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Validation of the Italian version of the Burn Specific Health Scale-Brief

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ABSTRACT

Introduction: A growing awareness of psychological and functional impairment due to burns have led to the development of specific instruments to evaluate Quality of Life in this population, such as the Burn Specific Health Scale – Brief (BSHS-B), whose psychometric properties have been consistently verified. The aim of this study was to translate the BSHS-B into Italian and to investigate its reliability and validity.

Methods: Translation procedures were carried out according to accepted standards. Internal reliability was assessed using Cronbach's alpha coefficient. Concurrent validity was evaluated through correlations between the BSHS-B and the Short-Form 36 Health Survey (SF-36), the Self-report Clinical Inventory (SCL-90), and the Body Uneasiness Test (BUT).

Results: The overall Cronbach's alpha value for the scale was 0.887. Significant correlations were found between the Italian BSHS-B domains, the SF-36 subscales (Spearman's rho: 0.184–0.414), and several SCL-90 subscales (Spearman's rho: −0.173 to −0.477). Furthermore, the affect and relationship domain and the skin domain of the BSHS-B negatively correlated with the compulsive self-monitoring and depersonalization subscales of the BUT.

Conclusion: The Italian translation of BSHS-B has shown satisfactory internal consistency, criterion validity, and convergent validity, supporting its application in routine clinical practice as well as in international studies.

1. Introduction

As the advances of medical and surgical techniques have increased survival rates after burns, there has been an increased focus on the psychological *sequelae* of burn trauma, in order to improve the psychological and functional adjustment of this clinical population. It is well known that both psychological and physical consequences of burns (including pain, scars, contractures, and amputations) account for mild to severe impairment and disability and significantly affect Health Related Quality of Life (HRQoL). Comparison with population controls and clinical groups demonstrated that burn patients perceived a lower overall life satisfaction and HRQoL that is influenced by specific physical and psychological factors such as heat sensitivity, impaired self-care, body image dissatisfaction, and changes in their social and working role [1]. Burn survivors show relevant and persisting problems in home and social integration, experience family difficulties and a lack of social support [2–4]. Furthermore, systematic

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reviews claim that nearly 28–33% of burn patients have not returned to any form of employment after 3 years post-burn [5,6]. Psychiatric complications are a major issue in victims of burn trauma: according to the literature, up to 65% of inpatients burn units experience a variety of psychiatric symptoms including drowsiness, confusion, sleep disturbances, depression, and anxiety [7,8]. Hyper-arousal, avoidance, and re-experiencing of the traumatic events are common symptoms, which often raise the clinical threshold for Acute and Post-Traumatic Stress Disorder (11–25% in the first month post-burn) [1]. Moderate to severe depressive symptoms – such as grief, shame, and social withdrawal – are experienced by 17–33% of in-patients and prevalence of Major Depressive Disorder ranges from 4% during the hospitalization to 10% in the year following discharge [9].

In light of these findings, post-burn HRQoL assessment contributes to improving out-patient aftercare service by recognizing individuals at a higher risk for developing psychological and psychiatric problems and by identifying physical, emotional, and social issues that may benefit from multi-disciplinary rehabilitation programs [10,11]. In response to the lack of a specific tool to evaluate HRQoL in burn survivors, Blades et al. (1979) developed the original Burn Specific Health Scale consisting of 114 items, from which an abbreviated (BSHS-A) [12], a revised (BSHS-R) [13], and a brief version (BSHS-B) [14] were derived. Easiness to administration, sensitivity to burn-related issues, and excellent psychometric properties have made the BSHS the most widely used instrument in clinical practice and research in burn trauma [15,16]. BSHS-B has been translated into several languages including Korean, Chinese, and Persian [17–19], but not Italian. The aim of this study was to translate the BSHS-B into Italian and to investigate its reliability and validity.

2. Methods

The study project was approved by the clinical team of the Operative Unit of Plastic Surgery and Burn Therapy of the Civico and Benfratelli Hospital of Palermo (Italy). Possible participants were approached by psychologists and medical residents within 6 months from their admission. All the participants were informed about the study's aims and procedures and then provided their written informed consent. Participants' anonymity was maintained throughout data collection and data analysis. Psychologists and medical residents distributed the self-report questionnaires to the patients and, when needed, assisted them in providing written answer to the questions.

2.1. Participants and settings

Study participants were adult burn patients (18–65 years) consecutively recruited from the Operative Unit of Plastic Surgery and Burn Therapy of the Civico and Benfratelli Hospital of Palermo (Italy) from 2010 to 2012. Patients were excluded if they were not fluent in Italian, presented either severe perceptual disabilities or mental retardation, or referred any diagnosis or treatment for major psychiatric or neurological disorders.

2.2. Measures

2.2.1. The Burn Specific Health Scale-Brief (BSHS-B)

The Burn Specific Health Scale-Brief (BSHS-B) is a widely used instrument to assess quality of life in burn patients [14]. The scale consists of 40 items encompassing nine subscales: simple abilities (3 items), hand function (5 items), work (4 items), body image (4 items), heat sensitivity (5 items), treatment regimens (5 items), affect (7 items), interpersonal relationships (4 items), and sexuality (3 items). Each item describes a particular task or experience that subjects are asked to evaluate on a scale from 0 (extreme) to 4 (not at all). A recent factor analysis [11,20] showed that, with the exception of work, all the above subscales can be grouped into three domains: the function domain (simple abilities and hand function), the skin sensitivity domain (body image, heat sensitivity, and treatment regimen), and the affect and relationship domain (affect, interpersonal relationship, and sexuality). Mean scores were calculated for each of the nine subscales and for the three domains. Consistently with other HRQoL scales, lower scores of the BSHS correspond to a worse quality of life.

Translation procedures were carried out according to accepted standards [21,22]. The original English version was forward-translated by two independent translators, an English translator and a psychiatric nurse fluent in English, who agreed on a final Italian translation. This first Italian version was independently back-translated in English by another translator and by a psychologist fluent in English with experience in HRQoL research, who, in turn, agreed on a final English back-translation. The Italian translation and the English back-translation were then reviewed by a multi-disciplinary committee composed by a professor of Psychiatry, a psychologist with experience in burn care unit, a physician, and a psychologist. The English back-translation was compared to the original version in order to detect any misinterpretation and ambiguity; the two versions were found to be reasonably similar. Furthermore, the Italian translation was compared to the original one to ensure conceptual equivalence and improve understandability. Minor amendments were made to the sexuality subscale: to render the question less embarrassing for patients, the item 21 was worded as ''I feel frustrated because I cannot be sexually active (original: aroused) as I used to''; the item 23 was changed into ''I no longer hug, hold the hand (original: hold), or kiss'' as there is no real difference in the Italian language between hugging and holding. In addition, ''tying shoelaces, bows...'' in item 6 was modified in ''tying shoelaces, necktie...'' to provide another example of the same hand function. Eventually, a pilot study was conducted with 10 out-patients, using the probe method. Patients were asked whether they considered any of the items challenging, annoying, or irrelevant and were asked to put one item for each subscale in their own words. The Italian translation of BSHS-B showed adequate face validity.

2.2.2. The Short-Form 36 Health Survey (SF-36)

The SF-36 [23,24] was included in the study protocol to evaluate criterion validity. SF-36 is the most widely used