Research paper

Evaluation of the Swedish Trauma Symptom Inventory-2 in a clinical and a student population

D. Nilsson [a,*], Ö. Dahlström [b], M. Wadsby [c], K. Bergh Johannesson [d]

[a] Institution for behavioral sciences and learning, department of psychology, Linköping university, SE-58183 Linköping, Sweden
[b] Institution for behavioural sciences, department of disability research, Linköping university, SE-58183 Linköping, Sweden
[c] Department of clinical and experimental medicine, CSAN, child and adolescent psychiatry, Linköping university, SE-58185 Linköping, Sweden
[d] National centre for disaster psychiatry, department of neuroscience, Uppsala university, SE-75185 Uppsala, Sweden

ARTICLE INFO

ABSTRACT

Introduction. – The Trauma Symptom Inventory-2 (TSI-2) is a broad-spectrum assessment instrument designed to identify symptoms that can appear in the aftermath of potentially traumatic experiences.
Objective. – This study aimed to evaluate the external and internal validity of this newly reconstructed instrument.
Method. – In total, 696 individuals participated in the study, including 83 psychiatric outpatients. Participants answered the TSI-2, together with a trauma history questionnaire, and other questionnaires assumed to correlate with the different scales included in the TSI-2.
Results. – Validity was evaluated by correlations between the TSI-2 and the other instruments and by the differences between clinical and non-clinical populations. Reliability was calculated by testing internal consistency and test-re-test reliability. A confirmatory factor analysis (CFA) was computed to test the postulated four-factor structure. Cronbach's alpha was found to be good and ranged from $\alpha = .77$ to .91 and test-retest reliability was strong. Strong to satisfactory correlations were found between the TSI-2 and the other instruments. The student sample scored significantly lower than the clinical group on all clinical scales. Sensitivity and specificity were calculated with different cut-off scores.
Conclusion. – Despite the CFA demonstrating a questionably good model of fit, most of the scales proved to be sound and the TSI-2 could be recommended as a broad-spectrum assessment instrument.

1. Introduction

Many clients seeking help at psychiatric clinics may have a history of several traumatic experiences and adverse life events (Al-Saffar, Borga, & Hallstrom, 2002; Cloitre et al., 2011). Symptoms of distress from repeated traumatic experiences can go unrevealed for a long time and may have accumulated up to the point at which a person finally requires psychiatric consultation or care. The symptoms of long-term impact of trauma may be misperceived in traumatised individuals as personality traits, personality disorders, or both (Briere, 1995, 2011).

Broad-spectrum assessment instruments for identifying these conditions serve as important tools at psychiatric clinics. A commonly held view is that stressors are perceived as traumatic when the potential threat exceeds the defensive abilities of the individual, which causes overwhelming fear, anxiety and stress in

certain situations (Briere & Rickards, 2007; Frueh, Grubaugh, Elhai, & Ford, 2012). More complex emotional effects after trauma can result from severe stressors that are either repetitive or prolonged, involve harm or abandonment by caregivers, or occur at vulnerable times in a person's life (Courtois & Ford, 2009). The result can be a complexity of symptoms including not only symptoms of posttraumatic stress disorder (PTSD), such as intrusive images, avoidance of reminders and hyperarousal, but also symptoms characterised by self-regulatory disturbances (e.g. dissociation, somatic distress, relational alienation and impulsiveness) (Cloitre et al., 2009). Other common symptoms can be difficulties in relationships with other people, low self-esteem and problems associated with handling emotions and situations. These symptoms often compromise an individual's personality development and the basic trust in primary relationships (Courtois & Ford, 2009).

Multiple types of potential trauma may be described as polytraumatisation, affecting both self-esteem and psychological distress (Nilsson, Dahlström, Priebe, & Svedin, 2014). The

cumulative effects of experienced potential trauma on symptom complexity in both children and adults have been shown to be severe (Briere, Hodges, & Godbout, 2010; Briere, Kaltman & Green, 2008; Browne & Winkelman, 2007; Cloitre, Cohen, Edelman, & Han, 2001).

The most common assessment instruments in use today have been mainly developed to assess consequences of single or limited traumatic events or specific time points. Instruments such as the Impact-of-Event Scale-Revised (IES-R) or the PTSD-Checklist (PCL-C) are insufficient for clients who have been exposed to multiple traumas and have not focused on emotional regulation (Resick et al., 2012; Shura, 2013). Standardised broad-spectrum assessment instruments assessing the consequences of multiple trauma exposure are scarce (Godbout, Hodges, Birere, & Runtz, 2016). Consequently, the development of such instruments is sorely needed. As there could be numerous symptoms, broad-spectrum assessment instruments are important.

Accordingly, there is a growing need to develop reliable and valid assessment instruments that consider the broad spectrum of possible symptoms occurring after multiple and recurring traumatic exposure.

The newly reconstructed Trauma Symptom Inventory-2 is such a broad-spectrum assessment instrument (Briere, 2011), which is a modified and extended version of the original Trauma Symptom Inventory (TSI) (Briere, 1995). The original TSI has been applied to assess trauma-related symptoms and behaviour. The instrument has demonstrated good psychometric characteristics and has been used in several studies (Efendov, Sellbom, & Bagby, 2008; Elhai, Gray, Kashdan, & Franklin, 2005; Krammer, Simmen-Janevska, & Maercker, 2013; McDevitt-Murphy, Weathers, & Adkins, 2005; Snyder, Elhai, North, & Heany, 2009). However, as research has advanced several other symptoms and problems associated with exposure to highly adverse events have been identified (Godbout et al., 2016).

The newly reconstructed Trauma Symptom Inventory-2 (TSI-2) (Briere, 2011) is a modified and extended version of the original TSI (Briere, 1995). The TSI-2 aims to assess symptoms that have remained after one or more distressing life experiences and potentially traumatic events that may have taken place at any time during the respondent's lifetime and do not have to be related to a specific potentially traumatic event or a specific point in time. The TSI-2 also includes information about anxiety regulation in close relationships. Satisfactory reliability and validity have been reported for the psychometrics of the TSI-2 (Briere, 2011; Godbout et al., 2016; Krammer, Grossenbacher, Goldstein, Kaufmann, Schwenzel, & Soyka, 2017). The TSI-2 seems to be able to identify symptoms in the aftermath of different kinds of potential traumas (e.g., interpersonal and non-interpersonal) (Briere, 2011). However, except for those studies carried out to standardise the instrument (Briere, 2011), few investigations have employed the TSI-2 instrument (Gray, Elhai, & Briere, 2010; Myers, Perrine, Lancman, Fleming, Lancman, 2013; Myers, Zeng, Perrine, Lancman, & Lancman, 2014; Godbout et al., 2016, Krammer et al., 2017). Because no valid broad trauma symptom questionnaires were available in Sweden, the TSI-2 was translated and validated in a Swedish setting. The aim of this study was therefore to provide updated psychometric findings of the TSI-2 to a European setting by examining the validity of the TSI-2 in a sample of college students and in a clinical sample of patients in outpatient care.

2. Materials and method

2.1. Participants

The validation of the TSI-2 was based on three groups: a group of university students ($n = 573$), a clinical group ($n = 83$), and a test-retest group of postgraduate and undergraduate students ($n = 40$).

2.1.1. University student groups

A reference group of university students ($n = 573$) were recruited from Linköping university. The aim was to include a variety of students from both natural and behavioural science programmes. The mean age in the student group was 27.6 years ($SD = 9.8$, range 18–60). The group included 427 women ($M = 26.6$, $SD = 9.2$, range 18–60) and 146 men ($M = 24.9$, $SD = 7.3$, range 18–55).

2.1.2. Clinical group

The participants in the clinical group were recruited from two psychiatric outpatient clinics: the Psychiatric Outpatient Clinic for Affective Disorders, Akademiska Hospital, Uppsala ($n = 64$) and the Tranås Psychiatric Outpatient Clinic ($n = 19$). The clinicians invited patients to participate in the study in connection with a diagnostic assessment. Patients who at preliminary assessment or through the referral document indicated a trauma history or a potential trauma-related disorder, such as PTSD, were invited. Interviews and self-reported measures were used to obtain intake psychiatric diagnoses. The patients had a variety of diagnoses, including depressive disorder, PTSD and bipolar disorder. Most clients had more than one diagnosis. Exclusion criteria were inadequate knowledge of the Swedish language and current alcohol abuse. The mean age in the clinical group was 39.6 years ($SD = 12.4$, range 19–65); the group included 61 women ($M = 38.2$, $SD = 11.9$, range 19–63) and 22 men ($M = 43.6$, $SD = 13.0$, range 24–65).

2.1.3. Test-re-test group

For test-retest purposes, a group of 40 individuals (35 women and 5 men) was recruited. This group was made up of 20 university students from the Psychotherapeutic Training Programme and 20 university students from the Human Resources programme. The mean age of this group was 30.2 years ($SD = 9.0$, range 21–51). The questionnaires were coded before distribution and the participants were asked to remember their specific code and note that on their questionnaire the second time. Thereby, anonymity could be kept. The test-retest group completed the questionnaires twice within a 2-week interval for comparison of scores.

2.2. Questionnaires

The TSI-2 is a revised version of the original TSI. In the TSI-2, 87 items have been added or modified according to current knowledge about experiences of trauma and for greater symptom coverage (Briere, 2011). Three new scales (Insecure Attachment, Somatic Preoccupation and Suicidal Tendencies) and two subscales (Anxious Arousal/Hyper Arousal and Impaired Self-Reference/Other-Directedness) have been added. In addition, several items and scales, particularly the validity scales, have been modified (Briere, 2011). The TSI-2 is intended to assess symptoms of trauma, for treatment planning and for long-term follow-up of any change in symptomatology.

The TSI-2 comprises 136 items describing different experiences and includes 2 validity scales, 12 clinical scales/subscales, and 4 factors. The respondent is asked to evaluate how often he or she has had the experience during the last 6 months, from never (0) to often (3). The validity scales include one scale designed to detect symptom of overreporting, the Atypical response scale (ATR), with items that seem to index posttraumatic stress, but, in fact, are unlikely to be endorsed by "true" posttraumatic stress sufferers (Gray, Elhai, & Briere, 2010). The Response Level scale (RL) is designed to assess bias towards underreporting or denying symptomatology. The clinical scales include: Anxious Arousal (AA) with subscales Anxiety (AA-A) and Hyperarousal (AA-H),