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Perceived social support among patients with burn injuries: A perspective from the developing world

Ahmed Waqas [a], Marvee Turk [c,*,1], Sadiq Naveed [b,1], Atif Amin [d], Harriet Kiwanuka [a,b,c,d], Neha Shafique [c], Muhammad Ashraf Chaudhry [a]

[a] CMH Lahore Medical College and Institute of Dentistry, Abdur Rehman Rd., Lahore, Pakistan
[b] KVC Prairie Ridge Psychiatric Hospital, Kansas City, USA
[c] Harvard Medical School, 25 Shattuck St., Boston, MA, USA
[d] University of Lahore College of Medicine & Dentistry, Raiwind, Pakistan

ARTICLE INFO

Article history:
Accepted 23 June 2017
Available online xxx

Keywords:
Burns
Social support
South Asia

ABSTRACT

Background: Social support is among the most well-established predictors of post-burn psychopathology after burn. Despite a disproportionately large burden of burns in the developing world, the nature of social support among burn patients in this context remains elusive. We, therefore, seek to investigate social support and its biopsychosocial determinants among patients with burn injuries in Pakistan.

Methods: A cross-sectional study of 343 patients presenting with burn injuries at four teaching hospitals in the Punjab province of Pakistan was conducted. Patient evaluation consisted of a multi-part survey of demographic status, clinical features, and social support as measured by the validated Urdu translation of the Multidimensional Scale of Perceived Social Support (MSPSS). Multiple regression analysis was performed to evaluate associations between patient characteristics and MSPSS score.

Results: Mean overall MSPSS score was 57.64 (std dev 13.57). Notable positive predictors of social support include male gender, Punjabi ethnicity, burn surface area, and ego resiliency.

Conclusion: Our study reveals a troubling pattern of inadequate social support among certain subgroups of Pakistani burn patients. Addressing these inequities in the provision of social support must be prioritized as part of the global burn care agenda.

1. Introduction

Burns represent a major global health problem, resulting in a total 265 million deaths, 7.1 million injuries, and 18 million lost disability-adjusted life years (DALYs) each year [1]. Furthermore, owing to widespread illiteracy, substandard living conditions, and inadequate medical facilities, upwards of 90% of these deaths, injuries, and lost DALYs are accounted for by low and middle income countries (LMICs) such as Pakistan [1]. While Pakistan does not operate a national burns registry, estimates of the country's burns-associated mortality rate are as high as 36% — a more than 5-fold increase from that observed in some high income countries (HIC) [2]. The etiological profile of Pakistan's disproportionate burden of burns includes commonplace household and workplace accidents as well as a growing epidemic of deliberate assaults and vitriolage [3].

* *Corresponding author at*: Harvard Medical School, 25 Shattuck St., Boston, MA 02115, USA.
E-mail address: Marvee_Turk@hms.harvard.edu (M. Turk).
[1] These authors contributed equally to this work.
http://dx.doi.org/10.1016/j.burns.2017.06.014
0305-4179/

While the physical consequences of burn injuries in Pakistan are undoubtedly severe and enduring, their associated psychosocial impact is no less debilitating. Clinically significant levels of many psychopathologies after burn – including anxiety, depression, sleep disorders, and PTSD– are well-established in burn patients worldwide [4–8]. Studies have further demonstrated a broad spectrum of factors that are predictive of psychosocial maladjustment in burn patients, such as burn severity, psychological resiliency, premorbid psychopathology, and social support [9–12].

Social support is among the most prominent and modifiable predictors of maladjustment after burn. The psychiatry literature defines social support as a "relationship transaction" intended to enhance the well-being of the recipient [13]. Since the development of psychometrically sound methods for its measurement, social support has been found to play a critical role in the physical and psychosocial well-being of individuals in the settings of both health and illness [14–17]. The therapeutic role of social support is widely conceptualized as a "buffer effect", whereby social support protects against deleterious effects of stress by either manipulating the stressor itself, changing the meaning ascribed to it, or improving the affective response that it elicits [18–20].

The buffering effect of social support in improving health outcomes is well-demonstrated in the burns literature. Studies have shown a negative correlation between social support and a range of psychopathologies after burn, including depression and anxiety [8,21–23]. The therapeutic role of social support as a part of burn care is particularly well-established in the context of PTSD. A recent study in Pakistani burn patients identified low levels of social support as a strong predictor of PTSD symptomatology after burn [24]. Beyond its role in psychosocial adjustment, social support has even demonstrated a profound mortality effect, particularly during the acute resuscitative phase of burn care [25]. All in all, the therapeutic role of social support as a part of burn care is both systemic and longitudinal.

Despite abundant research on the impact of social support on health outcomes after burn, relatively little is known regarding the biopsychosocial determinants of social support among burn patients. This gap in the literature is especially troubling in the context of LMICs, where both the burden of burn injuries is disproportionately high and accessibility to formal modes of burn rehabilitation is disproportionately low. A better understanding of social support in the LMIC context might might compensate for the inadequacy of formal modes of burn care in promoting burn related psychosocial adjustment. In this vein, our study aims to investigate social support and its biopsychosocial determinants among patients with burn injuries in Pakistan.

2. Methods

We conducted a cross-sectional study between August and December of 2016 at four publicly-funded teaching hospitals in Pakistan's Punjab province. Ethical approval was granted by the institutional review board of CMH Lahore Medical College.

Despite a lack of specific a priori data from which to derive a power analysis, we estimated a minimum sample of 199 participants to achieve a desired power of 95% given moderate effect size $\theta=0.15$, significance level $\alpha=0.05$, and $k=15$ estimated predictors. Ultimately, a total of 343 patients presenting with burn injuries within the designated study period were conveniently sampled for evaluation by six medical students under the guidance of a clinical psychologist. There were no exclusion criteria for participant selection.

Patient evaluation consisted of a multi-part survey of demographic status, clinical features, and social support as measured by the validated Urdu translation of the Multidimensional Scale of Perceived Social Support (MSPSS) [26].

The MSPSS is a brief self-report scale that quantifies the adequacy of social support from three sources: family, friends, and a significant other. The scale demonstrates strong internal consistency, construct validity, and factor structure stability across diverse populations worldwide. It consists of 12 items rated on a 7-point Likert scale, ranging from 'very strongly disagree' to 'very strongly agree'. Total scores range from 12 to 84, with higher scores corresponding to higher levels of perceived social support. Separate subscale scores distinguishing between social support from family, friends, and a significant other are also provided for interpretation in a similar manner.

As part of our patient evaluation, we also included measurement of ego-resiliency via the validated Urdu translation of the Ego Resilience Scale (ER-89) [27]. Ego resiliency is conceptualized as a dynamic capacity to systematically optimize the personality system according to environmental context [28]. The ER-89 consists of 14 self-report items rated on a 4-point Likert scale. Total scores range from 14 to 56, with higher scores corresponding to higher levels of ego resiliency.

Data were analyzed with SPSS v.21 (IBM, Chicago, Illinois). Frequencies and descriptive statistics were calculated for categorical variables and continuous variables, respectively. Univariate analyses of associations between patient characteristics, MSPSS total score, and MSPSS subscale scores were conducted using Pearson correlation and point biserial correlation. Associated variables were then evaluated for normality, linearity, and equal variance to ensure assumptions for regression analysis were met. Multiple regression analyses were then conducted with each associated variable included as a predictor of MSPSS score.

3. Results

3.1. *Sample characteristics*

A total of 343 patients were evaluated, including 162 males (47.2%) and 181 females (52.8%). Mean participant age was 30.6 years (10.31). A majority of participants were employed (64.1%), married (76.7%), educated beyond primary school (62.7%), and members of the Punjabi ethnic majority (68.8%). A minority of participants endorsed suicidal ideation (7.6%) or a prior personal history of psychiatric illness (6.7%). The predominant burn presentation was of an accidental injury (92.1%), inflicted by flame (55.4%), and sparing the face (79.9%). Furthermore, burn patients were more likely to be managed conservatively alone (88.3%) than than by reconstructive

Please cite this article in press as: A. Waqas, et al., Perceived social support among patients with burn injuries: A perspective from the developing world, Burns (2017), http://dx.doi.org/10.1016/j.burns.2017.06.014