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# Socioeconomic impact of children's burns—A pilot study

Nadia Kilburn\*, Baljit Dheansa

Brighton and Sussex Medical School and Queen Victoria Hospital, East Grinstead, United Kingdom

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## ABSTRACT

**Objective:** This pilot study aimed to gain empirical data on the social and economic impacts of child burns on children and parents, in the context of the outpatient setting.

**Method:** A questionnaire was completed by 52 parents of paediatric patients attending the burns outpatient department at Queen Victoria Hospital (QVH), East Grinstead, for at least the third time. Children's medical notes were used to extract demographic and medical data. Quantitative data was analyzed statistically and qualitative data was analyzed manually using content analysis.

**Results:** The financial burden related to the injury posed the greatest impact on parents, and was mainly associated with making the journey to the hospital, with lower income households being most affected. Self-employed parents and those who had to attend more than 6 hospital appointments also ran into difficulties. On the whole, there was not a considerable social impact on the burn-injured child, which may reflect the minor nature of burns in this study (mean depth partial thickness, median TBSA 1.0%).

**Conclusion:** Parents were shown to perceive a greater impact from their child's burn injury than their child. Certain groups of parents were identified as requiring additional support following the burn injury.

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## 1. Introduction

Epidemiological studies show that there are around 6400 paediatric admissions for burns in the UK each year [1]. Queen Victoria Hospital, East Grinstead, covers a population of 4 million people, and treats 500 child burns each year. Paediatric burns are traumatic events with significant consequences in physical, psychological and social dimensions. The physical recovery period associated with burns can be long and may involve multiple surgeries, and usually dressing changes, topical treatments and self-care practices such as wearing customized pressure garments and physiotherapy [2]. Several studies suggest that 20–50% of paediatric burns patients

experience psychological sequelae, such as anxiety, sleep disturbance, depression and PTSD [3–7]. Negative functional outcomes often occur: Herndon et al. found increased dependence in age-appropriate activities of daily living for 50% of burn-injured children [8]; whilst in Zyack et al.'s study, 85% of parents reported some level of interference with sports and playing with other children [8,9]. Reports indicate social withdrawal is present in two-thirds of children post-burn, and is associated with poor peer relationships and negative public perception [10].

Paediatric burns can also be stressful experiences for parents, as they try to manage their own distress as well as responsibilities of wage earning and caring for non-injured siblings [3,11–13]. In a study by Woodward, 60% of mothers of

\* Corresponding author at: 168 Freshfield Road, Brighton, East Sussex BN2 9YD, United Kingdom. Tel.: +44 7962254413.  
E-mail address: [bsms2087@uni.bsms.ac.uk](mailto:bsms2087@uni.bsms.ac.uk) (N. Kilburn).

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burn-injured children reported emotional upset, compared to 26% of mothers of children hospitalized for other reasons [14]. Likewise, Vigilano et al. found that 80% of mothers of children with burns exhibited emotional disturbance [15]. These findings are supported by numerous other studies showing that following their child's burn, parents tend to go through a process of guilt, self-blame, and anger, all of which may contribute to the development of depression and anxiety [16–18]. Moreover, parents of burn-injured children have been found to have an increased risk of developing acute stress response syndromes, including adjustment disorders and post-traumatic stress disorders, with the latter shown to have a prevalence rate in mothers of 18.8% [17,19,20].

There are also a number of studies focusing on the psychosocial impact of burns on children, though this predominantly focuses on severe burns for which the child is hospitalized, and not on burns managed on an outpatient basis. Given the large number of paediatric burns in the UK and the fact that the majority of burn injuries are minor and can be managed in outpatients [21], understanding the needs of this overlooked population is essential.

There is also a substantial amount of studies focusing on the psychological impact of child burn injury on parents, but not on socioeconomic implications. This comes as a surprise as there is a myriad of factors affecting family needs besides psychological problems. Families may be facing the loss of a wage earner while caring for the burn-injured child. Even though medical care can be delivered free of charge in the UK, the attendant costs of lost earnings, travel expenses, and special arrangements to care for the child can be devastating. Amongst the factors that contribute to long-term psychosocial adjustment and health-related quality of life, good family support has consistently been shown to be the most important [22–26]. However the multiple stressors that parents can experience may impede them from rendering and sustaining support for their injured child [27].

It is these particular gaps in the literature that formed the basis of this pilot study, the main aim of which is to gain empirical data on the social and economic impacts of child burns on the injured children and their families, in the context of the outpatient setting. The socioeconomic factors focused on included income and expenses, employment, family life and relationships, recreational activities, school and travel.

## 2. Method

The study consisted of 52 participants, who were recruited from the burns unit at Queen Victoria Hospital, East Grinstead over a period of 10 weeks between January and March 2013. The study's inclusion criteria were parents of children (aged 6 months to 16 years) who were attending the outpatient department for at least the third time. None of the children had previously been hospitalised as a result of their burn injury, nor had any received operative treatment. The medical details of the burn injuries and how these burns were classified in terms of severity are shown in Figs. 1 and 2. In this study, minor burns were classified as all first degree burns; second degree burns affecting less than 10% TBSA in children over the age of 10 years; and second degree burns affecting less

Patient number	TSA	Depth	Site	Severity
1	0.3	superficial PT/deep PT	back	minor
2	1	superficial PT	chest/ abdo, leg	minor
3	1.5	deep PT	hand	moderate/ major
4	4	superficial PT	leg	minor
5	0.3	superficial PT	hand	moderate/ major
6	1.5	superficial PT	leg	minor
7	1	superficial PT/deep PT	hand	moderate/ major
8	1	superficial PT/deep PT	hand	moderate/ major
9	0.5	superficial PT	hand	moderate/ major
10	2	superficial PT	arm/shoulder	minor
11	2	superficial PT	head/neck/face, ears	moderate/ major
12	1	superficial PT	arm/shoulder	minor
13	0.5	epidermis	foot/toes	moderate/ major
14	9	superficial PT/deep PT	arm/shoulder, back	moderate/ major
15	1	superficial PT	chest/abdo	minor
16	4.5	superficial PT	chest/abdo	minor
17	0.3	superficial PT	hand	moderate/ major
18	1	deep PT	ears	minor
19	6	deep PT	arm/shoulder	minor
20	0.3	superficial PT	hand	moderate/ major
21	0.3	superficial PT/deep PT	hand	minor
22	2	epidermis	leg	minor
23	0.5	epidermis	hand	moderate/ major
24	5	superficial PT	ears, chest.abdo, hand, leg, genitalia	moderate/ major
25	0.5	superficial PT/deep PT	foot/toes	major
26	3	epidermis	arm/chest	minor
27	1	superficial PT/deep PT	arm/shoulder	minor
28	4	deep PT	leg	minor
29	5	superficial PT	chest/abdo, arm/shoulder	minor
30	2.5	deep PT	chest/abdo	minor
31	1.5	deep PT	hand	moderate/ major
32	2	superficial PT	face/neck, chest	moderate/ major
33	2	superficial PT	arm/shoulder	minor
34	8	deep PT/ full thickness	chest/abdo, arm/shoulder	moderate/ major
35	0.3	deep PT/ full thickness	hand	moderate/ major
36	3	superficial PT/deep PT	chest/abdo, arm/shoulder	minor
37	0.3	deep PT	finger	moderate/ major
38	0.5	full thickness	finger	moderate/ major
39	1	epidermis	face/head/neck	moderate/ major
40	0.5	deep PT	finger	moderate/ major
41	3	superficial PT	chest/abdo, arm/shoulder	minor
42	2	superficial PT	arm/shoulder	minor
43	2	superficial PT	leg, foot/toes	moderate/ major
44	2	superficial PT	face/head/neck, arm/shoulders	moderate/ major
45	0.3	deep PT	finger	moderate/ major
46	0.3	epidermis	leg	minor
47	0.5	deep PT	hand	moderate/ major
48	1	full thickness	leg	minor
49	0.3	superficial PT	arm/shoulder	minor
50	3.5	superficial PT/deep PT	feet	moderate/ major
51	1	full thickness	foot/toes	moderate/ major
52	1.5	superficial PT	face/head/neck	moderate/ major

TSA- total surface area

PT- partial thickness

Fig. 1 – Details of the burn injuries included in the study.

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