

In: Post-Traumatic Stress Disorder
Editors: E. Foreman and J. Fuller

ISBN: 978-1-62417-437-7
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Chapter 5

**SUICIDAL IDEATION ASSOCIATED WITH PCL
CHECKLIST-ASCERTAINED PTSD
AMONG VETERANS TREATED
FOR SUBSTANCE ABUSE**

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ABSTRACT

This chapter begins by reviewing the literature concerning the use of the SCID versus the PCL for diagnosing PTSD, and by reviewing the literature regarding the presence of suicidal ideation as a clinical correlate of PTSD. This chapter then describes our recent study involving PTSD among Veterans, which assessed the presence of suicidal ideation as a clinical correlate of PTSD, as diagnosed by the SCID versus as diagnosed

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by the PCL. We hypothesized that the presence of suicidal ideation would be associated with a diagnosis of PTSD. Subjects were 101 Veterans recruited from VA behavioral health and substance use treatment clinics in the VA Pittsburgh Healthcare System. The study compared correlations of suicidal ideation with PTSD as determined with the PTSD Checklist versus the Structured Clinical Interview for DSM-IV, and utilized question 9 of the Beck Depression Inventory for assessing presence of SI. PTSD was diagnosed in 15 subjects using the SCID, and in 15 subjects using the PTSD Checklist. SI were reported by 16 subjects. The presence of SI was significantly associated with the diagnosis of PTSD on the PCL (chi-square=5.73, df=1, p=0.017) but not on the SCID (chi-square=0.08, df=1, p=0.773). These findings suggest that SI associated with the diagnosis of PTSD among Veterans are better ascertained by the PCL as compared to the more elaborate diagnostic algorithm used in the SCID. The current study finding raises the possibility that a less complicated diagnostic assessment instrument such as the PCL may be superior to the SCID, a more complicated instrument for diagnosing PTSD, at least in some populations.

1. INTRODUCTION

The diagnostic algorithm used in instruments such as the Structured Clinical Interview for DSM Disorders (SCID) for diagnosis of Post-traumatic Stress Disorder (PTSD) is complicated, and has proven to be controversial [McNally et al., 2009]. Whereas screening instruments such as the PTSD Checklist (PCL) have demonstrated adequate diagnostic efficiency in detection of PTSD, some researchers have suggested that the use of the self-report PTSD Checklist (PCL) may be superior to the SCID for diagnosing PTSD among some populations [McDonald and Calhoun, 2010]. However, research to date has not established which of these two diagnostic procedures is more accurate in detection of PTSD among Veterans. The PCL utilizes some but not all of the DSM criteria for PTSD and uses a dimensional approach, based on Likert-type self-ratings. In contrast, the Structured Clinical Interview for DSM-IV Diagnosis (SCID-P, Patient Version) [First et al., 1997] utilizes a semi-structured interview approach to be conducted by skilled clinical interviewers and applies the entire relatively complicated DSM-IV diagnostic algorithm to determine the presence/absence of PTSD. Because there have been few studies that have made a head-to-head comparison of the diagnostic utility of these two diagnostic approaches, it is currently unclear which diagnostic algorithm is best to make the diagnosis of PTSD among Veterans.

Some of the clinical correlates of PTSD are also understudied, such as the level of the important clinical correlate of suicidal ideation (SI). That question is particularly important at this time because of major changes in the DSM diagnostic system for PTSD that are currently being considered when the DSM-V is introduced in 2013.

The chapter begins by reviewing the literature concerning the use of the SCID versus the PCL for diagnosing PTSD, and by reviewing the literature regarding the presence of suicidal ideation as a clinical correlate of PTSD. Our current study is then described, which assesses the presence of suicidal ideation and evaluates the strength of association as a clinical correlate of PTSD as diagnosed by the SCID versus the PCL. This study provides a preliminary evaluation of the clinical utility of those diagnostic instruments and an evaluation of the clinical utility of the current DSM diagnostic system for assessing PTSD among Veterans. Assessments of clinical correlates are important in evaluating the clinical utility of a diagnosis. We hypothesized that the presence of suicidal ideation would be associated with the presence of the diagnosis of PTSD as determined by the SCID and as determined on the PTSD Checklist (PCL).

Post-traumatic stress disorder (PTSD) is defined by the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* as the development of specific symptoms following exposure to a severe traumatic event (defined as below) to which a person responded with intense fear, helplessness, or horror [APA, 2000]. PTSD is a relatively common disorder, with an estimated lifetime prevalence of 6-7% for the general US population [Kessler et al., 2005]. It is more common among Veterans, with lifetime prevalence among Veterans exposed to war zone trauma estimates as high as 15% and 31% based on self-rated symptom inventory lifetime prevalence rated among Veterans exposed to war zone trauma [Yeager et al., 2007]. In order to diagnose PTSD by DSM-IV criteria, "The person experienced, witnessed or was confronted with an event or events that involved actual or threatened death or serious injury or a threat to the physical integrity of self or others" (Criterion A1) and "the person's response involved intense fear, helplessness, or horror" (Criterion A2). In addition, the DSM system requires the presence of one of five listed symptoms involving *re-experiencing* of a traumatic event (Criterion B), three of the seven listed symptoms involving *avoidance* of stimuli associated with the trauma (Criterion C), and two of five symptoms associated with *arousal* (Criterion D) (APA 2000). If the number of symptoms present for any of those three groups of symptoms (re-experiencing, avoidance, or arousal) is less than the threshold

number of symptoms for that group of symptoms, then the person is deemed not to meet DSM IV criteria for PTSD, regardless of the overall number of diagnostic criteria for PTSD that the person might meet. Criterion E of DSM-IV PTSD states that the duration of the disturbance is more than one month, while Criterion F states that PTSD causes clinically significant distress or impairment in functioning.

Robert Spitzer and colleagues, who introduced the term Post Traumatic Stress Disorder (PTSD) into DSM-III, recently concluded that no other DSM diagnosis has generated so much controversy in the field as PTSD, including the boundaries of the disorder, diagnostic criteria, central assumption, clinical utility and prevalence in various populations [Spitzer et al., 2007]. In that article Spitzer and colleagues reviewed published data-based reports that contribute to questions regarding the validity of the DSM-IV PTSD diagnostic criteria, and noted the prominent non-specificity and apparent false positives of the PTSD syndrome. The authors also concluded that many suggested changes concerning PTSD in the DSM-V are based on face validity considerations rather than empirical findings. The final criteria for PTSD in DSM-V have not yet been decided, though preliminary versions of DSM-V criteria have become available. Most recently, committee members for the DSM-V provided a preliminary version of the DSM-V criteria for PTSD that lists 21 possible symptoms and signs, grouped into four (rather than the current three) clusters, including intrusion symptoms, avoidance, hyperarousal and the addition of negative affect [APA, 2010]. The new diagnostic cluster in the proposed diagnostic system which was not present in DSM-IV involves negative alteration in cognitions and mood associated with the traumatic event, as evidenced by two or more of seven listed symptoms. In addition, the number of symptoms required from the “avoidance” group of symptoms has dropped from three in DSM-IV to one in DSM-V.

In response to those proposed changes in the diagnostic system for PTSD, Rosen and colleagues [2010], in their review of the literature, noted that there are conflicting proposals on how the syndrome should be operationalized in the DSM-V and questioned the distinctiveness and specificity of the etiology of the disorder, noting a substantial overlap between PTSD and other disorders. Those same authors also acknowledged the “criterion creep” associated with PTSD, and the heterogeneity of the disorder. They concluded that PTSD should be relegated to the DSM-V appendix for experimental criteria. Similar concerns were presented by McNally [2009], who questioned whether the diagnosis of PTSD could be “fixed” in DSM-V.

Beyond questions regarding the validity of the DSM diagnostic criteria, there has been considerable research and dialogue regarding the validity and efficiency of various screening instruments for use in identification and diagnosis of PTSD by DSM-IV criteria. Foremost among them is the PTSD Checklist (PCL), a self-report instrument developed by a research team from the National Center for PTSD (Blanchard et al., 1996) and at present, the most frequently used self-report measure of PTSD symptoms [McDonald et al. 2010]. In use now for 20 years, and over a dozen validation studies have been conducted using that instrument [McDonald et al., 2010]. The PCL has demonstrated excellent psychometric properties in test-retest reliability, internal consistency, convergent validity, diagnostic utility [Weathers et al., 1993; Blanchard et al., 1996; Forbes et al., 2001; McDonald et al., 2010]. For example, the PCL has a demonstrated test-retest reliability of 0.96 and validity as indicated by a kappa of 0.64, leading researchers to refer to it as one of the “gold standards” for diagnosing PTSD [Blanchard et al., 1996].

Three versions of the popular PTSD Checklist developed by Blanchard and colleagues [Blanchard, Jones-Alexander, Buckley et al., 1996] have been developed; these include the PCL-M for military populations (that anchors the questions to “stressful military experiences”), the PCL-C for civilian populations (that anchors the questions to “stressful experiences”, unspecified) and the PCL-S that anchors symptoms to a specific trauma. Although there is considerable evidence of internal reliability of each, the cut scores for prediction of diagnosis vary across instruments and populations. More important perhaps, there is evidence that when used alone, the PCL may overdiagnose PTSD [Wilkins et al., 2011], as suggested by evidence that prevalence rates drop when criteria A1, A2 and F are added [Del Ben, Scott, Chen et al., 2006]. The convergent validity of the PCL-M with the PTSD section of the SCID has been estimated at 0.64 (kappa coefficient) for a military sample [Weathers, Litz, Herman et al., 1993]; it has also demonstrated convergence with diagnoses generated with the Mississippi PTSD Scale and the Clinician-administered PTSD Scale (CAPS) [as reviewed by Wilkins et al., 2011]. However, the very limited publication of peer-reviewed studies that compare the PCL as a diagnostic instrument in comparison with structured DSM-IV-based interviews such as the SCID [Wilkins et al., 2011] suggests that its efficiency when used alone as a diagnostic instrument has not been determined. Thus, it may best be used as originally intended, i.e. as a screening instrument in combination with a subsequent diagnostic interview. Finally, because of these continued controversies, a recent review concluded that more

research is also needed regarding the utility of the PCL cut-off criteria and scoring rules commonly employed for PTSD [McDonald et al., 2010].

Multiple studies and reviews have shown a clear relationship between PTSD and suicidal thoughts and behaviors-- irrespective of the type of trauma experienced [Oquendo et al., 2003; Panagioti et al., 2009]. For example, data from the National Comorbidity Survey have demonstrated that PTSD is significantly associated with suicidal ideation (adjusted odds ratio=2.79, $p<.01$) and suicide attempts (adjusted odds ratio=2.67, $p<0.01$) in a community-based sample of the general US population [Kessler et al., 1996]. A large recent study by US epidemiologists working with a population-based sample from Denmark demonstrated that PTSD is also significantly associated with completed suicide [Gradus et al., 2010]. Rates of suicidal ideation have been shown to increase linearly with each increase in the number of PTSD symptoms [Marshall et al., 2001]. This is a very pressing current public health concern, because PTSD is the most common mental disorder among OEF/OIF Veterans seeking VA services [Jakupcak et al., 2009]. Further, suicidal ideation has been shown to be associated with PTSD among US military Veterans, including Veterans from the Iraq and Afghanistan wars [Jakupcak et al., 2009; Pietrzak et al, 2010]. Furthermore, Veterans who screened positive for PTSD were more than 4 times more likely to endorse suicidal ideation relative to non-PTSD Veterans (Adjusted Odds Ratio=4.45, 95% CI 2.58-7.67, Jakupcak et al., 2009). Since the beginning of hostilities in 2001, there has been an increase in rates of suicide among active duty soldiers deployed to Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) [Jakupcak et al., 2009].

Thus, the prevalence of suicidal ideation among individuals with PTSD is of tremendous relevance to efforts to identify individuals at risk for suicide. Findings pertaining to the OEF/OIF veteran population are consistent with prior research with Vietnam Veterans showing that PTSD predicts completed suicides [Bullman and Kang, 1994]. Recently, a paper was published which examined the relation between PTSD and suicidal ideation in an OEF/OIF Veteran sample [Guerra et al., 2011]. That paper first reviewed the results of three previous papers assessing the relation of PTSD symptom clusters to suicidality, and concluded that the results concerning the association of PTSD and suicidality were "mixed" in those previous studies. Guerra and colleagues went on to report results of their own study, which showed that PTSD was associated with suicidal ideation among OEF/OIF veterans. Furthermore, the investigators determined that in this sample, suicidal ideation was associated with PTSD, irrespective of the presence or absence of comorbid major

depression or alcohol use disorders. Thus, the prevalence of suicidal ideation among individuals with PTSD is of tremendous relevance to efforts to identify individuals at risk for suicide.

The primary purpose of the current study was to examine the relation of suicidal ideation to PTSD as detected using two different instruments for assessing PTSD symptomatology and diagnosis. The first hypothesis was that PTSD as assessed by the Structured Clinical Diagnostic Interview for DSM-IV (SCID) and using all of the DSM-IV criteria (A through H) as included in the SCID would be associated with the presence of current suicidal ideation. The second hypothesis was that the determination of a diagnosis of PTSD using the simple 17-item DSM-IV symptom criteria included in the PCL would also be associated with the presence of current suicidal ideation.

McDonald and Calhoun [2010] recently concluded that studies are warranted to clarify the clinical utility of the different diagnostic algorithms for PTSD. Such studies would include an evaluation of the clinical correlates of PTSD, such as suicidal ideation. Therefore, an examination of the relation of suicidal ideation to PTSD, based on the elaborate DSM-IV-based diagnostic system used in the SCID and also using the PCL self-reported symptomatology that maps on to DSM-IV symptom criteria only (i.e. excluding the DSM-specified type of trauma and excluding the assessment of impact on functioning and duration of symptoms) may contribute to assessment of the clinical correlates of PTSD. Whereas this study is limited to a focus on suicidal ideation alone, more elaborate studies are warranted that assess the relationship of multiple clinical correlates of PTSD to contrasting diagnostic approaches (clinical interview versus self-report), and include an assessment of the effects of systematic variation in cut-scores for the PCL. Such research efforts are needed to help inform decisions regarding the optimal diagnostic approach to be used for PTSD in the upcoming DSM-V.

2. METHOD

2. 1. Subjects

Subjects were Veterans recruited from the outpatient behavioral health services of the VA Pittsburgh Healthcare System (VAPHS). Before entry into this protocol, the study was explained to all participants, and written informed consent was obtained from all subjects after all procedures had been fully explained. The study was approved by the VAPHS Institutional Review

Board. This study was conducted at the Highland Drive Campus of the VAPHS. Subjects were recruited for participation in the study through referrals from the outpatient behavioral health clinic and substance abuse treatment programs at the VAPHS and by flyers distributed at the VA and in the community. Study participants were required to be over the age of 18 years of age at recruitment into the study. Subjects were recruited without regard to gender, race, or ethnicity. Potential subjects were excluded from participation for any psychosis-related diagnosis, such as schizophrenia, and for evidence (by research interview) of any medical condition that would confound determination of any Axis I diagnosis. The study was typically completed in one to two sessions. Subjects were compensated \$20 for participation in the study. Blood was also collected for genetics studies as part of this study. The results of those genetics analyses are not yet available.

2. 2. Instruments

The SCID: Psychiatric diagnoses (including the diagnosis of PTSD) were determined using the Structured Clinical Interview for the DSM-IV (SCID) [First et al., 1997], administered by experienced clinical interviewers with specialized training in SCID administration. As presented earlier in this chapter, diagnosis of PTSD using the SCID interview approach includes all DSM-IV criteria, and includes a question asking about a history of trauma. The SCID has been demonstrated to have good reliability, validity, and clinical utility [First et al., 2008].

The PCL-C (PTSD Checklist-Civilian Version): The PCL-C consists of 17 items which correspond to diagnostic criteria B, C, and D of the DSM-IV criteria for PTSD [Ruggiero et al., 2003]. Examinees are instructed to indicate how much they have been bothered by each symptom in the past 30 days, using a 5-point (1-5) scale [Weathers et al., 1993] ranging from 1=*not at all bothersome*, to 5=*extremely bothersome*. The most common method of assessing the presence or absence of PTSD using the PCL involves simply summing the score from the items listed on the PCL, which includes the 17 items from Criterion B, Criterion C, and Criterion D of the DSM-IV diagnosis of PTSD, and then determining whether the summed score meets the threshold score of 50 or greater for the diagnosis of PTSD. That system was used for diagnosing PTSD with the PCL in the current study. The PCL does not assess all of the DSM-IV criteria (Criterion A through Criterion H) for PTSD, but instead it focuses on Criteria B, C, and D. Specifically, it does not seek to

provide a detailed assessment of the traumatic event (Criterion A1), nor does it seek to determine whether the respondent's reaction to the trauma involved intense fear, helplessness, or horror (Criterion A2). In addition, with the PCL, no attempt is made to determine whether the duration of the disturbance is more than one month (Criterion E), and no attempt is made to determine whether the disturbance causes clinically significant distress or impairment in functioning (Criterion F). Finally, the PCL uses only one symptom severity cut-off for diagnosing PTSD, a score of greater than or equal to 50 across Criteria B, C, and D [Forbes et al., 2001], while the DSM-IV uses separate severity cut-off scores for each of those three criteria. Thus, the PCL is a substantially shorter and simpler instrument for diagnosing PTSD than are the DSM-IV criteria themselves, as are utilized on the SCID.

Beck Depression Inventory (BDI) Question 9: Suicidal Ideation. The presence or absence of current suicidal ideation was determined by utilizing question 9 of the Beck Depression Inventory-Second Edition (BDI) [Beck, Steer, and Brown, 1996]. The BDI has demonstrated good reliability, validity, and clinical utility [Beck, Ward, et al., 2008].

2. 3. Statistical Analysis

Descriptive statistics were calculated for all variables, including means and standard deviation for continuous variables and frequencies for categorical variables. Statistical analyses were conducted using chi squares and logistic regressions. Unadjusted between-group comparisons of categorical variables were performed using chi-square tests, corrected for continuity. Logistic regression analyses were then conducted to determine the extent to which PTSD contributed to the development of suicidal ideation, after allowing for the effects of demographic factors and other confounding factors. In these analyses, suicidal ideation was defined in terms of the presence or absence of suicidal ideation on question 9 (the suicidality question) of the Beck Depression Inventory. Other design factors used for statistical control in these logistic regression analyses included gender, race, and the presence or absence of comorbid substance use disorder, which were selected on the basis of preliminary univariate analyses and a review of the literature. All tests were two-tailed. An alpha level of less than or equal to 0.05 was used in the study. All analyses were conducted using the Statistical Package for the Social Sciences, Version 15.0 [Norusis, 1992].

RESULTS

Participants in this study included 101 subjects. These subjects included 90 males (89%) and 11 females (11%); 85% were Caucasian, 10% were African-American, and 5% self-identified as from other minority racial groups. PTSD, as diagnosed by strict DSM-IV criteria (using the SCID), was diagnosed in 15 (14.9%) of the subjects. PTSD, as diagnosed using the PCL self-report and cut-off criteria specified above, was also diagnosed in 15 subjects (14.9%), with only 6 of the 15 (i.e. 40%) of the subjects who met diagnostic criteria for PTSD on the SCID, meeting diagnostic criteria on the PCL (and 9 of the 88 determined to be negative on the SCID meeting criteria for diagnosis of PTSD on the PCL). These findings (Table 1) indicate a poor concordance between those two instruments in diagnosing PTSD for this sample. Interestingly, the proportion of individuals who received a positive diagnosis by the PCL did not exceed the proportion of individuals were positive by SCID interview. It is noteworthy too that Major Depressive Disorder (MDD) (Current) was diagnosed in 52 of the subjects (51%). Suicidal ideation (SI) was reported by 16 (15.8 %) of the 101 subjects. The presence of SI was significantly associated with the diagnosis of PTSD on the PTSD Checklist (chi-square=5.73, df=1, p=0.017) but not on the SCID (chi-square=0.08, df=1, p=0.773).

Table 1. PCL-C- versus SCID-based PTSD Diagnoses

SCID – PTSD	PCL-C - PTSD		TOTAL
	NO	YES	
NO	79	9	88
YES	9	6	15
TOTAL	88	15	103*

Table 2. a. Suicidal Ideation by SCID PTSD Status

SCID– PTSD	BDI – SI		TOTAL
	NO	YES	
NO	72	14	86
YES	13	2	15
TOTAL	85	16	101*

*2 fewer cases due to missing BDI Scores.

Table 2. b. Suicidal Ideation by SCID PTSD Status

PCL-C PTSD	BDI – SI		TOTAL
	NO	YES	
NO	77	11	88
YES	8	5	13
TOTAL	85	16	101*

*2 fewer cases due to missing BDI Scores.

CONCLUSION

These findings indicate that for the sample included in this study the presence of suicidal ideation was associated with the diagnosis of PTSD as determined by the PTSD Checklist (PCL) but not as determined by the SCID. This is an interesting finding that may be due to method variance shared by the PCL and the BDI; that is, unlike the SCID, they both use a written, self-report format. Alternatively, it may be that PTSD diagnosis that is based solely on the DSM-IV symptom criteria (excluding functional status and the nature of the stressor) picks up a group of cases that present symptomatology that may be associated with suicidal ideation; in contrast, too, individuals that would be excluded from DSM-IV PTSD due to functional status and/or the specific nature of the stressor might yet endorse PTSD symptom criteria and suicidal ideation. Further study with a larger sample that more fully examines the overlap and non-overlap between the two diagnostic approaches would be needed to address this question.

Further studies are warranted to evaluate the association of suicidal ideation with a diagnosis of PTSD, while evaluating the utility of various diagnostic systems for diagnosing PTSD. Such research is needed to evaluate the risk for suicidal ideation in PTSD as the prevalence of PTSD varies across various Veteran and civilian populations, and as prevalence estimates vary using different data collection approaches (structured clinical interview versus written self-report) and different criteria sets for PTSD.

The findings of this study suggest that suicidal ideation is associated with the diagnosis of PTSD among US military Veterans recruited from behavioral health and substance abuse treatment clinics when PTSD is diagnosed by the PTSD Checklist (PCL), a simplified measure that assesses some but not all DSM-IV criteria for PTSD. However, the findings of this study did not confirm our other hypothesis, i.e., that suicidal ideation would be associated

with the diagnosis of PTSD as determined by the SCID, which uses a much longer and more complete diagnostic algorithm utilizing the relatively complex DSM-IV criteria to diagnose PTSD. These findings are also consistent with the conclusions from some recent studies that the diagnostic efficiency based on the convergent and divergent validation with DSM-IV structured interview approach is likely to vary with the sample, with the particular form of the PCL, and with the cut-points used for diagnosis of PTSD. Although the PCL may be superior to alternative symptom-only self-report measures for assessing PTSD [Conybeare et al., 2012], and may be a preferred screening tool for PTSD [Yeager et al., 2007], diagnostic efficiency may be limited, as reflected in terms of agreement with diagnostic approaches that strictly rely on the full set of DSM-IV diagnostic criteria and structured clinical interview by experienced clinical interviewers. The changes proposed for the DSM-V will make the diagnosis of PTSD more complicated, because it will increase the number of required clusters of symptoms by one cluster. Limitations of the current DSM diagnostic system for diagnosing PTSD discussed by recent authors [Spitzer et al., 2007; McNally, 2009] are unlikely to be redressed with the introduction of additional symptom criteria in DSM-V. After reviewing previous results and our own current results regarding PTSD, we concur with the conclusions of McDonald and Calhoun regarding the need for more research concerning the utility of scoring rules commonly employed for diagnosing PTSD, such as the rules used in DSM-IV, and for more research that aims to clarify the clinical correlates of PTSD among various populations. Limitations of the current study include the small sample size, the lack of any independent ‘gold standard’ or acceptable third source of diagnostic determinations (e.g. the Clinician Assessment of PTSD, or CAPS, a commonly used and well-validated clinical interview). Likewise, the evaluation of suicidal ideation is limited to a self-report using a single item from the Beck Depression Interview. It must also be noted that a higher correlation between suicidal ideation and PTSD diagnosis by the PCL as contrasted with the SCID interview may be due to methods variance; i.e. the fact that both the PCL and BDI are self-report instruments may contribute to a higher correlation between the two.

AUTHORS’ NOTE

- The contents of this manuscript do not represent the views of the Department of Veterans Affairs or the United States Government.

- The authors acknowledge the assistance of Maribeth Wesesky in the preparation of this manuscript.

ACKNOWLEDGMENTS

This material is based upon work supported by the Department of Veterans Affairs, Veterans Health Administration, the VAPHS Office of Research and Development and the VISN 4 Mental Illness Research, Education, and Clinical Center (MIRECC, Director: D. Oslin; Pittsburgh Site Director: G. Haas), VA Pittsburgh Healthcare System.

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