after burn were used to examine whether the model was replicated. Differences between mothers and fathers were examined exploratory. The role of child age was examined by including comparisons between children younger and older than 13 years of age.

2. Methods

2.1. *Participant recruitment and procedures*

Data for this study were collected as part of a larger prospective study on child (age 8–18 years) and parental adjustment following pediatric burn injury. Earlier studies in this cohort examined child health-related quality of life [22], child behavioral problems [23] and parents' traumatic stress reactions [24]. The unique contribution of the current study is the inclusion of child posttraumatic stress reactions and the simultaneous analysis of child and parent stress reactions. From April 2007 to July 2011, data were collected in three Dutch and four Belgian burn centers. Data collected within the first month after burn (T1) and three months after burn (T2) were used for the current study. Families were eligible to participate in the study if the child had been in the hospital for more than 24 h and the percentage total body surface area (TBSA) burned