

## Letter to the Editor

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# Assessing Suicide Ideation in Patients With Traumatic Brain Injury (TBI) by Using Depression Scales

IT IS with great interest that we read the special issue on “Perspectives on Suicide and Traumatic Brain Injury” and we particularly appreciated the paper by Tsaousides et al. entitled “Suicidal ideation following traumatic brain injury: prevalence rates and correlates in adults living in the community.”<sup>1</sup>

In this paper, the authors explored the rates of suicidal ideation (SI) in a cohort of 356 community-dwelling adults with mild to severe TBI.

One particular issue raises discussion. To date, three of the key studies investigating SI following TBI have made use of items from the Beck Depression Inventory (BDI-II,<sup>2</sup>),<sup>1,3,4</sup> while only one group has used Beck’s Scale for Suicide Ideation (SSI5).<sup>5–7</sup> Investigating SI by BDI-II was proposed by Wenzel, Brown and Beck,<sup>8(p.29)</sup> but was never validated.

Fortunately, we recently validated this approach in a cohort of 281 suicide attempters aged between 18 and 83 years without any neurological condition.<sup>9</sup>

We (1) extracted the score of the sole “suicide” item from the BDI and from the Hamilton Depression Rating Scale (HAM-D) and, (2) using principal component analysis, we extracted several orthogonal components across the 17 items from the HAM-D. The second component, accounting for 7.36% of total HAM-D variance, loaded mainly for the “suicide” item. We then correlated these measures to the gold standard SSI. These findings suggest that the use of a single “suicide” item or a dimensional factor (i.e. the second orthogonal component) derived from a depression scale might be a valid approach to assess suicidal ideation. Moreover, results suggest that clinician-rated scales as well as self-report questionnaires are equally valid to do so.

Of course, a limitation remains that an evaluation of SI by a single item derived from depression scales

provides only limited information on suicide-related behaviour,<sup>10</sup> compared with the SSI.<sup>11</sup>

Nevertheless, a stream of data indicates that emotional and affective disorders are frequent following TBI. Consequently, SI, combined with other clinical factors [such as seriousness of injury, male gender, older age, being unemployed, presence of emotional disturbances such as alexythymia, helplessness, worthlessness, and presence of psychiatric disorders, particularly depression and substance abuse<sup>1,4–6,12–14</sup>] is important to identify potential predictors for suicidal behaviour in TBI patients, and can help orient clinicians toward an appropriate intervention.

In conclusion, these studies convey an extremely important message to clinicians, which can be summarized in three points:

First, suicide ideation following traumatic brain injury is highly prevalent and affects nearly 30% of patients.<sup>1,4–6,13,14</sup>

Second, despite extensive efforts, research in suicidology has not yet succeeded in producing an accurate, short-term predictive model of suicidal behaviour at the individual level. However, a survey of 84850 adults of 17 countries showed that across all countries, 60% of transitions from ideation to plan and attempt occur within the first year after ideation onset.<sup>15</sup> It seems clear that an accurate and reliable measure of suicidal ideation might be important to assess the level of emergency, to predict the risk of a subsequent attempt and to inform the intervention decision.

Third, since a validated methodology<sup>10</sup> shows that suicide ideation is easily assessed by clinicians through the use of suicide items derived from depression scales (either clinician, e.g., Hamilton Depression Rating Scale or self-rated, e.g. BDI-II), this methodology might enhance an accurate detection of suicide ideation, which might subsequently help to prevent suicide attempts and completed suicide through intensive clinical programs.<sup>7,16,17</sup>

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Future research should confirm these findings in TBI samples: first by comparing SSI and the sole “suicide” component from the BDI or HAM-D; finally, by examining the transition from ideation to plan and attempt among this population in order to try to prevent completed suicide by intervention at particular periods of elevated risk.

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