



ASSOCIATION OF FAMILY SUPPORT WITH SELF-CARE ACTIVITIES OF PATIENT WITH SPINAL CORD INJURIES: A CORRELATIONAL STUDY

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ABSTRACT

Background

Spinal cord injury (SCI) is a destructive, spiteful, and hurtful condition that may or may not be traumatic. It produces disturbance in both motor and sensory functions, which affect the social, physical, and psychological well-being of the patients. The aim of the study was to assess the family support and self-care activities among patients with spinal cord injuries and to determine the relationship between the variables.

Methodology: A cross-sectional (correlational) study was conducted on 169 patients using consecutive sampling technique. Ethics approval was obtained from Ethics Review Committee of Khyber Medical University. Data were collected through validated tools; the Functional Independence Measure was used to assess self-care activities, while the Family Support Scale was used to assess family support. Data were analyzed by SPSS Version-22.

Results: The average age of the participants was 32.25 ± 11.57 years. Most (79%) of the participants were male, while 21% were female. The mean score of family support was 34.6 ± 14.97 , while the mean score of the functional independence measure was 91.5 ± 22.1 . There was a significant positive correlation between the variables ($r = .785, p < .001$).

Conclusion: It is concluded from the findings of the study that family support affects self-care activities and has a positive correlation among patients with spinal cord injuries. Based on these findings, policymakers and health professionals are recommended to arrange educational programs for families to effectively rehabilitate individuals with disabilities.

Keywords: Correlation, Family Support, Self-Care Activities, Spinal Cord Injuries, Patients

Introduction

Spinal cord injury (SCI) is a destructive, spiteful, and hurtful condition that results in the disturbance of motor and sensory functions of the body. It may or may not be traumatic, but the quality of life is being disturbed due to long-lasting diminished functions of the body.¹ The disturbed motor and sensory functions affect the social, physical, and psychological well-being of

the patients.² The consequences of SCI are devastating in nature, it affects the physical, social, vocational, and psychological well-being of the individuals.³ Physical disabilities lead to dependence on others, and self-care will be dependent on the help and support of the nurses and family members. Self-care is not limited to the activities of daily life, it is a universal phenomenon that covers all the experiences performed for the betterment of health and well-being and multiple factors can influence self-care.⁴

Spinal cord injuries affect 250,000 to 500,000 individuals worldwide.⁵ In developing countries, the incidence rate of SCI per year is up to 130 per million population.⁶, while this rate per year ranges from 15 to 39 per million population in Europe and the United States of America (USA).⁷ In Iran, the approximated prevalence of spinal cord injuries per year is 318 per million.⁶ In Pakistan, the incidence rate of SCI ranges from 19 to 88 per 100, 000 population, while prevalence ranges from 400 to 800 per million per year. In developing countries, it is also observed that incidence among males is higher than among females, and the utmost causes are falls, road traffic accidents, and violence.⁸ The causes of non-traumatic spinal cord injuries in Pakistan are tumors of the spine, degenerative spondylosis, tuberculosis, postoperative paralysis, epidural abscess, and transverse myelitis.⁹

Pressure ulcers, spasticity, bowel and bladder dysfunctions, pain, orthostatic hypotension, autonomic dysreflexia, respiratory complications, and bone fractures are the common complications associated with spinal cord injuries.¹⁰ Complications are accountable for increasing re-hospitalization, morbidity, and mortality among individuals with SCI. Self-care has shown efficacy in lowering rates of hospitalization, mortality, and recovering health.¹¹ Individuals with SCI should be empowered in self-care to handle complications.¹² Improvement in health and well-being and decrease in morbidity, mortality, and health care cost are the benefits of self-care. Thus, the need of assuming the responsibility of self-care for persons with chronic conditions has been recognized.¹³ Social and family support is positively associated with self-care and higher physical activities.¹⁴ In patients with chronic conditions, family support plays a vital role in self-care management.¹⁵

The role of family is very important in the prevention of complications among individuals with compromised abilities. In individuals with SCI, self-care, and quality of life can be improved through the collaboration of health professionals and family members.⁵ Family support has a significant relationship with a degree of adherence to rehabilitation.¹⁶ There is scarcity of evidence in Pakistani context, that is why this study was proposed. The study finding may have implications for the policymakers and health care providers to conduct educational programs and research for improving self-care abilities in persons with SCI. The purpose of the study was to assess family support and self-care activities and their relationship among patients with spinal cord injuries.

Materials and Methods

A cross-sectional (correlational) study design was used to assess family support and self-care activities and to determine the correlation between these variables. The sample size of the study was 169. Consecutive sampling techniques were employed to recruit individuals with spinal cord injuries of the lower level (paraplegic). Data were collected through validated tools. Family support was assessed by the family support scale (FSS), while self-care activities were assessed by functional independence measures (FIM). Data were collected at Paraplegic Center Peshawar from June to August 2021. Data were analyzed through SPSS Version-22. In descriptive statistics, frequency and percentage were calculated for categorical data, while mean and standard deviation were calculated for continuous variables. Pearson correlation was applied to determine the relationship between family support and self-care activities. ANOVA and Independent Samples T-test were employed to measure mean scores. Prior approval was obtained from the Advance Studied and Research Board (AS&RB) and Ethical Research Board (ERB) of Khyber Medical University (KMU) Peshawar. Formal permission was obtained from the administration of the study setting. The purpose of the study was explained to all the participants and written informed consent was secured.

Results

The total participants were 169; where 79% (N=133) were male and 21% (N=36) were female. The mean age of the participants was 32.25 ± 11.57 years. The proportion of married individuals was 52.7%, while 47.3% were unmarried. Among the participants, 28.4% (N= 48) were uneducated, 28.4% (N=48) have primary level education, 22.5% (N=38) were matriculate, 14.8% (N=25) have completed their intermediate, 5.3% (N=9) were graduated , and 0.6% (N=1) has completed Master degree. Most 79.3% (N=134) of the participants were unemployed, 13%(N=22) had private jobs, while 7.7% (N=13) were government employees. Individuals with complete paraplegia were 84% (N=142) and individuals with incomplete paraplegia were 16% (N= 27). The injuries to the participants were at thoracic level 53.8% (N=91) and at lumber level 46.2% (N=78). The causes of the injuries were falls from height (46.2%), road traffic accidents (21.8%), firearm injury (16%), post surgeries injury (2.4%), spinal tumor (7.1%), and spinal stenosis and transverse myelitis (6.5%). The mean duration since injury was 3.25 ± 4.1 years. Almost half (49.1%) of the participants had pressure ulcers. (Table-01).

| Demographic Characteristics of the Participants | | | |
|---|--------------|-----------|------------|
| | Category | Frequency | Percentage |
| Gender | Male | 133 | 79% |
| | Female | 36 | 21% |
| Marital Status | Married | 89 | 52.7% |
| | Unmarried | 80 | 47.3% |
| Level Of Education | Uneducated | 48 | 28.4% |
| | Primary | 48 | 28.4% |
| | Matric | 38 | 22.5% |
| | Intermediate | 25 | 14.8% |
| | Graduation | 9 | 5.3% |
| | Master | 1 | 0.6% |
| Type of Injury | Complete | 142 | 84% |
| | Incomplete | 27 | 16% |
| Level of Injury | Thoracic | 91 | 53.8% |
| | Lumber | 78 | 46.2% |
| Cause of Injury | Fall | 78 | 46.2% |
| | RTA | 37 | 21.8% |
| | FAI | 27 | 16% |
| | Post Surgery | 4 | 2.4% |
| | Spinal Tumor | 12 | 7.1% |
| | Other | 11 | 6.5% |
| Status of Bedsore | Yes | 83 | 49.1% |
| | No | 86 | 50.9% |

The FIM mean score was 91.5 ± 22.1 and a significant difference in the mean scores of males and females was observed ($t= -4.77, p<0.001$). The mean FIM score of males was 87.96 ± 22.19 and females had 104 ± 16.91 mean FIM score. Patients with complete injury had lower FIM scores (88.33 ± 21.9) than patients with incomplete injury (108.18 ± 14.52) and the difference in mean scores was significant ($t=-5.93, p>0.001$). The level of injury had effects on self-care activities; patients with injuries at lumber level had greater FIM mean scores (103.55 ± 20) than the patients with injuries at the thoracic level (81.17 ± 18.29). The difference was significant ($t=-7.58, p<0.001$). The duration since the injury had also a significant moderate positive correlation with self-care activities ($r = 0.416, p<0.001$). The mean score of perceived family support was 34.62 ± 14.97 , which was higher among female individuals (40.44 ± 14.04) as compare to male individuals (33.18 ± 14.86). The difference in mean scores of married and unmarried participants was not

significant ($t=-1.36$, $p=0.17$). A moderate positive correlation was observed between family support and time since injury ($r =.369$, $p<0.001$). A significant strong positive correlation was found between family support and self-care activities among patients with spinal cord injuries ($r = .785$, $p<0.001$). (Table-02)

| Table- 02 (Association of variables) | | | | |
|--------------------------------------|---------------|--------------|---------|------------------|
| Variables | Test Applied | Test's Value | P-Value | Significance |
| Self-Care and Gender | Ind.S. T-test | -4.774 | .000 | Significant |
| Self-Care and Age | Pearson | .022 | .776 | Not- Significant |
| Self-Care and Marital status | Ind.S. T-test | .610 | .542 | Not-Significant |
| Self-Care and Education | ANOVA | 2.455 | .036 | Significant |
| Self-Care and Injury Cause | ANOVA | .756 | .605 | Not-Significant |
| Self-Care and Injury Type | Ind.S. T-test | -5.933 | .000 | Significant |
| Self-Care and Injury Level | Ind.S. T-test | -7.580 | .000 | Significant |
| Self-Care and Injury Duration | Pearson | .416 | .000 | Significant |
| Self-Care and Care Giver | ANOVA | 9.459 | .000 | Significant |
| Self-Care and Employment | ANOVA | 6.567 | .002 | Significant |
| Family Support and Gender | Ind.S. T-test | -2.71 | .009 | Significant |
| FS and Type of Family | ANOVA | .564 | .570 | Not-Significant |
| FS and Employment | ANOVA | 9.185 | .000 | Significant |
| FS and Injury Duration | Pearson | .369 | .000 | Significant |
| Family Support and Self-Care | Pearson | .785 | .000 | Significant |

Discussion

This study was aimed to determine association between family support and self-care activities. The study sample comprised of 79 % males and 21% females. This difference may be due to more exposure of men to the hazards than the females. The result of a study conducted in Brazil was congruent with this study, which was 84% male and 16% female.¹⁷ These findings are also consistent to a study conducted in Pakistan which reported that 76% of the affected population was male that was three times greater than the number of females.⁸ The average (mean) age of the participants of the study was 32.25 ± 11.57 years. The study of Darain et al. has also suggested that the mean age of the individuals with SCIs was 32.6 years.⁸ This study has suggested that the most common cause of the injury was fall from height, while the second most common cause was road traffic accidents. A previous study has also revealed that falls were the utmost cause of spinal cord injuries.¹⁸ The results of the work, which was accomplished in Pakistan were also consistent with the current study.⁸

The current study has disclosed that most (84%) of the participants had complete paraplegia. Previous studies have also indicated similar results to this study.¹⁸ The current study has unveiled that female individuals have secured higher mean scores in self-care than the male individuals of the study population. The result shows that females were more independent than the male participants. The work of A. Coura et al. has presented that females were more dependent. This was inconsistent with the findings of the present study.¹⁷ The findings of a study conducted in Brazil were found consistent with the results of the current study.¹⁹

This study has showed a moderate positive significant relationship between self-care activities and the duration of the condition. The findings of a study conducted in Saudi Arabia were inconsistent with the existing study.²⁰ It has also been revealed in this study that patients with incomplete paraplegia have a higher mean score of FIM than patients with complete paraplegia. Patients with injury at the lumbar level have also better mean scores of FIM. The findings of the study of B. Lee et al. were found aligned with the recent study.²¹ The current study has signified a positive relationship between self-care activities and level of education. The study suggested that education

influenced self-care in patients with SCIs. A study performed in Saudi Arabia has also reported that low education was associated with a lower level of physical activities.²⁰

Findings of current study revealed that there was a substantial positive correlation between family support and self-care activities among the study population. The findings of the work of Philips et al. were found coherent with the results of this study.²² The study of Xiaolian et al. has also proven a certain correlation between family support and self-care behavior.²³ The results of a study performed on individuals with Multiple Sclerosis were found coherent with the findings of this study.²⁴ A Korean study has also identified a correlation between family support and adherence to rehabilitation among patients with stroke.¹⁶ A Canadian study has indicated that family support was a facilitator in self-care management among individuals with spinal cord injuries.²⁵

Conclusion

Spinal cord injuries have devastating and spiteful effects on the lives of people. Individuals with SCIs face limitations in functional abilities and become dependent on others in self-care. Independence in self-care is very important for patients with functional disabilities. It has been concluded from the findings of the study that family support plays a significant role in developing self-care abilities. Gender, age, type of injury, level of injury, duration of disease, and education were found influencing factors on self-care activities of the patients. Self-care has a substantial role in the hindrance and prevention of complications among individuals with compromised abilities. Therefore, special attention should be given to patients with spinal cord injuries and all the possible help should be provided in making them independent in self-care.

Limitation

The study has a limitation of time and was limited to Paraplegic Center Hayat Abad Peshawar. The sample size was also small and a very low number of females have participated in the study. Due to these limitations, the results of future studies may vary from the findings of the current study.

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