Quick Review of Model System Research

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Depression and Pain among Inpatients with Spinal Cord Injury and Spinal Cord Disease: Differences in Symptoms and Neurological Function[1]

What is the study about?

The main purpose of this study was to analyze the relationship between depression and severity of pain among patients with a recent spinal cord injury or disease. The study also examined patient characteristics, neurological function and etiology (traumatic vs. non-traumatic).

Who participated in the study?

This study used data from medical records from 100 adults who had sustained spinal cord injury or had spinal cord disease and were admitted to a large hospital in the Midwest between January 2008 and July 2010. Patients were ages18 and over, receiving inpatient rehabilitation for the first time and completed the Patient Health Questionnaire 9 (PHQ-9) to determine their levels of depressive symptoms upon admission.

How was the study conducted?

A retrospective review of electronic medical records was the basis for this cross-sectional study. Data collected from patient records for patients with a spinal cord injury, demographic and neurological data were acquired from a large research database maintained as part of the SCI Model System program. Data collected from those with a spinal cord disease, demographic and neurological data were obtained from medical chart reviews. Depression data consisted of scores on the PHQ-9 completed shortly after admission to the rehabilitation unit. Pain data were acquired from data recorded by nurse inquiry and documented on the unit's nursing charts. Patients were asked to rate the severity of their current pain using a 0-10 numeric rating scale from the first and last 2 days on the rehabilitation unit.

What did the study find?

Demographic and neurological characteristics did not distinguish those experiencing different levels of depression. The only statistically significant differences in patients' attributes as a function of their pain ratings at admission was that those with non-traumatic spinal cord injuries reported lower levels of pain compared to those with traumatic spinal cord injuries. There were also statistically significant differences in pain rating at discharge as a function of both traumatic etiology and age at onset, with those reporting moderate to severe pain being significantly younger. The authors expected to find that patients with higher levels of depression at admission would have higher pain ratings. However, there was not a statistically significant relationship between levels of depressive symptomatology and pain ratings for the group as a whole on admission to the rehabilitation unit. The severity of depression or pain was not a function of neurological impairment. There was a relationship between pain and depression scores in patients with incomplete spinal injury (American Spinal Injury Association AIS D). Patients with paraplegia (Para ABC) had a disproportionately lower association between level of pain and depression. The authors noted that patients who had sustained traumatic injury were more likely to have pain. Finally, patients had a lower level of symptoms at discharge than on admission, which has been reported by others, as well.

The authors suggested that performing routine assessments of pain and depressive symptoms could help with early detection and possibly limit the occurrence of secondary complications of these symptoms and lower the need for long term opiates.

1.   Tate, D. G., Forchheimer, M. B., Karana-Zebari, D., Chiodo, A. E., & Kendall Thomas, J. Y. (2013). Depression and pain among inpatients with spinal cord injury and spinal cord disease: differences in symptoms and neurological function. *Disability and rehabilitation*, *35*(14), 1204-1212.