

Depression and Spinal Cord Injury

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ABSTRACT

Spinal Cord Injury refers to damage to the spinal cord. It may cause permanent disability or to some extent loss of sensation in parts of the body below the level of the damage. Literature data supports that Spinal Cord Injury (SCI) patients show symptoms of depression as a secondary complication. The purpose of this review is to demonstrate the association of major depressive disorder (MDD) with Spinal Cord Injury. A large proportion of patients will be diagnosed with depression 1 to 5 years after the injury. Tools for assessing such a mental disorder vary, the most common being the Patient Health Questionnaire (PHQ-9) which includes 9 relevant questions. Also, Major Depressive Disorder is related to the gender, age and ethnicity of the patient. The immediate need to deal with it is necessary as there is a high possibility that it will become chronic or recrudescence. In addition, it is necessary to evaluate the quality of life of people with spinal cord injury, which decreases after the injury and increases the likelihood of mental disorder.

Keywords: Spinal Cord Injury, Major Depressive Disorder, quality of life, assessment tools.

Introduction

Spinal Cord Injury represents a major traumatic event in a person's life and usually leads to pain and loss of motor and sensory function. People with Traumatic Spinal Cord Injury (SCI) may be vulnerable to complications such as pneumonia, urinary tract infections, cardiovascular disease, chronic pain and depression. This can reduce their quality of life and disturb their mental state. Depressive disorders are the most common form of psychological distress in SCI and appear to be more common than in the non-disabled

population [5][14].

Research conducted at Dhulikhel Hospital and Spinal Injury Rehabilitation Center, showed that 68% of people with Spinal Cord Injury, who were on average at the age of 34,8 years, were in a depressed mood. Most of the participants were male (67.4) and had paraplegia (73.7). This state of depressed mood was significantly associated with gender, education, type of injury, and with the time of its occurrence since the injury [2]. Depressive symptoms are particularly prevalent after SCI and are related to aging, gender, or ethnicity, and there

appear to be lower levels of subjective well-being SWB related to income, work, and educational opportunities among minority participants, with these differences possibly related to ethnic differences in socioeconomic status. (education and income) [5].

The aim of this study was to investigate the prevalence of depression after SCI and its association with pathophysiological, demographic, and socioeconomic factors, such as gender, age, level of injury, economic status, and suicidal ideation and highlight the importance of detecting and validly treating depression after a Spinal Cord Injury.

A review of the current literature was performed using the PUBMED online database and the following keywords: Spinal Cord Injury, Major Depressive Disorder, quality of life, assessment tools. Inclusion criteria for the review were: Primary studies of people with SCI, published after 2000 in the English language; the initial search came to 50 articles. After screening titles and abstracts, 26 articles were rejected because they did not meet the inclusion criteria. More specifically, studies were rejected because of their irrelevant title and because the population examined was animals or people without SCI. Eleven of the studies were rejected because they did not involve Spinal Cord Injury and 15 because they did not include the term depression.

Discussion

Finally, there were 24 studies included in the present review (Table 1). A cross-sectional study of 134 adults (≥18 years) with SCI was conducted by the Brain and Spinal Cord Injury Research Center (BASIR) clinic, Tehran University of Medical Sciences. The Beck Depression Inventory (BDI-II Persian), a multiple-choice inventory with 21 questions, was used to measure the presence and severity of depression. Data were collected through interview. The results were that (49.3%) of the participants had mild to severe depression. There was a greater likelihood of depression in people with SCI who were female and had quadriplegia, suicidal thoughts, a history of attempted suicide, a low educational level, or cared for a family member other than a spouse or parents. Conclusion: Depression was highly prevalent in individuals with SCI and was associated with certain demographic, pathophysiological and

socioeconomic indicators. The main predictors and factors affecting depression should be determined to provide early detection and early treatment to prevent more complications and improve the quality of life of people with SCI [7,11].

Other research conducted with the Patient-Reported Outcomes Measurement System (PROMIS). Physical Function Bank data), depression (Patient Health Questionnaire-9 (PHQ-9)), pain severity (0–10 numerical rating scale (NRS)) and fatigue (0–10 NRS) showed that pain and fatigue were independently associated with depression.

In addition, depression was more severe in middle-aged participants than in younger or older participants. Physical function decreased with increasing age, as well as with higher level of injury [10].

Depression

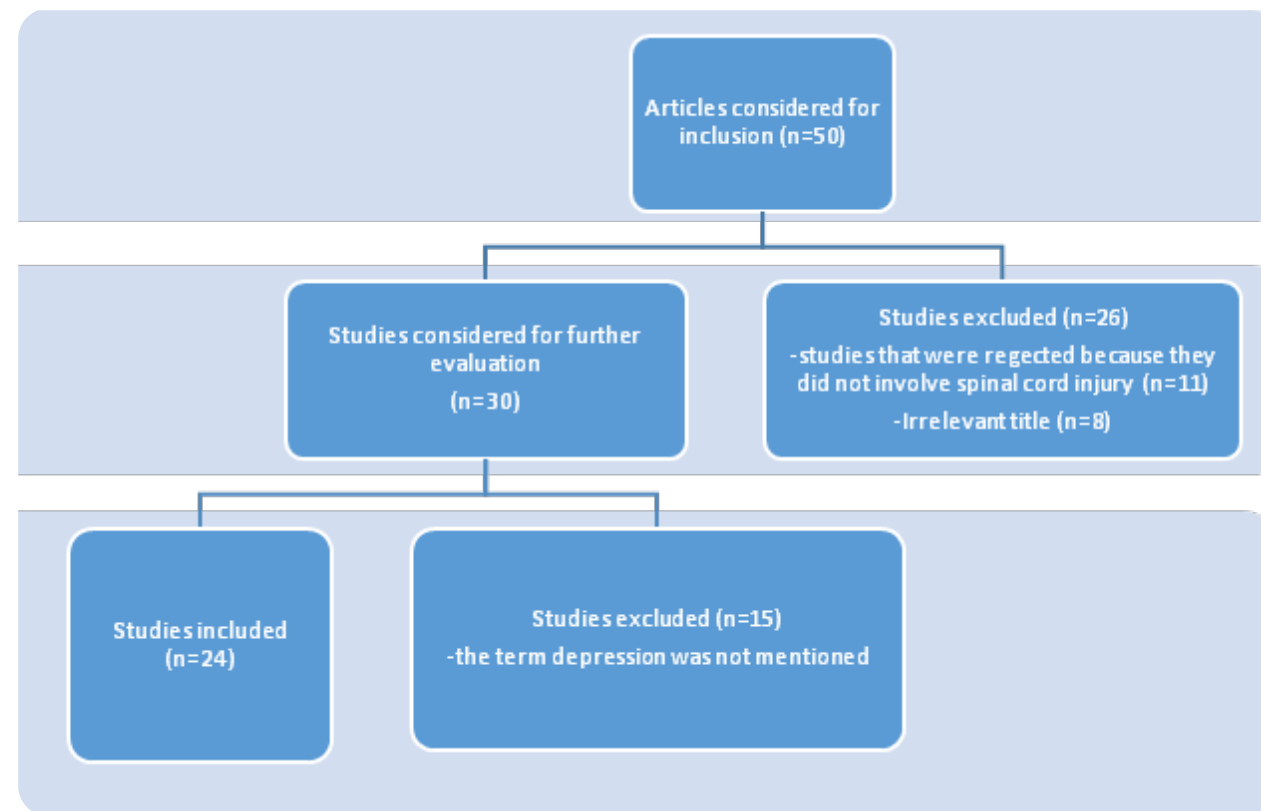
The term 'depression' does not only refer to an emotional state. It is also associated with thought, behavior and certain physical changes. Patients with depression tend to have negative thoughts about themselves, their experiences and their future. Initial experiments validate the tests for depression, creating a powerful model system for further understanding of the relationships between molecular changes induced by SCI and the development of depression [13].

People living with a Spinal Cord Injury (SCI) run an increased risk of a number of chronic health conditions, including secondary comorbidities that may develop or be affected by the injury, the presence of the lesion, and/or the aging process [4,9].

Having Major Depressive Disorder (MDD) is associated with poorer subjective health, lower satisfaction in life, and greater difficulty in daily role functioning. Both physical and psychological symptoms predict potential MDD [3]. Individuals at highest risk are those with a history of depression prior injury [hazard ratio (HRR) 1.6; 95% CI: 1.1–2.3], history of substance abuse (HRR 1.6; 95% CI: 1.2–2.3) or permanent neurological deficit (HRR 1.6; 95% CI: 1.2–2.1). Depression occurs frequently and early on, in people suffering from SCI. Both the patient and the injury factors are related to the development of depression. These data should be used to target patients for mental health assessment and services during initial hospitalization and after

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discharge from hospital and their intergration into the community [6,12,21].

The complexity of the mental health problems faced by many people with Spinal Cord Injury living in the community needs to be highlighted. Providing mental health services to this vulnerable population requires recognition of co-morbidity and issues of mobility [15]. However, recent studies indicate that depressive symptomatology increases immediately after hospital discharge but decreases significantly 36 months thereafter [18].

Depression, Quality of life and Anxiety

Quality of life is related to health (HRQOL) and well-being. With various instruments of measurement HRQOL (SF-36 and Illness Impact Profile) and well-being (Life Satisfaction Scale and Life Satisfaction Questionnaire) domains are identified where the quality of life of people with SCI is inferior, compared to that of the general population [22,24].

Depression and assessment

A variety of tools such as a depression scale can be used to assess depression so as to rate its symptoms, weekly score recording as well as questionnaires such as the PHQ-9. A reliable scientific tool used to determine the presence of depression with the help of only 9 questions. The authors investigated the PHQ-9 factor structure among individuals with SCI at various time points post-injury. Contingency factors were associated with life satisfaction. This resulted in a 2-factor solution for all groups, with 3 emotional-reported items (feeling depressed/hopeless, feeling bad about self/failure, and suicidal ideation) and 3 physical-reported items (sleep disturbance, low energy/fatigue, and appetite disturbance) loading consistently on Emotional and Physical factors, respectively, at all time points. Factor scores were negatively correlated with life satisfaction.

It remains unclear whether body object validation

reflects depressive symptomatology per se. However, validation is still associated with life satisfaction [3,12,19,20,21,25,26].

Depression and treatment

The response to SCI was a stable low depression, whereas persistent moderate to severe depression, mainly, represented a continuation or recrudescence of prior to injury depression. This line of research has the potential to improve identification of subgroups destined for negative outcomes and inform early intervention studies [17]. Depression is almost always treatable. The strategies used are cognitive psychotherapy, medication, improving interpersonal relationships and behavioral activation. Cognitive behavioral therapy for depression helps patients learn new ways of thinking and behaving to ensure lasting results in improving their emotional state. It is essential, however, that a combination of these strategies must be applied in order to better deal with it. The low rate of mental health treatment for people with SCI and possible major depression has implications for improving the effectiveness of depression treatment in people with SCI [1,8,23].

To address this high prevalence, clinical doctors

should use these risk factors and on-going systematic screening to identify those at risk of depression. Aggravating health problems and the lack of effective depression treatment in SCI patients may contribute to high rates of chronic or recurrent depression [9]. There is a necessity for group psychological intervention with the aim to improve psychological adjustment, self-concept and adaptive coping following Spinal Cord Injury. The theoretical foundations of the Coping Effectiveness Training Program (CET) are based on Lazarus and Folkman's (1984) cognitive theory of stress and coping and cognitive behavioral therapy techniques [16]. A significant ($p < 0.001$) 57% reduction in depressive symptoms occurred in the group being treated, whereas there was no significant change in the untreated group. At the end of 6 months, 30% of participants were not depressed, 42% were mildly depressed, and 29% were still majorly depressed, but to a lesser extent. Activities in the community increased significantly during the treatment period, as did life satisfaction. In conclusion, while it is suggested that depression is treatable in this population, 6 months may not be a sufficient time frame to achieve maximum benefit [27].

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