BURNS 43 (2017) 877–885

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/burns

The effect of a rehabilitation nursing intervention model on improving the comprehensive health status of patients with hand burns

Lin Li [a], Jia-xi Dai [b], Le Xu [b,c,*], Zhen-xia Huang [b], Qiong Pan [b], Xi Zhang [b], Mei-yun Jiang [a], Zhao-hong Chen [a]

[a] Department of Burns, Fujian Medical University Union Hospital, Fuzhou, Fujian Province, China
[b] Fujian Medical University Union Clinical Medical Institute, Fuzhou, Fujian Province, China
[c] Department of Nursing, Fujian Medical University Union Hospital, Fuzhou, Fujian Province, China

ARTICLE INFO

Article history:
Accepted 4 November 2016

Keywords:
Hand burns
Rehabilitation
BSHS-A
Comprehensive health status

ABSTRACT

Aims and objectives: To observe the effect of a rehabilitation intervention on the comprehensive health status of patients with hand burns.

Background: Most studies of hand-burn patients have focused on functional recovery. There have been no studies involving a biological–psychological–social rehabilitation model of hand-burn patients.

Design: A randomized controlled design was used.

Methods: Patients with hand burns were recruited to the study, and sixty patients participated. Participants were separated into two groups: (1) The rehabilitation intervention model group ($n = 30$) completed the rehabilitation intervention model, which included the following measures: enhanced social support, intensive health education, comprehensive psychological intervention, and graded exercise. (2) The control group ($n = 30$) completed routine treatment. Intervention lasted 5 weeks. Analysis of variance (ANOVA) and Student's t test were conducted.

Results: The rehabilitation intervention group had significantly better scores than the control group for comprehensive health, physical function, psychological function, social function, and general health. The differences between the index scores of the two groups were statistically significant.

Conclusions: The rehabilitation intervention improved the comprehensive health status of patients with hand burns and has favorable clinical application.

Relevance to clinical practice: The comprehensive rehabilitation intervention model used here provides scientific guidance for medical staff aiming to improve the integrated health status of hand-burn patients and accelerate their recovery.

What does this paper contribute to the wider global clinical community?

1. This paper will provide a scientific guidance for medical staff aiming to help hand-burn patients recover more rapidly.

* *Corresponding author at*: Department of Nursing, Fujian Medical University Union Hospital, Fuzhou, Fujian Province, China. Tel.: +86 13365917538.
E-mail address: xl_8332@126.com (L. Xu).

http://dx.doi.org/10.1016/j.burns.2016.11.003

2. This paper will contribute to knowledge regarding the formation of a multidisciplinary team to promote the comprehensive rehabilitation of burn patients.

1. Introduction

The hand is in people for proper function and is the body part that is most likely to be involved in burns, with an incidence rate of 45–50% [1]. Although the overall surface area of each hand is less than 3% of the total surface area of the body and burns to the hand are generally not life-threatening, deep burns may lead to severe scar contracture deformities owing to the unique anatomical structure of the hand. These deformities often have a devastating impact on patients' quality of life [2]. Therefore, effective rehabilitation therapy for hand-burn patients is needed.

2. Background

Studies of burn patients' rehabilitation have been conducted in many countries [3]. In developing countries including China, the basic material resources to rehabilitate burn survivors are not plentiful [4]. Most reports have focused on the functional recovery of hand-burn patients. Regarding somatic function, studies have mainly focused on the following functional rehabilitation approaches: operative treatment, scar generation mechanisms, the early posture maintained by the patient, and the use of different rehabilitation devices and virtual videos. However, most of these methods are not systematic and must be altered to suit each specific case. It was reported that in terms of psychosocial aspects, hand-burn patients are prone to anxiety, depression, and other psychological stress reactions [5]. Additionally, there exists a relationship between the psychosocial issues faced by patients with hand burns and the possibility of their smooth return to society [6], but there have been no studies on the psychology and social rehabilitation of hand-burn patients. The present study is based on the biological–psychological–social medical model (Fig. 1) [7]. Considering hand-burn patients' needs in areas such as physical, psychological, and social rehabilitation, we sought to build a rehabilitation intervention model to improve the integrated health status of hand-burn patients and help their rapid and smooth return to society (Fig. 2).

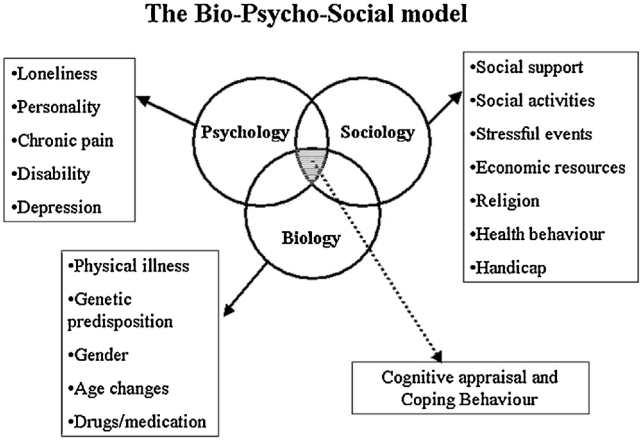

Fig. 1 – The biological–psychological–social medical model.

3. Methods

3.1. Design of the study

This randomized group intervention study was structured using a mixed design with one repeated factor (time: pre- and post-intervention) and one between-subject factor (intervention groups: rehabilitation intervention model, control).

3.2. Participants

Participants were recruited from patients hospitalized in the Burn Center, in Fujian, China, from March 2013 to October 2013. Sixty-six patients expressed interest in participating, and of these, 60 patients completed the study. Approval was obtained from the Fujian Medical University Union Hospital Burn Center prior to recruitment. Each participant gave informed consent before initiation of testing and intervention. Interested participants were screened for the criteria mentioned in Tables 1 and 2.

Four patients could not complete the interventions because of transfer to another hospital following surgeries, and two patients were not able to read and understand the study criteria. Thus 60 patients with hand burns were selected ultimately, and randomly divided into two subject group, with 30 cases each. The groups were similar in age, gender, and clinical variations, such as total burn size, burn degree, and previous hand surgery; no statistically significant differences between the subject groups existed ($p > 0.05$) (Table 3).

3.3. Description of instrumentation

The Abbreviated Burn-Specific Health Scale (BSHS-A) is a simplified form developed by Munster and others based on the BSHS from 1979, and is a professional scale for evaluating the comprehensive health condition and life quality of burn patients [8,9]. The scale involves four realm and seven subrealm problems concerning the quality of life of the burn patient—(1)the physical function realm (20 items), including the three sub-domains, flexibility and self-care skills, hand function, and role activity; (2)the psychological function realm