Validation of a screening instrument for post-traumatic stress disorder in a clinical sample of older adults

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Objectives: To determine the diagnostic validity of the Post Traumatic Disorder Checklist (PCL) against the ‘gold standard’ of the Clinician Administered PTSD Scale (CAPS) in a clinical sample of older adults.

Methods: A cross-sectional validation study: participants were patients (65 years and over) being treated for medical and/or psychiatric conditions in a hospital setting. Participants completed the PCL, measures of mood, cognition, physical health, alcohol use and the CAPS. A receiver operating characteristics curve was constructed to determine the optimal cut-point of the PCL. Analysis of variance was used to examine clinical differences between PTSD cases, sub-threshold cases and the remainder of the sample.

Results: Using the recommended cut-point of 50, the PCL had a sensitivity of 0.40, specificity of 0.97 and positive predictive value of 0.57. However, these values changed to 0.90, 0.87 and 0.45, respectively, when the optimal cut-point of 36 was used.

Conclusion: With an adjusted cut-point the PCL is an acceptable and brief screening instrument for PTSD in older adults.

Keywords: PTSD; screening; aged; depression

Introduction

Post-traumatic stress disorder (PTSD) is a relatively common disorder with potentially serious consequences for both the individual and society (Kessler, 2000). There is high co-morbidity with other disorders such as depression and substance misuse (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). It is known that PTSD can lead to increased utilization of medical services (Deykin et al., 2001; Stein, McQuaid, Pedrelli, Lennox, & Mc Cahill, 2000). Furthermore, a significant proportion of those with PTSD do not present to mental health services and remain undiagnosed (Kessler, 2000; Magruder et al., 2004; van Zelst, de Beurs, Beekman, van Dyck, & deeg, 2003). Cultural differences in the reactions to trauma are known. For example, Finnish War veterans, having assimilated their experiences well, had a surprisingly low rate of PTSD (Hautamäki & Coleman, 2001): Londoners are stereotypically characterized by stoicism and resilience (Wessely, 2005).

The PTSD Checklist-Civilian is a 17-item self-report questionnaire designed to identify possible cases of PTSD (Blanchard et al., 1996). Its items correspond to criteria for diagnosis of PTSD from the Diagnostic and Statistical Manual of Mental Disorders (4th ed., DSM-IV, American Psychiatric Association, 1994). It has been validated both in a health care setting (Stein et al., 2000) and with older adults in the United States (Cook et al., 2005). Interest has centred on the appropriateness of the given cut-point in older adults and in the factors associated with sub-threshold scores (van Zelst et al., 2003a).

The present study was designed to test the diagnostic validity of the PCL against the ‘gold standard’ of the Clinician Administered PTSD Scale (Blake et al., 1995) in a clinical sample of older adults.
UK adults. A secondary aim was to determine whether clinical factors such as mild-to-moderate cognitive impairment affected its performance.

Methods
Ethical approval for the study was given by the Joint South London and Maudsley/Institute of Psychiatry NHS Local Research Ethics Committee.

Participants
Participants were inpatients or day-patients (of 65 years and over) being treated for medical and/or psychiatric conditions on two hospital sites. Patients were not approached if their formal carers felt they were too physically or psychologically unwell to be interviewed, or if they were unable to consent due to cognitive impairment, communication or language difficulties. A total of 127 patients were approached of whom 16 declined to take part, five were too unwell and six were discharged prior to completing the assessment and could not be traced. Thus 100 participants completed the study; 58 were women, 90 were of white British origin, six were white European and four were black Caribbean. Forty had a mental disorder as diagnosed by their responsible consultant: affective disorder (24), organic disorder (10) or other disorder (6). Seventy-seven participants were recruited from the general hospital wards and 23 from the mental health service. The mean age of the whole group was 82 years (SD 8 years).

Instruments
History of any trauma was elicited using the Life Events Checklist. This is a 17 item checklist ascertaining potentially traumatic experiences (Gray, Litz, Hsu, & Lombardo, 2004). The Clinician Administered PTSD scale (CAPS; Blake et al., 1995; Weathers, Keane, & Davidson, 2001) is a well-validated, structured clinical interview that measures the intensity and frequency of the 17 DSM IV PTSD symptoms and associated symptoms. The ‘current’ version was used, concentrating on symptoms in the preceding month. Both assessing clinicians (S.H. & L.B.) were trained to use the CAPS. The PTSD Checklist-Civilian (PCL) is a 17-item self report questionnaire. Participants were asked to rate on a five-point Likert scale (from 1 ‘not at all’ to 5 ‘extremely’) how much their symptoms had bothered them in the last month. The PCL has good psychometric properties and can be scored in two ways. Those whose total score is at or above the cut-point of 50 are likely to have a DSM-IV diagnosis of PTSD (Blanchard et al., 1996). Alternatively, cases of PTSD may be identified as those scoring above the cut-point for each criterion B to D (Ruggiero, Del Ben, Scotti, & Rabalais, 2003). The AUDIT-5 is derived from the Alcohol Use Disorders Identification Test (AUDIT) and is a five-item screening test for hazardous drinking which has been validated for use in older people (cut-point 5/6; Philpot et al., 2003). The Self-Care (D) is brief, self-administered screening tool validated to identify depression in older adults (cut-point 6/7; Bird, Macdonald, Mann, & Philpot, 1987). Cognitive state was assessed using the Mini Mental State Examination (cut-point 23/24; Folstein, Folstein, & McHugh, 1975).

Procedure
Eligible patients agreeing to take part provided written informed consent. Assessment took place over two sessions as the study procedure was somewhat time-consuming. The Life Events Checklist, PCL, the MMSE, Self-Care (D) and the AUDIT-5 were administered at the first session. During the second session (no more than 2 weeks later), the Life Events Checklist was repeated and the CAPS was administered.

Data analysis
The sensitivity, specificity and positive predictive value of the PCL were calculated using the CAPS as the gold standard. A receiver operating characteristics (ROC) curve was constructed to determine the optimal cut-point of the PCL in this sample. We were also interested in subjects experiencing symptoms, but not reaching full DSM-IV criteria in sections B-D. Analysis of variance was used to compare mean values and chi-square to compare categorical values between ‘cases’, ‘sub-threshold cases’ and ‘non-cases’.

Results
Fifty-nine participants were able to identify at least one traumatic life event using the Life Events checklist. The life events selected as severe were: death of a loved one (30), war experiences (11), robbery (5), sexual assault (4), life-threatening illness (4), road traffic accident (3) and other (2). Thirty-two participants scored 23 or below on the MMSE, 33 scored six or above on the Self-Care (D), and six scored five or more on the AUDIT-5.

The prevalence of PTSD in the sample, as identified by the CAPS, was 10%. Using the recommended cut-point of 50 for the PCL, the sensitivity was 0.4, specificity was 0.97 and positive predictive value was 0.57. An ROC analysis indicated the optimum cut-point for this sample was 36, with a sensitivity of 0.9, specificity of 0.87 and positive predictive value of 0.45, and the area under the curve was 0.935. Repeating the analysis excluding those with mild organic impairment and/or hazardous drinking had no effect on the optimum cut-point, sensitivity or specificity. Similarly, separate analyses for the clinical source of the participants (medical vs mental health) showed no appreciable differences in the PCL performance.
All 10 participants with CAPS-identified PTSD scored above the cut-point for depression on the Self-Care (D).

Of the 49 participants identifying a traumatic event but not fulfilling criteria for PTSD, 21 scored above the CAPS cut-point for one additional criterion and two fulfilled two criteria. Forty-one participants did not identify a traumatic event. However, a proportion of these also scored above the CAP cut-points for each of the criteria B–D. Table 1 shows the proportion of each fulfilling the criteria for each symptom cluster. Avoidance symptoms (criterion C) were less frequent than either re-experiencing or arousal symptoms.

Discussion

The prevalence of PTSD in this sample was 10% using the CAPS, which is in agreement with previous work in adults (1–9%; Hidalgo & Davidson, 2000). Overall we found that the PCL was acceptable to participants, did not cause distress and took approximately 10 min to perform (compared with 45 min for the CAPS). However, using the recommended cut-point of 50 failed to identify over half the participants with PTSD as defined by the CAPS. Reducing the cut-point to 36 achieved optimal sensitivity and specificity. This is a similar finding to a recent study performed in older primary care patients that suggested a cut-point of 37 (Cook et al., 2005). It is also in accordance with recent studies of younger primary care patients that suggest that the cut-point should be lowered (Lang, Laffaye, Satz, Dresselhaus, & Stein, 2003; Walker, Newman, Dobie, Ciechanowski, & Katon, 2002).

Considering the 'sub-threshold' group of subjects, it is clear from both the CAPS and PCL that many people had re-experiencing symptoms (nightmares, flashbacks) and arousal symptoms (poor sleep, hyper-awareness), while fewer (almost half as many) had corresponding avoidance symptoms (avoiding reminders of the traumatic event). Some even passed the cut-point for these symptom clusters without being able to identify a traumatic event. This pattern of symptoms in the elderly has been previously described, in a group with reactivated PTSD in later life (Macleod, 1994) and Finnish war veterans (Hautamäki & Coleman, 2001). There could be various explanations for this. There may be an element of stoicism, i.e. individuals have ‘learned to live with’ symptoms over many years and do not let them interfere with their daily lives. In the case of war experiences there may be fewer reminders of the distressing experience and fewer opportunities to talk about it. If the traumatic event occurred many years ago, symptoms may be less severe now, although the CAPS does take severity into account. A previous review (Averill & Beck, 2000) has suggested that PTSD symptoms decline in later life, that this may be the natural history of the condition with avoidance symptoms becoming less prominent over time.

The present study does have limitations. Participants were from a mixed clinical population, both medical and psychiatric. This was deliberate in that we expected to find a higher rate of PTSD in these groups. Those with PTSD may somatize and present to general medical services instead of mental health services (van Zelst et al., 2006). Catastrophic physical ill health, such as cancer or myocardial infarction, can be traumatic in itself (Doerfler, Paraskos, & Piniarski, 2005; Kangas, Henry, & Bryant, 2005). However, the PCL performed similarly in both the medical and psychiatric sub-samples.

There was a high rate of mild-to-moderate cognitive impairment (33% subjects MMSE < 23) which probably relates to the advanced age of the group (mean age 81) and physical co-morbidity. We were keen to include those with mild cognitive impairment when they were able to give informed consent. Case reports have suggested that the onset of cognitive impairment may be a trigger for re-emergent PTSD. We did not find any such association. However, there was a positive association between PTSD caseness and self-rated depression score, as has been found elsewhere (van Zelst et al., 2006).

Conclusion

In common with other authors we have found that the PCL does have acceptable validity when a lower cut point of 36 is used, is simple to administer and brief. More effective screening will help to identify older adults with PTSD so that specific treatments can be provided for them.
References


