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Hypnosis for reduction of background pain and pain anxiety in men with burns: A blinded, randomised, placebo-controlled study

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ABSTRACT

Introduction: ‘Background pain’ and ‘pain anxiety’ are among the numerous problems of patients with burns. Non-pharmacological and pharmacological interventions have been used to reduce background pain and pain anxiety. This study compared the effectiveness of hypnosis and ‘neutral hypnosis’ (as a placebo in the control group) in decreasing the background burn pain and pain anxiety of adult male survivors with burns.

Design: This is a blinded, randomised, placebo-controlled study.

Methods: Sixty men with burns were included in the minimisation method (30 individuals in the intervention group and 30 individuals in the control group). Four hypnotherapy sessions were performed every other day for each participant in the intervention group. Four neutral hypnosis sessions were performed every other day in the control group. Burn pain and pain anxiety of the patients in both groups were measured at the end of the second and fourth sessions. Repeated measures ANOVA was used for data analysis.

Results: There was no significant difference between the groups in the reduction in background pain intensity. There was a significant reduction in background pain quality and pain anxiety in the intervention group during the four hypnosis sessions. After two hypnotherapy sessions, a significant reduction was observed in the level of background pain quality and pain anxiety of participants.

Conclusion: Hypnosis is effective in reducing background pain quality and pain anxiety of men with burns.

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1. Introduction

1.1. Background

Every year, more than 11 million people worldwide suffer from burns and undergo medical interventions such as hospitalisation. Three hundred thousand people lose their lives because of fire-related burns. In Iran, the statistics indicate that about 300,000 people suffer from different types of burns, and 24,000 people are hospitalised every year [1].

Burn is associated with several problems with both physical and mental aspects such as scarring, deformity, pain, anxiety and post-traumatic stress disorder [2]. Burn pain is one of the most difficult problems for patients with burns. They describe their burn pain as 'a living hell' [3]. Patients with burns experience three types of pain: procedural pain, background pain and breakthrough pain. Procedural pain is discomfort that occurs with procedures such as daily wound treatments, invasive line insertions, and physical and occupational therapy. Breakthrough pain is described as acute, strong and episodic pain. It is generally related to an activity or movement of the affected zone. Background pain is a type of discomfort that affects patients while resting and going through their daily routine. It is persistent, long-term and unpredictable, and patients describe it as a burning and throbbing pain. Background pain persists, and patients often feel it is unbearable [4]. In addition to the pain and repeated exposure to painful therapeutic measures, a type of predictive and anticipatory anxiety develops in these patients. There is a direct relationship between anxiety and pain, and the level of anxiety is affected by the perception of all three types of pain. There is a vicious cycle between anxiety and pain: pain causes anxiety and increased anxiety level causes increased pain perception, making it difficult to endure the pain [5].

Different pharmacological and non-pharmacological methods are used for pain control. Pharmacological interventions have been the focus of research in treating burn-associated pain. Because excessive consumption of narcotic drugs leads to some adverse effects such as respiratory depression and drowsiness, the use of other pain control methods such as non-pharmacological methods are being investigated [6]. Among the non-pharmacological interventions, hypnosis is considered a noteworthy pain-control method.

Hypnosis is an altered state of consciousness in which environmental unconsciousness and individual responsiveness to social cues reduces, with increase in the level of attention and local concentration. In other words, it is a method for altering thoughts, perceptions and actions by induction, which is carried out by a therapist after the patient enters a hypnotic state [7]. Although hypnosis has roots in the history of pain reduction and it has been used for a long time, it has not been discussed sufficiently in Iran.

1.2. Rationale

Literature review reveals that most of the studies on the effect of hypnosis on burn pain were in the form of case studies, and they mainly focused on procedural pain reduction [8-10]. Some

differences can be seen in various studies on pain reduction after hypnotherapy and in the number of sessions for hypnosis. In addition, standard methods of hypnosis have not been applied in most studies, and the interventions were merely a type of relaxation/imagination state [11]. To the best of our knowledge, thus far, only one study examined some suggestions for reducing pain anxiety in patients with burns [12]. Few studies examined the effect of hypnosis on the qualitative aspect of the pain in these patients. The limitations of prior research include sample size inadequacy, no application of a standard hypnosis technique to reduce burn pain, lack of assessment of the hypnotisability of participants and no application of a placebo in the control group. Attempts were made in this study to compensate for the weaknesses of the earlier studies and achieve further accurate results on the effect of hypnosis on pain and burn pain anxiety, especially through the application of the 'neutral hypnosis' method like the use of placebo in a control group. The present study examined the effectiveness of hypnosis in decreasing burn pain and pain anxiety in adult men with burns using 'neutral hypnosis' as a placebo in the control group.

1.3. Hypotheses

On the basis of the literature findings, the hypotheses designed and studied in this work are as follows:

1. Participants who receive hypnosis intervention will have greater reduction in pain intensity than participants in the neutral hypnosis group.
2. Participants who receive hypnosis intervention will have greater reduction in pain quality than participants in the neutral hypnosis group.
3. Participants who receive hypnosis intervention will have greater reduction in pain anxiety than participants in the neutral hypnosis group.

2. Methodology

2.1. Research design

A blinded, randomised, placebo-controlled clinical trial was designed to achieve the research objectives.

2.2. Sampling and randomisation strategy

In this study, patients were selected through convenience sampling, and they were placed in either the intervention or control group (IG and CG) using the minimisation method, which is a form of randomisation that allows the selection of small groups that are meticulously alike in terms of patient characteristics [13]. This study considered the variables of age, education, history of any type of psychotherapy, total body surface area (TBSA) and type of burn in the minimisation method. This research calculated a sample size of 25 in each group with respect to the study of Shakibaei and colleagues and inclusion of some data such as $\mu_0=3.1$ and $\mu_1=3.3$ SD=1.44 $\alpha=0.05$ and $1-\beta=0.8$ in the formula $N = 4\delta^2 \frac{(Z_{\alpha/2} + Z_{\beta})^2}{(\mu_1 - \mu_0)^2}$. Assuming

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