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QUALITY OF LIFE AND SUBJECTIVE WELL-BEING COMPARISON BETWEEN TRAUMATIC AND NON-TRAUMATIC SPINAL CORD INJURY PATIENTS IN TEACHING HOSPITAL

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ABSTRACT

Background: Spinal cord injuries (SCI) profoundly affect quality of life and subjective well-being, but comparisons between traumatic and non-traumatic injury types remain underexplored.

Objective: The objective was to compare self-reported life satisfaction and quality of life between traumatic and non-traumatic spinal cord injury patients.

Methodology: This cross-sectional study evaluated 130 patients with spinal cord injuries' quality of life and general wellbeing at the Teaching Hospital of Faisalabad, Pakistan, between March and August of 2023. Adult participants were categorized as ASI A, B, C, or D and had complete or incomplete lesions at the cervical or thoracolumbar levels. SWLS and WHOQOL-BREF questionnaires were used to gather data, and SPSS Version 26 was used for analysis.

Results: In this study of 130 spinal cord injury patients, the injury types were evenly distributed, with 65 (50.00%) having traumatic injuries and 65 (50.00%) having non-traumatic injuries. Most patients (79, 60.77%) were less than 1-year post-injury, and 98 (75.38%) had paraplegia. Quality of life assessments showed no significant difference between injury types (p=0.651). Pain significantly impacted task performance for 43 patients (33.08%), while 26 (20.00%) required extreme medical treatment for daily functioning. Subjective well-being was reported as satisfactory by 19 (27.14%) of traumatic and 27 (41.54%) of non-traumatic patients.

Conclusion: This study found no significant difference in quality of life between traumatic and non-traumatic spinal cord injury patients, underscoring the effectiveness of Faisalabad Teaching Hospital.

Keywords: Spinal Cord Injury, Quality of Life, Traumatic Injury, Non-Traumatic Injury.

Introduction

Worldwide healthcare institutions and individuals are faced with a significant difficulty when it comes to spinal cord injury (SCI).[1,2] These injuries have an effect on more than just physical limitations; they also have an impact on quality of life and subjective well-being.[3] A remarkable dearth of studies has been conducted to examine the subtle differences in life satisfaction and quality of life between patients with traumatic and non-traumatic spinal cord injuries, despite the fact that much research has been done on the clinical management and rehabilitation of SCI patients.[4] In contrast to non-traumatic injuries, which might be caused by infections or degenerative disorders, traumatic spinal cord injuries are frequently the consequence of accidents or violent acts.[5] The etiology, course, and psychological effects of these two categories of injuries might vary greatly, possibly resulting in different sensations of life satisfaction and well-being.[6]

A number of elements, including as physical health, psychological adjustment, social support, and environmental context, affect the quality of life for those with spinal cord injuries.[7,8] Nevertheless, little is known about how these variables interact in situations involving traumatic vs non-traumatic injuries.[9] Many spinal cord injuries are lumped together into a general category by existing research, which may ignore the unique requirements and experiences of patients with various lesion kinds.[10] This implies that the distinct difficulties and coping strategies that are pertinent to each group may not be well captured by traumatic and non-traumatic injuries.[11, 12]

By comparing individuals with traumatic and non-traumatic spinal cord injuries in terms of their self-reported quality of life and contentment with life, the current study aims to close this research gap. The goal of this study is to provide a more nuanced understanding of the ways in which various forms of spinal cord injuries influence subjective well-being by concentrating on a specialized cohort at Faisalabad Teaching Hospital..

Objective: The purpose of this study was to compare the self-reported quality of life and life satisfaction of individuals with traumatic spinal cord injuries to those without such injuries.

Material and Methods

Study Design and Settings

This cross-sectional study was conducted at Faisalabad Teaching Hospital over a six-month period, from March 2023 to August 2023.

Inclusion and Exclusion Criteria

The study's inclusion criteria were people who were at least eighteen years old, capable of understanding and filling out the questionnaires, and who had either complete or incomplete spinal cord lesions that resulted from traumatic or non-traumatic sources. A neurological level of damage such as cervical (C1-T1) or thoracolumbar (T2-L2), as well as a neurological severity of injury classified as ASI A, B, C, or D, were required of the participants. Those under the age of eighteen and those with severe mental health or cognitive disorders that would make it difficult for them to participate were excluded.

Sample Size

A sample size of 130 was determined using a 7% margin of error and an anticipated population of 240 patients. This explains why the ratio of traumatic to non-traumatic injuries is 4:1.

Sampling Technique and Equipment

The approach used for convenience sampling was non-probability. Two validated instruments were used to gather data: the Satisfaction with Life Scale (SWLS) and the WHOQOL-BREF for quality of life.

Data Collection Procedure

Researchers conducted SWLS and WHOQOL-BREF questionnaire administration at the hospital.

Furthermore, a form was used to collect demographic and clinical data, which included information about social involvement, age at injury, and type of damage.

Statistical Analysis

SPSS Version 26 was used to analyze the data. A significance threshold of $p<0.05$ was applied. The Kolmogorov and Shapiro-Wilk tests were used to evaluate the normality of the data. Cronbach's alpha was used to test the reliability of SWLS and WHOQOL-BREF ($\alpha = 0.8$). SWLS scores were added up, and WHOQOL-BREF ratings were computed on a 0-100 scale. Demographic and clinical data were summarized using descriptive statistics. Frequency and percentage were used to analyze categorical variables, and the Chi-square test was used to evaluate relationships between injury type and demographic features.

Ethical Approval

The study complied with the moral standards established by the ethical council of IQRA National University. All participants provided written informed consent, and anonymity and confidentiality of the data were preserved. Participants were made aware of their unrestricted ability to discontinue participation in the study at any moment. Only authorized workers had access to the securely stored data.

Results

The study participants' demographic and features linked to spinal cord injuries are displayed in Table 1. The bulk of participants (71.54%) are men, (70.00%) are married, and (33.18%) are primarily in the age range of 31 to 40. A substantial percentage of participants are unemployed (60%) and have only completed junior high school or less in education (76.92%). In terms of time since injury, the majority of participants (60.77%) have been injured for less than a year. The majority of injuries occur in people under 30 (34.62%). There is an equal distribution of traumatic and non-traumatic injuries (50.00% each). According to the American Spinal Injury Association (AIS) severity scale, AIS A is more common (55.38%) in cases of severe injuries. The thoracic area (T7 to T12) has the highest frequency of injury (41.54%). Quadriplegia is less common among participants (24.62%) than paraplegia (75.38%). Falls (25.38%) and disease-related violence (53.18%) are the main causes of injuries. In summary, 41.54% of the injuries are incomplete and 58.46% of the injuries are complete.

Table 1: Demographic and Spinal Cord Injuries Related Characteristics

Characteristics	**Category**	**Frequency**	**Percentage**
Gender	Male	93	71.54
	Female	37	28.46
Marital Status	Married	91	70.00
	Not Married	39	30.00
	Divorced	0	0.00
	Widowed	0	0.00
Age	Less than 30	35	26.92
	31 to 40	43	33.08
	41 to 50	27	20.77
	Over 50	25	19.23
Education	Junior high School and Lower	100	76.92
	Senior high School	16	12.31
	University degree and above	14	10.77
Employment	Employment	52	40.00
	Unemployment	78	60.00

Injury Duration	< 1-year Post-injury	79	60.77
	1-3 years Post-injury	22	16.92
	>3 years Post-injury	18	13.85
	>10 years Post-injury	11	8.46%
Injury Age	Less than 30	45	34.62
	31 to 40	42	32.31
	41 to 50	21	16.15
	Over 50	22	16.92
Damage Type	Traumatic	65	50.00
	Non-traumatic	65	50.00
Neurological Severity (AIS)	A	72	55.38
	B	35	26.92
	C	18	13.85
	D	5	3.85
Injury Level	C1 to C4	6	4.62
	C5 to C8	10	7.69
	T1 to T6	23	17.69
	T7 to T12	54	41.54
	Lumbar or Sacral	37	28.46
Physical Function	Paraplegia	98	75.38
	Quadriplegia	32	24.62
Injury Cause	Sports	1	0.77
	Fall off-road	33	25.38
	Traffic Accident	27	20.77
	Disease Violence	69	53.08
Injury State	Complete	76	58.46
	Incomplete	54	41.54

Table 2 presents the participants' quality of life according to the type of spinal cord injuries. Of the individuals who had suffered traumatic injuries, nine said their quality of life was poor, forty said it was neither excellent nor bad, and sixteen said their quality of life was good. Those with non-traumatic injuries, on the other hand, reported a good quality of life in 19 cases, a negative quality of life in 6, and a neutral quality of life in 40 cases. Patients with traumatic and non-traumatic spinal cord injuries do not appear to have significantly different quality of life, according to the p-value of 0.651.

Table 2: Quality of Life and Damage Type

Characteristics	**Category**	**Type of Damage**		**P Value**
		Traumatic	Non-traumatic	
Quality of Life	Bad Quality	9	6	0.651
	Neither Good Nor Bad	40	40	
	Good Quality	16	19	

The effect of physical discomfort on patients' capacity to carry out necessary duties is depicted in Figure 1. Five patients (3.85%) out of 130 say that their pain severely limits their ability to do chores. A bigger subset of 32 patients (24.62%) report significant pain interference. 41 patients (31.54%) experience mild interference, whereas 43 patients (33.08%) report moderate interference. Nine patients (6.92%) claim that their inability to do important chores is unaffected by physical pain.

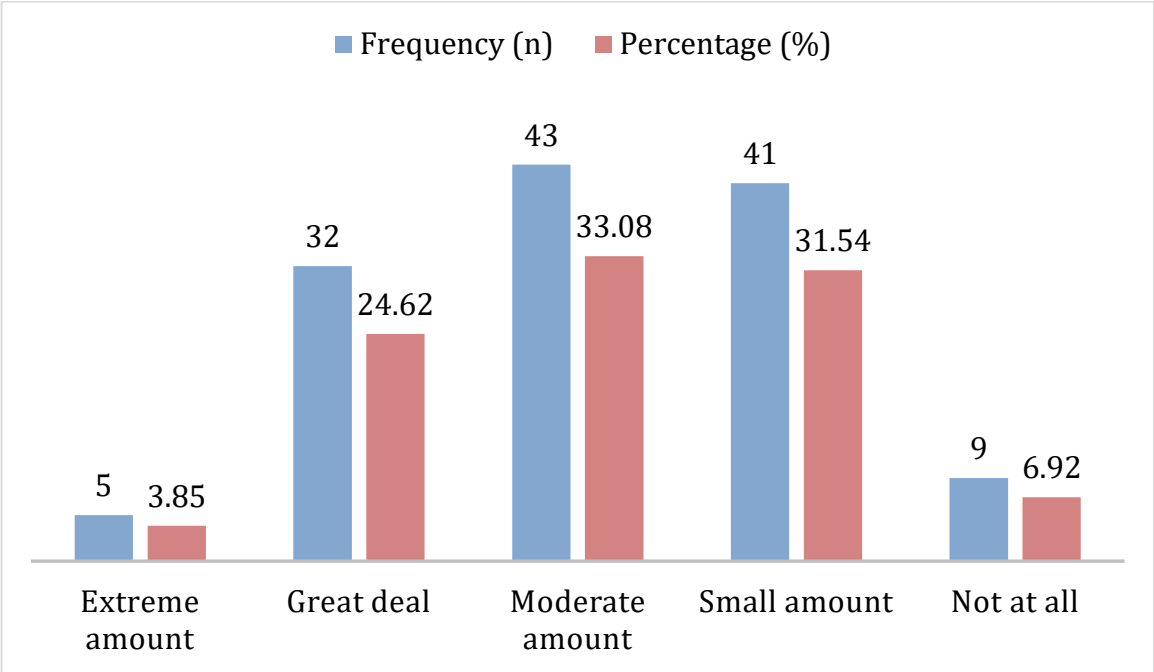

Figure 1: Frequency of Patients on the Extent Physical Pain Prevents them from Accomplishing Necessary Tasks

The incidence of individuals requiring medical treatment to function in daily life is depicted in Figure 2. Of the 130 patients, 26 (20.00%) need a high level of medical care. Twenty-seven patients (20.77%) require extensive medical care. Notably, 35 patients (26.92%) need a significant level of care, whereas the same 35 patients (26.92%) only need a minor amount. Merely 7 individuals (5.38%) do not require medical intervention to carry out their daily activities.

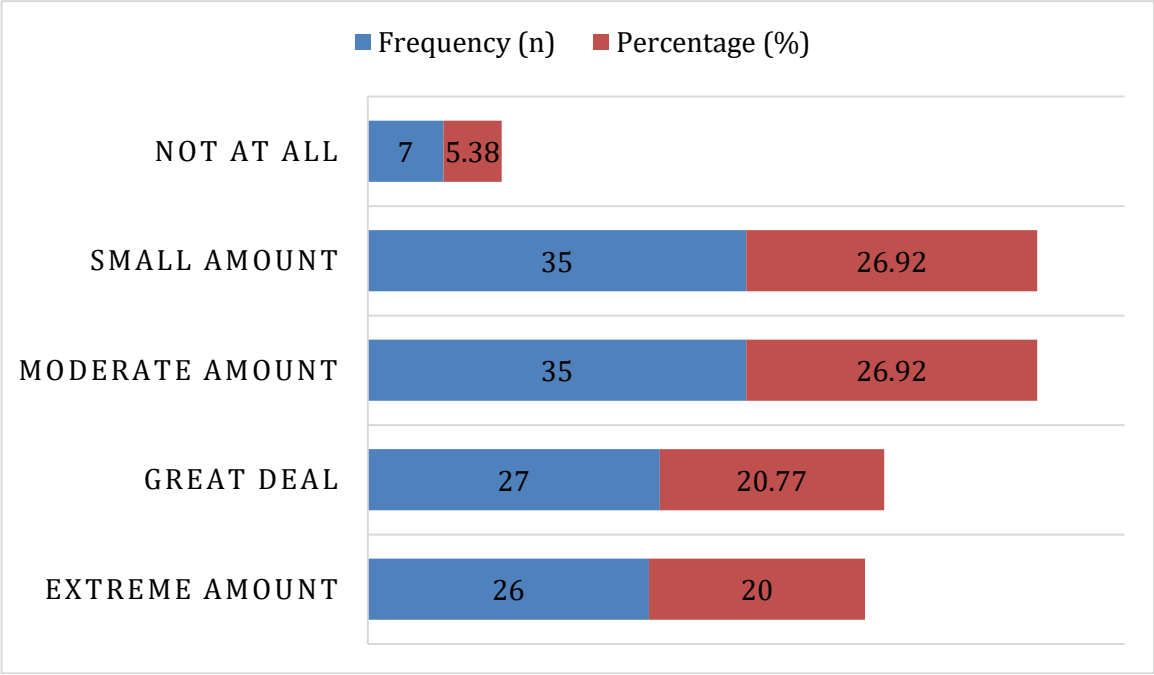

Figure 2: Frequency of Patients on the Need for Medical Treatment to Function in Daily Life

The subjective well-being of individuals with various kinds of spinal cord injury is examined in Table 3. Twelve of the one hundred and thirty-two patients (31.43%) who had traumatic injuries and sixteen who did not (24.62%) said they were "Not Satisfied" with their state of health. Comparably, 22 patients (33.85%) with non-traumatic injuries and 24 patients (34.29%) with traumatic injuries

fell into the "Neither Agree nor Disagree" category. In the meantime, "Satisfied" with their well-being was stated by 19 patients (27.14%) who had traumatic injuries and 27 patients (41.54%) who had non-traumatic injuries. There is no statistically significant difference in the subjective well-being of patients with traumatic and non-traumatic spinal cord injuries, as indicated by the p-value of 0.297.

Table 3: Comparison of Subjective Well-Being Between Traumatic and Non-Traumatic Spinal Cord Injury Patients

Characteristics	**Category**	**Type of Damage**		**P.Value**
		Traumatic	**Non-traumatic**	
Subjective Well Being	Not Satisfied	22	16	0.297
	Neither Agree nor Disagree	24	22	
	Satisfied	19	27	

Discussion

This research examined the subjective well-being and quality of life of patients with and without spinal cord injuries (SCIs). The findings are noteworthy and add to the continuing discussion on SCI recovery since they showed no significant differences between the two groups' subjective well-being or overall quality of life.

Nine traumatic injury patients and six non-traumatic injury patients in our research reported a "bad" quality of life, while sixteen traumatic and nineteen non-traumatic patients reported a "good" quality of life. There is no statistically significant difference between the groups, as shown by the p-value of 0.651. This result is in opposition to earlier studies that suggested that, in comparison to non-traumatic injuries, traumatic injuries often result in worse quality of life results.[13] According to a research by Greenham et al., (2022), individuals with traumatic SCI typically reported having a worse quality of life as a result of issues with social integration and chronic pain.[14] The high caliber of treatment and support offered at the hospital may help to lessen some of the discrepancies seen in other settings, which might explain why there was no statistically significant difference seen in our research.

In a similar vein, the findings of the subjective well-being survey showed that 31.43% of traumatic and 24.62% of non-traumatic patients were "not satisfied," but 27.14% of traumatic and 41.54% of non-traumatic patients reported feeling "satisfied" with their well-being. There seems to be no discernible difference in the two injury kinds' subjective well-being, as shown by the p-value of 0.297. This is in line with some earlier research that suggested individual coping mechanisms and support networks may have a greater impact on subjective well-being among SCI patients than injury type.[15] Our findings, however, contradict those of a research by Simpson et al., (2022), which indicated that since traumatic SCI patients had greater degrees of psychological anguish and physical handicap, their subjective well-being was worse than that of their non-traumatic counterparts.[16]

In our research, patients classified their pain interference as minor (31.54%), moderate (32.08%), and severe (3.85%). This distribution is consistent with the earlier work by Widerstrom (2017), which shown that pain, regardless of the kind of damage, has a major influence on functional outcomes in SCI patients.[17] The need for focused pain management techniques is shown by the large proportion of patients in our research who reported moderate pain interference.

Twenty percent of the population required excessive levels of medical attention, whereas twenty-six percent just needed moderate amounts. This is in line with research by Esquenazi et al. (2012), which found that patients' reported quality of life and functional status may be greatly impacted by the amount of medical therapy needed.[18] In contrast to other study findings, our data show a larger percentage of patients needing less medical intervention; this might be due to variations in patient access and support for healthcare.[19]

Overall, this study shows the value of tailored care and the potential contribution of rehabilitation

centers to improving patient outcomes across injury types, even though the lack of significant differences between traumatic and non-traumatic SCI patients deviates from some earlier research.

Study Limitations

There are a few drawbacks to this research that need to be noted. The cross-sectional design limits the capacity to notice changes over time or determine causation. Because convenience sampling ignores demographic and geographical variations outside of Faisalabad Teaching Hospital, it may restrict the results' applicability to larger groups. Furthermore, relying only on self-reported metrics to assess subjective well-being and quality of life may lead to response biases since people may over report or underreport their experiences depending on their own opinions or social desirability. Additionally, the study did not take into consideration confounding variables that could have an impact on the results and explain the lack of significant differences between the groups with traumatic and non-traumatic injuries, such as socioeconomic status, mental health issues, or varying degrees of social support.

Conclusion

There are no significant differences between individuals with traumatic and non-traumatic spinal cord injuries, according to this research, which offers insightful information on the quality of life and subjective well-being of these patients. Even though there were no clear differences, the results highlight how important tailored treatment plans and strong support networks are to improving patient outcomes. The observed parity in life satisfaction across lesion types may be attributed to the excellent quality of treatment provided at the hospital. To further our knowledge of the ways in which various forms of spinal cord injuries affect general well-being, future research should investigate these aspects in more detail while taking into account other relevant characteristics including mental health and socioeconomic status.

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