
ORIGINAL ARTICLE

Postconcussive Complaints, Anxiety, and Depression Related to Vocational Outcome in Minor to Severe Traumatic Brain Injury

Harm J. van der Horn, MSc,^a Jacoba M. Spikman, PhD,^b Bram Jacobs, MD,^a
Joukje van der Naalt, MD, PhD^a

From the Departments of ^aNeurology and ^bNeuropsychology, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands.

Abstract

Objectives: To investigate the relation of postconcussive complaints, anxiety, and depression with vocational outcome in patients with traumatic brain injury (TBI) of various severities and to assess sex differences.

Design: A prospective cross-sectional cohort study.

Setting: Level I trauma center.

Participants: Adults (N=242) with TBI of various severity.

Interventions: Not applicable.

Main Outcome Measures: Extended Glasgow Outcome Scale, return to work (RTW), Head Injury Symptom Checklist, and Hospital Anxiety and Depression Scale.

Results: In 67% of the patients, complaints were present; 22% were anxious, and 18% were depressed. The frequency of complaints increased significantly with injury severity, in contrast to anxiety and depression. Frequencies of patients with anxiety and depression (9% and 5%) were lower with complete RTW than with incomplete RTW (42% and 37%; $P<.001$). Patients with minor TBI with complaints were more anxious (50% vs 27%; $P<.05$) and depressed (46% vs 23%; $P<.05$) compared with patients with other severity categories and patients with incomplete RTW (67% vs 36% and 60% vs 30%, respectively). A higher percentage of women with minor TBI were depressed (45% vs 13%; $P=.01$) and had incomplete RTW (50% vs 18%; $P<.05$) compared with men. Multiple regression analysis showed that injury severity, complaints, anxiety, and depression were all predictive of RTW (explained variance 45%). In all severity categories, anxiety and depression were predictive of RTW, complaints, and sex only for minor TBI.

Conclusions: Anxiety and depression are related to vocational outcome after TBI, with a different profile in the minor TBI category, partly due to sex differences.

Archives of Physical Medicine and Rehabilitation 2013;94:867-74

© 2013 by the American Congress of Rehabilitation Medicine

Traumatic brain injury (TBI) is a prominent cause of neurologic and psychosocial dysfunction, constituting a worldwide public health issue. In the United States alone, an annual incidence of 1.4 million patients is reported, the majority being young adults with mild TBI.^{1,2} Disabilities after severe TBI are usually substantial, limiting patients in their normal daily functioning.³ In mild TBI, most patients recover within 3 to 6 months without any further medical treatment and resume previous work or activities. However, a subgroup of these patients has persistent postconcussive

complaints.^{4,5} These refer to physical, cognitive, behavioral, and/or social functioning and can last for several months to even years.⁵⁻⁷ The incidence rates of these complaints, however, vary with the diagnostic criteria that are used.^{8,9}

Although certain complaints can be underpinned by pathology, for instance, memory complaints resulting from objective memory deficits, other factors are identified that may influence the persistence of postconcussive complaints, such as previous TBI, preinjury psychiatric or personality problems, coping style, and sex differences.¹⁰⁻¹² In the present study, we focused on the relation with anxiety and depression. In several studies, a relation was found between the presence of postconcussive complaints and anxiety and depression in mild to moderate TBI^{8,9,13,14}; however,

No commercial party having a direct financial interest in the results of the research supporting this article has or will confer a benefit on the authors or on any organization with which the authors are associated.

the causal relation is not clear. It is likely that anxiety and depression result in a lower sense of well-being and increased problem-focused behavior, which manifests itself in an increased expression of complaints. However, it also seems plausible that overexpression of complaints contributes to the causation of emotional distress.

In various studies, depression and anxiety disorders were found after TBI, with varying rates.¹⁵⁻¹⁷ For example, Bombardier et al¹⁶ have recently reported that 53% of the patients hospitalized for TBI of various severity suffer from major depressive disorder during the first year after the accident. Furthermore, they found that these patients were at a higher risk of developing a comorbid anxiety disorder. However, the relation with injury severity was not reported. In other studies investigating this relation, results have been inconclusive so far.^{6,17-20} Therefore, more research is required to identify the exact relation of injury severity with anxiety and depression after TBI.

Postconcussive complaints are known to interfere with the resumption of work and other previous activities. Residual complaints are present even in the majority of patients with mild to moderate TBI resuming work completely.⁵ Anxiety and depression are also related to vocational outcome.¹⁹ More often, symptoms of anxiety and depression are found in patients who become unemployed after TBI than in those who are working. Although several studies found evidence for anxiety and depression to be a consequence of increased functional and vocational limitations, little is known about the direct influence of anxiety and depression on vocational outcome.^{6,21-23} This exact relation merits further investigation.

The influence of sex differences on outcome after TBI is under debate. Most frequently, women have shown poorer outcomes, a higher incidence of postconcussive complaints, and an increased susceptibility to affective disorders than do men after TBI.^{10,21,24}

In summary, the amount of complaints, anxiety, and depression are identified as factors having an influence on long-term vocational outcome after TBI, but the exact relations between these factors and injury severity are unclear so far. The main goal of the present study was to investigate how postconcussive complaints, anxiety, and depression are related to each other and to vocational outcome for different injury severity categories of TBI. In addition, the influence of sex differences was explored.

Methods

Patients

All patients with TBI included in this study were admitted to the University Medical Centre Groningen, a level 1 trauma center, in the period from 2005 to 2011. Exclusion criteria were age younger than 15 years and previous TBI (ie, any TBI in medical history). TBI was defined according to the criteria used by the American Congress of Rehabilitation Medicine with at least a period with

loss of consciousness or loss of memory for events (posttraumatic amnesia).²⁵ Glasgow Coma Scale (GCS) score and posttraumatic amnesia were determined on admission by a medical specialist and documented prior to admission by emergency medical personnel in the field. With this score, 3 severity groups were defined: minor (GCS score = 15), mild (GCS score = 13–14), and moderate-to-severe TBI (GCS score = 3–12). This subdivision was made in agreement with other studies considering that the majority of patients sustain a minor or mild TBI.²⁶ Disentangling the minor from the mild category might provide valuable information about the differences between these groups. Considering the overall less favorable outcome of patients with moderate and severe TBI, these categories were combined.²⁷ Outcome was determined by an experienced trauma neurologist (J.vdN.) unaware of injury variables: at 6 months ± 2 weeks for patients with minor and mild TBI and 12 months ± 4 weeks for patients with moderate-severe TBI. The questionnaires for complaints, anxiety, and depression were filled in at the moment of outcome. Only patients with an extended Glasgow Outcome Scale score of higher than 2 were included. Data were obtained in compliance with the ethical regulations of our institute. Computed tomography (CT) on admission was done in 233 patients; in 9 patients (4%), CT data were not available. Scoring was done according to the Marshall criteria. Overall, 61% showed CT abnormalities (81% minor abnormalities), with 29%, 55%, and 99%, respectively, in the minor, mild, and moderate-severe TBI categories.

Only 3 patients were involved in receiving compensation for their injuries, which is unlikely to affect our findings.

Outcome measures

Vocational outcome was determined in patients between the ages of 16 and 65 years (N = 215). Return to work (RTW) was scored in 4 categories: (0) previous work or study resumed, (1) previous work or study resumed, but with lower demands or part-time, (2) previous work or study not resumed, different work on a significantly lower level, and (3) not working. For analysis, a dichotomy was used for the separate RTW categories: “complete RTW” (category 0) and “incomplete RTW” (categories 1–3).

The extended Glasgow Outcome Scale,²⁸ an 8-point scale, was used to determine overall outcome to facilitate comparison with other studies.

Questionnaires

Assessment of postconcussive complaints was performed with a 19-symptom head injury checklist, comparable to the Head Injury Symptom Checklist.²⁹ Separate postconcussive symptoms were scored as follows: never (0), sometimes (1), and often (2). For analysis of most frequently occurring separate symptoms, a dichotomy was used: “symptoms” (scores 1–2) and “no symptoms” (score 0). The severity of postconcussive complaints was defined as the sum of the separate symptom scores. The presence of postconcussive complaints was defined as reporting 2 or more symptoms, regardless of severity. For analysis, a dichotomy was used: “complaints” (≥ 2 symptoms) and “no complaints” (< 2 symptoms). The symptom checklist also contained 2 items that are not considered to be posttraumatic complaints. A positive answer on both items was regarded as an indicator of an increased tendency to complain, that is, expressing disproportional complaints. Assessment of anxiety

List of abbreviations:

| | |
|------|---------------------------------------|
| CI | confidence interval |
| CT | computed tomography |
| GCS | Glasgow Coma Scale |
| HADS | Hospital Anxiety and Depression Scale |
| OR | odds ratio |
| RTW | return to work |
| TBI | traumatic brain injury |

Download English Version:

<https://daneshyari.com/en/article/6150164>

Download Persian Version:

<https://daneshyari.com/article/6150164>

[Daneshyari.com](https://daneshyari.com)