

# Screening for Trauma Histories, Posttraumatic Stress Disorder (PTSD), and Subthreshold PTSD in Psychiatric Outpatients

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The ability of the Structured Clinical Interview for *DSM-IV* (SCID) posttraumatic stress disorder (PTSD) module's screening question to identify individuals with PTSD or subthreshold PTSD was examined. First, the screen's sensitivity for detecting a trauma history was determined. Second, the incremental validity of a more thorough trauma assessment was examined by determining how many individuals responded negatively to the screen but then were diagnosed with PTSD or subthreshold PTSD. Last, the optimal SCID termination point for assessing subthreshold PTSD was determined. Using a trauma list increased the number of participants reporting a trauma; however, the SCID screen captured almost all individuals who had PTSD or subthreshold PTSD. When one screens for subthreshold PTSD, the SCID can be terminated on failure to meet Criterion B.

The criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) for posttraumatic stress disorder (PTSD) are long and complex. The symptoms are divided into four criteria groups, and individuals must attain symptom thresholds within each criterion to be given the diagnosis. Diagnostic assessment of PTSD involves sequential ascertainment of the criteria—individuals first describe experiencing a trauma (Criterion A1) and then report whether their reaction involved fear, helplessness, or horror (Criterion A2). If either part of Criterion A is not met, the diagnosis of PTSD cannot be made; therefore, asking individuals about Criteria B (five re-experiencing symptoms), C (seven avoidance symptoms), and D (five arousal symptoms) is not indicated.

In previous studies, researchers have found that PTSD is under-recognized in routine clinical practice when PTSD symptoms are not the presenting complaint (Davidson & Smith, 1990; Zimmerman & Mattia, 1999). Zimmerman and Mattia (1999) found that the prevalence of PTSD was twice as high in patients given a semistructured diagnostic interview than in patients assessed with an unstructured clinical interview. Davidson and Smith (1990) found a sevenfold difference in prevalence rates in psychiatric outpatients given structured versus unstructured interviews.

One alternative to using a diagnostic interview is a brief, self-administered paper-and-pencil questionnaire, and in a previous report, the usefulness of such a measure for identifying PTSD was demonstrated (Sheeran & Zimmerman, 2002). Commonly used PTSD questionnaires include the Trauma Symptom Inventory (Briere, Elliott, Harris, & Cotman, 1995), the Mississippi Scale for Combat-Related PTSD (Keane, Caddell, & Taylor, 1988), and the Posttraumatic Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997). Clinicians may prefer to use a semistructured interview, such as the Structured Clinical Interview for *DSM-IV*

(SCID; First, Spitzer, Williams, & Gibbon, 1997), rather than a self-administered questionnaire because this represents the current “gold standard” diagnostic approach. The SCID is the most widely used, fully diagnostic research interview; therefore, knowing how well it assesses trauma histories, PTSD, and subthreshold PTSD symptoms is important.

The assessment of PTSD begins by determining a history of trauma, which is usually accomplished by either asking a general screening question or inquiring about a list of specific traumatic events. Screening questions, which are used in structured diagnostic interviews such as the SCID and the Diagnostic Interview Schedule (Robins, Helzer, Croughan, & Ratcliff, 1981), ask whether individuals have ever experienced a traumatic event. A few examples of traumatic events are included in the screening question. A more thorough, albeit time consuming, method of assessing trauma involves prompting memories of traumatic events by reading a list of traumas and asking individuals to indicate whether they have experienced any of these, or similar, events.

Previous research has demonstrated that screening questions less comprehensively assess traumatic events than trauma lists (Goodman, Corcoran, Turner, Yuan, & Green, 1998). However, this research did not address the clinical significance of the missed traumatic events on the diagnosis of PTSD or subthreshold PTSD. Although the more detailed trauma list is better at identifying a trauma history, it may not be more effective than a screening question at identifying individuals with a PTSD diagnosis because individuals with PTSD may be unlikely to respond negatively to a screening question. Thus, the incremental validity of a trauma list or, conversely, the performance of the screening question in the identification of PTSD is unknown.

A second assessment and diagnostic issue relates to the observation that some individuals have clinically significant PTSD symptoms but do not meet full criteria for the disorder. That is, some individuals may meet Criteria A1 and A2, have symptoms of PTSD for a month or more (duration criterion) that cause significant impairment or distress (impairment criterion), but are not given the diagnosis of PTSD because they fail to meet the other criteria thresholds (i.e., Criteria B, C, and D). The SCID PTSD

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module allows for subthreshold ratings to be made both at the symptom level (e.g., intrusive thoughts) and for the PTSD diagnosis itself when full criteria are not met but impairing and distressing symptoms are present (Weiss, 1993). Weiss (1993) provides a detailed description of each PTSD symptom and examples of "criterion and non-criterion responses" to each SCID item.

The prevalence and clinical relevance of PTSD symptoms not meeting full diagnostic criteria, variously referred to as *subthreshold PTSD*, *partial PTSD*, or *anxiety disorder not otherwise specified in DSM-IV terms*, have been demonstrated in several studies (Angst, 1997; Foa, Kessler, McFarlane, & Shalev, 2000; Stein, Walker, Hazen, & Forde, 1997; Zlotnick, Franklin, & Zimmerman, in press). For example, Zlotnick et al. (in press) found that the presence of subthreshold PTSD was associated with social and occupational impairment comparable to full *DSM-IV* PTSD and that 73% of subthreshold PTSD patients desired treatment for their symptoms.

Although it is increasingly included in the PTSD literature, there has been no consistent definition for subthreshold PTSD, and researchers have used noticeably different criteria to diagnose it (Blanchard, Hickling, Taylor, Loos, & Gerardi, 1994; Zlotnick et al., in press). In general, the number of symptoms and extent of impairment have been considered the primary criteria for defining a subthreshold anxiety disorder (Angst, 1997).

Our goal in the present research, which is part of the Rhode Island Methods to Improve Diagnostic Assessment and Services project, was to examine the performance of the SCID screening question for identifying a trauma history, PTSD, and subthreshold PTSD. First, the sensitivity of the SCID's screening question for detecting a history of traumatic events was determined. Next, the incremental validity of a more thorough trauma history assessment was examined by determining the number of individuals who responded negatively to the screening question but who nonetheless were diagnosed with PTSD or subthreshold PTSD. Last, the optimal interview termination point for assessing subthreshold PTSD was determined.

## Method

### Participants

Participants were psychiatric outpatients ( $N = 1,300$ ) presenting for treatment at the outpatient practice of the Rhode Island Hospital Department of Psychiatry. The group included 807 women (62%) and 493 (38%) men, who ranged in age from 18 to 80 years ( $M = 38.1$ ,  $SD = 12.7$ ). The sample included 1,155 (89%) Caucasians, 47 (4%) African Americans, 24 (2%) Hispanics, 11 (1%) Asian Americans, 39 (3%) Portuguese, and 24 (2%) with other or mixed ethnicities. In the sample, 549 (42%) participants were married. The remainder were never married ( $n = 393$ ; 30%), divorced ( $n = 194$ ; 15%), separated ( $n = 86$ ; 7%), living with their romantic partner ( $n = 55$ ; 4%), or widowed ( $n = 23$ ; 2%). The participants achieved the following education levels: 137 (11%) had less than a high school education, 297 (23%) graduated high school or passed an equivalency exam, 407 (31%) attended but did not graduate from college, 294 (23%) completed a 2- or 4-year college program, and 165 (13%) attended or completed a graduate or professional school program. The most frequent current *DSM-IV* diagnoses were major depression (47%), social phobia (28%), generalized anxiety disorder (16%), panic with agoraphobia (14%), specific phobia (11%), obsessive-compulsive disorder (8%), dysthymia (7%), and borderline personality disorder (7%).

Participants diagnosed with subthreshold PTSD experienced a trauma, reported some PTSD symptoms, and had significant impairment or distress

resulting from these symptoms. The same impairment and distress criterion used in diagnosing *DSM-IV* PTSD was used in diagnosing subthreshold PTSD. As reported earlier, definitions of subthreshold PTSD have not been consistent across studies. Because of the lack of consistency, we chose to use a clinically derived definition of subthreshold PTSD based on the presence of clinically significant impairment or distress.

We examined the percentage of agreement between our definition and the most widely used definition of subthreshold PTSD in the literature (Blanchard et al., 1994). By using Blanchard et al.'s (1994) diagnostic algorithm (i.e., patients meeting PTSD Criteria B and C or Criteria B and D but failing to meet all three) with our patients, we were able to compare the number of patients diagnosed across definitions. There was 92% agreement between our subthreshold PTSD definition and that of Blanchard et al.

### Measures

Individuals presenting for an intake appointment were asked to participate in a diagnostic evaluation prior to meeting with their treating clinician. During the course of the study, 18 diagnostic raters administered the SCID interviews. Five raters were research assistants with bachelor's degrees in social or biological sciences, and the remaining raters were doctoral-level psychologists. During the 3-month training period, raters reviewed written cases, discussed the administration of the SCID on an item-by-item basis with the principal investigator (Mark Zimmerman), observed at least 5 SCID interviews before beginning administration, and were observed and supervised on the administration of at least 15 interviews. At the conclusion of the training period, raters were required to achieve exact or near-exact interrater reliability with a senior diagnostician for five consecutive evaluations before independently administering SCID interviews. Ongoing supervision of the raters included weekly diagnostic case conferences.

The SCID's PTSD module begins with the standard screening question, which asks patients whether they ever experienced a traumatic, life-threatening, or extremely upsetting event. A more extensive assessment of PTSD symptoms is conducted only if the screening question is answered in the affirmative. We modified the SCID PTSD module in two ways. The first modification involved adding a list of traumatic events to prompt patients who indicated that they had never experienced a trauma when they were asked the screening question. In the modified SCID, a list of 12 possible traumatic events, derived from the trauma query of the PDS (Foa et al., 1997), is read and the patient is asked whether he or she has had similar experiences to every item on the trauma list. If a patient answers "no" to each item on the trauma list, the module is terminated. The trauma list was added to the PTSD section of the SCID after the first 402 patients had been evaluated, and it included the following list of events: serious accident, natural disaster, nonsexual assault by a family member or known person, nonsexual assault by a stranger, sexual assault by a family member or known person, sexual assault by a stranger, combat, sexual contact when younger than age 18 by someone more than 5 years older, imprisonment, torture, life-threatening illness, and witnessing the death or violent assault of another (Foa et al., 1997). The PDS list, including a residual category (e.g., "other trauma"), also was used to code participants' type of trauma.

The standard SCID terminates whenever a patient fails to meet a PTSD criterion threshold. For example, if a patient fails to meet Criterion A2, Criteria B, C, and D symptoms are not queried. These termination points exist at the end of every criterion set. Our second modification of the SCID was to remove these termination points so that every patient reporting a trauma was asked about every PTSD symptom.

The *DSM-IV* convention in distinguishing between principal and additional diagnoses was followed. That is, the principal diagnosis referred to the disorder that the patient indicated was the main reason for seeking treatment; all other diagnoses were considered additional. Patients' diagnoses were specified as current, partially remitted, or past. Patients in partial remission had met full criteria for PTSD in the past but currently experienced impairment and distress from less than a full range of symp-

toms. Patients in full remission reported few current PTSD symptoms and minimal distress and impairment as a result of their symptoms.

Over the course of the entire project, joint-interview diagnostic reliability information was collected. From the 47 reliability interviews conducted to date, the reliability of SCID-based diagnoses of PTSD ( $\kappa = .91$ ) and subthreshold PTSD ( $\kappa = 1.00$ ) was excellent. Kappa coefficients for presence of a trauma were .96 (screening question) and .89 (trauma list), and the kappa coefficient for presence of Criterion A was .89. Other *DSM-IV* criterion thresholds had kappas of .87 (Criterion B) and .94 (Criteria C and D). The reliabilities of the individuals' PTSD symptoms ranged from .68 to 1.00, with a mean kappa of .84.

**Analyses**

First, the prevalence of PTSD and subthreshold PTSD was determined. Next, the sensitivity of the SCID screening question was examined for identifying current, partially remitted, or past PTSD or subthreshold PTSD. The third analysis examined whether a more thorough trauma history assessment improved the detection of PTSD and subthreshold PTSD. Finally, Criteria B, C, and D were analyzed to ascertain the optimal point for ending the subthreshold PTSD interview. The number of patients diagnosed with lifetime subthreshold PTSD who met and failed to meet each criterion threshold was determined.

**Results**

*Prevalence of PTSD*

Five participants had missing data and were therefore excluded from the analyses, yielding a sample size of 1,295. Nearly one third of the sample was diagnosed with a lifetime history of PTSD ( $n = 263$ ; 20%) or subthreshold PTSD ( $n = 116$ ; 9%). In the majority of cases, the disorder was current ( $n = 241$ ; 64%). Of those with a current disorder, 187 (78%) did not present for treatment for their PTSD symptoms and were given a PTSD diagnosis as an additional rather than primary disorder. Eighty-three (22%) patients presented for the diagnostic evaluation with the disorder in partial remission and 55 (15%) in full remission. We asked patients to identify traumatic events linked to their PTSD symptoms ("index traumas"). The index traumas reported for patients with PTSD and subthreshold PTSD were as follows: experiencing a sexual assault by someone known to the patient ( $n = 124$ ; 33%), nonsexual assault by someone known to the patient ( $n = 87$ ; 23%), witnessing death or violent assault ( $n = 49$ ; 13%), serious accident ( $n = 27$ ; 7%), sexual assault by a stranger ( $n = 10$ ; 3%), nonsexual assault by a stranger ( $n = 6$ ; 2%), military combat ( $n = 7$ ; 2%), life-threatening illness ( $n = 5$ ; 1%), sexual contact at younger than 18 by someone more than 5 years older ( $n = 4$ ; 1%), imprisonment ( $n = 1$ ; 1%), and other ( $n = 59$ ; 16%). The mean age of onset for patients with PTSD or subthreshold PTSD was 19.97 years ( $SD = 12.15$ ).

*Sensitivity of the Screening Question*

The trauma list was added to the SCID after the first 402 participants had been evaluated, leaving 893 participants in the trauma identification analysis. Four hundred two participants responded negatively to the SCID screening question. Of these, 92 (23%) subsequently reported a trauma when cued by the trauma list. Of these 92 participants, 9 (10%) met full criteria for the diagnosis of PTSD, and 7 (8%) met criteria for subthreshold PTSD, for a total of 16 participants with either diagnosis. It is important to note that half of the 16 participants with a diagnosis

who were missed by the screening question had a current disorder. In the other 8 patients, the symptoms were partially remitted ( $n = 6$ ) or in the past ( $n = 2$ ).

For detecting a trauma history, the SCID screening question had a sensitivity of 84% (491/583), specificity of 100% (310/310), positive predictive power (PPP) of 100% (491/491), and negative predictive power (NPP) of 77% (310/402; see Table 1). For detecting a lifetime history of PTSD, the SCID screening question had a sensitivity of 95% (172/181), specificity of 55% (393/712), PPP of 35% (172/491), and NPP of 98% (393/402). Finally, the SCID screen had a sensitivity of 94% (252/268), specificity of 62% (386/625), PPP of 51% (252/491), and NPP of 96% (386/402) for detecting a lifetime history of either PTSD or subthreshold PTSD.

The incremental validity of the addition of the trauma list was assessed by comparing its performance with that of the SCID screening question in the 893 patients assessed with the trauma list (see Table 2). The sensitivity and NPP of the trauma list approach for detecting PTSD and subthreshold PTSD were 100%, 6% and 4% higher than the SCID screen, respectively. The specificity of the list for detecting PTSD and subthreshold PTSD was approximately 12% lower than that of the SCID screen, and the PPP was about 5% lower than the SCID.

*When Should the Diagnostic Interview Be Terminated?*

The diagnostic properties of the PTSD criteria for diagnosing subthreshold PTSD were analyzed to determine an optimal termination point for the SCID PTSD interview. Of the 116 patients with a subthreshold PTSD diagnosis, 97% ( $n = 112$ ) met Criterion B, 34% ( $n = 39$ ) met Criterion C, and 63% ( $n = 73$ ) met Criterion

Table 1  
*Performance of the SCID Screening Question in Identifying a History of Trauma, Posttraumatic Stress Disorder (PTSD), and Subthreshold PTSD (n = 893)*

Variable	Positive	Negative
SCID screening question		
Trauma history		
Positive	491	92
Negative	0	310
PTSD diagnosis		
Positive	172	9
Negative	319	393
PTSD/subthreshold PTSD		
Positive	252	16
Negative	386	293
Trauma list		
PTSD diagnosis		
Positive	181	0
Negative	402	310
PTSD/subthreshold PTSD		
Positive	268	0
Negative	315	310

*Note.* SCID = Structured Clinical Interview for *DSM-IV* (First et al., 1997); PTSD/subthreshold PTSD = participants diagnosed with PTSD or subthreshold PTSD.

Table 2  
*Performance (in Percentages) of the SCID Screening Question as Compared With the PDS Trauma List in Identifying a History of Trauma, Posttraumatic Stress Disorder (PTSD), and Subthreshold PTSD (n = 893)*

Variable	SCID screening question				PDS trauma list			
	Sens.	Spec.	PPP	NPP	Sens.	Spec.	PPP	NPP
Trauma history	84	100	100	77				
PTSD	95	55	35	98	100	44	31	100
PTSD/subthreshold PTSD	94	62	51	96	100	50	46	100

*Note.* SCID = Structured Clinical Interview for *DSM-IV* (First et al., 1997); PDS = Posttraumatic Diagnostic Scale (Foa et al., 1997); Sens. = sensitivity; Spec. = specificity; PPP = positive predictive power; NPP = negative predictive power; PTSD/subthreshold PTSD = participants diagnosed with PTSD or subthreshold PTSD.

D. Thus, Criterion C was the most likely to be failed by patients with subthreshold PTSD, whereas Criterion B was almost always present. This suggests that if Criterion B is absent, then the interview can be terminated because few ( $n = 4$ ) patients with subthreshold PTSD receive this diagnosis by virtue of meeting Criterion C or D or both without also meeting Criterion B.

### Discussion

Our goal in this research was to examine the performance of the SCID's screening question in identifying PTSD and subthreshold PTSD and to determine an optimal point for terminating the SCID when assessing subthreshold PTSD. First, the prevalence of PTSD and subthreshold PTSD was determined. We found that nearly one third of our sample was diagnosed with either PTSD or subthreshold PTSD, results that are similar to those of other studies (O'Toole et al., 1996).

Next, the sensitivity of the screening question for capturing trauma history was examined. Although a more comprehensive trauma assessment increased the number of participants reporting a trauma from 55% to 65%, the sensitivity of the SCID's screening question for detecting a trauma history was a respectable 84%. Most important, using the trauma list identified few additional cases of PTSD or subthreshold PTSD. This suggests that individuals with diagnosable PTSD symptoms readily recall that they have experienced a trauma and report it when asked a screening question.

It is important to note that individuals may have psychopathology, other than PTSD symptoms, related to traumatic events (e.g., borderline personality disorder, depressive disorders, substance use disorders). Knowing how well the SCID screening question and trauma list perform when identifying trauma histories, PTSD, and subthreshold PTSD will help clinicians better judge which method to use on the basis of the goals of their assessment. For the purpose of this project, which was to diagnose PTSD or subthreshold PTSD, the SCID screening question performed very well.

Other research has shown that screening questions, like those used in the SCID, less comprehensively assess traumatic events than assessments involving a trauma list (Goodman et al., 1998). However, this research has not addressed the clinical significance of missed traumatic events (i.e., whether they lead to underdetection of PTSD symptoms or a PTSD diagnosis). For example, during a test-retest validation of their Stressful Life Events Screening Questionnaire, Goodman et al. (1998) found that al-

though college students reported more events during an interview than on a screening questionnaire, only 27% of these additional events were categorized as traumatic (Criterion A1 events) by the authors. Goodman et al. concluded that although their trauma screening measure missed more reported events than did the interview, it did not miss more traumatic events. Although Goodman et al. did not examine the clinical significance of the additional reported experiences, our data suggest that these reports would not be associated with clinically significant symptoms or impairment. In our study, the SCID screening question missed 23% of individuals who experienced a traumatic event. However, only 4% ( $n = 16$ ) of individuals with a diagnosis of PTSD or subthreshold PTSD ( $n = 379$ ) were missed. Thus, the SCID's screening item was adequate for identifying individuals who had PTSD or subthreshold PTSD.

In a structured diagnostic interview, PTSD diagnostic criteria are usually sequentially ascertained, in that a person is first asked about experiencing a trauma, about his or her reaction to that trauma, and then about reexperiencing (Criterion B), avoidance (Criterion C), and arousal (Criterion D) symptoms. The sequential nature of the diagnostic interview was examined to determine an efficient heuristic for terminating the assessment while still maintaining maximal effectiveness in capturing subthreshold, yet clinically significant, PTSD symptoms. The number of participants diagnosed with subthreshold PTSD who met each criterion set was determined. Consistent with the literature (Kilpatrick & Resnick, 1993; McMillen, North, & Smith, 2000; Schutzwahl & Maercker, 1999), results showed that a majority of participants met Criteria A, B, and D but failed to meet Criterion C. In fact, only 4 patients failing to meet Criterion B were given the diagnosis of subthreshold PTSD. On the basis of this analysis, Criterion B was determined to be the optimal termination point for SCID subthreshold PTSD assessment.

A limitation of this study is that the SCID interviews used in these analyses relied solely on retrospective self-report. No collateral or multimodal assessments of the PTSD diagnoses were performed to validate the reports. Given that the SCID was the only measure used, the generalizability of the results to other structured interviews is uncertain. Furthermore, the fact that the participants were mostly Caucasian and seeking treatment may further hinder generalizability to other PTSD populations. Our findings should be replicated in a non-treatment-seeking sample.

Another limitation to the study may be the lack of multiple trauma assessments across time. Previous research on this topic has been mixed. Some authors have suggested that trauma reports are inconsistent, even when questions are concrete and time between test and retest is kept short (Goodman et al., 1998), whereas others have found respectable kappa coefficients for traumatic events assessed 1 week apart (median  $\kappa = .62$ ; Wyshak, 1994). It may be that specific types of traumas are more reliably reported than others or that clinically significant traumas (i.e., those linked to PTSD symptoms) are more reliably reported than those not linked to significant impairment and distress. The relationship of type and clinical significance of traumatic events to the reliability of reporting should be the subject of future investigation.

Also, this study was not a head-to-head comparison of the SCID screening versus trauma list approaches. Instead, it was designed to determine how much information is missed by the screening question. By virtue of the design (first asking the SCID screening question, then administering the trauma list to those individuals who did not report a trauma on the screen), the sensitivity and NPP of the trauma list were necessarily 100%. Thus, the goal of the study was not to compare the diagnostic performance of the two approaches for assessing a trauma history but to determine how much sensitivity would increase and specificity decrease when the more comprehensive trauma list followed the brief SCID screen.

Finally, the definition of subthreshold PTSD used in this article differs from that most commonly found in the literature. The most widely used set of criteria for subthreshold PTSD requires individuals to meet Criterion B (reexperiencing) and either Criterion C (avoidance) or D (arousal), but not both (Blanchard et al., 1994). Our definition more closely follows the *DSM-IV* approach toward making not-otherwise-specified diagnoses, where subthreshold PTSD diagnoses were assigned when participants failed to meet at least one PTSD criterion threshold but had functional impairment or distress from their symptoms.

In summary, our results suggest that the SCID screening question captures almost all individuals who go on to meet the diagnostic criteria for PTSD or subthreshold PTSD. Although the SCID screening questions do an adequate job of assessing trauma histories in general, they do not perform as well as a trauma list. Furthermore, when using the SCID to assess subthreshold PTSD, the evaluation can be terminated on failure to meet Criterion B.

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