Original Article

Factors influencing resilience in patients with burns during rehabilitation period

Zhen Yang [a], Jun-qiao Wang [b],*, Bao-zhen Zhang [a], Yu Zeng [c], Hai-ping Ma [c]

[a] *The First Affiliated Hospital of Nanchang University, Nanchang, China*
[b] *School of Nursing, Fudan University, Shanghai, China*
[c] *The Second Affiliated Hospital of Nanchang University, Nanchang, China*

ARTICLE INFO

ABSTRACT

Purpose: To investigate the factors that influence levels of resilience in patients with burns during rehabilitation, and to provide theoretical guidance for psychological crisis prevention and intervention.

Methods: A total of 129 patients with burns and undergoing rehabilitation were investigated using a demographic questionnaire, the Connor-Davidson Resilience Scale (CD-RISC), the Social Support Rating Scale (SSRS), and the Simplified Coping Styles Questionnaire.

Results: The overall resilience score of burn patients was at a middle level. Multiple regression analysis showed that gender, marital status, occupation, educational level, burn severity, and a positive coping style were all significant factors influencing patient resilience.

Conclusion: During psychological crisis intervention, medical staff should guide burn patients according to their individual coping styles. Such guidance would achieve a better effect, improve patient resilience, and promote positive psychological adaptation.

1. Introduction

Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress [1], and is a measure of an individual's ability to recover and adjust following difficulty, frustration, and misfortune [2]. The subject of resilience has received increasing attention among researchers in the field of trauma research. As a measure of an individual's ability to cope with stress,

* *Corresponding author.*
E-mail address: junqwang@fudan.edu.cn (J.-q. Wang).

frustration or trauma [3], resilience has great influence when dealing with adversity, stress, illness and other adverse experiences, and also on maintaining personal health [4]. Burns are a common accident in China, and can cause tremendous physical and mental damage, including appearance changes, scars, and various physical dysfunctions, and resilience plays in important role in helping patients regain their physical and mental health [5]. This study was conducted to examine the resilience levels of burn patients through use of questionnaires, and then identify the various factors that influence resilience in such patients. This information can be used to assist clinical staff in developing individualized treatment and care programs for burn patients, and provide theoretical guidance regarding psychological crisis prevention and interventions, which may enhance an individual's ability to adapt to adverse events.

2. Materials and methods

2.1. Patient sample and setting

A total of 129 hospitalized burn patients were recruited using a convenience sampling method from a burn centre in China during November 2011 to June 2012. Patients were eligible for the study if they satisfied the following conditions: (1) were aged $\geq$ 18 years, (2) were hospitalized for burns or were undergoing burn rehabilitation, (3) demonstrated basic reading and comprehension skills, and had normal vision, hearing, and levels of consciousness, (4) provided their informed consent to participate in the study. The general information questionnaire used in this study was developed by the researcher after reviewing relevant literature and receiving expert advice. The questionnaire was designed to collect information on patient age, sex, marital status, educational level, occupation, monthly income, cause of burns, and burn severity.

2.2. General information

Among the 129 subjects recruited for this study, 105 were male, 24 were female, and the ages ranged from 18 to 60 years (mean age 34.22 ± 10.22 years). A total of 88 subjects were married, 7 were divorced, and 34 were unmarried. Fifty-seven subjects had received a high school or above, and 72 had completed a secondary school education or less. Seventy-one subjects reported a monthly income <1000 yuan, 37 subjects reported a monthly income of 1000 to 3000 yuan, and 21 subjects reported a monthly income >3000 yuan. Fifty-three subjects had mild burns, 55 had moderate burns, and 21 patients had severe burns.

2.3. Instruments

Several statistical instruments were used to analyse the data collected in this study. The Connor-Davidson Resilience Scale (CD-RISC)-Chinese version was used to measure the resilience level of the subjects. The Social Support Rating Scale was used to measure the social support level of the subjects, and the

Simplified Coping Style Questionnaire was used to measure the coping style of the subjects.

2.3.1. CD-RISC-Chinese version
The CD-RISC consists of a 25-item questionnaire developed by Connor and Davidson in 2003 [6]. The Chinese version was translated by Yu Xiaonan, and its internal consistency (Cronbach's alpha) was found to be 0.91 [7]. The Chinese version of CD-RISC analyses three different factors: tenacity, strength, and optimism. The factors for tenacity include 13 items (15, 12, 21, 17, 22, 23, 11, 16, 14, 18, 19, 13, and 20). The factors for strength include 8 items (9, 8, 10, 1, 7, 5, 25, and 24), and the factors for optimism include 4 items (6, 3, 2, and 4). The subjects were asked to provide response on a 5-point scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = almost always), and the total possible score was 100. Higher total scores were used to reflect increased levels of resilience [8].

2.3.2. Social Support Rating Scale
The Social Support Rating Scale was developed by Professor Xiao Shuiyuan to measure individual social relations. The scale has demonstrated good reliability (0.92) and validity, and the consistency of response to the items ranges from 0.89 to 0.94, making it suitable for use in a Chinese population [9]. This scale contains 10 items and measures three dimensions. The objective support dimensions include items 2, 6, and 7, the subjective support dimensions include items 1, 3, 4, and 5, and the support utilization dimensions include items 8, 9, and 10. Items 1–4 and 8–10 are scored by selecting an answer. Items 1–4 and 8–10 are single answer questions, with options 1,2,3,4, and count for 1,2,3, and 4 points respectively. Item 5 counts the total scores of options A-E. Items 6 and 7 count for 1 point for each source, and 0 points without any source. The total score is the sum of the scores for all 10 items. The highest possible total score is 72 points; the lowest is 12 points, and a higher score indicates better social support.

2.3.3. Simplified coping style questionnaire
This 20-item questionnaire was developed by Xie Yanin [9] in 1998; its retest reliability is 0.89, and its Cronbach's alpha for internal consistency is 0.90. The questionnaire includes two subscales, which include a positive coping response and a negative coping response. Items 1–12 comprise the positive response subscale, while items 13–20 comprise the negative coping response subscale. Each item is scored on a scale of 0–3, with 0 indicating not used and 3 indicating often used. The possible scores for the test range from 0 to 60.

2.4. Procedures

To ensure consistency during the data collection portion of the study, the principle investigator was present when all data was collected and was available to communicate with the subjects. This investigator explained the questions to the patients, who then independently their questionnaires. For patients who could not properly understanding the questions due to low educational level, or complete the questionnaire due to burn injuries, the investigator explained the individual questions and recorded the answers. A total of 129