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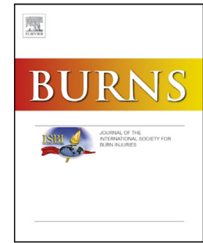

Review

Rehabilitation practices for burn survivors in low and middle income countries: A literature review

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ABSTRACT

Objective: To systematically review the delivery and effectiveness of rehabilitation for burn survivors in low and middle income countries (LMIC).

Methods: We systematically searched the literature through 11 electronic databases and the reference lists of relevant studies. Studies were suitable for inclusion if they were primary research with a focus on burns rehabilitation in LMIC settings describing either service delivery or treatment effectiveness. No time, design or other limitations were applied, except English language.

Results: Of 226 studies identified, 17 were included in the final review, including 7 from India. The results were summarised in a narrative synthesis as the studies had substantial heterogeneity and small sample sizes, with many relying on retrospective data from non-representative samples with no control groups. Most studies (12) described service delivery and 5 examined the effectiveness of different types of rehabilitation. Multiple studies stressed the need for rehabilitation and multidisciplinary teams for burns management.

Conclusions: The published research on burns rehabilitation is very limited and little is known about current practices in LMIC settings. In order to inform policy and service delivery, the effectiveness, feasibility and sustainability of current services needs to be investigated.
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1. Introduction

Burns contribute significantly to the global burden of death and disability: in 2015, injuries caused through exposure to fire, heat or hot substances led to the loss of over 12 million disability-adjusted life-years (DALYs) worldwide, and were attributed to over 180,000 deaths [1]. The World Health Organisation (WHO) describes burns as the 'forgotten global public health crisis' [2]. Burns have not received sufficient attention in global or national policy initiatives — they did not fit under any of the Millennium Development Goals, and are not directly mentioned in the subsequent Sustainable Developmental Goals [3,4].

The largest burden of burns are in low- and middle-income countries (LMICs), where prevention programs are inadequate or absent and healthcare resources are stretched, with limited acute care or rehabilitation services available for burns victims [5]. Over half of all burns-related deaths in the world occur in the South East Asia region, where India bears the largest burden with over a million people moderately or severely burnt every year [6]. Further, 60% of these deaths occur in women, mostly aged between 15 and 34 years [7]. Young females have been consistently reported across multiple hospital-based studies as a high risk group with the average male:female ratio of fire-related deaths of 1:3, the only injury with over-representation of women [7]. Prevention efforts face challenges particularly in the context of intent of the injury amongst women, with family violence and self-immolation common contributors to burn injury [7].

Few burn victims in LMICs receive appropriate first aid or immediate acute care, which can lead to further complications. Lack of co-ordinated management of a burn injury may result in complex psychological problems such as anxiety, depression and post-traumatic stress disorder, often leading to fatalistic attitudes and the belief by patients and carers that little or nothing can be done for pain management and to relieve suffering [8]. As a result, burn survivors become emotionally overwhelmed and typically withdraw [9]. Unfortunately, this lack of activity exacerbates secondary problems, such as contractures, thereby heightening the survivor's disability [10,11]. The distribution of burn morbidity also varies across settings and the prevalence of moderate and severe disability due to unintentional injuries in people under 60 years of age is 35.4 million in LMIC settings; 12.5 times higher than in high income countries (HIC) [12]. Populations in LMICs have a higher exposure to risks associated with burns, such as cooking fires and fuels [13].

Reported costs for burns treatment in India are comparatively high when compared to other LMICs. A tertiary hospital setting in India reports an average per patient cost of USD885 for burns treatment [14], while comparable work from Vietnam reports an out-of-pocket cost of USD427 per burns case [15]. Rehabilitation is defined as strategies involved in functional recovery and community reintegration from disability [16]. Coordinated rehabilitation with access to a multidisciplinary team minimises adverse effects of burn injury by preventing contracture development and the impact of scarring, and by maximising functional ability, psychological wellbeing and social integration [17]. Burns injury care in LMICs face several challenges, primarily because of limited resources, the absence of adequately trained health personnel, a lack of facilities equipped with essential resources, the lack of guidelines for best practice, the concentration of services in urban areas, as well as an array of access barriers for patients [18,19]. Ideally, burns rehabilitation should integrate the physical, psychological and social aspects of care as it is common for patients to experience difficulties in one or all of these areas following a burn injury. It is not known what burns rehabilitation services are available, accessible or most effective for low resource settings. Appropriate burns care that follows evidence-based guidelines to ensure the best outcomes for patients is unlikely to be achievable and sustainable within the overworked, under-resourced health care systems of LMICs, unless novel low cost models of care are developed. In order to inform development of such models of care, there is a need to understand the current practices, resources and effectiveness of rehabilitation in hospitals, homes and communities in LMICs. We carried out a systematic review of available literature to appraise the care practices and effectiveness of burn related rehabilitation in LMICs.

2. Methods

2.1. Search strategy

A systematic search of published literature was completed in 11 electronic databases: MEDLINE, Scopus, CINAHL, Web of Science, Web of Knowledge, SafetyLit, Cochrane Library database, Centre for Reviews in Health Systems and International Development, Global Health Library, International

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