

THE ROLE OF PATIENT INFORMATION AND COUNSELLING IN REDUCING SOCIAL STIGMA AND ENHANCING SELF-ESTEEM AMONG SPINAL CORD INJURY PATIENTS USING ORTHOSES

Shivangi Mehra¹, Dr. Nishi Fatma², Dr. Harvinder Singh Chhabra³

Research Scholar¹, Department of Psychology, Nims University Rajasthan, Jaipur.

Professor & Head², Department of Psychology, Faculty of Humanities and Social Sciences, Nims University Rajasthan, Jaipur.

Chief of Spine and Rehabilitation³, Sri Balaji Action Medical Institute, New Delhi.

Corresponding Author: Shivangi Mehra, Email ID: shivangimehraisic@gmail.com

Abstract

This work examines the psychological impact of orthotic devices specifically on self-esteem and social stigma among patients with spinal cord injury. A total of 60 participants were used and divided into two groups by simple randomization lottery method –

Group A, patients who received patient information sheet & counselling which included the details about orthosis, their uses, wearing techniques, its importance etc.

Group B, patients who did not receive patient information sheet & detailed counselling about the use of orthosis and were simply given the orthosis as prescribed by the Spine team of doctors.

The usability of orthoses was administered standard measures of self-esteem and social stigma. Data was collected after 4 weeks of orthosis use for both the group A and group B. Independent samples T-tests indicated that there were significant differences between the groups. The self-esteem difference was significantly lower in participants with group B, who just received the orthosis without proper patient information sheet and counselling about the usage ($M = 16.3$, $SD = 5.7$) than their counterparts with group A, who received patient information sheet about the detailed usage of orthosis as well as counselling ($M = 39.2$, $SD = 6.8$) with $t\text{-stat} = -11.66$ ($p < 0.05$). Correspondingly, participants of group B values were more stigmatized ($M = 41.5$, $SD = 9.3$) than those with group A ($M = 15.3$, $SD = 7.8$) with a $t\text{-statistic} = 11.87$ ($p < 0.05$). The d values provided by Cohen reflected large effect sizes of self-esteem ($d = -3.02$) and social stigma ($d = 3.05$).

These findings indicate that the knowledge about usability and benefits of orthosis with proper counselling have a significant influence on self-esteem and social stigma, which makes it necessary to take the psychological well-being of orthotics users into account. There is a need to conduct research on interventions that will alleviate these adverse psychological outcomes.

Keywords: Orthoses, Spinal Cord Injury Self-Esteem, Social Stigma, Counselling, Patient Education

Introduction

Background

Orthoses are commonly used by individuals with SCI to increase mobility, function, and overall quality of life. Although the benefits are evident in terms of both physical and functional aspects, the psychological and social outcomes are frequently forgotten. Adaptation to orthoses is an emotional as well as a physical process; patients experience feelings of self-image, confidence and social acceptance.

One factor that modulates these psychological outcomes is how well patients are prepared by receiving proper information and counselling at the time of orthosis prescription. "If patients get the appropriate advice and information - such as patient information sheets explaining what's involved in using orthoses, why they are important, and how to do so - they will better understand their condition, be more likely to use their orthoses as recommended, and will have more confidence wearing orthoses. Patients who are given orthoses without explanation may feel confused, shamed or uncared for, which in turn may result in lowered self-esteem and greater perceptions of social stigma.

This emphasises the importance of prescription by healthcare professionals but also ensuring patients are psychologically prepared and empowered through counselling and education. In that way the orthotic intervention is more integrated, not limited to only functional aspects, but also socio-psychological aspects of rehabilitation.

Research Problem

Although the functional role of orthoses is evident, there is scant investigation of psychological effects of counselling and patient education in the spinal cord injured. Previous studies were generally focused on device quality or adherence, although study of systematic education and counselling, and the implications on stigma reduction and self-esteem, are inadequate.

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Hence, this trial aims to examine whether providing a patient information sheet and counselling about orthoses increases self-esteem and decreases perceived social stigma in patients that receive orthoses, as compared to patients that merely receive orthoses.

Objectives

1. To assess the impact of patient information sheets and counselling on self-esteem among spinal cord injury patients using orthoses.
2. To evaluate the effect of patient information sheets and counselling on perceived social stigma among spinal cord injury patients using orthoses.

Research Questions

- RQ1: Does providing patient information sheets and counselling improve self-esteem compared to no counselling in spinal cord injury patients using orthoses?
- RQ2: Does providing patient information sheets and counselling reduce perceived social stigma compared to no counselling in spinal cord injury patients using orthoses?

Methodology

Participants

The study involved a total of **60 patients with spinal cord injury** who were prescribed different types of orthoses (including Ankle foot orthosis, Knee ankle foot orthosis, Hip knee ankle foot orthosis, Wrist hand orthosis, Elbow wrist hand orthosis, Anterior posterior thoraco-lumbo-sacral orthosis) as part of their rehabilitation program. Participants were randomly divided into two groups:

- **Group A (n = 30):** Received a **patient information sheet** along with **counselling** that explained the purpose of the orthosis, its benefits, techniques for proper use, and the importance of adherence.
- **Group B (n = 30):** Received only the **orthosis as prescribed** by the spine team of doctors, without structured information or counselling.

Inclusion criteria:

- Patients diagnosed with **traumatic or non-traumatic** spinal cord injury.
- Adults aged **18–60 years**
- ASIA impairment scale grades A–C
- Injury levels ranging from C7 to L5 (Patients with injuries above C7 were excluded due to likely ventilatory dependency and different rehabilitation needs)
- Minimum of six months' experience using orthoses.
- Ability to read and understand English.
- No cognitive impairments that could affect responses.

Exclusion Criteria:

- History of **major psychiatric disorders** or cognitive impairment
- SCI patients with **chronic complications** affecting independent rehabilitation (e.g., severe pressure ulcers, infections)
- Current use of psychotropic medications
- ASIA D and E were excluded as they exhibit milder impairments and may not require orthotic intervention, potentially confounding the study results.

Sampling method: Convenience sampling through hospitals & rehabilitation clinics.

Procedure

After random allocation by lottery method into two groups, group A and group B. The subjects in group A (n=30): received a patient information sheet along with counselling. The counselling intervention used in this study followed a psychoeducational approach, designed to provide both informational and psychological support to spinal cord injured patients prescribed with various orthoses as per need. Sessions focused on explaining the purpose, use, and benefits of the orthotic device, addressing emotional concerns, and fostering positive self-perception and confidence. The frequency of session was 1-2 in a period of 4 weeks. Patients were educated about coping with social stigma, maintaining adherence, and integrating orthoses into daily life. Each session lasted approximately 30–45 minutes and was delivered by a trained orthotist & psychologist using patient information sheets and interactive discussions. This approach was selected because psychoeducational counselling effectively enhances self-esteem, promotes self-efficacy, and reduces feelings of stigma in rehabilitation contexts. The subjects in group B (n = 30): Received only the orthosis as prescribed by the spine team of doctors, without structured information or counselling. Regarding ethics, while Group B did not receive counselling during the study, no standard care was withheld—they received the usual clinical orthosis prescription, which is standard practice. The counselling & patient information material was an additional educational component, so withholding it temporarily for research comparison does not constitute ethical harm. Nonetheless, the participants in Group B were later provided counselling & patient information material after study completion to ensure ethical balance.

Data Collection Instruments

To evaluate psychological outcomes, standardized and validated scales were used:

1. **Self-Esteem:** Rosenberg Self-Esteem Scale (RSES) – 10 items rated on a 4-point Likert scale (1 = Strongly Disagree, 4 = Strongly Agree). Higher scores reflect greater self-esteem.
2. **Social Stigma:** Stigma Scale for Chronic Illness (SSCI) – 12 items rated on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Higher scores indicate higher perceived stigma.
3. **Body Image (Exploratory):** Body Image Scale (BIS) – 9 items rated on a 5-point Likert scale, measuring self-perception of physical appearance.

All questionnaires were administered online via a secure platform to ensure confidentiality and ease of access.

Hypotheses

Based on the research objectives, the following hypotheses were tested:

- **H1:** Patients in **Group A (counselling + patient information)** will report **higher self-esteem** compared to patients in **Group B (no counselling)**.
- **H2:** Patients in **Group A (counselling + patient information)** will report **lower perceived social stigma** compared to patients in **Group B (no counselling)**.

Statistical Analysis

Data were analyzed using **SPSS Statistics (Version 26)**.

1. **Descriptive Statistics:** Means, standard deviations, and score ranges were computed for self-esteem and social stigma for both groups.
2. **Independent Samples T-tests:** Conducted to compare mean self-esteem and stigma scores between Group A and Group B.
 - o **Null Hypothesis (H₀):** No significant difference exists between the groups.
 - o **Alternative Hypothesis (H₁):** Significant differences exist between the groups.
3. **Effect Size (Cohen's d):** Calculated to determine the magnitude of the observed differences.
 - o *Interpretation:* Small (0.2), Medium (0.5), Large (0.8).
4. **Assumption Testing:**
 - o *Normality:* Verified using the Shapiro-Wilk test.
 - o *Homogeneity of variances:* Verified using Levene's test.

Results

Descriptive Statistics

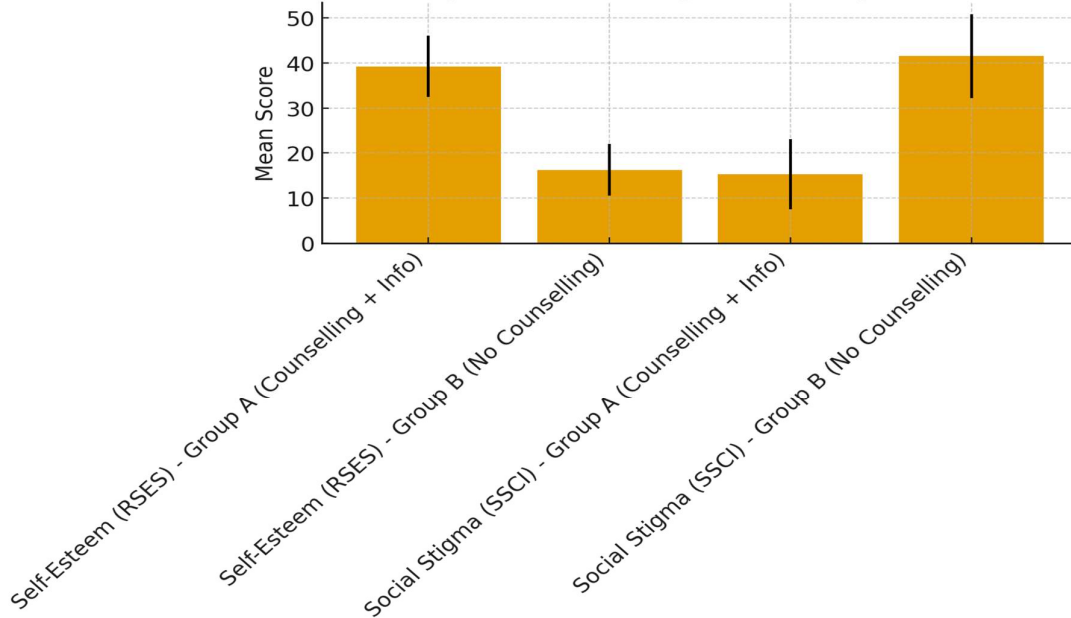
Descriptive statistics were calculated for self-esteem and social stigma scores among participants in **Group A** (patient information sheet + counselling) and **Group B** (no counselling, orthosis only)

Variable	Group	N	Mean	SD	Min	Max
Self-Esteem (RSES)	Group A (Counselling + Info)	30	39.2	6.8	28	49
	Group B (No Counselling)	30	16.3	5.7	10	27
Social Stigma (SSCI)	Group A (Counselling + Info)	30	15.3	7.8	8	30
	Group B (No Counselling)	30	41.5	9.3	27	55

Table 1: Descriptive Statistics for Self-Esteem and Social Stigma

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Comparison of Self-Esteem and Social Stigma
Between Group A (Counselling) and Group B (No Counselling)



Interpretation:

- Patients in **Group A** reported significantly **higher self-esteem** and **lower social stigma** compared to Group B.

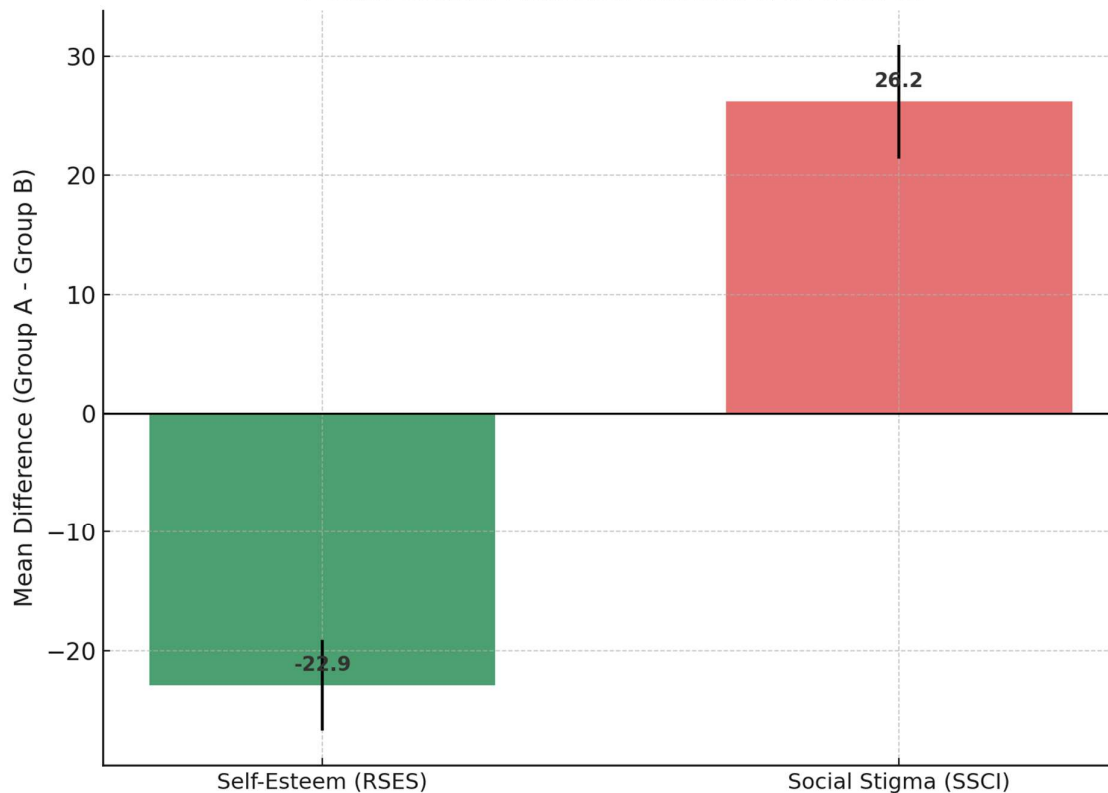
Independent Samples T-Test Results

Independent samples T-tests were conducted to compare mean scores between the two groups.

Variable	t	df	p-value	Mean Difference	95% CI (Lower, Upper)
Self-Esteem (RSES)	-11.66	58	<0.001	-22.9	-26.7, -19.1
Social Stigma (SSCI)	11.87	58	<0.001	26.2	21.4, 31.0

Table 2: Independent Samples T-Test Results

T-Test Results: Mean Differences with 95% CI



Interpretation:

- **Self-Esteem:** Patients in Group A (counselling + info) scored significantly higher than Group B ($t(58) = -11.66, p < 0.001$).
- **Social Stigma:** Patients in Group A reported significantly lower stigma compared to Group B ($t(58) = 11.87, p < 0.001$).

Effect Sizes

To measure the magnitude of differences, Cohen's d was calculated.

Variable	Cohen's d	Interpretation
Self-Esteem (RSES)	-3.02	Large Effect
Social Stigma (SSCI)	3.05	Large Effect

Table 3: Effect Sizes (Cohen's d)

Interpretation:

- Both differences were **large in magnitude**, indicating strong practical as well as statistical significance.

Discussion

The aim of the current study was to investigate the effects of patient information and counselling on psychosocial outcomes in people with spinal cord injury and orthoses. There were distinct differences between the two groups, the results showed. Significantly higher patient's self-esteem and lower perceived stigma were recorded in patients who underwent structured counseling and given a patient information sheet (Group A) than those who were given an orthosis without instructions (Group B). These findings provide strong support to the theoretical assumption that education and counselling enhance psychological adjustment in rehabilitation.

Interpretation of Findings

Thus, the impressive increase in the self-esteem of the patients in Group A emphasizes the need for mental as well as physical preparation for orthosis construction. If patients are well-informed on the device functionalities, purpose and advantage, they experience a feeling of control and determination in their rehabilitation process. However, without structured counselling in Group B, may have resulted in uncertainty, social phobia, and decreased self-esteem as evident by the lower scores of self-esteem amongst this group.

The decreased perceived stigma in Group A indicates that counseling is a buffer against adverse social perception. Information about the orthosis and reassurance from staff could support to enable patients to perceive the orthosis to be tools for independence, rather than a sign of being disabled. Based on the other hand, the patients in Group B might have been more sensitive of the feeling of being judged by others or being misunderstood, which may contribute to higher stigma scores.

Comparison with Previous Literature

While commonest research in the past has addressed psychological problem of visible versus invisible orthoses, the present work changes a focus to the role of counselling and information. It has been reported that psycho-education and the involvement of patients enhances adherence and decreases the subjective distress. The present results now generalise these data to the issue of orthotic use and prove that education and counselling are not marginal issues, they are fundamental to patient welfare.

Implications for Practice

The results of this study have significant clinical implications. Counselling and patient education are integral parts of prescription to be considered obligatory for rehabilitation teams when prescribing orthoses. In addition to a physical fit, patients need to be educated as to how to wear the device, what benefits to anticipate and how to respond to social reactions. Hospitals and rehabilitative centres might consider the use of structured counselling protocols, patient information sheets and peer-support sessions to consolidate psychological preparedness in addition to physical adjustment. Such techniques could potentially improve mental health symptomology whilst encouraging orthotic usage, subsequently boosting rehabilitation completion.

Limitations and Future Research

Despite its insights, the study has some limitations. The limited (56) number of participants may restrict the generalizability of the results. Cross-sectional design also does not allow monitoring long term changes in self-esteem and stigma. Finally, the use of self-report measures might result in bias concerning social desirability and under-reporting. Future research might be better served by larger samples, longitudinal follow-up, and the inclusion of qualitative findings to yield richer patient experiences. It also merits investigating whether the effect of counselling is dependent on demographics such as age, sex, and duration of orthosis use.

Conclusion

In summary, this trial shows that psychosocial interventions, in the form of counseling and written information, bring about important gains in psychological well-being, through increased self-esteem and reduced social stigma, for patients. These results highlight the need for psychological transfer in the orthotic rehabilitation. By considering counselling and patient education as part of the rehabilitation process, rehabilitation professionals can facilitate not only functional, but also healthier psychological recovery.

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