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#### **Review**

# Patient adherence to burn care: A systematic review of the literature



Margo M. Szabo<sup>a</sup>, Monica A. Urich<sup>a</sup>, Christina L. Duncan<sup>a,b,\*</sup>, Ariel M. Aballay<sup>b</sup>

#### ARTICLE INFO

#### Article history: Accepted 7 August 2015

Keywords:
Burn care
Treatment adherence
Adults
Children
Literature review

#### ABSTRACT

Objective: Few studies have been conducted on treatment adherence to burn care. Given the prevalence of burn injuries across the lifespan and the impact of proper burn care on associated morbidity, it is important to understand factors associated with regimen non-adherence in this population. The purpose of this paper is to summarize and critique all published literature on patient adherence to burn care.

Method: With no restriction on publication date, 13 relevant articles met the following inclusion criteria: (a) utilized a sample of patients who sustained a burn injury or their medical staff; (b) focused on treatment or healthcare adherence of the patient (e.g., adherence to pressure garment therapy, physical therapy, occupational therapy, diet, dressing changes, or sunscreen use); and (c) publication written or translated into English.

Results: Most studies (70%) used a correlational design, while only four studies used an experimental design (either longitudinal or single subject) to assess adherence to burn care treatment. Current research suggests that burn treatment characteristics, knowledge, and beliefs are associated with adherence to burn care regimens.

Conclusions: Given that adherence may vary as a function of different factors, future research should assess pediatric burn patients as a separate population, as well as investigate adherence to multiple aspects of the burn care regimen. To enhance adherence to burn care, healthcare providers should educate their patients on various treatment components and tailor these components to meet patients' goals and needs, as feasible.

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E-mail address: Christina.Duncan@mail.wvu.edu (C.L. Duncan).

<sup>&</sup>lt;sup>a</sup> Department of Psychology, West Virginia University, Morgantown, WV, United States

<sup>&</sup>lt;sup>b</sup> Department of Surgery, Burn Center, West Penn Allegheny Health System, Pittsburgh, PA, United States

<sup>\*</sup> Corresponding author at: West Virginia University, Department of Psychology, 53 Campus Drive, PO Box 6040, Morgantown, WV 26506-6040, United States. Tel.: +1 304 293 1289; fax: +1 304 293 6606.

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#### 1. Introduction

According to the American Burn Association [1], over 400,000 individuals require medical care for burn injuries in the United States each year. Of these individuals, there is a 96.6% survival rate [1]. To ensure survival and promote recovery, appropriate burn care (e.g., wound debridement and dressing changes, range of motion exercises) is critical [2]. The high prevalence of burn injuries and necessity of proper burn care for healing suggest it is important to understand treatment adherence in this population. Moreover, adherence to burn care may affect health outcomes (e.g., scarring [3]). Unfortunately, there has been little research conducted on treatment adherence among patients who have sustained burn injuries.

Treatment adherence has been defined as "the extent to which a person's behavior coincides with medical or health advice" [4]. This implies, for example, if a patient were advised to wear his or her pressure garment for 23 h a day, but he or she only wore it during daytime hours, the patient would be non-adherent to this treatment aspect. As such, he or she would not receive the maximum benefits of the treatment (e.g., prevention of hypertrophic scarring and contractures [5]). This definition of adherence is frequently utilized because it emphasizes that adherence should be viewed on a continuum, and examined within the context of the patient's individual treatment regimen and how closely the patient follows his or her regimen [6]. The value of treatment adherence in other medical conditions is clear. For instance, adults and children with cystic fibrosis who had a higher medication possession ratio (MPR) – an objective, indirect measure of adherence; that is, the ratio of how often patients filled their prescription as a function of how often it would be anticipated to be filled - had fewer lung exacerbations than those with lower MPR, or greater non-adherence [7]. Despite substantial research supporting the importance and benefits of adherence for other medical conditions, it is possible that previous work might not generalize to burn care treatment.

In addition to the potential benefits of adherence, there are negative consequences associated with non-adherence to the burn care regimen. Because range of motion exercises and pressure garment therapy (PGT) are utilized to help prevent and reduce the development of hypertrophic scarring [5,8,9], it is understandable that non-adherence to these treatment

components may be associated with scarring [e.g., 3]. Scars may restrict patients' range of motion, especially if the scar is over a joint [5]. Moreover, van Barr and colleagues [10] found that children often report psychosocial problems, such as dissatisfaction with appearance associated with scars. These authors also reported that children with facial burns report more problems with appearance than those with scars on other parts of their body, and that females endorse more difficulties with appearance than males. Furthermore, high levels of psychosocial problems in "satisfaction with current state," "emotional health," and "parental concern" were discovered among children with hypertrophic scars [10]. This association is only one example of the many potential psychosocial impacts of non-adherence to burn care, which could also include problematic social functioning, family disruption, increased healthcare costs, and adverse medical outcomes. Surprising, no studies exist linking non-adherence in burn care to these various psychosocial and medical outcomes. However, it makes logical sense that failure to follow treatment recommendations would be associated with problematic health outcomes as well as deleterious psychosocial consequences.

Understanding the factors that contribute to individuals being non-adherent to their burn care regimen is vital to creating successful interventions to promote adherence which, in turn, is anticipated to help these patients achieve optimal physical and psychological health. The goal of this study is to review and critique the research literature on treatment adherence among patients who have sustained burn injuries.

#### 2. Methods

To locate scholarly articles on regimen adherence in burn patients, the following databases were searched: Academic Search Alumni Edition (EbscoHost), PsycINFO, MEDLINE, and Google Scholar. Using the advanced search options, a combination of keywords such as burn(s), adherence, compliance, pressure garment, physical therapy, occupational therapy, diet, dressing changes, and sunscreen were searched. Due to limited literature on the topic (i.e., adherence to burn care), all participant age ranges were included in the investigation. To date, a systematic review of adherence to burn care has not yet been published; consequently; the

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