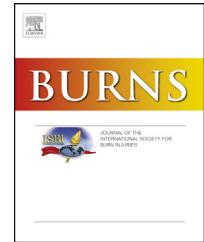


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Effects of structured home-based exercise program on depression status and quality of life in burn patients

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ABSTRACT

Background: Burns can cause life-threatening injuries and severe limitations. This study aimed to evaluate the effects of the structured home-based exercise program on depression status and quality of life in burn patients.

Materials and methods: This study was carried out in the Wound and Burn Treatment Department of University of Health Sciences, Dr. Lütfi Kırdar Kartal Education and Research Hospital, Istanbul. Thirty burn patients voluntarily participated in this study. Patients' demographic data such as burn area and grade, percentage, type, number of grafts, and duration of hospitalization were recorded. The quality of life was evaluated using the Short Form-36 (SF-36), and depression status was evaluated using Beck Depression Inventory (BDI). The home-based exercise program was defined by the clinical physiotherapist on the day when the patient was discharged. The home-based exercise program was applied for 3 weeks. Evaluations were performed at discharge and repeated after 3 weeks at the end of the exercise program.

Results: Of the 30 patients who completed the study (age range, 21–61 years; mean, 34.9 ± 12.99 years), 96.7% (n=29) were male and 3.3% (n=1) were female. A statistically significant difference was observed between BDI and SF-36 scores before and after the home-based exercise program ($p < 0.05$). BDI scores decreased after the home-based exercise program, whereas SF-36 scores increased.

Conclusion: Our study concludes that burn patients who underwent the structured home-based exercise programs attained acceleration of their physical, social, and psychological integrity. Thus, establishing a structured home-based exercise program according to the burn type and clinical course should be continued.

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1. Introduction

Severe burns are injuries that cause lifelong disability and dysfunction, resulting in suboptimal recovery associated with psychosocial and physical dysfunction [1]. These can cause numerous challenges to patients even when emergency treatment is successful. The most common problems are hypertrophic scars, joint contractures, motor dysfunctions (such as diminished muscle strength, limited joint movements, loss of coordination, and diminished walking ability), sensory disturbances (such as hypersensitivity, pain, itching, and sensory loss), obstacles to activities of daily living, social problems, and psychological disturbances. As a result, the quality of life and functional status of survivors may be seriously affected. Negative effects can be seen in the patients' daily functions and physical and psychological well-being [2,3].

Progress in medical and surgical treatments has reduced mortality rate in severe burns. Therefore, the number of patients requiring complex rehabilitation has increased. Rehabilitation is a comprehensive process that requires a multidisciplinary team working to improve the patient's physical and psychosocial skills that are needed to return to the community and daily lives [4,5]. Burn rehabilitation aims to restore patients' physical functions, cosmetic appearance, and maximum potentials to help them adapt to existing conditions with a permanent loss of function and to return to the roles and skills in their lives. In addition, rehabilitation specialists help in the reintegration and participation of the patients in all roles and skills in their lives and focus on improving the survival rates [6].

One of the most important steps in rehabilitation is exercise. Exercising is important so as to restore the joint range of motion, to increase muscle strength and endurance, to prevent the formation of venous thromboembolism, and to restore physical and mental health. The patient should initiate active or passive exercise for as long as possible, without being dependent on the bed for a long time [7]. If burn injuries are not treated or if the treatment is delayed, then the patient will experience severe inevitable problems caused by contractures, hypertrophic scar tissue formation, heterotrophic ossification, and a constant increase in soft tissue tension, which results in reduced quality of life of patients [8].

Burn injuries are critical because they undergo long-term hospitalization and cause various physical and psychological problems. Depression is one of the most common psychological symptoms of burn injuries [9,10]. Berg et al. have shown that psychosocial complications occur and continue after burn injuries. Depression in burn patients can persist for years. Ambulance and mobilization help in the psychosocial development of patients [11]. Another study has reported that community-based exercise program in severe burn injuries increased patients' lean mass and cardiac capacity [12]. However, whether exercise program in burn patients improves physical and mental health, as well as accelerates the recovery process, is still debated on [11,12].

The purpose of this study was to investigate the effects of structured home-based exercise program on depression status and quality of life in burn patients.

2. Materials and methods

2.1. Participants

Our study included 30 burn patients aged 18-65 years and admitted to the University of Health Sciences, Dr. Lütfi Kırdar Kartal Education and Research Hospital, Wound and Burn Treatment Department, from January 2017 to March 2017.

This study was permitted by the clinical practitioner of the Wound and Burn Treatment Department, where the study was conducted and was approved by the ethics committee of the University of Health Sciences, Dr. Lütfi Kırdar Kartal Education and Research Hospital. The informed consent form, which described the purpose and content of the study in detail, was explained and provided to each participant; oral informed consent was also obtained. Burn patients who agreed to participate in the study signed the voluntary consent form and confirmed their participation.

2.1.1. Inclusion criteria

- Burn patients admitted to the University of Health Sciences, Dr. Lütfi Kırdar Kartal Education and Research Hospital, Wound and Burn Treatment Department, for the treatment.
- Those aged 18-65 years.
- Those able to read and write, with cognitive competence to understand what was being read.
- Those who agreed to voluntarily participate by signing the informed consent form.

2.1.2. Exclusion criteria

- Patients admitted to the University of Health Sciences, Dr. Lütfi Kırdar Kartal Education and Research Hospital, Wound and Burn Treatment Department for treatment, and those aged <18 years.
- Orthopedic problems that prevent the exercise.
- Patients with clinical depression.
- Patients with chronic illnesses that prevent exercise.

2.2. Method

Patients' demographic information, burn area, burn grade, percentage of burns and burn types, and duration of intensive care and hospitalization were recorded. The physiotherapist taught the exercises practically during discharge in accordance with the burn area. In addition, a paper that describes exercises given as a home program was given. The content of the home exercise program given in the burn areas is shown in Table 1. The home-based exercise program was applied for 3 weeks. The clinical necessity of correctly and regularly performing these exercises was verbally explained to the patients. The quality of life was evaluated using the Short Form-36 (SF-36), and depression status was evaluated using the Beck Depression Inventory (BDI). Evaluations were performed at discharge and repeated after 3 weeks at the end of the exercise program.

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