EFFECT OF COGNITIVE RESTRUCTURING ON BODY IMAGE DISTURBANCE AMONG BURN SURVIVORS

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Conflicts of Interest

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ABSTRACT

Background: Burn injuries often lead to long-term psychological challenges, including depression, anxiety, and post-traumatic stress disorder due to visible scarring and disfigurement. Effective psychological strategies are vital to improve psychological well-being.

Objectives: This study evaluates the effect of cognitive restructuring techniques on reducing body image disturbance among burn survivors compared to conventional therapy.

Materials and methods: A true experimental study was conducted with 30 participants who were adults with burn injuries. They were split into two groups, the control and experimental groups' participants. The study was carried out for 36 sessions, and the participants in the experimental group received cognitive restructuring, followed by conventional therapy for the control group. Both the groups were assessed using the satisfaction with appearance scale. Statistical analysis was done to conclude the results of the pre- and post-tests within and between groups.

Results: the control group had a mean score of 55.67 in the pre-test and 57.00 in the post-test, showing a statistically significant improvement (P=0.014*). The experimental group had a mean score of 56.40 in the pre-test and 61.20 in the post-test, showing a statistically significant improvement (P=0.000*). The p-value of 0.004 is less than 0.01 and is highly significant at the 1% level, and hence we can say that there is a high significant difference in post-test level SWA scores between the control and experimental groups.

Conclusion: The study concluded that cognitive restructuring is an effective intervention for reducing body image disturbances in burn survivors, demonstrating a notable improvement in their satisfaction with appearance.

Key words – burns, body image disturbance, cognitive restructuring

INTRODUCTION:

Occupational therapy (OT) is recommended for maximum functional outcome in burn patients. OT addresses both body and mental needs. Burns are injuries caused by heat, electricity, chemicals, radiation, or friction to skin and underlying tissue. They range from shallow surface burns to life-threatening issues needing intensive care. Burns can be inflicted by many causes; among them are thermal agents like fire, hot liquids (scalds), and steam. Chemical burns result from exposure to acidic agents such as strong acids, alkalis, or solvents. Electrical current passed through the body causes electrical burns, which can cause both internal and external damage. Exposure to radioactive substances, medical x-rays, or ultraviolet light—sunburn being the most common—can all produce radiation burns. Exposure to rough surfaces can cause friction burns, both mechanically and thermally damaging. Their intensity will be a function of temperature, concentration, or duration of exposure. Burns constitute a global health problem, and the World Health Organization estimated that there are over 11 million instances of burns globally annually, which cause over 180,000 fatalities. Interestingly, 90% of burns are approximated to occur in low- and middle-income nations, where household cooking with improper practices, accident or intentional harm, and the individual who has mental illness or disability are more likely to be exposed due to compromised judgment or mobility and reduced access to care, which is accountable for increased incidences and mortality. The most devastating of all injuries are burns, which have a tendency to produce long-term psychological and emotional impact such as depression, anxiety, and post-traumatic stress disorder. Disturbance of body image is a phrase which is used to explain dissatisfaction, distress, or changed self-perception secondary to altered appearance, e.g., scarring or disfigurement. These changes can cause extreme body image distortions, which can result in lowered self-esteem, withdrawal from social relationships, and emotional coping problems. 6 Cognitive restructuring is one of the central elements of CBT that assists people in recognizing negative or cognitive distortive thinking styles and reframe them as more realistic and positive ones.

Such fruitful psychological treatments are of immense significance to improve the quality of life and facilitate social reintegration among burn survivors. Therefore, the current study aims to investigate the effectiveness of cognitive restructuring on body image disturbance in burn injury survivors.

METHODOLOGY

Research design: A true experimental study design was used to evaluate the effectiveness of cognitive restructuring on body image disturbance among burn survivors.

Sample technique: A random sampling technique was adopted to select participants.

Study population: The study population includes 30 patients with burns in the burns department from various hospitals in Chennai.

Sample size:
Control group: 15 members with 15 to 40% burns with conventional therapy measures.
Experimental group: 15 members with 15 to 40% burns with cognitive restructuring

Sample setting: Samples were selected according to the inclusion and exclusion criteria in various hospitals in Chennai.

Selection criteria

Inclusion criteria:

- Burn survivors with 15 to 40 percent of burns.
- Burn survivors experiencing moderate body image disturbances.
- Those that have completed initial medical treatment and are in the rehabilitation phase.
- Both male and female are included

Exclusion criteria:

- Individuals with severe cognitive impairment.
- Individuals who are currently undergoing surgical treatment.
- Burns survivors below 15 and above 40 percent.
- Individuals with cardio respiratory conditions.
- Individuals with cancer and other inflammatory conditions

Tools used:

The Satisfaction with Appearance Scale (SWAP) is a psychometric tool constructed to measure one's satisfaction or dissatisfaction with the appearance of oneself, especially for disfigurement resulting from illness, trauma, or congenital conditions.

Scoring method gauges an individual's subjective satisfaction with their appearance and the psychological impact of perceived disfigurement. It was originally created for burn patients and has 14 items. Every item is rated on a 7-point Likert scale, ranging from “strongly disagree" to "strongly agree." Increased scores indicate higher dissatisfaction with appearance, and lower scores indicate lower satisfaction.

Reliability:

Internal consistency: ICC=0.94, confirming high consistency between different raters.

Test-retest reliability: ICC = 0.87, indicating excellent stability of the scale over time

Validity

Content validity: Demonstrates strong content validity, as its items were developed with expert and patient input to comprehensively capture appearance-related concerns.

Construct validity: It also shows solid construct validity through factor structure and correlations with related constructs.

Good criterion validity**:** by significantly associating with psychosocial outcomes.

INTERVENTION PROTOCOL

Control group:

The control group received occupational therapy interventions focused on relaxation techniques aimed at reducing body image disturbances. Each session lasted for 60minutes, with a 10-minutes break included during the session. The relaxation methods Incorporated into the therapy included deep breathing exercises and meditation.

Experimental group:

The experimental group received cognitive restructuring activities aimed at reducing body image disturbances. Each session lasted for 60 minutes, including 10 minutes break. Cognitive restructuring techniques were used to help individuals challenge and modify negative thought patterns, encouraging the development of more positive and adaptive beliefs. This process involves shifting perceptions from negative self-judgments to more constructive and supportive thoughts.

Intervention and activities

Sessions	Activities
Session 1	The project was briefly explained to participants, and informed consent was given
Session 2-3	The Satisfaction with Appearance Scale was used as a pre-test
Session 4-5	Participants engaged with the effect of burns on self-esteem and body image via discussion and a Body Image Timeline
Session 6-7	Participants became aware of negative appearance-related thoughts and how they alter feelings and behaviours via a thought–feeling–behaviour mapping activity
Session 8-9	Participants identified cognitive distortions and practiced challenging and reframing negative thoughts through journaling and the Thought Detective exercise
Session 10-11	Participants rehearsed reframing negative body thoughts into positive affirmations to boost self-esteem
Session 12-13	Repeated practice in reframing negative thoughts into balanced affirmations that foster self compassion and healthier body image
Session 14-15	Participants worked on social anxiety and self-consciousness using coping skills (breathing, grounding, visualization) and scripted positive affirmations
Session 16-17	Participants learned assertive communication through role-playing realistic social scenarios with guided feedback
Session 18-19	Participants completed *Safe Place Visualization* to encourage calm, safety, and emotional regulation, followed by reflective sharing
Session 20-24	Mindfulness meditation and body-strength gratitude journaling with mindful processing of negative thoughts
Session 25-26	Body-positive visualization was done to enhance self-acceptance and develop a more compassionate inner image

Session 27-28	Self-care and appearance-based activities were done to encourage body appreciation and gradual return to grooming habits
Session 29-30	Students wrote and rehearsed daily self-affirmations in order to support positive self-beliefs and incorporate them into daily routines
Session 31-32	Students located personal triggers and high-risk situations for body image distress and created individualized warning sign plans
Session 33-34	Students focused on developing enduring self-care habits to support body acceptance and psychological well-being
Session 35	Participants constructed or enhanced an interpersonal support network through examination of family, friends, and community resources
Session 36	The Satisfaction with Appearance Scale was given as a post-test to both control and experimental groups

RESULTS:

The effect of cognitive restructuring on body image disturbance among burn survivors was conducted at various government and private hospitals in Chennai. A total of 30 participants were included, and they were divided equally into 15 in the control group and 15 in the experimental group, whereas the experimental group underwent cognitive restructuring techniques and the control group underwent conventional therapy.

The experimental group consisted of 15 participants, including 11 males (73.3%) and 4 females (26.7%). The mean score of the pre-test is 56.40, and the post-test is 61.20. Since the p-value of 0.000 is less than 0.05, the alternate hypothesis is accepted. Because the cognitive restructuring technique was used as an intervention, there is a statistically significant difference between the experimental group's pre-test and post-test SWAP scores.

The control group consisted of 15 participants, including 9 males (60.0%) and 6 females (40.0%). The mean score of the pre-test is 55.67, and the post-test is 57.00. Since the p-value of 0.014 is less than 0.05, the alternate hypothesis is accepted.

Hence, there is a statistically significant difference between pre-test and post-test scores in the control group of the SWAP because of the conventional occupational therapy intervention.

This implies that the control group saw a notable improvement as a result of the intervention.On comparison of the mean scores between the control and the experimental group, which are 57.00 and 61.20, with a P value of 0.004. Since the p-value of 0.004 is less than 0.05, the alternate hypothesis is accepted.

Therefore, the post-test scores of the experimental and control groups of the SWAP differ statistically significantly. This implies that the experimental group's intervention resulted in more improvement than that of the control group.

Table 2, statistical analysis of pre-test and post-test in control group

S.No.	Test	N	Mean	SD	T Value	Df	P value
1	Pre-test	15	55.67	4.152	-2.808	14	0.014*
2	Post-test	15	57.00	3.586			

** - significant at 1% level * - significant at 5 % level

Table 3, statistical analysis of pre-test and post-test in experimental group

S.No.	Test	N	Mean	SD	T value	Df	P value
1	Pre-test	15	56.40	3.906	-9.102	14	0.000**
2	Post-test	15	61.20	3.764			

** - significant at 1% level * - significant at 5% level

Table 4, statistical analysis of post-tests between control and experimental group

S.No.	Test	N	Mean	SD	T value	Df	P value
1	Control	15	57.00	3.586	-3.129	28	0.004**
2	experimental	15	61.20	3.764			

** - significant at 1% level * - significant at 5% level

DISCUSSION:

The study aimed at finding the effect of cognitive restructuring on body image disturbance among burn survivors. The study was conducted at various hospitals in Chennai. A total of 30 burn survivors were screened by the rule of nine, and the assessments were provided by a

doctor, and the samples were selected using the selection criteria in the methodology, and they were divided into experimental and control groups, 15 in each group.

The current study researched the effect of cognitive restructuring on body image disturbance among burn survivors. This study was based on the previous literature emphasizing the effectiveness of cognitive behavioural therapy (CBT) to reduce body image disturbance among women with breast cancer.

The level of body image disturbance in both the experimental and control groups was measured by the Satisfaction with Appearance Scale (SWAP). The experimental group underwent cognitive restructuring techniques incorporated in activities for a period of 3 months, whereas the control group underwent relaxation techniques for the same period of time as the experimental group.

The effectiveness of the intervention was evaluated by the pre-test and post-test scores of the experimental group. The post-test evaluation of both groups was done, and scores were tabulated. The final objective of the study is to evaluate post-test scores of both groups.

Table 4 and Figure 3 show the SWAP scores between the control and experimental groups in the post-test. The mean value of the control group is 57.00, and the mean value of the experimental group is 61.20, and the T value is -3.129, and the P value is 0.004.

Hence, there is a statistically significant difference in the post-test scores between the control and the experimental group of the SWAP. The results were similar to the previous study conducted, which used cognitive restructuring techniques to reduce depression among women with infertility.

CONCLUSION:

Investigating the impact of cognitive restructuring on body image disturbance in burn survivors was the aim of this study. The study was carried out over a 12-week period with 36 sessions. Thirty samples were selected for this study and were divided into 15 in control and experimental groups. Pre-test and post-test were conducted for both groups using satisfaction

with appearance scale. The experimental group underwent cognitive restructuring whereas the control group was given conventional occupational therapy.
The results indicated that the control and experimental groups' pre-test and post-test scores differed statistically significantly. Further analysis revealed that there was a significant improvement in the experimental group when compared to the control group after receiving cognitive restructuring techniques incorporated with some activities for the intervention to reduce the body image disturbance among burn survivors.

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