Journal of Anxiety Disorders 25 (2011) 404–410

Contents lists available at ScienceDirect

Journal of Anxiety Disorders

Testing whether posttraumatic stress disorder and major depressive disorder are similar or unique constructs☆

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ARTICLE INFO

Article history:
Received 15 August 2010
Received in revised form 20 October 2010
Accepted 8 November 2010

Keywords:
Posttraumatic stress disorder
Emotional trauma
Major depressive disorder
Item response theory
Rasch modeling
Comorbidity
Latent variable modeling

ABSTRACT

Posttraumatic stress disorder (PTSD) and major depressive disorder (MDD) co-occur frequently, are highly correlated, and share three symptoms in common. In the present paper, the authors tested whether PTSD and MDD are similar or unique constructs by examining their symptoms using Rasch modeling. Data were used from the 766 trauma-exposed subjects in the National Comorbidity Survey-Replication (conducted in the early 2000s) with PTSD and MDD symptom ratings. Results demonstrate that MDD symptoms were less frequently endorsed than PTSD symptoms—even for the three symptoms shared between the disorders. PTSD and MDD items represented a single, underlying dimension, although modest support was found for a secondary sub-factor. Removing their shared symptoms, and additional depression-related dysphoria symptoms, continued to result in a single underlying PTSD-MDD symptom dimension. Results raise further questions about PTSD's distinctiveness from MDD, and the causes of their comorbidity.

1. Introduction

In recent years, significant challenges have been raised about posttraumatic stress disorder's (PTSD) construct validity (McHugh & Treisman, 2007; Rosen & Frueh, 2007; Spitzer, First, & Wakefield, 2007). One particular construct problem involves PTSD's substantial symptom overlap, shared variance and comorbidity with other mood and anxiety disorders—especially major depressive disorder (MDD) (Frueh et al., 2000). The present paper empirically examines the extent to which PTSD and MDD are similar or unique, including the impact of their symptom overlap, using a nationally representative, trauma-exposed sample of U.S. residents.

Symptom overlap with other disorders is a particularly problematic issue with PTSD, raising questions about its distinctiveness as a mental disorder (McHugh & Treisman, 2007; McNally, 2003; Spitzer et al., 2007). Four PTSD symptoms overlap with other mood and anxiety disorders: anhedonia (criterion C4), sleep difficulty (D1), irritability (D2), and concentration difficulty (D3). MDD in particular shares PTSD's criteria C4, D1 and D3 in its major depressive episode symptom criteria.

Because of PTSD's symptom overlap with major depression, it is not surprising that these two disorders are highly comorbid. In fact, nationally representative studies reveal that 48–55% of individuals with a lifetime history of PTSD have also met criteria for a major depressive episode (Elhai, Grubaugh, Kashdan, & Frueh, 2008; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Moreover, diagnostic comorbidity between PTSD and major depression is even higher in clinical samples (reviewed in Keane & Kaloupek, 1997).

Furthermore, PTSD and depression instrument severity scores tend to be highly intercorrelated. For instance, the most widely used *DSM-IV*-based PTSD severity measures have been identified as the Clinician-Administered PTSD Scale (CAPS), Posttraumatic Stress Disorder Checklist (PCL) and Posttraumatic Diagnostic Scale (PDS) (Elhai, Gray, Kashdan, & Franklin, 2005). Based on psychometric studies of these instruments, PTSD-depression severity correlations generally range from .61 to .75 for the CAPS (reviewed in Weathers, Keane, & Davidson, 2001), .63 to .67 for the PCL (Adkins, Weathers, McDevitt-Murphy, & Daniels, 2008; Ruggiero, Del Ben, Scotti, &

☆ The authors report no financial or other relevant relationship to the subject of this article.

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doi:10.1016/j.janxdis.2010.11.003

Rabalais, 2003), and from .59 to .79 for the PDS (Adkins et al., 2008; Foa, Cashman, Jaycox, & Perry, 1997).

On the other hand, evidence with adults and adolescents demonstrates that the PTSD-major depression symptom overlap is not solely responsible for their high comorbidity, based on community samples (Elhai et al., 2008; Ford, Elhai, Ruggiero, & Frueh, 2009), military veterans in primary care (Grubaugh, Long, Elhai, Frueh, & Magruder, 2010), and clinical samples (Franklin & Zimmerman, 2001). For example, Elhai et al. (2008) discovered using adult data from the National Comorbidity Survey-Replication (NCS-R) that the lifetime prevalence rate of a major depressive episode among those with PTSD (54.72%) remained essentially the same when removing PTSD's overlapping symptoms and applying a prorated PTSD diagnostic algorithm (54.41%). Additionally, Ford et al. (2009) used adolescent data from the National Survey of Adolescents and also revealed unchanging prevalence rates with the original PTSD diagnostic algorithm (75.7%) vs. diagnosing PTSD without the overlapping symptoms (76.6%). Thus, although overlapping symptoms between PTSD and major depression intuitively would explain their high comorbidity, empirically such symptom overlap is not the sole cause.

Another possible explanation for PTSD's shared variance with major depression could involve additional *DSM-IV* PTSD symptoms that do not overlap with major depression's symptoms, but are depression-related. Simms, Watson, and Doebbeling (2002) initially tested and found support for a dysphoria factor among PTSD's symptoms, including the three PTSD-MDD overlapping symptoms (discussed above) in addition to memory impairment of the trauma (C3), emotional detachment (C5), constricted affect (C6), sensing a foreshortened future (C7), and irritability (D2). Dysphoria, considered a non-specific measure of distress, correlated .80 with depression scale measures—even higher than it correlated with other PTSD measures (ranging from .51 to .61) (Simms et al., 2002). And, dysphoria correlates less with trauma exposure endorsements than other PTSD factors do (Armour & Shevlin, 2010). Interestingly, after adjusting analyses for depression severity, Elklit, Armour, and Shevlin (2010) found that dysphoria's factor loadings were the most attenuated, but numerous other items' loadings were attenuated as well. Relatedly, Marshall, Schell, and Miles (2010) discovered that dysphoria items were no more correlated with distress measures than other PTSD items were. Overall, these findings suggest that depression accounts for substantial variance in PTSD, but not only through dysphoria. Nonetheless, numerous additional studies with community and clinical samples have found substantial support for the dysphoria factor in PTSD (most recently, Carragher, Mills, Slade, Teesson, & Silove, 2010; Elhai, Ford, Ruggiero, & Frueh, 2009; Engdahl, Elhai, Richardson, & Frueh, in press; Naifeh, Richardson, Del Ben, & Elhai, 2010; Shevlin, McBride, Armour, & Adamson, 2009).

1.1. Study aims

The present study used Rasch modeling with data from the NCS-R (Kessler, 2006) to examine the potential similarity or distinctiveness of PTSD in relation to major depression. Specifically, we explored the role of PTSD's overlapping and dysphoria symptoms in the PTSD-depression relationship. Since extant research demonstrates that PTSD and MDD are highly comorbid and highly intercorrelated, we hypothesized that (1) PTSD and depression symptoms would overlap in terms of their frequency of item endorsements (especially the overlapping symptoms), and (2) some evidence should support PTSD and depression as represented by a single construct, but support for unidimensionality should diminish especially after removing the overlapping and dysphoria symptoms. Investigating this issue is important for etiological, epidemiological and differential diagnostic purposes in the context of PTSD and MDD. Findings will inform the ongoing process of understanding and redefining PTSD's characteristics, and more generally will have implications for our understanding of posttraumatic reactions.

2. Method

2.1. Sample

The NCS-R was a nationally stratified, multistage area household probability sample study of non-institutionalized adults (age 15 and older) (Kessler, 2006). The NCS-R was conducted with 9282 participants in the early 2000s (NCS-R Part I), with demographic characteristics presented in previous NCS-R reports (Kessler et al., 2004). The University of Michigan's Institutional Review Board approved the study, in compliance with the Declaration of Helsinki, and required subject informed consent prior to participation. The present paper used data from the representative subsample of participants completing the NCS-R Part II (which evaluated PTSD; $n = 5692$).

2.2. Instruments

The diagnosis of *DSM-IV* mental disorders was conducted with the World Mental Health Survey Initiative version of the structured Composite International Diagnostic Interview (CIDI) (Kessler & Ustun, 2004). The CIDI evidences adequate convergence with other similar measures (Andrews & Peters, 1998; Haro et al., 2006).

Interviewing with the CIDI was straightforward for most mental disorders, including querying the nine core *DSM-IV* MDD symptoms (using binary "yes"/"no" lifetime symptom ratings). The procedures for querying the 17 *DSM-IV* PTSD symptoms were slightly more complex. Specifically, participants were first asked in behaviorally specific terms about previous exposure to 26 traumatic events meeting *DSM-IV*'s PTSD stressor criterion (A1) (e.g., combat exposure, disaster, life-threatening accidents, assault, witnessed indirect traumas to others, etc.). Only those participants endorsing a traumatic event with initial fear, helplessness or horror (Criterion A2) were subsequently queried by NCS-R interviewers about *DSM-IV* PTSD symptoms. PTSD symptom queries involved binary ("yes"/"no") lifetime symptom ratings about one's trauma. For those endorsing more than one trauma, the most upsetting occurrence of their most upsetting traumatic event type was used for symptom ratings. For individuals whose most upsetting trauma occurrence was different from a trauma that was randomly selected by NCS-R investigators, they were instructed to rate their PTSD symptoms separately for each event, in which case we analyzed their ratings from the most upsetting trauma.

2.3. Analyses

NCS-R Part II sampling weights were used for all analyses, to adjust for differential household size, non-response, and post-stratification. We only used data from participants who (in addition to endorsing PTSD's Criterion A1) had endorsed Criterion A2 in reference to an index trauma on which PTSD ratings were made ($n = 871$). For participants with multiple sets of PTSD ratings, we used ratings from their most upsetting event.

We further excluded 105 subjects missing more than four (24%) of PTSD's symptom items (leaving 766 remaining participants). These subjects were missing items because of skip-out diagnostic rules (if a participant did not meet PTSD's criterion B or C, s/he was not subsequently queried about remaining PTSD criteria); thus, including them would have required estimating their missing data, which were not missing randomly, but because they skipped out

Table 1
Items difficulty, model error, and fit statistics.

Items	Item difficulty	Infit		Outfit	
		Mean square	Standardized coefficient	Mean square	Standardized coefficient
Mean	0	.98	−.20	1.06	.30
SD	1.40	.14	2.60	.41	3.00
Maximum	2.58	1.21	4.40	2.29	5.60
Minimum	−2.06	.75	−4.40	.58	−4.20
Persons	Theta	Infit		Outfit	
		Mean square	Standardized coefficient	Mean square	Standardized coefficient
Mean	−.05	1.00	−.30	1.06	−.20
SD	1.22	.52	1.90	.98	1.70
Maximum	4.05	2.68	5.50	5.84	4.90
Minimum	−3.14	.35	−3.30	.20	−2.80

Note: Infit = Inlier-pattern-sensitive fit statistic, sensitive to unexpected item response patterns. Outfit = Outlier-sensitive fit statistic, sensitive to unexpected observations (i.e., outliers). Mean square = chi-square statistic divided by degrees of freedom (values > 1 indicate unmodeled noise or other error variance). Standardized coefficient = *z* test of the mean square, where $z > 1.96$ indicates that the data do not fit the model perfectly ($p < .05$).

of a previous PTSD symptom criterion. The remaining participants represented a slightly skewed sample in that they met at least one PTSD symptom cluster (only 42 subjects were skipped out of two symptom clusters). No missing depression data were evidenced. Additional missing PTSD item-level data (typically, 1–2 items each, by 6% of subjects) were estimated using maximum likelihood procedures using all available data in analyses (Schafer & Graham, 2002).

We used the WINSTEPS software (Linacre & Wright, 2004) to conduct Rasch analyses, exploring the construct validity and shared variance between symptoms of PTSD and MDD. The Rasch model is a type of item response theory (IRT) analysis, popularized by Wright and Stone (1979), being one of the most popular and empirically based IRT statistical methods (Bond & Fox, 2007; Embretson & Reise, 2000). Rasch modeling fits an equation that best characterizes the probability of endorsing an item (Reise & Henson, 2003) (e.g., a PTSD symptom). The model is a monotonically increasing function – the probability of item endorsement increases as the latent, unobserved trait level increases (Reise, Ainsworth, & Haviland, 2005) – and a person can be described as having a specific location on a continuous trait dimension (Embretson, 2006). Rasch analysis assumes that items are uncorrelated with each other, after controlling for the latent trait (Embretson, 2006). Core Rasch elements, jointly estimated within the same model, include the person's overall trait level (i.e., theta, or their general trait intensity), and the item's intensity level on a trait (i.e., item difficulty). Thus it is assumed that a respondent has a specific, true location within the dimensionality of the continuous latent construct. One advantage of Rasch modeling is that it is relatively scale-independent; that is, it does not rely on the observed scale's arbitrary metrics (Reise & Henson, 2003). As such, if the data fit the Rasch model, they can be interpreted based on items that are scaled in equal interval units (based on log transformations of odds ratios). Only one published paper has used Rasch modeling with a PTSD diagnostic instrument, but was limited to examining PTSD (without examining depression) (Betemps, Smith, Baker, & Rounds-Kugler, 2003).

We first modeled PTSD and MDD symptoms to assess their relative item difficulty. Next, we examined the extent to which these disorders' symptoms are unique or similar, using Rasch-based principal components analysis, whereby an analysis of residuals attempts to discover the fewest number of constructs (above and beyond noise or error) that explain the maximum amount of variance. We then re-conducted the principal components analyses, removing the three PTSD-MDD overlapping dysphoria symptoms. Finally we reapplied the model, additionally removing the five remaining dysphoria items.

3. Results

The included 766 participants were those satisfying both PTSD's criterion A1 and A2, and thus it was expected that this subsample would not necessarily be representative of the U.S. population in terms of demographics and trauma exposure. In fact, 557 (72.7%) were women, and 209 (27.3%) were men. Most participants identified their racial background as primarily non-Hispanic, Caucasian ($n = 552$, 72.1%), while 113 (14.8%) identified as African American, 18 (2.3%) as Asian, and 19 (2.4%) identified their race as "other." Hispanic ethnicity was reported among 64 (8.3%) of respondents. Age ranged from 18 to 90 ($M = 44.97$, $SD = 17.22$). Overall, the sample endorsed an average of 6.10 discrete traumatic events ($SD = 3.36$). The most common traumatic event that was nominated as the most upsetting event (upon which PTSD ratings were made) included unexpected death of a loved one ($n = 175$, 23.3%), rape ($n = 112$, 14.9%), and physical abuse by a romantic partner ($n = 54$, 7.2%). The average difference in years between study participation and one's most upsetting trauma was 23.26 ($SD = 21.69$).

Data were analyzed with the Rasch dichotomous data model (Linacre & Wright, 2004). Item-total correlations ranged from .18 to .63 (22 of the 26 correlations were greater than .30), with model reliability of .82, suggesting overall item congruence.

In general, item difficulty varied adequately on a relatively large PTSD/major depression continuum (from −2.06 to 2.58; Table 1), with depression items appearing at the higher end of the difficulty continuum and PTSD items appearing at the lower end (Fig. 1). Thus, MDD items were less likely to be endorsed than PTSD items. Interestingly among the overlapping PTSD-depression items, those from the NCS-R's PTSD module appeared at the lower end of the item difficulty continuum, while those essentially same symptoms from the MDD module appeared at the higher end.

Table 2 displays the item difficulties, along with fit indices and bi-serial correlations. It should be noted that the WINSTEPS software centers scale difficulty at a mean of 0, and thus severity level can be inferred based on this information. For example, a person with a measure (theta) of −1.0 tends to endorse items that have difficulty lower than −1.0 and not endorse items that have difficulty higher than that value. The item map shown in Fig. 1 assists in visualizing this phenomenon.

The unidimensionality of PTSD and MDD items was tested through the Rasch principal components analysis (PCA). PCA's purpose is to extract and explain variance in the items based on a potential single dimension or dimensions. Results revealed support for a single overall PTSD/depression measurement dimension, explaining 51.3 units or eigenvalues, or a respectable 66.4% of the total item variance.

Fig. 1. To the left of the Figure, participants are represented (each "#" is equivalent to 4 people and each "." is equivalent to 1 person), distributed according to their scores on the PTSD and MDD items. To the right are the items; items located lower in the figure are the more frequently endorsed (i.e., less pathological) items.

Although PCA findings suggest that the PTSD and MDD items work together as a single dimension, an analysis of residuals was conducted to assess if an additional cluster of the items may be present as a sub-factor. This set of residual variables provided modest evidence for one secondary scale, explaining 7.3 units (9.4% of total variance), exceeding the recommended three-unit criterion (Linacre & Wright, 2004). The cluster consisted of nine items with substantial positive loadings (i.e., with off-dimension loadings of .40 or greater), total score correlations greater than .45 (ranging from .48 to .63), and appear to have a common meaning that can

Table 2
Difficulties, fit indices, and bi-serial correlations.

Diagnostic category	Items content	Item difficulty	Standard error	Infit mean square	Outfit mean square	Bi-serial correlation
PTSD	Intrusive thoughts of the worst trauma	−2.06	.13	1.12	2.29	.18
PTSD	Avoiding thoughts/feelings of worst trauma	−1.98	.12	1.16	1.69	.19
PTSD	Nightmares about the worst trauma	−.91	.10	1.21	1.63	.23
PTSD	Hypervigilance	−1.30	.11	1.16	1.38	.26
PTSD	Impaired memory of the worst trauma	.53	.10	1.21	1.38	.30
PTSD	Flashbacks of the worst trauma	−.57	.10	1.16	1.35	.31
PTSD	Psychological distress when reminded of the worst trauma	−1.56	.11	1.03	1.29	.33
PTSD	Difficulty sleeping	−1.80	.12	1.00	1.04	.35
PTSD	Diminished pleasure	−.54	.10	1.04	1.27	.38
PTSD	Avoiding places/activities related to the worst trauma	−.90	.10	1.04	1.21	.39
PTSD	Physical distress when reminded of the worst trauma	−.61	.10	1.03	1.18	.40
PTSD	Irritability	−.44	.10	1.04	1.09	.41
PTSD	Difficulty concentrating since worst trauma	−1.27	.11	.96	1.04	.41
PTSD	Feeling of no future	.86	.11	1.08	1.05	.42
PTSD	Emotional detachment	−.96	.10	.98	1.01	.43
PTSD	Exaggerated startle response	−.82	.10	1.00	.97	.43
PTSD	Restricted affect	−.80	.10	.95	1.05	.46
MDD	Worthlessness	2.58	.16	.90	.64	.48
MDD	Agitation/retardation	2.39	.15	.88	.62	.51
MDD	Thoughts of death	1.82	.13	.83	.68	.56
MDD	Fatigue	1.55	.12	.80	.63	.59
MDD	Weight disturbance	1.40	.12	.79	.67	.60
MDD	Difficulty sleeping	1.32	.11	.79	.66	.61
MDD	Depressed mood	1.14	.11	.77	.65	.62
MDD	Diminished pleasure	1.50	.12	.75	.60	.62
MDD	Difficulty concentrating	1.45	.12	.75	.58	.63

be labeled as *depression*. The item content can be seen in Table 3. Another contrasting cluster of items was also found, constituting all (and only) PTSD items. However, their loadings were −.39 or closer to zero, thus not consisting of a significant sub-factor. These analyses indicate that the PTSD/MDD items represent a single, unitary dimension, although some evidence for a sub-factor could also be identified.

We reasoned that the unidimensionality found for the PTSD and MDD items could be due to their overlapping items that are part of PTSD's dysphoria construct. Therefore, we re-computed the PCA by removing the three overlapping items from both PTSD's and MDD's set of symptoms (leaving 20 items), hypothesizing that evidence of unidimensionality would diminish. However, in this analysis, slightly more variance (totaling 70.8% or 38.9 eigenvalue units) was explained by a unitary PTSD-depression dimension than in the previous analysis. The depression sub-factor accounted for 8.4% variance (or 4.6 eigenvalue units). Thus the hypothesis that removing these symptoms would diminish unidimensionality was not supported.

Finally, we again re-computed the PCA, removing PTSD's remaining five dysphoria items (leaving 15 items), hypothesizing that after removing dysphoria, support for unidimensionality should substantially decrease, since the only remaining symptoms are very distinct and separate sets of PTSD and MDD items. However, 76.5% of the variance in items (35.9 eigenvalue units) here was explained by the unitary PTSD-MDD construct. The depression sub-factor accounted for 8.4% variance (4.0 eigenvalue units). Thus, even when retaining the distinct item sets that are specific only to PTSD and MDD, a single dimension was revealed, again failing to support our hypothesis.

Table 3
Loadings, difficulties, infit, outfit and item content in the first cluster.

Loading	Item difficulty	Infit mean square	Outfit mean square	Item content
.93	1.14	.77	.65	Depressed mood
.88	1.32	.79	.66	Difficulty sleeping
.87	1.45	.75	.58	Difficulty concentrating
.84	1.50	.75	.60	Diminished pleasure
.83	1.40	.79	.67	Weight loss/gain
.82	1.55	.80	.63	Fatigue/loss of energy
.70	1.82	.83	.68	Thoughts of death
.56	2.39	.88	.62	Agitation/retardation
.54	2.58	.90	.64	Worthlessness

4. Discussion

We found that items representing *DSM-IV* PTSD and MDD symptoms seem to form a single, unitary construct, albeit with some evidence for a distinct sub-factor. This finding is consistent with recent theorizing on the matter (McHugh & Treisman, 2007; McNally, 2003; Spitzer et al., 2007), and empirical data from at least one prior study (Frueh et al., 2000). The unidimensionality driving the PTSD-MDD relationship held up even when removing the overlapping and other dysphoria symptoms that conceptually should be solely responsible for their unidimensionality.

Findings also show that MDD symptoms were less likely to be endorsed than PTSD symptoms by trauma-exposed participants. And among the PTSD-MDD overlapping symptoms, those items administered in the MDD module were more difficult and thus less likely to be endorsed. It is true that in the NCS-R, respondents were queried about several PTSD symptoms specifically in relation to their worst traumatic event. However, PTSD's emotional numbing and hyperarousal items (from which the PTSD module's overlapping items are derived) were not linked to an index trauma, and thus were phrased in a similar manner to the MDD module's overlapping items. Thus, decreased endorsement likelihood among the MDD module's overlapping symptoms was not a function of the PTSD module's overlapping symptoms being phrased differently. Perhaps assessing trauma history and subsequently querying PTSD symptoms primed participants to endorse these symptoms at greater levels than they did when queried in the context of depres-

sion. Or, since MDD was queried earlier in the interview than PTSD, an effect of administration order may have yielded differential item endorsements.

Results supported the hypothesis that PTSD and MDD symptoms were represented by a single, underlying construct. The unidimensionality did not diminish when overlapping symptoms or other dysphoria symptoms that are related to depression were removed from the analyses. Perhaps the continued unidimensionality after removing dysphoria items is not unexpected, in light of recent papers demonstrating that even non-dysphoria items are related to distress (Elklit et al., 2010; Marshall et al., 2010). Recently, Ferrier-Auerbach, Erbes, Polusny, Rath, and Sponheim (2010) conducted a principal components analysis (but not using Rasch modeling) of PTSD and depression symptoms among national guard soldiers and found five principal components. However, while they used the PTSD Checklist which does map well onto PTSD's symptom criteria, they used the Beck Depression Inventory-II which does not map well onto MDD's symptom criteria. Thus it is possible that additional spurious components could have been found because a non-*DSM-IV* MDD measure was used.

Previously we found in three different samples (community adults, community adolescents, clinical veterans) that removing the PTSD-MDD overlapping symptoms did not significantly alter PTSD's comorbidity rates with major depression (Elhai et al., 2008; Ford et al., 2009; Grubaugh et al., 2010). Yet the present study proceeded one step further by demonstrating that removing the overlapping symptoms and remaining dysphoria symptoms failed to separate PTSD and MDD into their own separate and distinct constructs. Perhaps some feature in the remaining, non-overlapping and non-dysphoria PTSD items accounts for the shared variance with depression. However, we still do not know what specific mechanism is responsible for the shared variance between these two disorders.

This study is limited by the fact that data were used from a community sample, and we therefore do not know how results would generalize to a large clinical sample of trauma-exposed participants. Furthermore, the sample only included trauma-exposed participants who met PTSD's criterion A2, since only those NCS-R participants were queried about PTSD symptoms, and thus somewhat skewing the target population for the present study. Also, since we analyzed lifetime symptoms, it was impossible to ensure that a participant's PTSD symptoms occurred simultaneously with their MDD symptoms. Additionally, since depression items were found to be more difficult than PTSD items, this could represent a measurement issue specific to the CIDI, and results may not generalize to other diagnostic interviews. Finally, given the relatively low base rate of PTSD symptom endorsement in this study, results may not generalize to trauma-exposed samples with higher base rates of PTSD.

Nonetheless, results provide further evidence of the shared variance between PTSD and MDD, and future research should attempt to further elucidate the nature of this overlap. This is a critical nosological issue that should be addressed in future revisions of the *DSM*. In fact, based on the current proposal for the PTSD diagnosis in *DSM-5*, the unidimensionality between PTSD and MDD will likely continue or exacerbate, given that several additional symptoms that are clearly depression-focused are proposed for incorporation into the *DSM-5* PTSD diagnosis (American Psychiatric Association. DSM-5 Development, 2010).

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