

ORIGINAL ARTICLE

Predictors of Participation Enfranchisement After Spinal Cord Injury: The Mediating Role of Depression and Moderating Role of Demographic and Injury Characteristics



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Abstract

Objectives: (1) To examine the mediating effects of depressive symptoms on the relations between employment, grief, depression treatment, and participation enfranchisement after spinal cord injury (SCI); and (2) to examine the moderating role of demographic and injury characteristics, including sex, race, marital status, education, and injury level, and completeness on these relations.

Design: Cross-sectional survey as part of the Project to Improve Symptoms and Mood after SCI (PRISMS).

Setting: Rehabilitation facilities.

Participants: Persons with SCI (N = 522; average age, 42y; 76% men; 64% white; 64% completed at least a high school education) enrolled from 2007 to 2011.

Interventions: Not applicable.

Main Outcome Measure: Participation enfranchisement.

Results: The final model fit the data relatively well (comparative fit index = .939; Tucker-Lewis Index = .894; root mean square error of approximation = .066; 90% confidence interval, .043–.089), explaining 32% of the variance in participation enfranchisement. Enfranchisement was positively related to employment and negatively related to depression. Grieving the loss of a loved one and the use of an antidepressant or psychotherapy were related to participation enfranchisement; these relations were mediated by depressive symptoms. Multigroup analyses supported the model's invariance across sex, marital status, severity of injury, and level of injury.

Conclusions: Depression appears to mediate the influence of employment, grief, and depression treatments on participation enfranchisement after SCI. These relations are applicable regardless of sex, marital status, and injury completeness and level. These findings highlight efforts to improve the detection and treatment of depression in SCI rehabilitation programs that may enhance participation.

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Traumatic spinal cord injury (SCI) is a life-altering event that affects persons of all ages.¹ SCI can have lasting emotional consequences, including increasing the risk of major depressive disorder (MDD) and other mood disorders.² These disorders can limit a person's activities and participation.³ Participation, defined as social involvement in a life situation,⁴ is described in the *International Classification of Functioning, Disability and Health* (ICF) model as a long-term rehabilitation outcome.⁵ Although the concept of participation has gained widespread acceptance, its definition and measurement remain challenging.⁶ Complicating this issue is that grounding the definition and measurement of participation in the ICF does not adequately capture the nuances of how participation is experienced. Earlier studies have used terms (eg, social or community [re]integration, social health, social adjustment, independent living, participation) from various disciplines.^{7,8} Persons with disabilities have expressed their desire to define and pursue participation on their own terms rather than by predetermined societal expectations.⁹

In this study, we used a relatively new concept and measure of participation enfranchisement, which assesses the subjective experience of participation. The term reflects individuals' values that give meaning to participation across life domains; it is not tied to a particular activity or form of participation. Enfranchisement reflects active engagement, choice and control, access and opportunity, fulfilling responsibilities, having an impact and supporting others, and social connection. This construct reflects persons' perception on the communities in which they want to participate and respect their full participation. Therefore, enfranchisement reflects the extent to which persons perceive their communities as valuing, respecting, and fully including them.¹⁰

Although few studies discuss the concept of enfranchisement, several address participation. Persons with higher levels of participation and greater engagement in activities tend to experience better quality of life.¹¹ To improve the participation of persons with SCI, it is important to understand how potentially modifiable factors (eg, personal and psychosocial characteristics) are associated with participation. In this study we examined 2 broad categories of factors related to participation: psychosocial factors and demographic and injury characteristics. Frequent psychological consequences of SCI are depression and grief reactions. SCI can result in grief reactions as persons deal with major losses. Depressed mood is common and reflects a normative grieving process.¹² Prevalence estimates for MDD among persons with SCI range between 20% and 43% during inpatient rehabilitation and 25% and 30% after discharge.¹³ Regardless of time since injury, persons with SCI who experience stressful events (eg, death of a loved one) are at an increased risk of depressive symptoms.¹⁴ Depressive symptoms are associated with poorer

outcomes including lower community mobility,¹⁵ lower frequency of leisure activities,¹⁶ less social integration,¹⁷ and reduced likelihood of employment.¹⁸ Depressed individuals spend more hours in bed and fewer days out of the house than their nondepressed counterparts.¹⁹

Antidepressant medication and psychotherapy are used singly or in combination to treat depressive symptoms after SCI.²⁰ Open trials of various medications demonstrate benefits in reducing depressive symptoms.²¹ Psychological interventions (eg, coping effectiveness training,²² cognitive behavior therapy²⁰) are effective in reducing depressive symptoms, and some are effective in increasing quality of life²³ and participation.²⁴

Employment is another key factor related to depressive symptoms. Employed persons with SCI report less emotional distress than those who are unemployed.²⁵ Moreover, employment is a critical part of one's social roles and participation.^{26,27}

Some studies, but not all, suggest that demographic and injury characteristics are related to participation in life situations. One study reported that women with SCI have higher occupational integration and lower physical independence, mobility, social integration, and economic self-sufficiency than men,²⁸ whereas another study found no relation between sex and participation.²⁷ Some studies^{27,28} report that persons with less severe injuries, lower levels of injury, younger age at injury, living more years with SCI, white race, higher education, and employment achieve greater community integration; however, these factors explained minimal variance. Marriage and spousal support may be related to participation.²⁹ Because the literature is inconsistent and the magnitude of the relations of psychosocial factors to participation may vary across persons with different demographic and injury characteristics, it is important to treat these factors as potential moderators and examine how they influence the relations of psychosocial factors to participation.

In summary, prior studies have identified several potential predictors of participation after SCI. There is evidence linking grief, employment, depressive symptoms, and their treatments to participation. However, our understanding of how depressive symptoms mediate participation enfranchisement is limited, as is our understanding of how these relations are moderated by demographic and injury characteristics. The first aim of this study was to examine the relations of psychosocial factors to participation enfranchisement through their associations with depression using the structural equation model (SEM).³⁰ The second aim was to test the invariance of these relations across sex, race, marital status, education, completeness of injury, and level of injury.

Methods

Participants and procedures

Participants were drawn from a multisite, randomized controlled trial of venlafaxine extended release for MDD in persons with traumatic SCI called the Project to Improve Symptoms and Mood after Spinal Cord Injury. Of the participants, 202 were from the Rehabilitation Institute of Chicago; 147 were from the University of Michigan, Ann Arbor; 86 were from the University of Alabama, Birmingham; 62 were from the Baylor Institute of Rehabilitation; and 25 were from the University of Washington, Seattle. Participants were recruited primarily through outpatient clinics and from the SCI Model System database. Others were recruited from the community through newsletters, flyers, and affiliated hospital referrals.

List of abbreviations:

CFI	comparative fit index
CI	confidence interval
ICF	<i>International Classification of Functioning, Disability and Health</i>
MDD	major depressive disorder
ML	maximum likelihood
PHQ-9	Patient Health Questionnaire-9
RMSEA	root mean square error of approximation
SCI	spinal cord injury
SEM	structural equation model
TLI	Tucker-Lewis Index

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