

Original Article

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The effect of multimedia training on social function of burned patients in Shahid Motahhari Hospital, Tehran: A clinical trial study

O efeito do treinamento multimídia na função social de pacientes queimados no Hospital Shahid Motahhari, Teerã: um estudo clínico

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ABSTRACT

Introduction: Burn is a tissue injury and affects social functioning and relationships. Complications of burns lead to disruption of social relationships and, consequently, social dysfunction.

Objective: This study aims to determine the effect of multimedia training on burned patients' social functioning in Shahid Motahhari hospital in Tehran.

Methods: This clinical trial study assessed 100 burned patients. The intervention group received multimedia self-care discharge training on a CD in addition to the standard education. The social function of the quality of life was examined in both groups before the intervention, 3 months and 6 months after the intervention.

Conclusions: Results showed that before the intervention, the mean score of social function of quality of life in intervention and control group was $1/55 \pm 0/46$, $1/92 \pm 0/6$, respectively, which was statistically significant ($p < 0.001$). Mean and standard deviation of social function of quality of life in the intervention and control groups three and six months after intervention were $2/47 \pm 0/56$, $4/05 \pm 0/77$, $2/15 \pm 0/39$, $3/29 \pm 0/95$, also statistically significant ($p < 0.001$).

Keywords: Self care; Multimedia; Patient discharge; Social adjustment; Burns

RESUMO

Introdução: a queimadura é uma lesão tecidual que afeta o convívio social e os relacionamentos. Complicações de queimaduras levam à ruptura das relações sociais e, conseqüentemente, à disfunção social.

Objetivo: este estudo objetiva determinar o efeito do treinamento multimídia no comportamento social de pacientes queimados no hospital Shahid Motahhari em Teerã.

Métodos: este estudo clínico investigou 100 pacientes queimados. O grupo de intervenção recebeu, na alta hospitalar, um treinamento de autocuidados em multimídia num CD, além das informações de rotina. A função social da qualidade de vida foi examinada em ambos os grupos antes da intervenção, três meses e seis meses após a intervenção.

Conclusões: os resultados mostraram que, antes da intervenção, o escore médio da função social da qualidade de vida no grupo intervenção e controle foi de $1/55 \pm 0/46$ e $1/92 \pm 0/6$, respectivamente, o que foi estatisticamente significativo ($p < 0,001$). A média e o desvio-padrão da função social da qualidade de vida nos grupos intervenção e controle três e seis meses após a intervenção foram $2/47 \pm 0/56$, $4/05 \pm 0/77$, $2/15 \pm 0/39$ e $29/3 \pm 0/95$, respectivamente, também estatisticamente significativo ($p < 0,001$).

Palavras-chave: Autocuidados; Multimídia; Alta do Paciente; Ajuste Social; Queimaduras

INTRODUCTION

Burn has been described as one of the most devastating disasters on the human body,¹ seriously damaging one's life and health. It is considered the fourth most common injury.² The World Health Organization (WHO) estimates that the incidence of severe burns is 1% of life expectancy, and more than 300,000 people die from burns worldwide each year.³ According to the Forensic Medicine Organization statistics, 379 people died from burn injuries in Iran in the first quarter of this year. Of these, 213 were men, and 166 were women.⁴ Thus, burn injuries are one of the most dangerous health incidents in Iran.

Over the past decade, advances in health care led patients with more severe burns to survive.⁵ However, even when urgent management is successful, burn injuries can create many obstacles for patients. In addition to their physical problems, they suffer from social problems, and ultimately their quality of life is affected.⁶ Also, these patients have severe seizure disorders, which can last longer.

High-end living is attractive in most places where a lot of space for cabins can be appealing. Marriage, relationships, and residence location occupy a prominent place in patients' lives and ultimately cause them to become overwhelmed by fear and anxiety.⁷ These patients have trouble meeting new people and dating, worrying about developing relationships, and exhibiting various reactions, such as shyness, aggression, or extreme social avoidance. Therefore, it is necessary to design appropriate support programs to improve their quality of life.⁸

To help these patients, they need to learn how to live with their situation and to meet their own needs, being less dependent on others and showing that they can deal with these shortcomings. Thus, they need training, learning, and rehabilitation.⁹ Patient education's philosophy is to apply the information and skills learned to control and cope better with the disease. The health care team, especially the nurses, are responsible for conducting patient education programs.¹⁰ The role of nurses in the last few years as an essential member of the health care team has undergone a historical transformation, from promoting patient-centered health education to empowering patients to self-care and achieve health. Informing the patient and contributing to decision-making speeds recovery and reduces hospital stay and readmission.¹¹ This is a critical challenge in achieving donation.

Multimedia education is a traditional teaching tool for patients with disabilities.¹² The lecture-based training requires a great deal of time and expense. Moreover, a patient with a burn injury during hospitalization is less prone to learn and remember education due to mental and physical injuries, physical weakness, painful daily activities, intellectual discomfort, and lack of focus on decision-making. The empowerment and self-care are not.⁹

In recent decades, traditional approaches to learning with the advent of new technologies such as multimedia virtual education have undergone dramatic changes.¹³ The purpose of the multimedia application is to make meaningful learning happen, and meaningful learning occurs when the learner can make sense of the material presented, building a coherent men-

tal image from multiple sources of information.¹⁴ It seems that learning is better if the patient can carry out a self-care program using a comprehensive audiovisual CD to suit any time and circumstances they wish.⁹ Also, due to the gradual rehabilitation process in patients, education during discharge for these patients to return to the community must be sufficient and carefully planned.¹⁵

OBJECTIVES

Since humans are social beings and communicating with others is an essential factor in life and patients with burns suffer from this, the researchers investigated the impact of multimedia training on burn patients' social functioning at the Shahid Motahari Hospital in Tehran.

MATERIALS AND METHODS

Setting

This research was a randomized controlled clinical trial conducted in the hospitalization wards of Shahid Motahari Burn Center, Tehran, Iran, from 2016 to 2017. The study population consisted of all burn patients admitted to Shahid Motahari Burn Center and participated in the study based on the inclusion criteria.

Inclusion and Exclusion Criteria

The criteria for participating in the study were individuals aged between 18 to 60 years; who were able to use audio-visual compact discs (CDs); with a percentage of burn 10-45%; burn degrees 1, 2, and 3; minimum reading and writing literacy; and understanding of Persian language. The study also included subjects who lacked sensory and motion problems and brain and mental disorders or mental retardation; living in Tehran and its suburbs; with burns due to accident, non-self-immolation, and non-electrical burn. The exclusion criteria were the withdrawal of continued study and severity of the disease, disability, and death.

Sampling Method

The study used convenience sampling and continuous variables. The patients were randomly assigned into intervention and control groups. According to the studies conducted in this regard, we considered the effect of educational interventions with a 95% of confidence interval (CI) and 80% of testing capacity on the number of samples needed for each group. Also, we considered ten scores of difference in the psychological dimension of both groups' quality of life. Thus, we estimated the population to be 55 people so that each group included 50 subjects, considering 10% of the probability of not participating. Finally, we considered 100 participants in the study using the formula $n = 2(z_{1-\alpha/2} + z_{1-\beta})^2 s^2 / (\mu_1 - \mu_2)^2$. In this formula, $z_{1-\alpha/2} = 1.96$, $z_{1-\beta} = 0.84$, $s = 9$ and $\mu_1 - \mu_2 = 5$.

Measures

The current study used two questionnaires: the demographic information and disease status questionnaire and the Burning Specific Health Scale. The demographic information and disease status questionnaire included questions about gender, age, occupation, marital status, burning agent or source of heat (gasoline, gas, flame, hot liquids, oil, hot food, etc.), level of education, degree and percentage of burns, burning area, city, incident location, and economic status. The patient and a research associate selected this questionnaire on the first day to complete the study's sample inclusion. The other instrument was a questionnaire on quality of life in burn patients (Burning Specific Health Scale - BHS-B). We used the social dimensions of this questionnaire. The questionnaire included 40 questions about skin sensitivity to heat, body image, hand performance, care for burnt areas, communication, ability to perform simple activities, sexual function, and psychological dimension with the options high, moderate, low, and never, which had been scored from 1 to 5, respectively. Each questionnaire had at least one and at most five scores. Based on this questionnaire, each dimension of the quality of life was determined separately and in all domains. Of the 40 questions of the questionnaire, 18 were related to the physical dimension of quality of life, 11 were about the psychological dimension, and 11 questions assessed the social dimension of quality of life.

Ten faculty members of the school of medical sciences received the demographic information and disease status questionnaire to validate it. Their opinions were applied as the reliability. Kildal et al. in 2001 validate the BHS-B, using its dimensional analysis to measure it.¹⁶ In Iran, Pishnamaazi et al. (2009) estimated its validity and reliability using Cronbach's Alpha of 94% in the burn patients at the Shahid Motahari and Hazrat Fatemeh hospitals.¹⁷ At the Qotboddin Shirazi Hospital,¹⁸ this tool's reliability was calculated with Cronbach's Alpha of 98%. Our study measured a Cronbach's Alpha of 94%.

Education and Treatment Program

Based on the implementation of this method, the researcher referred to the Burn Medical Educational Center of Shahid Motahari Hospital after receiving the study confirmation from the Iran University of Medical Sciences and the ethical code from the university's ethics committee (93-02-28-24922-106366 on 8/12/2014 and registered in a clinical trial with the code IRCT 2014112920145.). After introducing the principal investigator and the collaborators of the research and the study objectives to the hospital's officials and obtaining permission, he referred to the departments. While introducing him, his research colleagues, and the study objectives to the departmental authorities, the samples were randomly provided according to the inclusion criteria as the control or intervention group. After explaining the procedure and ensuring the anonymity of the samples, each participant signed the informed consent. The researcher also informed the participants that he would compensate for their transportation and absence from work costs at 3 and 6 months.

Before the intervention, the patient, with the help of a research associate and using medical records, completed the demographic information and burn characteristics questionnaire. Then the intervention and control groups received face-to-face routine training. However, in addition to routine training, the intervention patients received the self-care discharge education for burn patients in an educational CD containing text, slide, film, and recorded sound. Then the researcher gave this CD to the patients to perform at home. In the educational session, they used CDs and answered questions for 30-60 minutes at the time of discharge. Educational content was prepared based on the sources of self-care education in burn patients.

The patient completed the psychological, physical, and social dimensions of the quality of life in burn patients' questionnaire before the intervention, on the day of discharge, and 3 and 6 months after the intervention. The patients also received the researcher's telephone number, email address, and telegram number to contact if necessary. The researcher conducted a weekly phone contact with the patients in the intervention and control groups to follow up and ensure the samples' preservation. After 3 and 6 months of intervention, researchers contacted the patients in both the control and intervention groups by phone to complete the questionnaire. Patients completed the questionnaires in the manner of the self-report. At the end of the research, the educational CD was provided to the control group for observing ethics in the research.

Ethical consideration

The Ethics Committee of the Iran University of Medical Sciences and the research sites approved this study (Ethical code: 93-02-28-24922-106366). The Iranian Registry of Clinical Trials (IRCT) approved the clinical trial under N. IRCT2014112920145N1. The CONSORT checklist was used to report the study.

Statistical Analysis

After collecting raw data for the analysis, we used the descriptive and inferential statistics (Chi-square, and independent and paired t-tests for the distribution of normal variables), Fisher's exact test, nonparametric tests (Mann-Whitney, Wilcoxon, Friedman, and Dunn tests), with Bonferroni correction, and Spearman's correlation coefficient by SPSS software (version 21, Chicago, IL, USA). It should be noted that the process included all participants and excluded no one during the investigation.

RESULTS

Among the study participants, 56% of the subjects were men, and 56% were women. Only 34% of the intervention group was 39-48 years, and 44.9% of the control group was 29-38 years. According to the statistics, most of them (44% in the intervention group and 79.6% in the control group) were married. In the intervention group, 48% were employed, and in the control group, 62.5%. Also, 52.1% had complete superior education in the intervention group and 66.7% in the control group.

Moreover, 36% in the intervention group and 34% in the control group were burned by fire flame, and 60% in the intervention group and 64% in the control group had a degree of burns of 1, 2, and 3. Furthermore, 24% in the intervention group had a burn percentage of 15–20%, and 36% in the control group had a burn percentage of 21–26%. About 46% of participants had burns in the trunk, hand, and foot in the intervention group. In the control group, 47.9% had burns in the whole body. Most patients in the intervention and control group (58.1% and 79.2%, respectively) resided in Tehran. Furthermore, most patients in the intervention and control group (58.1% and 53.5%, respectively) were burned at home. In the intervention group, 56.5% were at an average economic level, and 37.8% were at a weak economic level.

The Mann-Whitney test showed that before the intervention, the mean of social function in intervention and control groups was 1.92 ± 0.6 and 1.55 ± 0.46 , which was statistically significant ($p < 0.001$). The mean difference of the social function score in both intervention and control groups before the intervention was statistically significant. The mean score of the social dimension in the intervention group was slightly higher than the control group. Mean and standard deviation of social function scores in intervention and control groups three months after intervention were 3.29 ± 0.95 and 2.15 ± 0.39 , respectively. Six months after the intervention, the mean and standard deviation of intervention and control groups were 4.05 ± 0.77 and 2.47 ± 0.56 , which were statistically significant ($p < 0.001$) (Table 1). Considering the chi-square value ($=95.14$) and the value of significance level ($p < 0.001$) in Table 2, we rejected the assumption of the equality of the mean scores of social function during three periods since the level of significance was less than 0.05, statistically. This is the average score of social function varied at least in two of the three periods. Therefore, to determine which of the two periods had a significant difference, we used the Dunn follow-up test. Tables 2 and 3 present the results of the test. Each period's mean score had substantial differences with other periods because the corrected significance level value was less than 0.05. Figure 1 shows that the social dimension score before intervention in the intervention group was slightly higher than the control group. However, after 3 and 6 months of intervention, the intervention group's social function score demonstrated a significant difference compared to the control group ($p < 0.001$).

DISCUSSION

The results of this study showed that discharge multimedia self-care education improves the social functioning of burn patients. This finding is consistent with the study by Li et al., which found that burn patients' social functioning five weeks after rehabilitation was better than the control group.¹⁹ Tang et al. (2015) also showed that rehabilitation interventions and self-care measures increased patients' social function dimension three months after the intervention, consistent with the present study.²⁰ Radwan et al. (2011) found that running a 7-day rehabilitation program for two weeks improved social performance in the experimental group, also consistent with our study.²¹

Burn injuries affect the individual's ability to cope with life's stresses and interact socially.⁸ These individuals feel ashamed and embarrassed about being in the community and communicating with others due to the apparent changes caused by burn injuries. The look and sometimes curiosity of others suggest that they feel compassion and sympathy. For this reason, the lack of communication and social skills requires intervention.²³ Hojati et al.'s study showed that psychosocial interventions significantly affected life satisfaction, occupational activity, mental health, physical health, quality of life, and social relationships. Therefore, these interventions increase patients' life satisfaction and social relationships.²⁴ The Fatimid study results showed that patients' quality of life in the social dimension was relatively undesirable, so it recommended the patients to learn communication skills.²⁵

The consequence of education in the community is maintaining and promoting health. It brings many benefits, including reduced illness length, accelerated independence, and maintained self-confidence in self-care.²⁶ A study by Elalem et al. (2018) showed that nursing interventions to promote self-care were effective in burn patients. The self-care intervention led to an active participation of patients in their treatment and a significant improvement in quality of life and self-esteem, consistent with the present study. It also correlates with self-esteem and quality of life later.

The social skills of these individuals experienced a significant impact.²⁷ Hospital discharge is associated with stress and anxiety and an increased need for patients to receive information. Information training is essential for the well-being of patients because they experience discomfort after discharge.²⁸ Discharge does not mean the end of treatment for burn patients, but that the patient and their family must resume the responsibility of managing their lives without assistance from the hospital staff. Burn patients need to adapt to new situations that include self-care at home, lifestyle change, and return to society.

Limitation and Recommendation

One of the limitations of the present study was the patient's mental state, that is, if they could answer the questions effectively. Also, the researchers emphasized the importance of the subject in the results, asked the samples to comply with the CDC's care instructions thoroughly, and followed up with the patients by telephone.

CONCLUSIONS

Given the present study's findings, it is essential to provide virtual and multimedia education and institutionalize a self-care culture. It allows the patient to engage in self-care. Nurses and caregivers in burn centers must know that these patients will be socially isolated and need to return to the community. Nurses usually deal with patients' behaviors and attitudes more than other health professionals. So they can help these individuals get back into the community with proper education. However, education through lectures does not meet their educational needs because they are involved in their burn accident's mental illness, especially while they are still in the hospital. And it may

affect their ability to understand and learn in this situation. Thus, they need virtual training to use it in the right conditions and in a comfortable place. Self-care education should be continuous, accessible, monitored, and economically viable. So using

educational CDs, which is a virtual teaching method, can be a good option. It is recommended that nurses use this method in clinical centers. ●

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