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Accidental burns in children under five years of age: The gendered burden of care and socio-economic deprivation

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ABSTRACT

This qualitative study focused on the factors that contribute to burn injuries in children under five years of age admitted into R. K. Khan Hospital, KwaZulu Natal, South Africa. A triangulated approach, including 12 semi-structured in-depth interviews with mothers of the children, analysis of children's medical records, and home visits to observe the living circumstances of the participants, was used to strengthen the study and ensure its trustworthiness. The study highlights the influence of intersecting social criteria such as race, class and gender that contribute to hazardous environmental conditions, gendered burdens of care, and socio-economic deprivation that constitute important underlying structural factors predisposing children to burn injuries.

1. Introduction

Burn injuries represent the 11th leading cause of death globally (Roman, Lewis, Kigwangalla, & Wilson, 2012). Bradshaw, Bourne, and Nannan (2003) reported that in South Africa children from low-income groups were more at risk for sustaining burn injuries, with 1300 children dying every year as a result of burn injuries. Environmental and structural factors, such as poverty and informal housing, which are often overcrowded and lack infrastructure, constitute high risk factors (Bartlett, 2002; Van Niekerk, Rode, & Laflamme, 2004). Twice as many individuals in low and middle income countries (LMICs) die, and three times as many suffer long term disabilities from burn injuries compared with high income countries (HICs) (De Ramirez, Hyder, Herbert, & Stevens, 2012). (See Graph 1–Graph 3.) (See Table 1.)

The study, upon which this article is based, was undertaken in R. K. Khan Hospital situated in Chatsworth,[1] KwaZulu Natal, South Africa. Burn injuries in the age group 0–5 years, which are preventable, have been on the increase. Between 2013 and 2014 there was an increase from 132 to 175 admissions of children under five years of age with burn injuries at R.K. Khan Hospital. Despite this, there has been no research into this phenomenon. This study was designed to understand those factors that contribute to burn injuries in children, as this might contribute to more holistic interventions, geared towards primary prevention.

1.1. Literature review

There are several international, regional and national policies and pieces of legislation that deal with the protection of children and working in their best interests. Of particular salience is the *Convention on the Rights of the Child* (*UNICEF, 1989*) (UNCRC), *The African Charter on the Rights and Welfare of the Child* (African Union, 1990), the *Constitution of South Africa Act 108 of 1996* (Republic of South Africa, 1996), and the *Children's Act 38 of 2005* (Republic of South Africa, 2005), all of which reinforce the role of governments in providing the best possible environments for the development of children, and the promotion of child rights. The White Paper on Families in South Africa (Department of Social Development, 2012) is guided by principles of human rights, family diversity, family resilience, and promoting and strengthening families and marriages. The White Paper, as with this study, is rooted in ecological-systems theory which asserts that children do not develop and grow in isolation; their lives are influenced by different systems from micro to macro levels (Papalia, Olds, & Feldman, 2010). While legislative and policy mandates speak to children's rights to safety and security, bodily integrity and to life, it is unfortunate that children are ever so often victims of preventable injuries such as burns.

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[1] Chatsworth, the product of apartheid, was a designated Indian area primarily for the poor and working class, the majority of whom were forcibly removed from their places of origin. It is now a sprawling and vibrant township, made up of mainly low and middle income Indian families, but with some demographic changes. Following the relaxing of influx control and separate development legislation a number of informal shack settlements, with mainly Black African occupants, have mushroomed in the area.

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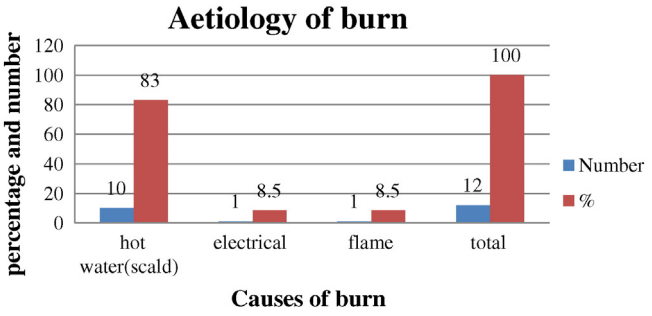
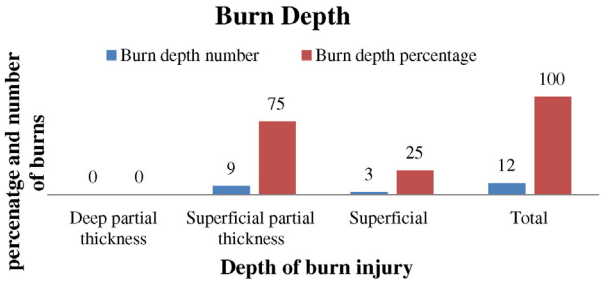


Graph 1. Aetiology of burn injury.

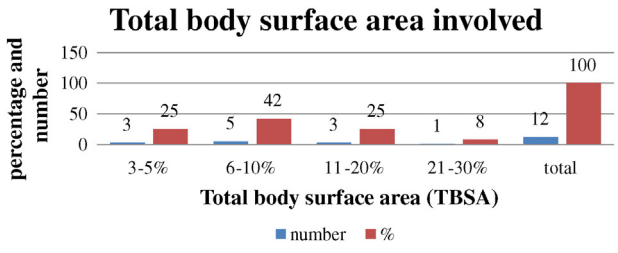


Graph 3. Burn depth.

The psychosocial and economic long-term costs of paediatric burns are enormous. The health and social burdens of paediatric burns are felt most in developing countries, particularly in Africa, with the highest cases of paediatric burns, followed by Asia (Parbhoo, Louw, & Grimmer-Somers, 2010a). Burn injuries remain a major source of morbidity and mortality for children, and constitutes a global health problem (Karimi, Beiki, & Mohammadi, 2013). Eighty-five percent of the injuries accounted for are as a result of scald burns that are most common in children under five years of age. Burn injuries could also be potentially seen as a form of abuse (Garzon, Degolier, & Brehm, 2013).

Risk factors that have been documented include maternal education, socio-economic status, overcrowding and poverty (Mcgarry et al., 2013; Kendrick et al., 2013). Thus, a child's total environment must be considered in developing preventive measures (Tse, Poon & Tse et al., 2006). In developing countries successful burn prevention is hampered by poor infrastructure, lack of health and safety policies, lack of caregiver education on prevention, and poor access to electricity and water. In the study conducted by Donroe, Gilman, Brugge, Mwamburi, and Moore (2009) the multivariate analyses showed that poverty was the main factor that contributed to burns. Educational level above high school in either parent showed a reduced risk of burn injuries in children (Delgado et al., 2002). Locke, Rossignol, and Burke (1990) also report a relationship between lack of parental education and burns.

South Africa is no different from other Low and Middle Income Countries (LMIC), with burn injuries being a serious health problem. A 15-year analysis of hospital data was undertaken by Child Safe South Africa from the Red Cross War Memorial Children's Hospital (RCH) (the only paediatric hospital in Sub Saharan Africa with a trauma and burns unit exclusively for children) trauma registry in Cape Town for the period 1995 and 2009 for children under 13 years of age. The study conducted by Parbhoo, Louw, and Grimmer-Somers (2010b) showed that the majority of the children that received treatment at the RCH between 1995 and 2009 were younger than four years of age. Studies conducted by Mashreky et al. (2008) confirmed similar findings. Research conducted by Gevaart-Durkin, Swart, and Chowdhury (2014) between 2006 and 2012 at 16 regional hospitals in South Africa, showed that 70% of children sustained liquid burns. Scald burns are the most common, with frequent burn injuries occurring in the home environment, a pattern similar to that shown in global literature (Allorto, Oosthuizen, Clarke, & Muckart, 2009; Mashreky et al., 2008; Parbhoo et al., 2010a; Wesson et al., 2013). The second cause of burns was flame-related (Wesson et al., 2013).



Graph 2. Total body surface area.

Den Hollander, Albert, Strand, and Hardcastle (2014) conducted a study at Inkosi Albert Luthuli Hospital that covered the period from December 2008 to December 2010. They reported that 147 burn injuries in children resulted from hot liquids. Flame burns accounted for as many as 65 children in the under four year age group. They concluded that the results were similar to other studies in South Africa. Children under five years were most commonly admitted, with hot liquids being the most common cause of burns. The majority of burn injuries occurred in or around the home (Den Hollander et al., 2014).

In South Africa it is the lower socio-economic group who are affected by lack of affordable electricity (Kimemia, Vermaak, Pachauri, & Rhodes, 2014), with informal settlements presenting greater threats. Within these settlements, energy poverty and low income levels are factors that contribute to the risk of burns and poisoning (Huchzermeyer & Karam cited, in Kimemia et al., 2014). The budget of the household impacts on whether that household is able to afford sufficient energy or not. Households still make use of paraffin, firewood and candles in both electrified and non-electrified households. It has been highlighted that the highest energy poverty is seen in single parent households with children, and no employment (Kimemia et al., 2014). The then Deputy Minister of Energy, Barbara Thompson, reported that South African households were spending 14% of their monthly income on energy, which is higher than the international benchmark of 10% (Department of energy, 2012).

Severe burn injuries impact greatly on children who have to live with being disfigured or disabled. The burn injury may require treatment throughout the child's life, which has enormous impact on the child's and the family's wellbeing (Bakker, Maertens, Van Son, & Van Loey, 2013). Amongst the psychosocial problems reported are anxiety disorders (De Young, Kenardy, Cobham, & Kimble, 2012; Bakker et al., 2013; Meyer et al., 2007), behaviour problems and family disruption, negative attitudes of educators and classmates, and increased costs of medical care and long term rehabilitation (Allorto et al., 2009; Chopra, Kettle, Wilkinson, & Stirling, 1997).

2. Methodology

Guided by eco-systems theory, the study was designed to gain a holistic understanding of multi-systemic factors (Bronfenbrenner, 1994; Brendtro, 2006) that contribute to burn injuries in children. A

Table 1
Ages of children in months.

Number of children	Age in months
1	0–3
4	7–12
2	13–18
3	25–26
2	37–60