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Participation in Daily Activities and Quality of Life among Individuals with Paraplegic Spinal Cord Injury in Pakistan

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Abstract

Individuals with paraplegic Spinal Cord Injury (SCI) face various difficulties that limit participation in daily activities and lowered Quality of Life (QOL) after hospital discharge. This cross-sectional study aimed to investigate the level of participation in daily activities and QOL among individuals with paraplegic SCI and to examine the relationship between these two variables. The results revealed that individuals with paraplegic SCI faced significant challenges in social participation, life activities, mobility, getting along, self-care, and cognition, leading to a reduction in overall QOL. Occupational therapists prioritize post-discharge interventions targeting to improve participation and QOL for successful rehabilitation and community reintegration.

Keywords: Individual with Paraplegic SCI; Participation; Quality of Life, Occupational Therapy

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1.0 Introduction

SCI can occur from traumatic or non-traumatic events. Injury to cervical areas can result in complete/incomplete quadriplegia while injury to the thoracic, lumbar, and sacral regions of the spine can result in complete/incomplete paraplegia depending upon the severity of the injury. The irreversible damage to the spinal cord often results in a lifelong disability. These injuries have a significant impact on the physical, psychological, and social functioning of individuals (Boop et al., 2020). In low-income resource countries like Pakistan, the prevalence of SCI is alarmingly high, affecting approximately 207.9 million individuals (Khan et al., 2018). Many of these individuals are young adults aged 26 to 35 and often face socioeconomic challenges and live below the poverty line following the injury (Darain et al., 2017).

After hospital discharge, individuals with paraplegic SCI encounter numerous challenges that greatly affect their overall well-being. These challenges include limited financial resources, inadequate access to comprehensive rehabilitation and healthcare services for managing secondary complications, increased social stigma, ongoing discrimination, dependence on family members, and confinement to their homes (Darain et al., 2017). As a result, these individuals experience adverse effects on their cognition, mobility, self-care

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abilities, social relationships, and life skills, which significantly hinder their ability to participate in daily activities and lead to a considerable reduction in their QOL (Barclay et al., 2015).

Participation in daily activities and QOL are critical outcomes for individuals with paraplegic SCI, as they are closely interconnected. The World Health Organization (2001) defines participation in daily activities as an individual's active involvement in various life situations, such as self-care, work, leisure, play, and spirituality. Participation provides structure and meaning to the lives of individuals with paraplegic SCI transitioning from hospital to community living (Alve et al., 2019).

QOL is a comprehensive concept that encompasses an individual's perception of their life situation, considering cultural values, goals, and concerns. It includes physical and psychological health, independence, social relationships, and the influence of the environment. Individuals with paraplegic SCI often experience isolation, depression, and dependency on family members due to the loss of control over their movements and drastic changes in their physical abilities, significantly impacting their QOL (Sajid et al., 2020). While the importance of participation in daily activities and QOL for individuals with paraplegic SCI is well-documented in developed countries, there is a lack of research on these aspects in developing countries like Pakistan. Existing studies primarily focus on managing SCI impairments, with limited exploration of how individuals with paraplegic SCI participate in daily activities. Therefore, this study aims to investigate the participation in daily activities and QOL among individuals with paraplegic SCI who are living in the community. Additionally, the study seeks to explore the relationship between participation in daily activities and QOL in this population to better understand specific areas that require attention and intervention, ultimately empowering individuals with paraplegic SCI. The findings from this study can generate new knowledge to inform the development of targeted strategies and support systems to enhance daily functioning and overall well-being, facilitating successful rehabilitation and integration into the community after hospital discharge.

2.0 Literature Review

Individuals with paraplegic SCI after discharge from the hospital to the community often face significant difficulties that hinder their participation in daily activities such as work, play, and leisure, as well as daily routines, impacting their overall QOL (Fekete et al., 2019). These activities fulfill basic needs and promote a sense of belonging and skill development. However, when these activities are inaccessible, they can lead to social exclusion, reduced independence, life satisfaction, and overall well-being (Halvorsen et al., 2021). The International Classification of Functioning, Disability, and Health (ICF) provides a comprehensive framework for understanding how SCI affects an individual's ability to participate in daily activities.

According to the ICF, personal, environmental, and social factors influence the participation of individuals with paraplegic SCI in their daily activities (Mat Rosly et al., 2018). Participation is a widely recognized concept in rehabilitation, encompassing various aspects such as social adjustment, independent living, social functioning, and community integration. It can be assessed from both objective (society's viewpoint) and subjective perspectives (the individual's perception) (Ripat et al., 2012). Participation in daily activities is essential for physical, mental, emotional, and social health. It promotes the overall QOL for individuals with paraplegic SCI, aids in treatment planning and follow-up, and helps prevent secondary issues after recovery and treatment cessation (Alizadeh Zarei et al., 2017). When compared to QOL in people with SCI, participation has numerous advantages, such as providing opportunities to engage in work, physical activity, and leisure activities, reducing psychosocial issues, promoting self-efficacy, developing social relationships, and supporting integration into society (Huang et al., 2016).

Occupational therapy plays a key role in the rehabilitation of individuals with paraplegic SCI by focusing on facilitating their participation in daily activities. Participation, as defined by the Occupational Therapy Practice Framework Fourth Edition, encompasses all activities necessary to meet an individual's basic life needs. The habits, routines, roles, and rituals acquired during activity engagement can either support or hinder their ability to perform daily tasks. Participation is seen as a dynamic relationship involving the individual, the activities they engage in, the environment in which these activities take place, as well as the impairment and contextual factors that affect participation (Boop et al., 2020). Occupational therapists view participation as both the means and the end in society, making it a primary concern of their occupational therapy practice and the central core of the profession (American Occupational Therapy Association, 2020; Daud et al., 2016).

QOL refers to individual satisfaction across various aspects of life, including health, social relationships, and living conditions (Islam et al., 2016). Individuals with paraplegic SCI experience challenges in four areas of their QOL, as defined by the World Health Organization (WHO). These areas are physical health, psychological well-being, social relationships, and the environment. People with paraplegic SCI may face difficulties related to physical health, such as pain and reliance on medical aids. They may also experience psychological issues like depressive symptoms and negative emotions. Socially, they may struggle with a lack of integration into social networks. Additionally, the environment can present barriers in terms of physical safety, transportation, home environment, access to healthcare and social services, and opportunities for leisure activities (Yasmin et al., 2023; Serres et al., 2023; World Health Organization, 2020). Assessing overall QOL beyond diagnosis is important for understanding the impact of the disease and facilitating comprehensive rehabilitation (Wolf et al., 2015). Participation in daily activities is closely related to quality of life in achieving overall well-being (Wolf et al., 2015).

Occupational therapists possess specialized knowledge, skills, and expertise in activities, participation, and assistive technology, which are vital for the successful rehabilitation process. They employ various equipment, services, techniques, and practices to address the challenges faced by individuals with paraplegic SCI, enhance their ability to perform daily tasks, engage in self-care activities, and interact within society, thereby improving overall well-being and community integration while preventing secondary issues. Occupational therapy aims to promote functional independence and fairness in everyday activities, education, work, play, and leisure. It can help individuals with paraplegic SCI achieve positive rehabilitation outcomes and an overall improved QOL within the community (Arsh et al., 2020; Akyurek et al., 2017).

3.0 Methodology

3.1 Study Design, Sampling, and Location

This study utilized a cross-sectional study design to determine the level of participation in daily activities and QOL among individuals with paraplegic SCI and to examine the relationship between their participation in daily activities and QOL in this population. The cross-sectional design was chosen because it allows for quick data collection and provides valuable insights into disease aetiology, making it practical and cost-effective (Kesmodel, 2018). Non-probability purposive sampling was employed to select participants for the study. The researchers specifically chose participants based on certain qualities that were suitable for the research question (Etikan, 2016). The target sample size was determined to be one hundred forty (n=140) using G*Power 3.1 software. This sample size calculation considered an alpha level of 0.05, a power level of 0.8, and a medium effect size of 0.15. Participants were individuals diagnosed with paraplegic SCI living in various cities of Pakistan. They had been discharged from hospitals and were currently undergoing comprehensive rehabilitation therapies as outpatients. Their information was obtained from medical records, and they were contacted to be invited to participate in the study. The study was conducted with the approval of the UiTM Malaysia Research Ethics Committee (Ref no: 600-TNCPI (5/1/6)) and the National Bioethics Committee for Research at the National Institute of Health, Ministry of Health in Pakistan (Ref no: NBC-922/23/1546).

3.2 Data Collection Instruments

The data collection instruments used in this study were socio-demographic information, structured, validated, and standardized questionnaires in the Urdu language. These questionnaires included the following:

- World Health Organization Disability Assessment Schedule 2.0 (WHODAS-II scale): This scale was used to assess the level of participation in daily activities among individuals with paraplegic SCI. It consisted of 36 questions divided into six domains. Participants rated their perceived level of participation in daily activities on a five-point Likert scale ranging from 1 to 5 (1 = none limitation, 2 = mild limitation, 3 = moderate limitation, 4 = severe limitation, and 5 = extreme limitation or cannot do), with higher scores indicating more severe limitations in daily activity participation (Rahman et al., 2023). The Cronbach's alpha reliability of the WHODAS-II scale was 0.92, indicating high reliability ranging between 0.8 -1.0 (Irfan et al., 2017; Hair et al., 2020).
- World Health Organization Quality of Life BREF Scale (WHOQOL-BREF scale): This scale included 26 questions grouped into four domains and was used to assess the participant’s level of QOL. Participants indicated their level of QOL satisfaction on a five-point Likert scale ranging from 1 to 5 (1 = very dissatisfied, 2 = dissatisfied, 3 = neither dissatisfied, 4 = satisfied, and 5 = very satisfied), with higher scores indicating higher QOL (Rahman et al., 2023). The Cronbach's alpha reliability of the WHOQOL-BREF scale was 0.86, indicating high reliability ranging between 0.8 -1.0 (Lodhi et al., 2017; Hair et al., 2020).

3.3 Data Collection Procedure

Data collection for this study was conducted in outpatient rehabilitation departments in Pakistani hospitals. All diagnosed individuals with paraplegic SCI who were discharged from the hospital to the community and on follow-up were identified and offered opportunities to participate in this study. The participants were given a detailed description of the study and their consent was acquired first, before starting the data collection. All the data obtained from the participants were kept private and confidential. The study included a total of 140 participants who met the following criteria: (i) they were male or female paraplegic SCI patients aged 18-60, residing in Pakistan; (ii) their diagnosis of paraplegic SCI was limited to the thoracic regions T1-T12 or the lumbar regions L1-L5 of the spinal vertebrae; and (iii) the participants experienced complete paralysis of the lower body, including both legs and were categorized as paraplegic. The questionnaire was distributed to all participants using the Google Survey form that was either emailed or sent through the WhatsApp application. It took approximately 20-30 minutes to complete the questionnaire and responses were collected on a spreadsheet form.

3.4 Data analysis

The collected data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) Statistics version 28. The data cleaning process was performed, including checking for blank responses, missing values, data entry errors, and outliers. The normality of the data was assessed using the Shapiro–Wilk test. Data cleaning ensures the inclusion of high-quality data, which increases the validity and reliability of the study (Creswell & Creswell, 2022). A p-value less than 0.05 was considered statistically significant for all calculations, and no adjustments for multiple comparisons were made. All the data was presented using tabulation. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were calculated to summarize the socio-demographic characteristics of all participants. Mean and standard deviation values were calculated to analyze objective one, determine the level of participation (WHODAS-II scale) and QOL (WHOQOL-BREF scale) among persons with paraplegic SCI. In inferential statistics, a Pearson correlation coefficient (r) test was used to analyze objective two, identifying the correlation between the level of participation in daily activities (WHODAS-II scale) and QOL (WHOQOL-BREF scale) in this population. The magnitude of the correlation coefficient was interpreted as follows: small ($0.1 \le |r| < 0.3$), medium ($0.3 \le |r| < 0.5$), and large ($|r| \ge 0.5$). A positive or negative relationship was determined by the sign of the correlation coefficient, with a significance level of 0.05 and 0.01 and a 95% confidence interval (Creswell & Creswell, 2022).

4.0 Findings

4.1 Socio-demographic Characteristics

This study involved a total of 140 individuals with paraplegic SCI, most of whom were young adults in their mid-thirties, who were diagnosed with SCI approximately 5 years ago from their current age. The majority of participants came from middle and lower-socioeconomic-class families and relied on various sources for daily survival, such as family support, pensions, zakat (charitable giving), and assistance from relatives. Some participants were independent and engaged in activities like freelancing, running their businesses, or working in different government departments in Pakistan. Table 1 provides an overview of the participants' socio-demographic characteristics.

The vast majority of the participants were males (97.9%, n=137), and a smaller proportion were females (2.1%, n=3), falling within the age range of 21 to 60 years. Among the participants, a significant number were married (57.1%, n=80), and about (35.8% n=50) had completed their secondary education. In terms of employment status, a majority of the participants were either unemployed or dependent (56.4%, n=80), while (24.9% n=34) worked full-time, and (18.6% n=26) worked part-time.

Regarding the nature of their injuries, traumatic injuries were the most common (85.7%, n=120). These injuries resulted from various incidents, including gunshots, motorcycle, and rickshaw accidents, falls from heights, bomb blast fragments, wave accidents, accidents involving scraping machine belts, and billboard falls. Non-traumatic injuries accounted for (14.3% n=20) of the cases and were caused by conditions like tumors and transverse myelitis disease. Most participants' injuries were between the T1 and T12 spinal vertebrae (71.5%, n=100). The majority of the participants had received comprehensive rehabilitation services (72.9%, n=102), and the length of follow-up since the injury ranged from 15 days to 8 years.

Table 1: The Socio-demographic characteristics information of the participants.

Socio-demographic Characteristic	Frequency (n)	Percentage (%)
Genders		
Male	137	97.9%
Female	3	2.1%
Ages		
21-30	54	38.6%
31-40	59	42.1%
41-50	25	17.9%
51-60	02	1.4%
Marital Status		
Married	80	57.1%
Un-married	60	42.9%
Education Level		
Primary Education	62	44.2%
Secondary Education	50	35.8%
Higher Education	28	20%
Employment Status		
Working Full Time	34	24.9%
Working Part-Time	26	18.6%
Unemployed/Dependent	80	56.5%
Nature of Injury		
Traumatic Injury	120	85.7%
Bolt Injury/Violence	20	14.2%
Bomb Blast Injury	10	7.1%
Vehicle Accident Injury	40	28.5%
Falls from Height Injury	35	25%
Billboard Fall Injury	05	3.5%
Work Place Injury	10	7.1%
Non Traumatic Injury	20	14.3%
Tumour	08	5.7%
Transverse Myelitis	12	8.5%
Level of Injury		
T1-T12 Level of Injury	100	71.5%
L1-L5 Level of Injury	40	28.5%
Rehab Programs		
Attended	102	72.9%
Not attended	38	27.1%

4.2 Level of Participation in daily activity across the domains of the WHODAS-II Scale

The study found that the majority of individuals with paraplegic SCI experienced varying levels of difficulty participating in daily activities, ranging from mild to extreme, across all domains of the WHODAS-II scale as presented in Table 2. Specifically, the sixth domain of social participation had the highest mean and standard deviation score of (M=25.95, ± SD=7.008), indicating that a significant number of participants faced severe to extreme challenges in joining community activities, participating with dignity, maintaining a healthy lifestyle, engaging in recreational activities, and social interactions. The fifth domain of life activities had the second highest mean and standard deviation score of (M=23.82 ± SD=7.831), suggesting that participants encountered severe to extreme difficulties in performing everyday tasks, leisure activities, employment, household work, and fulfilling responsibilities in the community.

The mobility domain had the third highest mean and standard deviation score of (M=15.76 ± SD=4.661), indicating that participants faced severe to extreme challenges in activities such as getting around, physical movements, standing for long periods, changing positions quickly, and walking long distances within the community. The getting along domain had the fourth highest mean and standard deviation score of (M=11.2 ± SD=5.1), highlighting that participants experienced moderate to severe difficulties in interacting with people, maintaining friendships, making new friends, and engaging in sexual activities.

Lastly, self-care and cognition had moderate mean and standard deviation scores of (M=8.98 ± SD=3.2 and M=9.51 ± SD=4.8), respectively. This suggests that while the majority of participants were independent in these domains, they still encountered mild to moderate challenges in a few activities such as washing, dressing, eating, staying alone, concentrating, remembering, analysing, learning new tasks, and understanding activities. Overall, the WHODAS-II (36 items) total scores indicated that most participants scored between 36 and 180 range in all domains, which suggests varying levels of participation in daily activities. The domains with the highest scores, were social participation followed by life activities, getting along, mobility, self-care, and cognition.

Table 2: Distribution of the responses of participant's domains wise on the WHODAS-II scale (n=140)

Domains of WHODAS-II scale	Scoring	None limitation	Mild limitation	Moderate limitation	Severe limitation	Extreme limitation
Cognition	6-30 (6 items)	n=98, 70%	n=22, 15.7%	n=10, 7.14%	n=05, 3.57%	n=05, 3.57%
Mobility	5–25 (5 items)	n=05, 3.57%	n=10, 7.14%	n=12, 8.57%	n=68, 48.5%	n=45, 32.1%
Self-Care	4-20 (4 items)	n=22, 15.7%	n=84, 60%	n=16, 11.4%	n=10, 7.1%	n=08, 5.71%
Getting Along	5–25 (5 items)	n=06, 4.28%	n=14, 10%	n=50, 35.7%	n=50, 35.7%	n=20, 14.28%
Life Activities	8–40 (8 items)	n=08, 5.71%	n=16, 11.4%	n=24, 17.14%	n=32, 22.85%	n=60, 42.85%
Social Participation	8–40(8 items)	n=03, 2.14%	n=02, 1.42%	n=10, 7.14%	n=90, 64.28%	n=35, 25%

4.3 Quality of Life (QOL) across the domains of the WHOQOL-BREF scale

The study found that the QOL of Individuals with paraplegic SCI on the WHOQOL-BREF scale across four domains; physical, psychological, social, and environmental health was significantly low except for the social health domain, as presented in Table 3. The first domain, physical health, had the highest mean and standard deviation score of (M=20.95 ± SD=6.194), suggesting that participants experienced very low QOL in their physical well-being. They faced challenges such as physical pain, dependent on medication, lack of energy, and mobility and they need assistance or adaptive equipment to perform daily tasks and leisure activities. The fourth domain of environmental health had the second-highest mean and standard deviation score of (M=20.1 ± SD=7.64), indicating that participants had a very low QOL in their physical environment. Due to inconvenient transport facilities and distance from healthcare services in the Pakistani community, individuals with paraplegic SCI faced difficulties related to their living conditions and lacked a healthy environment beneficial to their well-being and leisure activities.

The second domain of psychological health had the third highest mean and standard deviation score of (M=16.56 ± SD=6.021), suggesting that participants experienced very low QOL in their psychological well-being. They dealt with emotional distress, disturbed bodily appearance, depression, anxiety, and a sense of meaninglessness in life, which affected their overall well-being and ability to participate in daily activities. Lastly, the third domain of social relationship health had the lowest mean and standard deviation score of (M=8.7 ± SD=2.713), suggesting relatively normal QOL in participants' social interactions due to proper attention from friends and family members, and their ability to adapt to social situations after hospital discharge, leading to overall satisfaction with their lives.

Furthermore, the WHOQOL-BREF scale of two items related to the general perception of overall health-related QOL and overall satisfaction with QOL revealed that participants perceived their health-related QOL as poor (M=2.35 ± SD=1.118), and expressed dissatisfaction with their lives (M=2.89 ± SD=0.895). Overall, the WHOQOL-BREF scale (26 items) total scores indicated that most participants scored below 45 in the domains of physical, psychological, and environmental health, indicating low QOL and facing problems in daily activities in the community. In contrast, the social health domain showed higher scores, ranging from 45 to 65, indicating a normal QOL in terms of social interaction.

Table 3: Distribution of the responses of participant's domains wise on the WHOQOL-BREF scale (n=140)

Domains of WHOQOL BREF Scale	High QOL range (>65)	Normal QOL range (45 to 65)	Low QOL range (< 45)
Physical Health	n=10, 7.14%	n=35, 25%	n=95, 67.85%
Psychological Health	n=18, 12.85%	n=42, 30%	n=80, 57.1%
Environmental Health	n=10, 7.14%	n=40, 28.57%	n=90, 64.28%
Social Health	n=13, 9.28%	n=77, 55%	n=50, 35.7%

4.4 Correlation between participation in daily activity and QOL

The Pearson Correlation analysis of the study found a moderately negative inverse statistically significant correlation (r = -.586, p-value = .000, two-tailed) between participation in daily activities (WHODAS-II scale) and QOL (WHOQOL-BREF scale) among individuals with paraplegic SCI (n=140). This correlation suggests that individuals who engage in higher levels of participation in daily activities tend to have better QOL, while those with lower levels of participation in daily activities tend to have lower QOL. The effect size/coefficient of determination ($r^2 = 0.34$) indicates that participation in daily activities explains 34% of the changes in QOL among individuals with paraplegic SCI in Pakistan, while the remaining 66% is influenced by other factors.

Table 4: Correlations between level of participation in daily activity and QOL among individuals with paraplegic SCI (n=140)

		(WHODAS-II scale)
Quality of Life	Pearson Correlation	-.586**
(WHOQOL BREF scale)	Sig. (2-tailed)	.000

5.0 Discussion

This is the first study conducted in Pakistan that aimed to assess the level of participation in daily activities and QOL among individuals with paraplegic SCI and to examine the relationship between these two variables. The findings from the WHODAS-II scale revealed that individuals with paraplegic SCI experienced significant difficulties in their participation in daily activities after hospital discharge. They faced severe to extreme challenges in physical movement, getting around, leisure activities, employment, responsibilities, social interactions, and community involvement. These difficulties were influenced by factors such as physical pain, lack of energy, pressure sores, urinary tract dysfunction, hyperthermia, sleep issues, poor access to the physical environment, uneven roads in the community, depression, shock, feelings of failure, and dependency, hopelessness, guilt for not being able to support their families, limited financial resources, inadequate comprehensive rehabilitation services, absence of government social policies and lack of employment opportunities. These challenges significantly affected their participation in daily activities (Kashif et al., 2019).

However, individuals with paraplegic SCI exhibited mild difficulties in self-care and cognitive activities suggesting that they are relatively independent in these activities, possibly due to the availability of resources such as home modifications, assistive devices, and adaptive strategies. These findings are consistent with previous studies conducted in low-resource income countries like Pakistan, which have highlighted the significant challenges faced by individuals with SCI, including confinement to their homes, unemployment, poverty, dependency, and secondary medical complications. These challenges contribute to decreased participation in daily activities and hinder community reintegration (Arsh et al., 2017).

The findings from the WHOQOL-BREF scale indicated that individuals with paraplegic SCI reported poor to very poor overall QOL and dissatisfaction with their health after hospital discharge, except in the social health domain where they rated their QOL as normal due to the support and attention received from family and friends. However, in the domains of physical, psychological, and environmental health, they perceived several challenges which prevented the majority of them from accessing the necessary support to adjust their condition and fully participate in communities. These challenges had a significant impact on their QOL, emphasizing the need for comprehensive rehabilitation and support services to facilitate participation in daily activities (Bangash et al., 2023).

This study found a moderate and significant correlation between participation in daily activities and QOL among individuals with paraplegic SCI. Participants who actively engaged in daily activities such as sports, recreational activities, and spirituality report feelings of enjoyment, achievement, and fulfillment within their community after hospital discharge and tended to have higher QOL. These findings aligned with previous research suggesting that active participation in daily activities contributes to individuals' sense of value, integration, and effective management of their lives (Ahmad et al., 2022). Comprehensive rehabilitation and post-discharge follow-up play a crucial role in improving participation in daily activities, reducing secondary complications, minimizing pain, fostering positive emotions, developing a sense of accomplishment, and ultimately improving overall QOL (Ahmed et al., 2018).

6.0 Conclusion & Recommendations

In conclusion, this study provides valuable insights into the level of participation in daily activities and QOL among individuals with paraplegic SCI in Pakistan. The findings demonstrate that increased participation in daily activities is positively correlated with an improvement in overall QOL. This highlights the importance of focusing on meaningful activity engagement in the rehabilitation process for individuals with paraplegic SCI. The study sheds light on the challenges faced by this population in various domains of daily living, including social participation, life activities, mobility, getting along, self-care, and cognition. It also identifies specific areas where individuals with paraplegic SCI experience lower QOL, such as physical health, psychological well-being, and the environmental context. Some limitations have been identified, such as the smaller sample size and the focus on individuals with paraplegic SCI only, which could restrict broader conclusions about other SCI conditions. Therefore, future studies should consider a larger and more diverse sample size, including individuals with various types of SCI, to enhance the generalizability of findings.

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Paper Contribution to Related Field of Study

This study contributes to various fields, including occupational therapy, physiotherapy, health education and rehabilitation sciences by highlighting the crucial link between daily activity participation and QOL for individuals with paraplegic SCI. The findings of this study suggest that engagement in meaningful activities can enhance the overall well-being of individuals with paraplegic SCI.

References

Alve, Y. A., Bontje, P., & Begum, S. (2019). Endeavoring sustainable participation: post-discharge adaptation process of occupational participation among persons with spinal cord injury in Bangladesh. World Federation of Occupational Therapists Bulletin, 75(2), 112-123.

Akyurek, G., & Bumin, G. (2017). Community participation in people with disabilities. Occupational therapy-occupation-focused holistic practice in rehabilitation. Croatia: Intech, 81-107.

Arsh, A., Darain, H., Muhammad, D., Khan, M. N., Ilyas, S. M., Zeb, A., & Khalid, S. (2017). Factors responsible for readmissions to a rehabilitation center following spinal cord injury. Cell, 333, 9482238.

Arsh, A., Anwar, Z., Zeb, A., & Ilyas, S. M. (2020). Effectiveness of occupational therapy in improving activities of daily living performance in complete cervical tetraplegic patients; A quasi experimental study. Pakistan journal of medical sciences, 36(2), 96.

Ahmad, S., Islam, M., Zada, M., Khattak, A., Ullah, R., Han, H., & Araya-Castillo, L. (2022). The influence of decision making on social inclusion of persons with disabilities: a case study of Khyber Pakhtunkhwa. International Journal of Environmental Research and Public Health, 19(2), 858.

Ahmed, N., Quadir, M. M., Rahman, M. A., & Alamgir, H. (2018). Community integration and life satisfaction among individuals with spinal cord injury living in the community after receiving institutional care in Bangladesh. Disability and Rehabilitation, 40(9), 1033-1040.

Alizadeh Zarei, M., Mohammadi, A., Mehraban, A. H., Ansari Damavandi, S., & Amini, M. (2017). Participation in daily life activities among children with cancer. Middle East Journal of Cancer, 8(4), 213-222.

Boop, C., Cahill, S. M., Davis, C., Dorsey, J., Gibbs, V., Herr, B. & Lieberman, D. (2020). Occupational therapy practice framework: Domain and process fourth edition. AJOT: American Journal of Occupational Therapy, 74(S2), 1-85.

Barclay, L., McDonald, R., & Lentin, P. (2015). Social and community participation following spinal cord injury: a critical review. International Journal of Rehabilitation Research, 38(1), 1-19.

Bangash, S. U., & Muhammad, H. (2023). Exploring Emotional, Problem Focus and Dysfunctional Coping Strategies and Life Satisfaction among Married and Unmarried Spinal Cord Injury Patients. Annals of Human and Social Sciences, 4(2), 59-70.

Creswell, J. W., & Creswell, J. D. (2022). Research design: Qualitative, quantitative, and mixed methods approaches (6th ed.).SAGE Publications.

Darain, H., Ilyas, S. M., Zeb, A., Ullah, I., & Muhammad, D. (2017). Epidemiology of spinal cord injury in Pakistan: a retrospective study. Physikalische Medizin, Rehabilitationsmedizin, Kurortmedizin, 27(02), 106-109.

Daud, A. Z. C., Judd, J., Yau, M., & Barnett, F. (2016). Issue in applying occupation-based intervention in clinical practice: a Delphi study. Procedia-Social and behavioral sciences, 222, 272-282.

Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics, 5(1).

Fekete, C., Siegrist, J., Post, M. W., & Brinkhof, M. W. (2019). Productive activities, mental health and quality of life in disability: exploring the role enhancement and the role strain hypotheses. BMC Psychology, 7, 1-13.

Halvorsen, A., Kristine, P. A. P. E., Marcel, W. M., Biering-Sørensen, F., Mikalsen, S., Hansen, A. N., & Steinsbekk, A. (2021). Participation and quality of life in persons living with spinal cord injury in Norway. Journal of Rehabilitation Medicine, 53(7).

Huang, W. C., Wu, T. F., Liao, H. F., Liou, T. H., & Kang, Y. W. (2016). The relationship of participation restriction to quality of life in individuals with spinal cord injury. Phy Med Rehabil Int, 3(5), 1099.

Hair, J. F., Page, M., & Brunsveld, N. (2020). Essentials of business research methods (4th ed.).Routledge

Irfan, M., Sethi, M. R., Khan, I., Awan, N. R., Naz, F., Saleem, U., & Naeem, F. (2017). TRANSLATION AND VALIDATION IN PASHTO (3): WORLD HEALTH ORGANIZATION DISABILITY ASSESSMENT SCHEDULE 2.0. Journal of Postgraduate Medical Institute, 31(4).

Islam, M. S., Jahan, H., Hossain, M. S., & Patwary, M. F. K. (2016). Quality of life among persons with paraplegic spinal cord injury. Disability, CBR & Inclusive Development, 27(3), 102-117.

Lodhi, F. S., Raza, O., Montazeri, A., Nedjat, S., Yaseri, M., & Holakouie-Naieni, K. (2017). Psychometric properties of the Urdu version of the World Health Organization's quality of life questionnaire (WHOQOL-BREF). Medical Journal of the Islamic Republic of Iran, 31, 129.

Kesmodel, U. S. (2018). Cross-sectional studies – what are they good for? Acta Obstetricia et Gynecologica Scandinavica, 97(4), 388–393.

Khan, D. Q.F., Bilal, H. D., Khan, M.S. D., Ahmad, N.D., Jaffar, M. D., Ayaz, D. M., & Khalid, S. D. (2018). The Prevalence of Traumatic Spinal Cord Injury in Khyber Pakhtunkhwa from 2008 to 2017: A Cross-Sectional Study. International Journal of Scientific & Engineering Research, 9(10), 776.

Kashif, M., Jones, S., Haider Darain, H. I., Raqib, A., & Butt, A. A. (2019). Factors influencing the community integration of patients following traumatic spinal cord injury: a systematic review. *JPMA*, *69*(1336).

Mat Rosly, M., Halaki, M., Hasnan, N., Mat Rosly, H., Davis, G. M., & Husain, R. (2018). Leisure time physical activity participation in individuals with spinal cord injury in Malaysia: barriers to exercise. Spinal cord, 56(8), 806-818.

Ripat, J. D., & Woodgate, R. L. (2012). Self-perceived participation among adults with spinal cord injury: a grounded theory study. Spinal cord, 50(12), 908-914.

Rahman, E., Bardhan, N., Curtin, M., Islam, M. S., Patwary, M. F. K., & Kumar Das, S. (2023). An assessment of disability and quality of life in people with spinal cord injury upon discharge from a Bangladesh rehabilitation unit. Spinal Cord, 61(1), 37-42.

Sajid, M. I., Ahmad, B., Mahmood, S. D., & Darbar, A. (2020). Gunshot injury to spine: an institutional experience of management and complications from a developing country. Chinese Journal of traumatology, 23(6), 324-328.

Serres-Lafontaine, A. D., Labbé, D., Batcho, C. S., Norris, L., & Best, K. L. (2023). Social participation of individuals with spinal injury using wheelchairs in rural Tanzania after peer training and entrepreneurial skills training. African journal of disability, 12, 975.

Wolf, T. J., & Baum, C. M. (2015). Improving participation and quality of life through occupation. Stroke rehabilitation, 46-58.

Yasmin, R., Kousar, S., Sultana, S., Noor, N., Amin, J., & Abbasi, S. I. (2023). Assessment of Stress Level and Quality of Life in Spinal Cord Injury Patients. Pakistan Journal of Medical & Health Sciences, 17(05), 107-107.