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Psychological problems in children with burns—Parents' reports on the Strengths and Difficulties Questionnaire

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ABSTRACT

Burns may have a devastating effect on psychological health among children, although previous studies report difficulties as well as positive findings. The aims were to describe the rate of psychological problems in children with burns using a standardised instrument and to explore statistical predictors of these problems. Parents ($n = 94$) of children aged 3–18 years who sustained burns 0.3–9.0 years previously answered the Strengths and Difficulties Questionnaire (SDQ) covering Emotional symptoms, Conduct problems, Hyperactivity/Inattention, Peer relationship problems, Prosocial behaviour, and a Total difficulties score. Questions regarding parental psychological health and family situation were also included. The results for three of the SDQ subscales were close to the norm (10%) regarding the rate of cases where clinical problems were indicated, while the rate of cases indicated for Conduct, Peer problems and Total difficulties was 18–20%. Statistical predictors of the SDQ subscales were mainly parents' psychological symptoms, father's education, and changes in living arrangements. Visible scars were relevant for the Total difficulties score and Hyperactivity/Inattention. In summary, a slightly larger proportion of children with burns had psychological problems than is the case among children in general, and family variables exerted the most influence on parental reports of children's psychological problems.

1. Introduction

Children constitute the largest risk group for burns. In Sweden, children represent about 40% of all in-hospital admissions [1]. Risk factors for burns among children are male gender [2], sensorimotor deficits [3], oppositional defiant disorder [4], attention deficit hyperactivity disorder (ADHD) [5] and dysfunctional factors within the family [6]. In addition, children with burns are exposed to considerable challenges during treatment and rehabilitation for the burn, e.g. pain during the acute treatment, and itching and scar management during wound healing and rehabilitation.

Psychological problems commonly reported after burns in childhood are behavioural disorders, anxiety disorders, substance use disorders, enuresis, disrupted development, sleep problems, depression, a poorer body image, and poorer health-related quality of life [7–11]. One previous study from

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Sweden indicated that children with burns had less prosocial orientation, more externalising problems, and more concentration problems than a control group, although the differences were small [12]. On the contrary, other studies have found positive results regarding long-term psychosocial recovery [13–15]. In recent studies comparing young people and adolescents who had been burned as children with non-injured controls, the injured group had equal levels of problem behaviour, lower levels of depression, higher levels of positive personality traits and coping styles [16], equal emotional family environment [17], more positive evaluation of how others viewed their appearance and a higher quality of life [18].

Previously identified determinants of better psychosocial health after burn injury are male gender [19], younger age [20], extroverted personality traits [21] and positive family relations [17,20,22–24], whereas size of the burn does not seem to have a clear association with psychosocial adjustment [10,12]. Psychological health of the parents may also be a contributing factor in the child's adjustment [25,26].

Thus, previous studies regarding post-burn psychological problems are in part contradictory. The aims of this study were to describe parents' reports of psychological problems in children with burns aged 3–18 years using a standardised instrument and to explore possible statistical predictors of these problems.

2. Methods

2.1. Participants and procedure

The Uppsala Burn Centre and the Linköping Burn Centre are today the two Swedish burn centres with nationwide responsibility for treating patients with severe burns. Admission criteria are based on the recommendations of the American Burn Association (ABA). At the time of the study, the catchment area for the two centres covered approximately 6.3 million inhabitants (approximately 70% of the Swedish population) from the northern and southern parts of Sweden, and some parts of central Sweden. The sample for this study comprised consecutively admitted patients at either of the two burn centres between January 2000 and December 2008. All children aged 3–18 years at the time of the investigation were included in the study and a total of 195 children fulfilled the age criterion. Fourteen families were lost to follow-up due to unknown addresses, leaving a total possible sample of 181 families. All families of these children received an information letter describing the study. One week later they were sent a questionnaire booklet and a prepaid response envelope. The questionnaire booklet designed for the parents contained questionnaires covering physical, psychological, and social aspects of the child's post-burn health as well as questionnaires regarding the parents' own current psychological symptoms and family situation. Three weeks after the initial questionnaire booklet was sent, non-responders received a reminder letter and a new copy of the questionnaire booklet. As outlined in the invitation letter, responders received a lottery ticket worth 2.5 Euros. The study was approved by the Regional Ethics Review Board in Uppsala.

2.2. Measures

2.2.1. Strengths and Difficulties Questionnaire (SDQ)

The Swedish version of the Strengths and Difficulties Questionnaire (SDQ) [27,28] was used to assess the parents' perception of psychological health in their children. The SDQ consists of 25 items rated 0 = ''Not true'', 1 = ''Somewhat true'' or 2 = ''Certainly true''. The items are divided into five subscales with five items each: Emotional symptoms, Conduct problems, Hyperactivity/Inattention, Peer relationship problems, and Prosocial behaviour. The first four subscales are summated and form a sixth subscale, the Total difficulties score. High scores on the first four subscales and the Total difficulties score reflect more problems and indicate increased risk of psychiatric caseness; while high scores for the prosocial behaviour subscale indicate more positive behaviour and a lower risk of psychiatric caseness.

In addition, SDQ provides an impact supplement containing one screening question which asks whether parents perceive their child as having ''difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?'' Those who perceive any difficulties are asked to fill in another seven questions about the duration and impact of these difficulties on the child's mood and daily life [29]. Five of these questions are used to calculate the Impact score.

The SDQ parental report exists in two versions, one for children aged 3–4 years, and another version for children aged 4–16 years. Here, the families of all 3–4-year-olds received the 3/4 version, and the 4–16 version was sent to families with children aged 5 years and above. There are two items that differ between these versions and both belong to the subscale Conduct problems; in the 3/4 version parents are asked if their child is ''Often argumentative with adults'' and ''Can be spiteful to others ''and the corresponding items for the 4–16 version are'' Often lies or cheats'' and ''Steals from home, school or elsewhere''. In addition, in the impact supplement parents are asked if the problems affect ''learning situations'' and ''schoolwork'' of children aged 3–4 years and 4–16 years, respectively. As these differences are minor, both questionnaires have been analysed together.

Swedish norms for the SDQ based on the 90th percentile suggest that a Total difficulties score of 14 and above indicates caseness [27]; the corresponding cut-offs for the other subscales are shown in Table 1. For the impact supplement, a score of 1 or more has been found to indicate child psychiatric caseness and a score of 2 corresponds to the 90th percentile of a community sample [28].

2.2.2. Injury-, child-, and parent characteristics

Data regarding length of stay as inpatients at the burn centre (LOS), Total Body Surface Area burned (TBSA burned), TBSA with full-thickness burns (TBSA-FT), age and gender were gathered from the patients' medical records. Parents were asked to report the presence of scars and visible scars (on hands, face, or neck) at the time of the investigation (1 = present, 0 = not present).

Further descriptive data were obtained by a Swedish adaptation of the Burn Outcomes Questionnaire [30,31] and regarded preburn health problems including a range of