Check for updates

OPEN ACCESS

DOI: 10.46903/gjms/23.2.1841

STUDENTS' CORNER ORIGINAL ARTICLE

ASSOCIATION OF SELF-EFFICACY WITH SELF-CARE ACTIVITIES OF PATIENTS WITH SPINAL CORD INJURIES AT PARAPLEGIC CENTRE, HAYATABAD, PESHAWAR

Majeed Ullah[1],Sehrish Naz[2], Bakhtyar Ali Shah[2], Sohail Muhammad[1], Muhammad Anwar[1], Javid Iqbal[1]

[1]Health Department, District Headquarters (DHQ) Hospital Timergara, Dir Lower, Khyber Pakhtunkhwa, [2]Khyber Medical University, Peshawar, Pakistan

ABSTRACT

Background: Spinal cord injury (SCI) severely impacts mobility and sensory functions, leading to long-term disabilities and decreased quality of life. The aim of the study was to assess the prevalence of self-care activities among patients with spinal cord injuries and to examine association of self-efficacy with self-care activities of patients with SCI.

Materials & Methods: An analytical cross-sectional study was carried out with a sample size of 196 participants, employing a consecutive sampling technique at the Paraplegic Centre in HayatAbad, Peshawar. Ethical approval was obtained from Ethical Review Committee of Khyber Medical University. Data were collected through validated tools; the Functional Independence Measure (FIM) was used to assess self-care activities, while the Mindfulness-Based Self-Efficacy Scale Revised (MSES-R) was used to assess Self-efficacy. Data were analyzed by SPSS Version-24.

Results: Most participants (83.2%) were male, while 16.8% were female. In terms of education, 39.8% were uneducated, 25.5% had completed matriculation, and 2.0% had graduated or attained higher education. The average age was 36.94 ± 12.8 years. The mean self-efficacy score was 62.58 ± 8.669, and the mean score FIM score was 25.28 ± 8.50. A significant positive correlation was found between the variables ($r = -0.132$, $p < 0.003$).

Conclusion: The study concludes that self-efficacy positively influences self-care activities in patients with spinal cord injuries. It recommends that policymakers and health professionals prioritize support for these patients to help them achieve greater independence in self-care.

KEY WORDS: Correlation; Patients; Self-efficacy; Self-Care Activities; Spinal Cord Injuries.

Cite as: Ullah M, Naz S, Shah BA, Muhammad S, Anwar M, Iqbal J. Association of self-efficacy with self-care activities of patients with spinal cord injuries at paraplegic centre, Hayatabad, Peshawar. Gomal J Med Sci 2025 Apr-Jun;23(2):272-7. https://doi.org/1046903/gjms/23.2.1841

INTRODUCTION

Spinal cord injury (SCI) is a severe and challenging condition that disrupts body mobility and sensory functions, leading to long-term impairments and a decreased quality of life.[1] This condition can arise from traumatic events, such as vertebral fractures, or non-traumatic causes like infections and vascular damage.[2] Individuals with SCI often face permanent impairments and a heightened risk of complications affecting nearly every organ in the body.[3] The severity of an SCI is evaluated neurologically, with complete injuries generally presenting a lower likelihood of recovery compared to incomplete injuries.[4] Treatment typically involves inpatient rehabilitation, which is essential for helping patients adjust and regain their independence.[5]

Globally, the incidence of SCIs ranges from 236 to 1,009 cases per million people, with the highest annual incidence reported in China at 60,000 cases.[6] In the United States, the yearly incidence is estimated at 54 cases per million, with an overall prevalence between 721 and 906 cases per million.[2] In Iran, the annual prevalence is approximately 318 per million, while in Pakistan, the incidence ranges from 19 to 88 per 100,000 people, corresponding to an annual

Corresponding Author:

Majeed Ullah
Nursing officer, Health Department
DHQ Hospital Timergara, Dir Lower
Khyber Pakhtunkhwa, Pakistan.
E-mail: rmsmajeed@gmail.com

Date Submitted: 10-11-2024
Date Revised: 26-04-2025
Date Accepted: 04-05-2025

prevalence of 400 to 800 per million.[1] A spinal cord injury can lead to numerous changes in life activities, encompassing physical, social, psychological, and environmental aspects. Individuals with SCI develop specific needs that may impact their ability to care for themselves, affecting their performance in activities essential for achieving, maintaining, or promoting optimal health.[4] Because of their core disabilities and secondary medical issues, those who suffer from spinal cord injury may find it difficult to do daily tasks, which can lower their quality of life.[7] Many people who have spinal cord injuries (SCI) feel it challenging to cope with their condition, which can lead to high levels of anxiety and depression.[8] There is a shortage of population based SCI data in Pakistan; although, a small number of single-center retrospective studies have revealed demographic data on SCI patients in Pakistan.[9]

Exercise self-efficacy is strongly linked to extent of physical activity in the general population and among individuals with spinal cord injuries both.[10] Research has indicated that increased self-efficacy and self-care activities are associated with enhanced mental well-being and QOL in individual's with SCIs.[11] Individuals with SCIs should have high levels of self-efficacy in order to maintain their rehabilitation and self-care practices.[12] A prior study revealed a positive relationship between training and enhancements in patients' self-efficacy as well as reductions in readmission rates.[13] Self-care activities have been shown to improve patient well-being and lower hospitalization and mortality rates.[14] The need for persons with chronic illnesses to actively participate in self-care and take ownership of their health is becoming more widely realized. Patients see medical professionals for an average of just 66 minutes a year.[15]

The rising incidence of SCI highlights the critical need for comprehensive rehabilitation services and self-management strategies to improve patients' quality of life. Enhanced self-efficacy and participation in self-care activities are essential for optimal recovery, and this study aimed to explore the relationship between self-efficacy and self-care activities among patients with SCI, addressing an important gap in the literature and advocating for more focused support from healthcare systems and policymakers.

MATERIAL AND METHODS

A cross-sectional quantitative study design was used to, assess the prevalence of self-care activities of patients with spinal cord injuries (SCI) and to examine association of self-efficacy with self-care activities of patients with spinal cord injuries (SCI) at paraplegic centre HayatAbad Peshawar. Paraplegic patients aged-18 years and older, with traumatic SCIs including both admitted and outpatient (OPD) cases, were included in this study. Patients with SCI undergoing treatment for psychiatric problems were excluded from the study, as such treatment could influence their quality of life. Patients who were unwilling to take part in the study were also excluded. Data were collected using validated tools. Self-efficacy was assessed through MSES-R tool which have 22 items. Each item is rated on a five-point Likert scale, from 0 (not at all) to 4 (completely). The total score varies between 0 and 88.

Self-care activities were assessed by FIM tool which are total 18 items. Each item is scored on 1 to 7 points Likert scale, where 1 indicates complete dependence and 7 indicates complete independence.The study was approved from the Graduates Committee, ASRB, and the Ethical Board of Khyber Medical University, as well as from the hospital director. Informed consent was taken from all the participants. The sample size consisted of 196 individuals, and the data were processed and analyzed using SPSS version 24.

RESULTS

The study included 196 participants, predominantly male (83.2%) and married (55.1%). Education levels varied, with 39.8% uneducated, 25.5% having completed matriculation, and only 2.0% achieving graduation or higher. Injury causes included road traffic accidents (26.0%), firearm injuries (15.8%), bomb blasts (2.6%), falls from heights (46.9%), and other reasons (8.7%). Most participants (92.9%) experienced complete paraplegia, with 93.9% of injuries located in the thoracic region, followed by lumbar (5.6%) and sacral (0.5%) regions. The majority had recent injuries (less than 6 months, 52.6%),

while only a small number had injuries older than two years (1.5%). Living arrangements showed that 95.9% lived with family, and nearly all participants (95.9%) relied on others for care (Table 1).

DISCUSSION

The study participants were predominantly male (83.2%), which reflects higher male exposure to hazards, consistent with findings from Brazil.[1] The mean age was 36.94 ± 12.8 years, comparable to a previous study at the same rehabilitation center.[16] Most participants were married (55.1%), aligning with earlier research indicating 75% were married.[9] A significant portion was uneducated (39.8%), while 25.5% completed education up to the matric level. The leading cause of spinal cord injuries (SCI) was falls from heights (46.9%), corroborating findings by Qureshi et al.[17] (Table 2)

Injury specifics revealed that 92.9% had thoracic injuries, consistent with findings in Pakistan.[18] Additionally, 92.9% experienced complete paraplegia, which aligns with another study showing 84% had complete paraplegia.[1] Over half (52.6%) sustained injuries within the last six months, aligning with a Chinese study indicating an average of 8 months post-injury.[6] Most participants (95.9%) lived with family, similar to another study showing 72.2% living with family or friends.[19]

Table 1: Socio-demographic profile of the Study Participant's (n=196)

Variables		Frequency	Percentage (%)
Age	Mean= 36.94	SD= 12.8	
Gender	Male	163	83.2
	Female	33	16.8
Marital status	Single	88	44.9
	Married	108	55.1
Level of education	Uneducated	78	39.8
	Primary	12	6.1
	Middle	27	13.8
	Metric	50	25.5
	Intermediate	25	12.8
	Graduation and above	4	2.0
Cause of injury	Road traffic accident	51	26.0
	Fire arm injury	31	15.8
	Bomb blast injury	5	2.6
	Fall from height	92	46.9
	Other	17	8.7
Type of injury	Complete paraplegic	182	92.9
	Incomplete paraplegic	14	7.1
Level of injury	Thoracic	184	93.9
	Lumber	11	5.6
	Sacral	1	.5
Time since injury	Below 6 months	103	52.6
	7 months -1 year	49	25.0
	1.1 years to 1.5 years	24	12.2
	1.6 years to 2 years	17	8.7
	Above 2 years	3	1.5
Living situation	Living alone	8	4.1
	Living with other	188	95.9
Caregiver	Self	8	4.1
	Other	188	95.9

Table 2: Association of Self Care Score with demographic Variables

Variable's	Test Applied	Test's Value	P-Value	Significance
Self-Care and Gender	Ind. S T-Test	0.420	0.001	Significant
Self-Care and Age	Pearson	0.032	0.047	Significant
Self-Care and Type of Injury	Ind. S T-Test	0.622	0.004	Significant
Self-Care and Level of injury	Ind. S. T-Test	1.05	0.005	Significant
Self-Care and Living Situation	Ind. S. T-Test	0.168	0.430	Not Significant
Self-Care and Care giver	Ind. S. T-Test	2.145	0.0410	Significant
Self-Care Level and Gender	Chi-Square test	4.509	0.479	Not significant
Self-care score and Marital status	ANOVA	0.045	0.004	Significant
Self-Care score and Education	ANOVA	5.163	0.000	Significant

Table 3: Association of Self Efficacy Score with Self Care activities sub groups

Variable's	Test Applied	Test's Value	P-Value	Significance
Self-efficacy score and self-care score	Pearson	0.132	0.003	Significant
Self-efficacy score and Sphincter control score	Pearson	-0.055	0.443	Not Significant
Self-efficacy score and Transfer score	Pearson	-0.022	0.755	Not Significant
Self-efficacy score and Locomotion score	Pearson	0.324	0.021	Significant
Self-efficacy score and Communication score	Pearson	0.040	0.579	Not Significant
Self-efficacy score and Social Cognition score	Pearson	0.465	0.041	Significant

The analysis of self-care activities showed that female participants engaged more in self-care than males ($p < 0.001$), with higher FIM scores (25.17 ± 8.78 vs. 15 ± 8.99) .[1] Age was also significantly correlated with self-care ($r = 0.032$, $p < 0.047$), as older individuals face more challenges.[1] Participants with complete injuries had lower FIM scores compared to those with incomplete injuries ($t = 0.622$, $p < 0.004$).[4] The injury level affected self-care, with individuals having lumbar injuries showing higher FIM scores than those with thoracic injuries ($t = 1.05$, $p < 0.005$).[19] Significant correlations were found between self-care scores and demographic factors, including type of injury and education level (Table 3).

Self-efficacy scores averaged 62.58 ± 8.669, with a significant association with self-care activities ($r = -0.132$, $P < 0.003$). This finding aligns with earlier research indicating a positive relationship between self-efficacy and self-care.[20] Self-efficacy was also evaluated across subgroups of self-care activities, showing significant associations with locomotion ($P = 0.021$) and social cognition ($P = 0.041$), while no significant correlations were found with sphincter control, transfer, or communication scores.

CONCLUSIONS AND RECOMMENDATIONS

Spinal cord injuries (SCI) significantly impact individuals, causing functional limitations and increased dependence, especially among males. Falls and road accidents are the primary causes. The study highlights self-efficacy and personal factors in enhancing self-care and independence.

To improve rehabilitation in Pakistan, large-scale clinical trials, community studies, and culturally tailored guidelines are needed. Expanding rehabilitation centers and implementing awareness programs on traffic safety and fall prevention are also essential.

Implications for nursing education and practices: The study emphasizes enhancing nursing education and practices for spinal cord injury patients by incorporating self-efficacy, specialized training, and patient engagement. It advocates for personalized care, effective communication, holistic approaches, and supportive policies. Further research is needed to explore patient needs, barriers, and the influence of cultural and healthcare factors through longitudi-

nal studies and diverse populations.

Limitations: The study faced limitations due to being conducted at a single site with a small sample size, which included only traumatic paraplegic patients and a limited number of female participants. Additionally, language and literacy barriers posed challenges in communicating with some patients.

REFRENCES

1. Haroon M, Muhammad DD, Iqbal J, Hameed A, Sultan A. Association of family support with self-care activities of patients with spinal cord injuries: A correlational study. J Popul Ther Clin Pharmacol. 2023;30(18):286-91. https://doi.org/10.53555/jptcp.v30i18.3015
2. Ding W, Hu S, Wang P, Kang H, Peng R, Dong Y, et al. Spinal cord injury: The global incidence, prevalence, and disability from the Global Burden of Disease Study 2019. Spine (Phila Pa 1976). 2022;47(21):1532-40. https://doi.org/10.1097/BRS.0000000000004417
3. Arsh A, Darain H, Zeb A, Ilyas SM, Khalid S. Mortality and its associated factors in patients with spinal cord injuries at Paraplegic Center Peshawar, Pakistan. Khyber Med Univ J. 2019;11(2):71-4.
4. Abu-Baker NN, Al-Zyoud NH, Alshraifeen A. Quality of life and self-care ability among individuals with spinal cord injury. Clin Nurs Res. 2021;30(6):883-91. https://doi.org/10.1177/1054773820976623
5. Jones ML, Gassaway J, Sweatman WM. Peer mentoring reduces unplanned readmissions and improves self-efficacy following inpatient rehabilitation for individuals with spinal cord injury. J Spinal Cord Med [Internet]. 2021;44(3):383-91. https://doi.org/10.1080/10790268.2019.1645407
6. Li Y, Chien WT, Zhu B, He H, Bressington D. Predictors of self-efficacy among people with spinal cord injury during inpatient rehabilitation: A cross-sectional study. J Nurs Scholarsh. 2021;53(2):218-26. https://doi.org/10.1111/jnu.12632
7. Van Diemen T, van Nes IJW, van Laake-Geelen CCM, Spijkerman D, Geertzen JHB, Post MWM. Learning self-care skills after spinal cord injury: A qualitative study. BMC Psychol [Internet]. 2021;9(1):1-12. https://doi.org/10.1186/s40359-021-00659-7
8. Diemen T, Tran Y, Stolwijk-Swuste JM, Roels EH, Nes IJW, Post MWM. Trajectories of self-efficacy, depressed mood, and anxiety from admission to spinal cord injury rehabilitation to 1 year after discharge. Arch Phys Med Rehabil [Internet]. 2021;102(10):1939-46. https://doi.org/10.1016/j.apmr.2021.04.018
9. Zeb A, Arsh A, Bahadur S, Shah I, Ilyas SM. Functional recovery in patients with post-traumatic spinal cord injuries: An outcome of gross mobility at Paraplegic Center Peshawar, Pakistan. Khyber Med Univ J. 2019;11(1):17-20. https://doi.org/10.35845/kmuj.2019.18442
10. Kooijmans H, Post M, Motazedi E, Spijkerman D, Bongers-Janssen H, Stam H, et al. Exercise self-efficacy is weakly related to engagement in physical activity in persons with long-standing spinal cord injury. Disabil Rehabil [Internet]. 2020;42(20):2903-9. https://doi.org/10.1080/09638288.2019.1574914
11. Carrard V, Kunz S, Peter C. Mental health, quality of life, self-efficacy, and social support of individuals living with spinal cord injury in Switzerland compared to that of the general population. Spinal Cord [Internet]. 2021;59(4):398-409. https://doi.org/10.1038/s41393-020-00582-5
12. Kim JY, Cho E. Evaluation of a self-efficacy enhancement program to prevent pressure ulcers in patients with a spinal cord injury. Jpn J Nurs Sci. 2017;14(1):76-86. https://doi.org/10.1111/jjns.12136
13. Sedghi Goyaghaj N, Pishgooie AH, Aliyari S, Zareiyan A. The effect of self-care program training on self-efficacy in veterans with spinal cord injury: A randomized clinical trial study. Arch Neurosci. 2019;6(3). https://doi.org/10.5812/ans.89001
14. Conti A, Clari M, Kangasniemi M, Martin B, Borraccino A, Campagna S. What self-care behaviours are essential for people with spinal cord injury? A systematic review and meta-synthesis. Disabil Rehabil [Internet]. 2022;44(7):991-1006. https://doi.org/10.1080/09638288.2020.1783703
15. Riegel B, Dunbar SB, Fitzsimons D, Freedland KE, Lee CS, Middleton S, et al. Self-care research: Where are we now? Where are we going? Int J Nurs Stud [Internet]. 2021;116:103402. https://doi.org/10.1016/j.ijnurstu.2019.103402
16. Arsh A, Anwar Z, Zeb A, Ilyas SM. Effectiveness of occupational therapy in improving activities of daily living performance in complete cervical tetraplegic patients: A quasi experimental study. Pak J Med Sci. 2020;36(2):96-9. https://doi.org/10.12669/pjms.36.2.1002
17. Ullah Z, Bilal M, Khan NA, Shams H, Pathan A, Ullah I. Causes of traumatic spinal cord injury with gender distribution and most commonly affected age group. Natl J Life Health Sci. 2024;1(2):29-32. https://doi.org/10.62746/njlhs.v1n2.40

18. Rauf U, Naz R, Ihsan H, Khan F, Begum M, Khan WA. Levels of anxiety and depression among patients with spinal cord injury coming to Paraplegic Centre, Peshawar. Rehman J Health Sci. 2019;1(2):33-6.
19. LaVela SL, Etingen B, Miskevics S. Factors influencing self-care behaviors in persons with spinal cord injuries and disorders. Top Spinal Cord Inj Rehabil. 2016;22(1):27-38. https://doi.org/10.1310/sci2201-27
20. Chin CH, Tseng LM, Chao TC, Wang TJ, Wu SF, Liang SY. Self-care as a mediator between symptom-management self-efficacy and quality of life in women with breast cancer. PLoS One [Internet]. 2021;16(2):e0246430. https://doi.org/10.1371/journal.pone.0246430

CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.

AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	MU, SN
Acquisition, Analysis or Interpretation of Data:	MU, SN, BAS, SM, MA
Manuscript Writing & Approval:	MU, SN, BAS, SM, JI

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.