Acute Stress Reactions in Couples After a Burn Event to Their Young Child

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Objective This multicenter study examines acute stress reactions in couples following a burn event to their preschool child. Methods Participants were 182 mothers and 154 fathers, including 143 couples, of 193 children (0–4 years) with acute burns. Parents’ self-reported acute stress reactions and emotions regarding the burn event were measured within the first month postburn. Results More mothers than fathers reported clinically significant acute stress reactions. Multilevel analysis revealed that individual parent reactions were associated with parent gender and negative emotions about the burn event. Interestingly, avoidance symptoms overlapped to an important extent within couples, whereas intrusion symptoms were mainly intra-individual. Burn characteristics, such as burn size, contributed to acute stress within couples. Conclusions Mothers and fathers are seriously affected by their child’s burn trauma and share a part of their acute stress reactions. These results emphasize the importance of a family-based approach to support adjustment after pediatric medical trauma.

Key words burns; children; parents; posttraumatic stress.

Young children constitute a high-risk group for sustaining burn injuries (Stoddard et al., 2006). Deep dermal burns often result in permanent scarring and physical limitations, and may cause psychological consequences in children and their families (De Young, Kenardy, Cobham, & Kimble, 2012; Graf, Schiestl, & Landolt, 2011; Noronha & Faust, 2007). Previous research on pediatric burns and other medical traumatic events has shown that child and parent psychological adjustment are often interrelated (Cox, Kenardy, & Hendrikz, 2008; Graf et al., 2011; Kazak, 1997; Noronha & Faust, 2007). Postburn adjustment may be understood from a family systems perspective, in which (the behavior of) a child is not considered at the individual level, but within the context of the broader family system (Kazak, Simms, & Rourke, 2002). The family consists, beyond the traditionally studied mother–child dyad (Seagull, 2000), of several subsystems that may interact with each other, for example, parent–parent, child–parent–grandparent (Kazak, 1997). Children are influenced by the interactions with the immediate systems surrounding them, but also by interactions within and between these different subsystems (Bronfenbrenner, 1977). From a family perspective, it is imperative to address a child’s direct environment when studying psychological reactions following a potentially medical traumatic event. This might even be more the case for very young children, who heavily rely on their parents for protection in the context of stress (Scheeringa & Zeanah, 2001).

Injury or illness in children may elicit acute stress symptoms (ASS) in the short term and posttraumatic stress symptoms (PTSS) in the longer term in their parents, such as unwanted reliving of the traumatic event,
avoidance of thoughts, people or places that remind one of the traumatic event, irritability, and difficulties concentrating (Kazak et al., 2006). Previous studies on parents of various groups of ill and/or injured children demonstrated that parents are at considerable risk for ASS and PTSS (Ballufi et al., 2004; Le Brocque, Hendriksz, & Kenardy, 2010). Research on children with burns has shown that 18.8% of parents met criteria for clinical stress in the acute phase (Fukunishi, 1998), 47% had clinical significant PTSS at 3 months (Hall et al., 2006), and 16% of parents experienced posttraumatic stress disorder (PTSD) on average 7 years postburn (Rizzone, Stoddard, Murphy, & Kruger, 1994). Parental PTSS following pediatric burns was (indirectly) related to the size of the burn, with parents of children with more extensive burns having the highest level of PTSS (Bakker et al., 2010; Cella, Perry, Kassam-Adams, Fleisher, & Winston, 2009). This differs from other literature on acutely ill or injured children, where mixed results were found concerning the relationship between injury variables and subsequent parent adjustment (Le Brocque et al., 2010). Circumstances of the burn event have not been researched widely in relation to parental adjustment; only one study showed that parental proximity at the time of the injury was not related to PTSS (Rizzone et al., 1994). Furthermore, parents’ peritraumatic anxiety and dissociation, and child reactions were linked to PTSS at 3 months postburn (Hall et al., 2006). Studies on parents of injured or acutely ill children showed that parent appraisal of life threat to the child was strongly related to acute stress symptoms (Ballufi et al., 2004; Kassam-Adams, Fleisher, & Winston, 2009). In the longer term, feelings of guilt about the burn event appeared an important predictor of stress responses in parents of children with burns (Bakker et al., 2010; Cella, Perry, Kulchycky, & Goodwin, 1988), but the relationship between guilt feelings and acute symptomatology is unknown. Besides feelings of guilt, also anger has been shown to be associated with PTSS both in a large variety of trauma populations (McHugh, Forbes, Bates, Hopwood, & Creamer, 2012) and in adults with burns. The role of anger in relation to acute stress symptomatology has not yet been investigated in parents of (burn) injured children.

Past research predominantly focused on the reactions of mothers to medical trauma in their children (Phares, Lopez, Fields, Kamboukos, & Duhig, 2005). As such, there is limited knowledge on ASS and PTSS in fathers and in couples. Several researchers in the field of pediatric psychology have advocated the importance to involve the whole family (e.g., Alderfer et al., 2008; Phares et al., 2005; Seagull, 2000). Most of the few previous studies that included both mothers and fathers of acutely ill children have found PTSD more frequently in mothers than in fathers (Nelson & Gold, 2012). In contrast, PTSD prevalence rates in mothers and fathers of children with newly diagnosed diabetes were fairly similar, although co-occurrence of PTSD within couples was very low (Landolt et al., 2002). Phares and colleagues (2005) suggested, after reviewing a large body of literature in the area of pediatric psychology, that there were “more similarities than differences between mothers and fathers of chronically ill children” (p. 636). Interestingly, Bronner and colleagues (2008) found a strong correlation between mothers’ and fathers’ PTSS 3 months after their child had been admitted to the pediatric intensive care unit, despite the fact that mothers had overall higher scores.

To our knowledge, no studies have specifically studied potential similarities of parental acute distress within couples after an injury in their child. This information on trauma-related family dynamics is important for optimizing family support after pediatric illness or injury (Nelson & Gold, 2012). The aim of this study was to examine subjective distress in couples in the sub-acute phase of recovery of their preschool child and to identify variables associated with individual parent and parent–couple traumatic stress. Parental distress in the first month after the burn is examined to gain more knowledge about this unique and highly demanding period for parents. Preschool children were focus of the study, as they constitute an important risk group for burn injuries and often share many similarities in terms of burn etiology and event circumstances. We hypothesized that mothers would experience greater levels of distress than fathers, but that acute stress in couples would not be independent. Further, we hypothesized that individual parent factors such as parent gender and individual peri-traumatic reactions would influence the parent’s level of stress. Child factors, that is, factors that are the same for both parents within a couple such as severity of the burn, were thought to be modestly associated with acute stress reactions in couples.

**Methods**

**Participant Recruitment and Procedures**

This study describes the first results of a larger prospective study that examines child and parental adjustment following a pediatric burn event. Data were gathered in three burn centers in the Netherlands and four in Belgium between October 2007 and July 2010. Families were eligible to participate if the child was between 8 months and 4 years old, the length of stay in the hospital was ≥ 24 hr, and burn severity quantified by the Total Body Surface Area (TBSA) burned was ≥ 1%. TBSA burned is the estimated...
proportion of the body with second or third degree burns. Exclusion criteria were insufficient parental Dutch language proficiency required to complete questionnaires, pre-existing severe mental disabilities in the child, and deceased children. A local researcher contacted consecutive eligible families 1–4 weeks after admission. Parents were approached while their child was still hospitalized, or were invited by telephone. The researcher explained the study purpose and offered additional written information. Two independent ethics committees in the Netherlands and Belgium, respectively, approved this study. All families signed an informed consent form.

Of 313 families that met the study criteria, 216 consented to participate (69%). Fifty-five families declined participation (18%), 26 families were missed before they could be approached (8%), and 16 families were not invited because their participation was deemed inappropriate (e.g., severely ill family members, psychiatric background, or court custody cases: 5%). Of the 216 families that consented to participate, 23 families had incomplete data, that is, the measure for parental subjective distress was not completed, and were not included in the current analyses. The final 193 participating families did not differ from the other 120 eligible families in terms of child age, gender, length of stay in the hospital, percentage TBSA, and percentage deep burns.

Participants

Parent Characteristics

A total of 182 mothers and 154 fathers, including 143 couples, participated. Mean age was 31 years (SD = 5.3) for mothers and 35.8 years (SD = 5.8) for fathers. The majority of the parents were in a relationship (88% of mothers and 95% of fathers). Seventeen families reported that they also had children from previous relationships (9%). The majority of parents, 83% of mothers and 81% of fathers, were born in the Netherlands or Belgium. Education level was categorized as low (primary education, technical and vocational training until the age of 16), middle (technical and vocational training until the age of 18), or high (technical or vocational training for 18+ or university). Mothers’ and fathers’ degrees were as follows: 29 and 26% low, 29 and 35% middle, 42 and 39% high. Sixty-nine percent of the mothers and 90% of the fathers were currently employed.

Child Characteristics

Children, 126 boys (65%) and 67 girls (35%), were 1.8 years old (SD = 0.9) years old (range 0–4). In 77% of the cases, the burn accident occurred in the home, and 91% of the burn injuries were scald burns. Mean TBSA was 7.5% (SD = 6.5, range 1–45), and the mean length of stay in the hospital was 11.4 days (SD = 10.6, range 1–55). Thirty-six percent of the children required at least one skin grafting procedure during their initial hospitalization (M = 0.5, SD = 0.8, range 0–5).

Measures

Acute Stress Reactions

The Impact of Event Scale (IES) is a valid and psychometrically sound 15-item self-report measure to assess two dimensions of traumatic stress reactions, that is, symptoms of intrusion and avoidance (Horowitz, Wilner, & Alvarez, 1979; Sundin & Horowitz, 2002). In adult patients with burns, the IES was demonstrated to be a good indicator for PTSD (Sveen et al., 2010). The validated Dutch version of the IES was administered within the first month postburn (Brom & Kleber, 1985). The IES was completed by parents either in the hospital, if parents could be approached while their child was still hospitalized, or at home, when the child was already discharged and parents were invited by telephone to participate. In that case, the questionnaires were sent to their home address by regular mail, and returned in a pre-stamped envelope. Parents were asked to rate the frequency of symptoms they had experienced on a 4-point Likert scale (0-1-3-5). The total possible score ranged from 0–75, with higher scores representing higher levels of subjective distress. We used scores 26 and higher on the total scale as indication of “clinically significant stress” (Velden, Burg, Steinmetz, & Bout, 1992). The two subscales, Intrusion (range 0–35) and Avoidance (range 0–40), were used as two dependent variables in the multilevel regression analysis. In our study, Cronbach’s α was .86 for Intrusion and .79 for Avoidance, leading to a corrected correlation for unreliability of .70 between Intrusion and Avoidance. This finding indicates discriminant validity, that is, the two subscales can be treated as related but distinct constructs (Kenny, 2011).

Independent Parent-Related Variables

Several parental emotions regarding the burn event were inquired. Parents were asked: “To what extent do the following emotions apply when you think about the accident that caused the burn?” Parents were asked to answer on a 5-point Likert scale, ranging from 0 “not at all” to 4 “a lot.” Based on previous research, we used the emotions guilt and anger (r = .45, p < .01). Further, parents reported their subjective appraisal of the life-threatening nature of the injury (yes/no) through a single item: “At any time, did you think your child would not survive the burn event?” All information was gathered within the first month after the
burn event, in the hospital if possible, or otherwise questionnaires were sent to the families’ home address.

Independent Child-Related Variables

Characteristics of the child (i.e., gender and age) and the burn (i.e., percentage TBSA, number of surgeries during initial hospitalization, and length of stay) were recorded from the medical file. Information regarding the place of the burn event (i.e., inside or outside the home) and the cause of the burn (e.g., hot fluids, flame, contact with hot object) were provided by the parents.

Statistical Analyses

Paired samples t-tests, Chi square statistics, and bivariate correlations were used to compare scores of mothers and fathers. Further, we used multilevel regression analysis in Mplus version 6.1 to examine symptoms of Intrusion and Avoidance within couples (Muthén & Muthén, 1998–2010). As data from mothers and fathers from the same family are nonindependent, it is highly recommendable to perform dyadic analyses (Kenny, 2011). This type of analysis considers the nonindependence in the data and directly measures the magnitude of the nonindependence (Hox, 2010). Our data set has a two-level hierarchy, with two parents nested within a couple. Each predictor variable in a multilevel model only varies at one level. The lowest level comprises the parent variables (i.e. parent gender, parent age, feelings of anger and guilt, and perceived life threat to the child), and the highest level comprises child and burn characteristics, as these are the same for parents within a couple (i.e. child gender, child age, burn size, and circumstance of the burn event occurring in the home setting). Intraclass correlation coefficients were used to examine the distribution of unexplained variance over the two levels. In other words, this coefficient indicates the extent to which the outcome (i.e., Intrusion and Avoidance) appears in individual parents, and to which extent it is shared within a couple. Individual parent-related variables and child-related variables were subsequently added to the regression model. Finally, the proportions of explained variance at the individual parent and the couple level were calculated.

Results

Parental Stress Reactions in Sub-Acute Phase of Burn Event

Fifty percent of the participating 182 mothers and 27% of the participating 154 fathers had clinically significant stress scores. Looking at complete participating couples only (n = 143), percentages were comparable (45% and 25% respectively, Table I). There was dyadic concurrence on the presence (15%) or absence (43%) of clinical stress in most couples. In families where mothers had scores above the cut-off, 34% of the fathers also had a score above the cut-off. In families where fathers had a score above the cut-off, 61% of the mothers also scored above the cut-off. Acute stress reactions in mothers and fathers were significantly correlated (r = .33, p < .01). The association between parents on symptoms of avoidance (r = .42, p < .01) was stronger than the association on symptoms of intrusion (r = .20, p = .02).

On average, mothers had higher total stress scores than fathers (mean difference 9.1, 95% CI 6.5–11.7, t(142) = 7.0, p < .01, r = .51). Mothers and fathers without a partner did not have higher stress scores than mothers and fathers with a partner (mothers: mean difference 3.3, t(179) = 1.0, p = .31; fathers: mean difference 4.0, t(149) = 0.8, p = .44). Table II shows mean IES scores for all mothers and fathers, and parental individual emotions regarding the burn event.

Multilevel Regression Analysis

Data from 143 complete couples were used for the multilevel analysis. Intraclass correlations showed that nearly all unexplained variance of the Intrusion subscale was found at the individual parent level (93%). In contrast, for the Avoidance subscale, 64% of the unexplained variance was found at the individual parent level, and 36% was found at the couple level. This means that for Avoidance, two parents within a couple expressed more similar reactions, than two random parents of different couples.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mothers (n = 182)</th>
<th>Fathers (n = 154)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IES—total (scale 0–75, M [SD])</td>
<td>27.3 (14.2)</td>
<td>17.5 (13.3)</td>
</tr>
<tr>
<td>Feelings of guilt (scale 0–4, M [SD])</td>
<td>2.0 (1.5)</td>
<td>1.4 (1.4)</td>
</tr>
<tr>
<td>Feelings of anger (scale 0–4, M [SD])</td>
<td>1.4 (1.5)</td>
<td>1.1 (1.3)</td>
</tr>
<tr>
<td>Perceived threat to life of child (% yes)</td>
<td>18%</td>
<td>9%</td>
</tr>
</tbody>
</table>
When examining associated variables with the Intrusion subscale, parent gender (female), more feelings of guilt and anger, and in particular perceived life threat to their child were parental characteristics significantly associated with higher intrusion scores. Child-related variables such as child gender and age and burn size were modestly associated with parent symptoms on the couple level. However, since only 7% of parents’ intrusion symptoms were found at the couple level, these child variables play a minor role in explaining intrusions in parents at the couple level.

For the Avoidance subscale, results showed that, in line of the findings on intrusion, parent-related variables gender and individual emotions concerning the burn event were significantly associated with higher avoidance scores. However, the associations were less strong compared with the Intrusion subscale and less variance was explained at the individual parent level (26 vs. 42%). In contrast with the findings on intrusion, two child-related variables, that is, more extensive burns and accidents that happened at home, were strongly related to parental avoidance at the couple level (Table III). This means that part of the similarity in avoidance reactions within a couple was explained by characteristics of the burn and the burn event. Parent-related and child-related variables together explained 74% out of 36% unexplained variance of avoidance symptoms at the couple level.

Discussion

This is the first study demonstrating that both mothers and fathers report considerable stress reactions in the sub-acute aftermath of a burn event to their preschool-aged child and that avoidance of stimuli associated with the trauma is, to an important extent, shared within couples. In contrast, intrusions appear intra-individual symptoms not shared within couples.

Approximately half of the mothers and one-fourth of the fathers in this study sample experienced significant acute stress in the first month after the burn. The rates we identified seemed somewhat high compared with studies that investigated (the risk for) PTSD in parents of ill or injured children (Balluffi et al., 2004; Kassam-Adams et al., 2009; Nelson & Gold, 2012), but are in line with studies on parents, predominantly mothers, of children with burns (Hall et al., 2006; Rizzone et al., 1994). Conceivably, the time frame of our study (i.e., the first month after the burn event compared with at least 3 months after the injury used in most other studies) partly explains the elevated stress scores identified in our study. Besides the time frame, the preschool age category in this study differs from other studies that included children of all ages.

Consistent with most other studies that included both parents of acutely ill or injured children, our results showed that, on average, mothers experienced more acute stress compared with fathers. This finding may be related to women’s higher risk to develop PTSD (Olff, Langeland, Draijer, & Gersons, 2007), but also to the fact that mothers are often the primary caregiver (Cabizuca, Marques-Portella, Mendlowicz, Coutinho, & Figueira, 2009). However, we also found a considerable overlap within families. For example, our results showed that if one parent reported significant distress, in 34–61% of the cases the other parent as well experienced significant distress. And, in a minority of the participating families,

Table III. Multilevel Regression Analysis for Variables Related to Couples’ Acute Stress (n = 143)

<table>
<thead>
<tr>
<th></th>
<th>Intrusion (0–35)</th>
<th>Avoidance (0–40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
</tr>
<tr>
<td>Child-related variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child gendera</td>
<td>1.97</td>
<td>0.97</td>
</tr>
<tr>
<td>Child age</td>
<td>1.11</td>
<td>0.52</td>
</tr>
<tr>
<td>Burn size</td>
<td>0.19</td>
<td>0.09</td>
</tr>
<tr>
<td>Accident at home</td>
<td>1.33</td>
<td>1.08</td>
</tr>
<tr>
<td>Individual parent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent gendera</td>
<td>3.98</td>
<td>0.85</td>
</tr>
<tr>
<td>Parent age</td>
<td>−0.40</td>
<td>0.17</td>
</tr>
<tr>
<td>Feelings of anger</td>
<td>1.42</td>
<td>0.40</td>
</tr>
<tr>
<td>Feelings of guilt</td>
<td>0.87</td>
<td>0.38</td>
</tr>
<tr>
<td>Perceived threat to life of childb</td>
<td>8.88</td>
<td>1.98</td>
</tr>
<tr>
<td>R² Individual parent level</td>
<td>42% (of 93%)</td>
<td>26% (of 64%)</td>
</tr>
<tr>
<td>R² Couple level</td>
<td>32% (of 7%)</td>
<td>74% (of 36%)</td>
</tr>
</tbody>
</table>

*0 = male, 1 = female. b0 = no, 1 = yes.
*p < .05. **p < .01. ***p < .001.
fathers actually had higher stress scores than mothers. To speculate, this latter finding may for instance be related to pretrauma factors (e.g. prior trauma, Kassam-Adams et al., 2009), being the primary caregiver (Cabizuca et al., 2009), or circumstances of the injury.

Interestingly, this study demonstrated that on the family level mothers and fathers showed an overlap in their avoidance symptoms in the sub-acute phase of the burn event, in contrast to intrusion symptoms that appeared to be predominantly individual experiences. Our results support a reported association between mothers’ and fathers’ PTSS, 3 months after their child had been admitted to the pediatric intensive care unit (Bronner, Knoester, Bos, Last, & Grootenhuis, 2008). Two injury-related factors, that is, burn severity and burn events occurring in the home, were associated with avoidance symptoms within couples. Although previous studies have reported the relationship between burn severity and individual parent traumatic stress (Hall et al., 2006; Rizzone et al., 1994), this study shows the impact of burn severity on acute distress in couples. We speculate that seeing their child so badly injured and in pain may create a mutual coping response in couples to temporarily withdraw from what happened. Avoidance in couples was further modestly related to injuries that occurred at home. Because the vast majority of pediatric burns in infants and toddlers concern scald burns that occur in the home (Vloemans et al., 2011), it can be an important factor in coping with a burn event in this population of parents.

Ignoring thoughts about the circumstances of the accident may be a functional response for parents to modulate intense emotions in this early phase after the burn event (Horowitz, 1986). Other shared family factors may as well have influenced the similarity of responses in couples, such as similarities in the supportive network (Bronner et al., 2008).

Acute stress reactions in parents were strongly related to their emotions about the burn event. The strongest association was found between subjective distress and the thought that their child might not survive the burn injury. Previous studies support this finding in parents of children with traffic-related injuries (Kassam-Adams et al., 2009), and children that were admitted to the intensive care unit (Balluffi et al., 2004). We also found that parents’ feelings of anger and guilt were related to their stress reactions. Concerning feelings of guilt, our group found a predictive value of feelings of guilt present at 1 year post-burn on traumatic stress 10 years later in mothers of children with more severe burn injuries (Bakker et al., 2010). Profound feelings of guilt may be particularly relevant when parents are faced with accidental injury in their children (Aitken, Mele, & Barrett, 2004). Compared to guilt, anger appeared even stronger related to parental subjective distress. Anger has been shown to be associated with PTSD in general trauma populations (McHugh et al., 2012); however, to our knowledge, it has not yet been reported in parents of injured children. The current findings emphasize the relevance of investigating individual emotions in the context of parental traumatic stress, as negative appraisals may interfere with healthy psychological adaptation to a traumatic event (Ehlers & Clark, 2000). Emotions about the burn event, and potential similarities or discrepancies in subjective feelings of anger or guilt, may be point of attention in monitoring parents during and after hospitalization.

Further research is needed to better understand these dynamics and the potential effect of this mutuality in couples on longer-term child and family adjustment. Important topics to address are for instance the extent to which the overlap in couples’ avoidance symptoms maintains over time, and if couples that share symptoms in the acute phase run more or less risk of adequate adjustment to their child’s medical trauma in the long run. Additionally, prospective information on postburn behavior of the children may provide more insight into the potential consequences of couple’s stress reactions on a family level.

Findings from this study suggest that including both parents in screening and counseling is of importance, because there appears to be a shared component in their reactions to the injury of their child. In clinical practice, in the hospital but also shortly after discharge, health care workers should be aware of the presence of stress reactions in both parents and the potential interaction between parents’ symptoms. The findings confirm the critical importance of monitoring traumatic stress reactions not only in mothers but across the entire family (Seagull, 2000). Mothers and fathers may need help for instance to contextualize and cope with intense emotions and change roles flexibly (Rolland & Walsh, 2006). In addition, parents may have significant worries about their child’s health and potential functional limitations, and their child’s appearance (Thompson, Boyle, Teel, Wambach, & Cramer, 1999). Approximately half of admitted children are discharged within a few days and not all of them are monitored systematically for an extended period. Parental psycho-education during hospitalization and before discharge could include information on potential parent reactions and shared symptoms within families in order to normalize feelings and reassure couples. Further, it may be helpful to frame adaptation to the medical trauma as a challenge for all family members (Rolland & Walsh, 2006). Previous
reports have also underlined the relevance of including the entire family in interventions after a pediatric medical trauma (Seagull, 2000). In the burn centres participating in this study, psychosocial support services is provided for children and their families during hospitalization and on follow-up (e.g., psychological counseling, social work, burn camps for burn survivors 8–17 years old), but no specific family counseling program or parent groups for supporting the entire family system have been developed.

Some limitations of this study should be noted. Our results concern parental reactions within the first month after their young child’s burn event. Initial stress symptoms tend to gradually decline over time in most parents (Le Brocque et al., 2010). Nevertheless, this study on short-term reactions adds to our understanding of parents’ experiences of the sub-acute phase during or shortly after hospitalization, which is a highly relevant phase with respect to clinical pediatric practice. Further, albeit not a sensitive predictor on its own, stress reactions in the acute phase may be associated with long-term posttraumatic stress reactions (Kassam-Adams et al., 2009). The IES, used in his study to measure parental subjective distress, measures only two symptom clusters of traumatic stress, that is, avoidance and intrusion, excluding hyperarousal. Furthermore, the IES does not inquire after symptoms of dissociation. As such, the IES does not provide figures concerning the prevalence of Acute Stress Disorder. Nevertheless, the IES has been validated in the Dutch population (Brom & Kleber, 1985), has proven acceptable discriminant validity between persons with and without PTSD in an adult population with burns (Sveen et al., 2010), and has been used previously in other studies on parents of injured children (e.g. Le Brocque et al., 2010). Children in this study were 0–4 years old; consequently, our results may not readily be applied to parents of older children. It would be interesting, however, to investigate if the risk for developing ASS and/or PTSS in parents of young children differs from parents of older children. With regard to the population under study, parents with insufficient proficiency in the Dutch language were not included in this study, though they were well represented in the pediatric burn population. Further, the literature reports that a significant minority of pediatric burn injuries is non-accidental, resulting from abuse or serious neglect (Toon et al., 2011). This was not an exclusion criterion in our study, but we do not have information if these cases are present in our sample. Finally, we recognize that apart from the parental emotions related to the burn event and the child and burn characteristics we investigated in this study, factors such as previous life stressors, premorbid mental health problems, and additional circumstances of the burn event may also have influenced stress reactions in couples.

Despite these limitations, this study has substantial strengths. Most importantly, we included both mothers and fathers of children with acute burns admitted to all burn centers in the Netherlands and all burn centers in the Dutch-speaking region of Belgium. In two-thirds of the sample, both parents participated, which makes this a considerably large and unique study sample. We used advanced statistical modeling to properly study our dyadic data (Kenny, 2011). By doing so, we surpassed the traditional practice of either studying differences between mothers and fathers or statistically treating parents of the same child as independent caregivers.

In conclusion, this study with a large sample of mothers and fathers showed that acute stress reactions were highly prevalent in both parents after a burn event to their young child. On average, mothers reported more distress than fathers, but a significant overlap in avoidance symptoms within couples was found. Information on individual parent emotions regarding the burn event, such as the perceived threat to the life of the child, anger, guilt, and injury severity may be helpful in identifying parents and couples who are most at risk for acute traumatic stress. Follow-up care should not only systematically monitor scar evolution, but also systematically address mothers’ and fathers’ emotions and subjective distress in response to the burn event. We therefore recommend the integrated screening of both caregivers and the potential interplay in couples as part of a more comprehensive family support system after pediatric medical trauma.

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