The Detailed Assessment of Posttraumatic Stress, 2nd Edition (DAPS-II): Initial Psychometric Evaluation in a Trauma-Exposed Community Sample

by

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Abstract

The Detailed Assessment of Posttraumatic Stress (DAPS; Briere, 2001) is a comprehensive, multiscale questionnaire that assesses all posttraumatic stress disorder (PTSD) diagnostic criteria, as well as peritraumatic responses and associated problems including dissociation, suicidality, and substance abuse. Although relatively few psychometric studies of the DAPS have been conducted, DAPS scores have been shown to have excellent reliability, validity, and clinically utility, performing as well or better than leading PTSD questionnaires. The DAPS was recently revised for *DSM-5* (American Psychiatric Association, 2013). The present study was an initial psychometric evaluation of the DAPS for *DSM-5* (DAPS-II) in a community sample with mixed trauma exposure (N = 367). DAPS-II total PTSD scores demonstrated high internal consistency (α = .98), strong convergent validity with the PTSD Checklist for *DSM-5* (r = .91), and good discriminant validity with other measures of trauma-related intrusions and avoidance, dissociation, depression, anxiety, appetite gain, interpersonal needs, and well-being (rs = -.13 to .75). DAPS-II associated features scales also demonstrated high internal consistency and good convergent and discriminant associations. In confirmatory factor analyses the *DSM-5* four-factor model of PTSD provided adequate fit, but leading alternative six- and seven-factor models (Armour, Mullerova, & Elhai, 2016) provided better fit. Taken together, these results indicate that the DAPS-II is a psychometrically sound measure of *DSM-5* PTSD symptoms and would be a useful evidence-based tool in both research and clinical settings with diverse trauma populations.

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List of Abbreviations

PTSD	Posttraumatic Stress Disorder
DAPS	Detailed Assessment of Posttraumatic Stress
DAPS-II	Detailed Assessment of Posttraumatic Stress for *DSM-5*
CAPS	Clinician-Administered PTSD Scale
CAPS-5	Clinician-Administered PTSD Scale for *DSM-5*
PDS	Posttraumatic Stress Diagnostic Scale
PDS-5	Posttraumatic Stress Diagnostic Scale for *DSM-5*
PCL	PTSD Checklist
PCL-5	PTSD Checklist for *DSM-5*
PCL-S	PTSD Checklist – Specific Version
IDAS-II	Inventory of Depression and Anxiety Symptoms – Second Edition
MDI	Multiscale Dissociation Inventory
DSI-SS	Depression Symptoms Inventory – Suicidality Subscale
INQ-R	Interpersonal Needs Questionnaire – Revised
ACSS-FAD	Acquired Capability for Suicide Scale
DIS	Discomfort Intolerance Scale
BHS	Beck Hopelessness Scale
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition

SPSS	Statistical Package for the Social Science
CFA	Confirmatory Factor Analysis
MLR	Robust Maximum Likelihood Estimator
FIML	Full Information Maximum Likelihood
CFI	Comparative Fit Index
TLI	Tucker-Lewis Index
SRMR	Standardized root mean square residual
RMSEA	Root mean square error of approximation
χ^2	Chi-square test statistic
AIC	Akaike Information Criterion
BIC	Bayesian Information Criterion
STDYX	Standardized solution outputted by Mplus
SE	Standard Error
RE	*DSM-IV* Criterion B: Reexperiencing
INT	*DSM-5* Criterion B: Intrusions
AV	*DSM-5* Criterion C: Avoidance
NACM	*DSM-5* Criterion D: Negative alterations in cognition and mood
AR	*DSM-5* Criterion E: Alterations in arousal and reactivity
PDST	Peritraumatic Distress
PDIS	Peritraumatic Dissociation
IMP	Functional Impairment

SUI	Suicidality
T-DIS	Trauma-related Dissociation
SUB	Substance Use
PB	Positive Bias
NB	Negative Bias
EX	Externalizing Behaviors
AN	Anhedonia
DA	Dysphoric Arousal
AA	Anxious Arousal

Introduction

The Detailed Assessment of Posttraumatic Stress (DAPS; Briere, 2001) is a comprehensive, multiscale questionnaire that assesses trauma exposure and trauma-related symptomatology. Based on the posttraumatic stress disorder (PTSD) diagnostic criteria in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994), the DAPS consists of 104 items divided into 13 scales assessing trauma exposure, peritraumatic distress and dissociation, and core symptoms of posttraumatic stress disorder (PTSD), as well as trauma-related functional impairment, associated problems including dissociation, suicidality, and substance abuse, and positive and negative response bias. The DAPS can be administered and scored by individuals with no specialized training, and a clinical profile can be obtained in approximately 20 minutes. Additionally, DAPS items are written at a sixth-grade reading level and DAPS scores are standardized by gender on trauma-exposed adults from the general population, increasing its usefulness for a wide variety of settings and individuals.

With its multiple scales and broad-spectrum approach, the DAPS was designed to address limitations of widely used PTSD measures such as the PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993), which assesses only the core PTSD symptoms, and the Posttraumatic Stress Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997), which goes beyond the PCL only by also assessing trauma exposure and functional impairment. Further, unlike the PCL and PDS, which contain one item per PTSD symptom, the DAPS contains two to four items. These additional items provide multiple opportunities for respondents to endorse complex or difficult to understand symptoms. This feature is particularly valuable in conducting confirmatory factor analysis (CFA) of PTSD symptoms. All leading CFA models of PTSD

include at least one factor with only two symptoms (Armour et al., 2016), and having only one item (observed variable) per symptom limits the analyses that can be conducted (Brown, 2015; Witte, Domino, & Weathers, 2015).

Despite these valuable features, the DAPS has received surprisingly little empirical attention. The most extensive presentation of DAPS psychometric information is in the professional manual (Briere, 2001), which provides strong support of the psychometric properties of DAPS scores. As reported in the manual, DAPS scale scores have high internal consistency with acceptable alpha coefficients in normative, clinical and community, and university samples. As expected, number of lifetime traumas, interpersonal nature of the exposure, and peritraumatic distress are positively associated with DAPS clinical scale scores. Convergent and discriminant validity of DAPS scores is substantiated by findings that DAPS PTSD symptom scales correlate predictably well with other measures of reexperiencing, avoidance, and hyperarousal and less substantially with measures of less-related constructs like depression, mania, and somatic complaints (Briere, 2001). The DAPS generates scores that effectively approximate the diagnostic conclusions of the CAPS, although considerably less expertise, person-power, and time is required to reach a diagnosis. Specifically, the manual cites studies in which DAPS PTSD decision rules demonstrated excellent sensitivity (.88) and specificity (.86) with the CAPS and good sensitivity with the PDS, indicating that the DAPS can accurately identify the presence and absence of PTSD similarly to leading measures.

However, apart from the manual, there are no dedicated psychometric evaluations to the DAPS in the published literature. Nonetheless, the DAPS has been used in other papers, and has performed as well or better than even the leading measures of PTSD. In fact, when compared to leading *DSM*-correspondent measures such as the PCL, PCL-5, and PDS, the DAPS attained

higher levels of correspondence with a network of predicted associations (Blevins, Weathers, Davis, Witte, & Domino, 2015). Also, Witte, Domino, and Weathers (2015) used the DAPS in a recent study evaluating potential order effects in self-report assessments of PTSD. Because the DAPS presents *DSM* PTSD symptoms in a different order than do the PCL and PDS, Witte et al. tested for order effects by comparing the factor structure of the DAPS to that of the PCL and PDS. They found that the DAPS produced similar factor analytic findings when compared to the PCL-S and PDS, ruling out the presence of order effects while also providing structural validity evidence for the DAPS.

Some of the associated features scales of the DAPS have also been evaluated in the literature. Briere, Scott, and Weathers (2005) used the DAPS to assess both transient and persistent dissociation in trauma survivors as a predictor for PTSD symptoms. Scores on the DAPS Trauma-Specific Dissociation (T-DIS) subscale that indicated the presence or relative absence of persistent dissociation were predictive of PTSD status, with high specificity (.97) and moderate sensitivity (.57). In comparison to trauma-exposed participants with clinical levels of persistent dissociation, those who scored in the sub-clinical range on the Trauma-Specific Dissociation subscale ($T < 65$) had significantly lower likelihood of PTSD. Young, Merali, and Ruff (2009) examined the validity scales of the DAPS in relation to the validity scales of the Millon Clinical Multi-Axial Inventory III (MCMI III; Millon et al., 1997) and Ruff Neurobehavioral Inventory (RNBI; Ruff & Hibbard, 2003) in a sample of motor vehicle accident pain patients who did not have a TBI or neurological damage. DAPS positive and negative bias scores correlated predictably with scores from the MCMI III and RNBI validity scales, indicating that the DAPS accurately detects faking good as well as “cries for help” or malingering in challenging populations.

In sum, the DAPS has many very desirable features, and the manual and additional empirical reports indicate that it is psychometrically sound. It appears that the DAPS incorporates comprehensive presentations of PTSD important for making diagnostic and treatment decisions and yet requires less time, resources, and expertise to administer. Although there are no focal psychometric evaluations, when the DAPS is used in the literature, it has performed well. Therefore, the DAPS is deserving of more empirical attention and a rigorous psychometrical evaluation.

The DAPS was recently revised for *DSM-5*, as were other *DSM*-correspondent measures including the PCL-5 (Weathers et al., 2013b), PDS-5 (Foa et al., 2015) and CAPS-5 (Weathers et al., 2013a), all of which have now been validated for *DSM-5* PTSD. The revised DAPS (DAPS-II) is a 119-item self-report measure with four subscales reflecting the *DSM-5* PTSD criteria. The *DSM-IV* reexperiencing (RE) cluster retained the same 10 items (e.g., having upsetting dreams or nightmares about the experience) and is now *DSM-5* Criterion B intrusions (INT). The new negative alterations in cognition and mood (NACM) *DSM-5* Criterion D subscale contains six items retained from the *DSM-IV* avoidance and numbing cluster, four new cognitive items (e.g., thinking you are a bad person, feeling like people can't be trusted) and four new trauma-related emotional distress items (e.g., feeling nervous or anxious, feeling guilty about what happened). The remaining four items from the *DSM-IV* avoidance and numbing cluster now comprise the avoidance (AV) subscale (e.g., not doing certain things because they reminded you of the experience). In attempt to mirror the usage of overt behavior referents in *DSM-5* Criterion E, four items assessing reckless behavior and verbal and physical aggression were also added (e.g., getting into physical fights, losing your temper more easily) to the hyperarousal (AR) subscale to create the new alterations in arousal and reactivity (AR) subscale.

The aim of the present study is to provide the initial psychometric evaluation for the DAPS-II for *DSM-5* PSTD. Psychometric properties of DAPS-II scores evaluated included internal consistency (alpha coefficients, item-scale correlations, and inter-item correlations) of DAPS-II PTSD, suicidality (SUI), trauma-related dissociation (T-DIS), substance use (SUB), and functional impairment (IMP scales; convergent and discriminant validity of DAPS-II PTSD, suicidality (SUI), and trauma-related dissociation (T-DIS); and structural validity (CFA; confirmatory factor analysis) of DAPS-II PTSD scores.

It was hypothesized that DAPS-II PTSD scores would demonstrate high internal consistency and good convergent and discriminant validity with scores on various questionnaire measures of PTSD and other relevant constructs. Regarding the associated features scales of the DAPS-II, it was hypothesized that suicidality (SUI), trauma-related dissociation (T-DIS), substance use (SUB), and functional impairment (IMP) scores would demonstrate high internal consistency.

In terms of convergent and discriminant validity, it was hypothesized that DAPS-II scores would demonstrate a similar pattern of associations with measures of PTSD and other constructs, as has been demonstrated previously (Armour et al., 2015; Armour et al., 2016; Witte, Domino, & Weathers, 2015). It was hypothesized that DAPS-II scores would correlate strongly with another measure of PTSD ($r \geq .80$) and nearly as strongly with symptom-level measures such as trauma-related intrusions and avoidance on the IDAS-II ($.70 \leq r \leq .79$). DAPS-II scores were expected to be moderately with constructs closely related to PTSD including dissociation, depression, and anxiety, weakly correlated with peripherally related measures of appetite gain and interpersonal needs ($r < .30$), and negatively correlated with well-being ($r < 0$). It was also expected that scores on suicidality (SUI) would demonstrate a predicted pattern of

associations with measures of suicidal ideation, correlating strongly with a measure of suicidal ideation (r = .80), moderately with depression, anxiety, interpersonal needs, and hopelessness (r = .40-.69), and weakly with measures of capability and distress intolerance (r < .30), as has been demonstrated previously (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). Additionally, suicidality (SUI) scores were expected to be negatively correlated with well-being (r < 0). It was hypothesized that trauma-related dissociation (T-DIS) scores would be highly correlated with scores form another measure of dissociation, the MDI, (r = .80), and would be moderately correlated with measures of less-related constructs such as depression and anxiety (r < .60) and negatively correlated with well-being (r < 0).

Lastly, four models of PTSD symptoms were evaluated for fit to the data: the *DSM-5* implicit four-factors, six-factor externalizing, six-factor anhedonia, and seven-factor hybrid model (see Table 2). It was expected that the fit to be adequate for the *DSM-5* four-factor model and relatively better with other empirically-supported six- and seven-factor models (Armour et al., 2016), as has been demonstrated previously with other leading measures and the DAPS (Witte et al., 2015).

Methods

Participants and Procedure

Participants were 550 male and female adults recruited through Amazon's open-source Mechanical Turk system. This method of recruitment was selected for the purpose of gathering a normative adult sample beyond an undergraduate population as well as the ability to ensure participant anonymity. Eligible participants were at least 18 years of age and fluent in English. Through Amazon's MTurk service, participants were given a randomly assigned code (e.g.

H66GST9MC837XC) to be recruited and compensated anonymously with no direct or indirect coding, link, or investigator awareness of participant names or identifying information.

Participants completed a demographic questionnaire and the DAPS-II questionnaire from any computer with internet access. Participants completed the study in 45-60 minutes and received $2 as compensation. Following data collection, participant responses were rigorously screened for Criterion A traumatic stressor exposure (1=meet criteria, 0=do not meet criteria) through a process that involves syntax-based sorting and clinical judgment regarding trauma narrative severity. The two graduate student raters agreed on Criterion A ratings on 530 (96%) cases. Only participants who completed the survey and qualified as having a Criterion A trauma exposure (n = 367) were included in the analyses.

The final sample consisted of 367 individuals (59.1% female) ranging in age from 18 to 74 years (M = 36.9 years; SD = 12.0). In terms of race, the sample was 76.6% Caucasian, 14.4% Asian, 5.4% Black, 1.9% Native, and 1.4% Multiracial or other race. Approximately 4.9% of participants were Hispanic or Latino. Most of the participants worked full-time (60.8%), some were students (19.9%), some were active military or veterans (13.4%), and about half (49.6%) had children. There were varying degrees of education among participants in the sample: 7.4% high school graduate, 31.9% some college or associates degree, 20.2% bachelors, 19.6% masters, and 2.2% doctorate degree. The most frequently reported Criterion A trauma exposures included transportation accidents (32.2%), sexual assault (21.8%), physical assault (10.9%), assault with a weapon (7.9%), and other serious work or recreational accident (6.8%). Of the 367 participants. 114 (25.6%) met *DSM-5* criteria for a provisional PTSD diagnosis.

Measures

Descriptive statistics and alpha coefficients for all scales and subscales used in the study are presented in Table 1.

Detailed Assessment of Posttraumatic Stress (DAPS-II). The DAPS-II (Briere, 2001) is a 119-item *DSM*-correspondent self-report measure of PTSD. Respondents indicate the frequency of their PTSD symptoms in the past month using a 5-point scale from 1 = *never* to 5 = *four or more times a week*. The original DAPS has demonstrated substantial reliability and validity in measuring the effects of traumatic exposure (Briere, 2001). Previously, resulting diagnoses of PTSD have good sensitivity and specificity, when compared to the gold-standard Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995). In the current study, coefficient alpha for the DAPS-II PTSD total scale was $\alpha = .99$.

PTSD Checklist for *DSM-5* (PCL-5). The PTSD Checklist for *DSM-5* (PCL-5; Weathers, et al., 2013) is a 20-item questionnaire measure of PTSD. Respondents indicate how much they were bothered by each of the items in the past month on a 5-point scale from 0 = *not at all* to 4 = *extremely* (Weathers et al., 2013b). The PCL-5 has been shown to be psychometrically sound, with high internal consistency and test-retest reliability in addition to strong convergent and discriminant validity for assessing PTSD symptoms (Blevins et al., 2015; Wortmann, et al., 2016). In the current study, coefficient alpha for the PCL-5 PTSD total scale was $\alpha = .97$.

Multiscale Dissociation Inventory (MDI). Additionally, dissociative symptomatology was assessed with the Multiscale Dissociation Inventory (MDI; Briere, 2002), a 30-item self-report measure. It was selected in order to primarily assess the performance of the Trauma-Specific Dissociation (T-DIS) scale of the DAPS-II. The MDI measures six different types of

dissociative responses that can accompany individual reactions to trauma such as disengagement, depersonalization, memory disturbance, and others. Respondents indicate the frequency of the experience described in each item over the past month on a 5-point scale from 1 = *never* to 5 = *very often*. Normative scores on the MDI are based on a standardization sample of 444 trauma-exposed individuals. The MDI is deemed a reliable and valid measure of dissociation in several samples and populations, (Briere, 2002). In the current study, coefficient alpha for the MDI dissociation total scale was $\alpha = .98$.

Inventory of Depression and Anxiety Symptoms (IDAS-II). The IDAS-II (Watson, et al., 2012) is a 99-item self-report measure that assesses depression, anxiety, and related symptomatology. IDAS-II scales were used for discriminant validity to determine if the four DAPS-II *DSM-5* symptom factor subscales associate as expected with depression and anxiety. The IDAS-II consists of 99 items, organized into a General Depression scale and 18 other non-overlapping scales that have exhibited high internal consistency. Respondents indicate how much they have felt or experienced the symptom described in each item on a 5-point scale from 1 = *not at all* to 5 = *extremely*. Additionally, the IDAS-II has demonstrated good convergent and discriminant validity with other self-report and interview measures of depression, mania, and anxiety, as well as strong relationships to DSM disorder criteria (Watson et al., 2012).

Depressive Symptom Inventory Suicidality Subscale (DSI–SS). The Depressive Symptom Inventory Suicidality Subscale (DSI–SS; Metalsky & Joiner, 1997) is a four-item self-report measure used to assess suicidal ideation. Respondents indicate the frequency and intensity of their suicidal ideation and behaviors in the previous 2 weeks, for which higher scores indicate greater severity of suicidal ideation. If participants scored above low-risk on this measure, they received crisis management information, Coping Card instructions, and contacts for additional

resources before ending the survey. In the current study, coefficient alpha for the DSI-SS total suicidality scale was α = .93.

Interpersonal Needs Questionnaire- Revised (INQ-R). The Interpersonal Needs Questionnaire- Revised (INQ-R; Van Orden et al., 2008, 2012) is a 15-item self-report measure derived from the Interpersonal Theory of Suicide and developed to measure thwarted belongingness and perceived burdensomeness—both proximal causes of desire for suicide. Respondents indicate agreement with recent perceptions of themselves and others on a 7-point scale from 1 = *Not at all true for me* to 7 = *very true for me*, for which higher scores indicated higher levels of perceived burdensomeness or thwarted belongingness. In the current study, coefficient alphas for the INQ-R total scale, perceived burdensomeness, and thwarted belongingness were α = .92, .96, and .92, respectively.

Acquired Capability for Suicide Scale (ACSS-FAD). The Acquired Capability for Suicide Scale (ACSS-FAD; Van Orden et al., 2008) – fearlessness of death (FAD) is a 7-item subscale of the original 20-item ACSS-FAD. It measures respondent insensitivity to death, thought to be a contributor to suicidal behavior. Psychometric investigation of the ACSS-FAD supports the construct validity and use of this shortened version (e.g., Van Orden et al., 2008; Bender et al., 2011) to assess FAD (ACSS-FAD; Ribeiro et al., 2014). Respondents indicated the extent to which statements about fearlessness of death described them on a 5-point scale from 0 = *Not at all like me* to 4 = *Very much like me*. In the current study, coefficient alpha for the ACSS-FAD subscale was α = .85.

Discomfort Intolerance Scale (DIS). The Discomfort Intolerance Scale (DIS; Schmidt et al. 2006) is a concise two-item, self-report measure utilized to assess the degree to which participants are capable of tolerating sensations of physical discomfort. Respondents indicate the

extent to which statements about tolerating pain described them on a 7-point scale from 0 = *not at all like me* to 6 = *extremely like me*. In the current study, coefficient alpha for the DIS total scale was α = .92.

Beck Hopelessness Scale (BHS). A shortened four-item version of the Beck Hopelessness Scale (BHS; Beck & Steer, 1988) was used in this battery to assess the extent of positive and negative beliefs about the future and summed to create a hopelessness score. Respondents indicate whether true-false statements accurately described their attitudes and beliefs about the future. Adequate internal reliability has been reported for the BHS across diverse clinical and nonclinical populations. In the current study, coefficient alpha for the BHS total hopelessness scale was α = .80.

Statistical Analyses

Latent variable modeling was conducted using Mplus version 7 (Muthén & Muthén, 1998-2013). For all other analyses, IBM SPSS version 22.0 was used. Internal consistency for PTSD total scale and associated features scales was evaluated with Cronbach's alpha and examination of item-scale total and inter-item correlations. Convergent and discriminant validity were assessed for DAPS-II PTSD total, suicidality, and trauma-related dissociation using Pearson correlations between scores as described above.

The latent factor structure of the DAPS-II was examined using confirmatory factor analysis (CFA). Although they were determined to have ambiguous face validity in light of DSM-5 criteria, items 40 (e.g., People irritating you more than they did before the experience) and 67 (e.g., Feeling like you won't have much of a future) were included in the confirmatory factor analyses and allowed to load onto symptoms E1 and D2, respectively, in the interest of maintaining the integrity of the DAPS-II scales (Table 5). However, it was determined a priori

that items 52 (e.g., Feeling more restless since it happened) and 56 (e.g., Feeling jumpy or on edge since it happened), which were previously included in the *DSM-IV* Hyperarousal (AR) cluster, did not adequately correspond with any individual *DSM-5* symptom, and were therefore excluded from the analysis of all four CFA models.

Given that many of the variables were not normally distributed, robust maximum likelihood estimator was used (MLR; Brown, 2015; Chou & Bentler, 1995; Curran, West, & Finch, 1996). The covariance coverage matrix indicated that the proportion of data present for each pairwise combination of variables was .97-1.0. Missing data, due to individual participants inadvertently or purposefully skipping one or more items of the measure, were handled with Full Information Maximum Likelihood (FIML; Enders, 2010; Schafer & Graham, 2002). Preliminary analyses did not reveal other variables associated with the probability of an individual having missing data. For all models, model fit was evaluated using a variety of fit indices: χ^2 ($p \geq .05$), Bentler Comparative Fit Index (CFI $\geq .95$; Bentler, 1990), Tucker-Lewis Index (TLI $\geq .95$; Bentler, 1990), and Standardized Root Mean Square Residual (SRMR $< .08$; Hu & Bentler, 1999). The 90% confidence intervals for Root Mean Square Error of Approximation (RMSEA) were also evaluated according to the close-fit (lower limit $< .05$) and poor-fit (upper limit $< .10$) hypotheses (Browne & Cudeck, 1993; Kline, 2011). The *DSM-5* four-factor, six-factor externalizing, and six-factor anhedonia models are all nested within the seven-factor hybrid model. Thus, nested model comparisons were performed using the robust χ^2 difference test (Satorra & Bentler, 2001). Finally, all models were compared using the Akaike Information Criterion (AIC; Anderson, Burnham, & Thompson, 2000) and the Bayesian Information Criterion (BIC; Kass & Wasserman, 1995) Information Criterion, for which lower values that indicate greater likelihood to replicate are preferred (Kline, 2011).

Results

Internal Consistency

DAPS-II PTSD total scale. Internal consistency was high for DAPS-II PTSD total (α = .98) and for the four *DSM-5* symptom clusters: intrusions (α = .96), avoidance (α = .89), NACM (α = .96), and alterations in arousal and reactivity (α = .95). See Table 1 for scale and subscale descriptive statistics. Since alpha is a function of scale length, the relatively lower alpha for avoidance is likely attributable to the fact that this cluster consists of only four items. Mean item-total correlation across all 40 PTSD items (measuring the 20 *DSM-5* symptoms) was .80. Overall, there was very high internal consistency between the 40 PTSD items. In fact, the range of item-total correlations (r = .56 to .93) suggests some redundancy of items. Further, the 40 items were highly intercorrelated, with a mean of .65 and a range of .41-.84. Many correlations between items were above the upper end of the recommended range of .15 to .50 (Clark & Watson, 1995).

DAPS-II Associated Features scales. Internal consistency was high for all associated features scales, including suicidality (α = .95), trauma-related dissociation (α = .93), substance use (α = .92), and functional impairment (α = .93). Scale descriptive statistics are presented in Table 1.

Convergent and Discriminant Validity

DAPS-II PTSD total and questionnaire measures. Bivariate correlations between DAPS-II PTSD total scores and various questionnaire measures were examined to provide evidence of convergent and discriminant validity (see Table 3). As expected, DAPS-II PTSD total scores were most strongly correlated with the PCL-5, (r = .91, p < .001). Regarding discriminant validity, DAPS-II total PTSD scores demonstrated moderately strong positive correlations with measures of constructs closely related to PTSD including traumatic intrusions

(r = .67, p < .001), traumatic avoidance (r = .61, p < .001), derealization (r = .74, p < .001), depersonalization (r = .73, p < .001), anxiety (r = .67, p < .001), and depression (r = .61, p < .001). DAPS-II total PTSD scores had weak correlations with measures of appetite gain (r = .31, < .001) and thwarted belongingness (r = .26, < .001). Finally, DAPS-II total PTSD scores had a significant negative correlation with well-being (r = -.13, p = .03).

DAPS-II Suicidality (SUI) and questionnaire measures. Bivariate correlations between DAPS-II suicidality scores and various questionnaire measures of convergent and discriminant constructs were also examined. As expected, DAPS-II suicidality scores were most strongly correlated with measures of suicidal ideation, plan, and intent such as the DSI-SS (r = .71, p < .001) and the IDAS-II suicidality scale (r = .73, p < .001). DAPS-II SUI was also highly related to perceived burdensomeness (r = .71, p < .001). Regarding discriminant validity, DAPS-II suicidality scores demonstrated moderately strong positive correlations with general depression (r = .55, p < .001) and thwarted belongingness (r = .28, p < .001), and weak correlations with the ACSS-FAD (r = -.02, p = .749), DIS (r = .02, p = .68) and BHS (r = .13, p = .01) which were lower than expected. The DAPS-II suicidality scale is also negatively correlated with well-being (r = -.11, p < .05).

DAPS-II Trauma-related Dissociation (T-DIS) and questionnaire measures. Bivariate correlations between DAPS-II trauma-related dissociation scores and various questionnaire measures were also examined as evidence of convergent and discriminant validity. As expected, DAPS-II trauma-related dissociation scores demonstrated strong and significant positive correlations with the depersonalization and derealization scales on the MDI, (r = .78, r = .78, p < .001). The trauma-related dissociation scores were also very highly related to PTSD symptoms as measured by the PCL-5 (r = .84, p < .001). Regarding discriminant validity, DAPS-

II trauma-related dissociation scores were moderately correlated with measures of related constructs such as depression (r = .59, p < .001) and anxiety (r = .63, p < .001) and negatively correlated with well-being (r = -.12, p < .02).

Latent Factor Structure

To determine if four-factor, two six-factor, and seven-factor models of PTSD symptoms fit the DAPS-II scores in the sample, a confirmatory factor analysis (CFA) was conducted for each model using Mplus (Muthen & Muthen, 1998-2012). The *DSM-5* and previous literatures examining the factor structure of PTSD (Bovin et al., 2016; Witte et al., 2015) were used to identify which DAPS-II items loaded onto each factor in all models (see Table 2). Since the DAPS-II contains more than one item for most symptoms of PTSD, the residual variances of items purporting to measure the same symptom were allowed to correlate (Witte, Domino, Weathers, 2015). Additionally, post-hoc power analyses (MacCallum, Browne, & Sugawara, 1996) revealed adequate power in the sample for tests of close and not-close fit for all models (N = 367, df = 619-634, power = 1.000).

It was expected that findings would replicate previous factor analytic support for the relatively poorer fit for the *DSM-5* four-factor model and the relatively better fit of empirically supported six- and seven-factor models (Armour et al., 2016). Indeed, out of all models tested and across all fit indices, the *DSM-5* model provided the worst fit. The fit with the data was adequate according to some fit statistics (SRMR = 0.04), but not others (χ^2 = 1340.24, df = 634, p < .001; TLI = 0.90; CFI = 0.91). The null hypotheses that the fit was either close and or poor was rejected according to the RMSEA values (90% Confidence Interval = 0.051, 0.059).

In the sample of DAPS-II scores, the seven-factor model had adequate fit with the data according to most fit statistics and better fit compared to the *DSM-5* four-factor, six-factor

Externalizing, and six-factor Anhedonia models of PTSD symptoms across a variety of fit indices (see Table 4 for fit statistics for each model). Robust χ^2 difference tests demonstrated that the seven-factor Hybrid model fit the data significantly better than the *DSM-5* four-factor (χ^2 = 127.8, *df* = 15, $p < .001$), six-factor Externalizing (χ^2 = 97.6, *df* = 6, $p < .001$), and six-factor Anhedonia (χ^2 = 29.2, *df* = 6, $p < .001$) models of PTSD symptoms. Moreover, both six-factor models also had significantly better fit with the data than the *DSM-5* four-factor model (Externalizing χ^2 = 24.9, *df* = 9, $p = .003$; Anhedonia χ^2 = 95.2, *df* = 9, $p < .001$). The seven-factor Hybrid model also demonstrated the lowest Akaike (AIC) and Bayesian (BIC) Information Criterion values (AIC = 28891.2; BIC = 29516.0), indicating that it is the most likely of the four models to replicate in subsequent samples.

Given that the seven-factor Hybrid model provided the best fit to the data, it is examined in greater detail. The fit was adequate according to some (i.e., RMSEA, CFI, TLI, SRMR), but not all (i.e., χ^2) fit statistics (see Table 4 for fit statistics). The standardized loadings of the factors on to the latent variables were all significant and greater than .69 (see Table 5). The correlations among latent variables were all significant and greater than .59 (see Table 6). Specifically, the Dysphoric Arousal, Anxious Arousal, Anhedonia, and Intrusions clusters were all very highly intercorrelated ($r \geq .91$). The modification indices suggested produced complex models inconsistent with theory, so no modification indices were employed. The inter-item correlations of DAPS-II is presented in the correlation matrix in Table 7.

Discussion

This is the first study to examine the performance of the DAPS-II, the revised *DSM-5* version of the DAPS, the DAPS-II. Changes made to the original DAPS are consistent with the literature and the *DSM-5*. Specifically, items added to the DAPS-II to capture *DSM-5* PTSD

symptomatology are face valid, endorsed at expected rates, and correlated with the appropriate theorized factor with respect to other items in each cluster. The results of the current study provide evidence for the addition of 12 items to the original DAPS and the validity of *DSM-5* symptomatology in general, using the DAPS-II. The four DSM-5 subscales of the DAPS-II (e.g., INT, AV, NACM, AR) also performed as expected, producing a similar pattern of, but consistently lower, discriminant correlations than the PCL-5 as shown in Table 3. In light of *DSM-5*, some remaining items on the DAPS-II are not representative of any single PTSD symptom and may no longer fit on a proposed factor. In particular, items with ambiguous face validity include the following: 52. Feeling more restless since it happened; 56. Feeling jumpy or on edge since it happened. Items that no longer appear to fit in a *DSM* symptom cluster include the following: 40. People irritating you more than they did before the experience; 67. Feeling like you won't have much of a future. Clinicians and researchers may want to evaluate the usefulness of these items when administering the DAPS-II for different purposes. For example, clinicians should use the DAPS-II as written so they can use normative information unambiguously, but researchers should consider not including the items of concern in CFAs.

With respect to the study hypotheses, DAPS-II PTSD total scores demonstrated adequate internal consistency with high coefficient alphas. It should be noted that the coefficient alpha produced by the DAPS-II PTSD total score is likely attributable in part to the number of items included (42 items), as alpha is highly susceptible to inflation with the addition of items (Kopalle & Lehmann, 1997). Taken together with the substantial intercorrelations between items, these results indicate that DAPS-II PTSD items are strongly related, and possibly somewhat redundant. While the extensive coverage of PTSD symptoms provided by multiple items per most PTSD symptoms on the DAPS-II was beneficial for confirmatory factor analysis (CFA), the present

study presents evidence that many items overlap and may not, in fact, be necessary to capture the construct of PTSD. The associated features scales of the DAPS-II also demonstrated internal consistency, as evidenced by high coefficient alphas, and strong item-total and inter-item correlations.

DAPS-II PTSD scores and associated features subscales demonstrated convergent and discriminant validity. Overall, DAPS-II scales (PTS-T, SUI, T-DIS, SUB) performed as expected, producing patterns of convergent and discriminant correlations that corresponded with predictions for highly, moderately, and weakly related constructs. The pattern of discriminant correlations with the DAPS-II PTSD scale was similar to the pattern of discriminant correlations produced by the PCL-5, providing supporting evidence for good discriminant validity. Many discriminant correlations were higher than expected, again likely attributable to the highly intercorrelated nature of the DAPS-II items in this sample. Deviations from expected correlations between the DAPS-II Suicidality (SUI) subscale and constructs thought to be predictive of suicidal behavior such as interpersonal needs and fearlessness of death may be explained by the poor obtained internal consistency of INQ-R and ACSS-FAD measures (see Table 1). Lastly, this phenomenon might also be related to an over-endorsement of symptoms by respondents in general.

Factor analytic results using the DAPS-II were consistent with the growing volume of literature exhibiting the relatively better fit of the seven-factor hybrid model (Armour et al., 2016) and other empirical models compared with other leading theoretically-derived models such as the *DSM-5* implicit four-factor model. Thus, the DAPS-II PTSD total scale performed similarly to other leading PTSD measures such as the PCL-5, PDS, and CAPS-5 in a CFA, providing further evidence for its validity and clinical utility in measuring PTSD. The current

findings also add to the continual evaluation of the construct of PTSD and deliberation as to how it should be defined, raising questions as to whether empirically-supported models should be valued above parsimonious models.

Although existing psychometric research on the DAPS is sparse, the results of the present study support the reliability and construct validity of the DAPS-II in measuring PTSD symptoms in a trauma-exposed, diverse community sample. This validation of the DAPS-II as a self-report questionnaire allows researchers and clinicians another option for measuring *DSM-5* PTSD that has many advantages over current assessment tools and performs equally as well.

There are several important limitations of the present study. First, and most notably, is the reliance on questionnaire measures of PTSD and other constructs, which has been widely criticized in the literature (Cronbach, 1946; Nisbett & Wilson, 1977). First, self-report measures are dependent on the understanding, individual interpretation, introspective ability, and honesty of the participants as well as the structure of the instruments themselves (e.g., likert rating scales, item phrasing). Also, it is possible that participants engaged in inattentive or socially desirable responding while completing the measures. That being said, clients' interpretations of their own symptoms have clinical utility as important facets of assessment and treatment that affect rapport, perceptions of treatment, and treatment outcomes. Capturing participants' perceptions, including variables such as their understanding and response bias, is a meaningful strength of self-report instruments. Second, since both the DAPS-II and PCL-5 are questionnaires, correlations between their scores may be inflated due to shared method variance (Campbell & Fiske, 1959), heightening the perception of good convergent validity. Inflated convergent validity could be explored via other statistical methods such as the multitrait-multimethod matrix analysis. Lastly, it is also possible that the findings may not generalize to interview assessments

of PTSD such as the CAPS-5 (Weathers et al., 2013a). However, this is unlikely given that past literature on the DAPS has demonstrated results commensurate to, if not better than, results from standardized interview assessments (Blevins, Weathers, Davis, Witte, & Domino, 2015; Briere, 2001). Nonetheless, there are strong arguments for the use and validity of self-report assessment tools as laid out by David Chan (2009): 1) there is supporting evidence of criterion-related, convergent, and discriminant validity for self-report measures with other non-questionnaire criteria; 2) high correlations between self-report measures does not necessarily provide evidence for common method variance; 3) the use of non-self-report measures can also result in artificially inflated or deflated correlations; 4) not all constructs are equally susceptible to response biases such as social desirability; 5) social desirability responding is neither pervasive nor inevitable and can be reduced; and 6) self-report measures most accurately capture constructs that are perceptual in nature or that cannot be assessed via observable behavior. Given the advantages and disadvantages of self-report measures, future research should continue to investigate PTSD using many types of assessment tools.

Second, the current sample included English-speaking adults from the community who experienced a Criterion A traumatic event. Only 3.8% of participants met DSM-5 criteria for a provisional PTSD diagnosis, thus the majority of participants were likely experiencing few symptoms and little distress. It is possible that the current findings would not generalize to a clinical sample with more severe distress, symptoms, and comorbid psychopathology. It is also possible that this diverse sample of online MTurk workers does not represent the typical community sample of trauma-exposed adults. However, the individuals in the sample experienced a variety of traumatic experiences that ranged from moderate to very severe. Therefore, the sample will likely be representative of traumatic events experienced in the general

population. It is unclear whether or not these results would generalize to more specific or unique populations such as military service-members with combat experience, non-American citizens, or minors.

Another key concern in regards to the interpretation of results is the presence of high factor intercorrelations, especially in the seven-factor hybrid model (i.e., many exceed .85 or .90). Although this is a typical finding in CFA studies of PTSD (Elhai, Beihn, Armour et al., 2011; Reddy et al., 2013), it produces doubts about the conclusions of the study. For instance, even though the seven-factor hybrid model produced the most superior fit statistics in comparison to all models, the Dyspohric Arousal, Anxious Arousal, Anhedonia, and Intrusions clusters are all highly intercorrelated ($r > .91$). It is unclear whether or not such highly-correlated latent factors are truly different constructs and if the adoption of the *DSM-5* four-factor model is more parsimonious. Therefore, there is a need for studies that establish the validity of these constructs through methods such as differential associations with external variables. Future research should consider less restrictive models of PTSD symptoms, Exploratory Factor Analyses (EFA), or exploratory structural equation modeling (Marsh et al., 2009) to investigate PTSD symptom structure while avoiding common problems such as high factor intercorrelations.

The existence of equivalent models of PTSD factor structure is another important limitation for the interpretation of present findings. While the seven-factor hybrid model fit the data well, there are other models that fit the data equally well. For example, one such model could include replacing the covariances between the latent variables with direct effects, as in a structural model. Since the Intrusions latent variable was one of the most highly correlated with other latent variables, it is possible that Intrusions precipitated other PTSD symptom clusters such as dysphoric arousal (DA), intrusions (INT), and negative alteration in cognition and mood

(NACM). Intrusions with a direct effect on each of the other six factors would produce an identical solution that fits the data equally to the seven-factor hybrid model. Although the cross-sectional design of the present study cannot provide adequate support for this hypothesis, future research could incorporate longitudinal studies of the onset of PTSD symptoms after a traumatic event.

Despite these limitations, the present study provides clear evidence that the DAPS-II is a psychometrically sound assessment tool for *DSM-5* PTSD symptomatology. In addition, the questionnaire format of the DAPS-II is accessible because it requires less time and expertise to administer and score. Finally, the supplementary features, including extensive coverage of PTSD symptoms and trauma events, associated features scales that capture diverse clinical presentations, and validity and response bias scales, allow for versatility and usefulness beyond current questionnaire measures available. Thus, the DAPS-II provides an alternative and accessible tool for assessing *DSM-5* PTSD symptoms easily and accurately in a variety of populations.

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Appendix

Table 1

Scale-level descriptive statistics

Variable	*N*	*M*	*SD*	Possible range	Obs. range	α
DAPS-II scales						
PTS-T	307	72.5	38.7	40-210	42-204	.98
INT	355	17.7	9.4	10-50	10-50	.96
AV	360	7.1	4.0	4-20	4-20	.89
NACM	341	24.3	13.6	14-70	14-67	.96
AR	346	20.5	11.0	14-70	14-67	.95
IMP	357	8.5	5.0	5-25	5-25	.93
PDST	358	27.5	6.8	8-40	9-40	.78
PDIS	361	18.0	7.3	6-30	6-30	.89
T-DIS	358	6.3	3.8	4-20	4-20	.93
SUB	359	13.1	6.2	10-50	10-47	.92
SUI	358	13.0	6.6	10-50	10-40	.95
PB	355	15.6	7.1	8-40	8-40	.84
NB	362	10.1	4.6	8-40	8-35	.86
PCL-5	350	18.3	19.8	0-80	0-79	.97
MDI	334	50.0	23.7	30-150	30-146	.98
IDAS-II scales						
General Depression	335	44.6	17.6	20-100	20-96	.93
Dysphoria	345	21.4	10.2	10-50	10-50	.94

Lassitude	354	13.0	5.9	6-30	6-30	.87
Insomnia	355	13.7	6.5	6-30	6-30	.91
Suicidality	358	13.0	6.6	6-30	6-30	.92
Appetite Loss	359	5.6	3.1	3-15	3-15	.81
Appetite Gain	363	6.2	3.0	3-15	3-15	.81
Well-being	358	21.1	7.5	8-40	8-40	.88
Ill Temper	361	8.9	4.5	5-25	5-24	.89
Mania	356	8.9	4.7	5-25	5-25	.90
Euphoria	357	8.4	4.0	5-25	5-22	.84
Panic	350	13.6	7.3	8-40	8-40	.93
Social Anxiety	355	11.8	6.2	6-30	6-30	.91
Claustrophobia	356	8.1	4.5	5-25	5-25	.91
Traumatic Intrusions	358	7.6	4.2	4-20	4-20	.91
Traumatic Avoidance	358	8.4	4.1	4-20	4-20	.88
Checking	360	5.7	3.1	3015	3-15	.87
Ordering	359	9.3	4.3	5-25	5-24	.85
Cleaning	352	12.2	6.0	7-35	7-35	.92
DSI-SS	355	1.4	2.4	0-12	0-9	.93
INQ-R	364	13.3	11.0	8-56	8-56	.91
DIS	364	7.5	3.0	0-12	0-12	.92
BHS	364	2.1	0.6	0-4	0-4	.80
ACSS-FAD	364	14.0	6.6	0-28	0-28	.83

Note. DAPS-II = Detailed Assessment of Posttraumatic Stress, 2nd Edition; PTS-T = Posttraumatic Stress Total scale; INT = Intrusions subscale; AV = Avoidance subscale; NACM =

Negative alterations in cognitions and mood subscale; AR = Arousal subscale; IMP = Functional Impairment scale; PDST = Peritraumatic Distress scale; PDIS = Peritraumatic Dissociation scale; T-DIS = Trauma-related Dissociation scale; SUB = Substance Use scale; SUI = Suicidality scale; PB = Positive Bias scale; NB = Negative Bias scale; PCL-5 = PTSD Checklist for *DSM-5*; MDI = Multiscale Dissociation Inventory; IDAS-II = Inventory of Depression and Anxiety Symptoms, Second Edition; DSI-SS = Depressive Symptoms Inventory, Suicidality Subscale; INQ-R = Interpersonal Needs Questionnaire, Revised; DIS = Discomfort Intolerance Scale; BHS = Beck Hopelessness Scale; ACSS-FAD = Acquired Capability for Suicide Scale – Fearlessness about Death.

Table 2

Symptom mappings for confirmatory factor analysis (CFA) of PTSD factor structure.

PTSD Symptoms	Model 1	Model 2	Model 3	Model 4
B1. Intrusive thoughts (3)	INT	INT	INT	INT
B2. Nightmares (1)	INT	INT	INT	INT
B3. Flashbacks (2)	INT	INT	INT	INT
B4. Emotional cue reactivity (2)	INT	INT	INT	INT
B5. Physiological cue reactivity (2)	INT	INT	INT	INT
C1. Avoidance of thoughts (1)	AV	AV	AV	AV
C2. Avoidance of reminders (3)	AV	AV	AV	AV
D1. Trauma-related amnesia (1)	NACM	NACM	NACM	NACM
D2. Negative beliefs (3)	NACM	NACM	NACM	NACM
D3. Distorted blame (1)	NACM	NACM	NACM	NACM
D4. Pervasive neg. emotional state (4)	NACM	NACM	NACM	NACM
D5. Lack of interest (1)	NACM	NACM	AN	AN
D6. Feeling detached (1)	NACM	NACM	AN	AN
D7. Inability to experience pos. emotions (2)	NACM	NACM	AN	AN
E1. Irritability/aggression(3)	AR	EX	DA	EX
E2. Recklessness (1)	AR	EX	DA	EX
E3. Hypervigilance (2)	AR	AA	AA	AA
E4. Exaggerated startle (2)	AR	AA	AA	AA
E5. Difficulty concentrating (2)	AR	DA	DA	DA
E6. Sleep disturbance (1)	AR	DA	DA	DA

Note. Number of DAPS-II items for each symptom included in CFA analyses listed in parentheses; Model 1 = *DSM-5* four-factor; Model 2 = Externalizing six-factor; Model 3 = Anhedonia six-factor; Model 4 = Hybrid seven-factor; INT = Intrusions; AV = Avoidance; NACM = Negative alterations in cognitions and mood; AR = Alterations in arousal and reactivity; EX = Externalizing behaviors; AN = Anhedonia; DA = Dysphoric arousal; AA = Anxious arousal.

Table 3

DAPS-II Convergent and Discriminant Validity Correlations.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. DAPS-II PTSD total	---										
2. PCL-5 PTSD total	.91**	---									
3. IDAS-II Intrusions	.67**	.73**	---								
4. IDAS-II Avoidance	.61**	.70**	.72**	---							
5. MDI Derealization	.74**	.77**	.56**	.51**	---						
6. MDI Depersonaliz.	.73**	.76**	.57**	.52**	.93**	---					
7. IDAS-II Panic	.67**	.71**	.78**	.66**	.65**	.65**	---				
8. IDAS-II Depression	.61**	.70**	.79**	.71**	.59**	.59**	.81**	---			
9. IDAS-II Appetite Gain	.31**	.37*	.36**	.38**	.34**	.34**	.43**	.47**	---		
10. INQ-R total	.30**	.30**	.18**	.13*	.35**	.38**	.19**	.06	.05	---	
11. IDAS-II Well-being	.-.13*	-.13*	-.13*	-.12*	-.09	-.05	-.09	-.39**	.08	.24**	---

Note. DAPS-II = Detailed Assessment for Posttraumatic Stress, 2nd Edition; PCL-5 = PTSD Checklist for *DSM-5*; IDAS-II = Inventory of Depression and Anxiety Symptoms, Version 2; MDI = Multiscale Dissociation Inventory; INQ-R = Interpersonal Needs Questionnaire, Revised. $N = 367$ for DAPS-II correlations.

*$p < .05$; **$p < .01$.

Table 4

Fit statistics for models of PTSD symptom structure using the DAPS-II (40 items)

Model	χ^2	*df*	*p*	RMSEA (90% CI)	SRMR	CFI	TLI
4-factor *DSM-5* model	1340.24	634	< .001	.06 (.05, .06)	.04	.91	0.90
6-factor Externalizing model	1312.56	625	< .001	.06 (.05, .06)	.04	.91	0.90
6-factor Anhedonia model	1195.54	625	< .001	.05 (.05, .05)	.04	.93	0.92
7-factor Hybrid model	1159.29	619	< .001	.05 (.04, .05)	.04	.93	0.92

Note. *N* = 367 for all models. *DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*. RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; CFI = Bentler's Comparative Fit Index; TLI = Tucker Lewis Index.

**p* < .001.

Table 5

Standardized and unstandardized parameter estimates for the seven-factor hybrid model using the DAPS-II.

Item	PTSD Symptom	Factor	Estimate	SE	STDYX
DAPS 33	1. Intrusive memories	Intrusions	1.00	0.00[a]	0.77
DAPS 37	4. Cued distress		1.12	0.06**	0.84
DAPS 41	1. Intrusive memories		1.16	0.06**	0.84
DAPS 45	4. Cued distress		1.13	0.06**	0.84
DAPS 49	1. Intrusive memories		1.12	0.06**	0.86
DAPS 53	3. Flashbacks		1.08	0.06**	0.87
DAPS 57	2. Nightmares		1.06	0.07**	0.81
DAPS 61	5. Cued physical reactions		1.15	0.07**	0.85
DAPS 65	3. Flashbacks		1.04	0.07**	0.87
DAPS 69	5. Cued physical reactions		1.07	0.06**	0.89
DAPS 58	6. Avoidance of thoughts	Avoidance	1.00	0.00[a]	0.86
DAPS 34	7. Avoidance of reminders		0.92	0.06**	0.76
DAPS 54	7. Avoidance of reminders		0.89	0.06**	0.79
DAPS 66	7. Avoidance of reminders		0.97	0.05**	0.86
DAPS 42	8. Trauma-related amnesia	Negative Affect	1.00	0.00[a]	0.62
DAPS 72	9. Negative beliefs		1.38	0.15**	0.87
DAPS 75	9. Negative beliefs		1.43	0.16**	0.74
DAPS 78	9. Negative beliefs		1.36	0.16**	0.75
DAPS 81	10. Blame		1.53	0.16**	0.90

DAPS 73	11. Negative feelings		1.38	0.15**	0.90
DAPS 76	11. Negative feelings		1.49	0.17**	0.89
DAPS 79	11. Negative feelings		1.35	0.15**	0.78
DAPS 82	11. Negative feelings		1.50	0.17**	0.85
DAPS 38	12. Loss of interest	Anhedonia	1.00	0.00[a]	0.86
DAPS 46	13. Feeling detached		1.03	0.06**	0.87
DAPS 50	14. Feeling numb		1.00	0.06**	0.89
DAPS 62	14. Feeling numb		1.02	0.07**	0.89
DAPS 74	15. Irritability	Externalizing	1.00	0.00[a]	0.91
DAPS 77	15. Irritability		0.72	0.07**	0.76
DAPS 83	15. Irritability		0.91	0.06**	0.84
DAPS 80	16. Risk taking		0.87	0.06**	0.83
DAPS 63	17. Hypervigilance	Anxious Arousal	1.00	0.00[a]	0.86
DAPS 67	17. Hypervigilance		0.94	0.05**	0.70
DAPS 47	18. Startle		0.96	0.06**	0.80
DAPS 71	18. Startle		0.98	0.05**	0.84
DAPS 35	19. Difficulty concentrating	Dysphoric Arousal	1.00	0.00[a]	0.82
DAPS 39	19. Difficulty concentrating		1.06	0.06**	0.85
DAPS 51	20. Sleep disturbance		0.94	0.06**	0.77

Note. DAPS-II = Detailed Assessment of Posttraumatic Stress for *DSM-5*; STDXY = standardized solution outputted by Mplus. [a] Parameter was fixed at 1.0.

*$p < .05$; **$p < .001$.

Table 6

Zero-order correlations among latent variables of the seven-factor hybrid model using the DAPS-II.

	Avoidance	Intrusions	Negative affect	Anhedonia	Externalizing behavior	Anxious arousal	Dysphoric arousal
Avoidance	1.0	-	-	-	-	-	-
Intrusions	.80	1.0	-	-	-	-	-
Negative Affect	.51	.61	1.0	-	-	-	-
Anhedonia	.77	.91	.59	1.0	-	-	-
Externalizing behavior	.72	.85	.59	.85	1.0	-	-
Anxious arousal	.79	.93	.60	.93	.84	1.0	-
Dysphoric arousal	.81	.92	.60	.99	.84	.94	1.0

Note. DAPS-II = Detailed Assessment of Posttraumatic Stress for *DSM-5*. All zero-order correlations presented in the table were significant at $p < .001$.

Table 7

Zero-order inter-item correlations between DAPS-II items

	33	34	35	37	38	39	41	42	45	46	47	49	50
33	1.0												
34	0.65	1.0											
35	0.71	0.66	1.0										
37	0.69	0.70	0.66	1.0									
38	0.67	0.61	0.74	0.74	1.0								
39	0.67	0.60	0.80	0.70	0.83	1.0							
41	0.71	0.65	0.73	0.72	0.70	0.74	1.0						
42	0.48	0.48	0.53	0.55	0.56	0.56	0.54	1.0					
45	0.69	0.68	0.70	0.79	0.67	0.68	0.75	0.57	1.0				
46	0.60	0.62	0.66	0.67	0.76	0.73	0.64	0.55	0.72	1.0			
47	0.60	0.61	0.68	0.62	0.67	0.64	0.67	0.49	0.68	0.70	1.0		
49	0.78	0.61	0.69	0.66	0.69	0.72	0.74	0.55	0.75	0.68	0.67	1.0	
50	0.57	0.58	0.68	0.65	0.74	0.74	0.63	0.59	0.66	0.80	0.69	0.70	1.0
51	0.60	0.54	0.65	0.60	0.62	0.63	0.65	0.49	0.63	0.61	0.61	0.67	0.70
53	0.69	0.58	0.66	0.69	0.66	0.68	0.73	0.54	0.72	0.57	0.60	0.75	0.65
54	0.56	0.61	0.53	0.64	0.57	0.58	0.57	0.49	0.67	0.66	0.57	0.62	0.66
57	0.64	0.59	0.64	0.64	0.60	0.67	0.71	0.54	0.66	0.60	0.62	0.68	0.67
58	0.66	0.69	0.70	0.70	0.66	0.70	0.71	0.51	0.70	0.67	0.63	0.73	0.68
61	0.67	0.65	0.69	0.72	0.69	0.69	0.73	0.58	0.76	0.64	0.64	0.74	0.68
62	0.58	0.63	0.70	0.65	0.74	0.73	0.62	0.54	0.66	0.80	0.65	0.67	0.84
63	0.61	0.56	0.65	0.63	0.65	0.68	0.71	0.48	0.71	0.68	0.67	0.66	0.66
65	0.61	0.62	0.67	0.64	0.65	0.70	0.69	0.55	0.70	0.66	0.63	0.70	0.70
66	0.59	0.61	0.65	0.68	0.65	0.67	0.69	0.52	0.68	0.66	0.60	0.67	0.70
67	0.53	0.49	0.54	0.59	0.49	0.50	0.57	0.45	0.56	0.55	0.58	0.55	0.52
69	0.66	0.67	0.70	0.71	0.68	0.73	0.71	0.56	0.78	0.71	0.68	0.70	0.73
71	0.61	0.60	0.65	0.64	0.71	0.70	0.66	0.45	0.65	0.68	0.81	0.64	0.69
72	0.58	0.51	0.65	0.64	0.66	0.67	0.64	0.55	0.64	0.60	0.58	0.63	0.66
73	0.62	0.57	0.61	0.64	0.63	0.65	0.64	0.53	0.62	0.63	0.57	0.63	0.70
74	0.65	0.63	0.67	0.68	0.70	0.70	0.70	0.59	0.67	0.65	0.62	0.70	0.73
75	0.55	0.60	0.57	0.62	0.56	0.60	0.55	0.42	0.60	0.65	0.56	0.58	0.62
76	0.58	0.56	0.60	0.66	0.61	0.64	0.61	0.51	0.66	0.62	0.56	0.63	0.66
77	0.45	0.40	0.49	0.51	0.55	0.53	0.52	0.55	0.55	0.47	0.47	0.53	0.58
78	0.61	0.54	0.54	0.59	0.62	0.59	0.63	0.44	0.67	0.66	0.58	0.64	0.58
79	0.65	0.61	0.71	0.66	0.67	0.70	0.64	0.50	0.72	0.67	0.66	0.69	0.68
80	0.50	0.58	0.59	0.57	0.62	0.64	0.56	0.58	0.61	0.65	0.56	0.62	0.71
81	0.57	0.56	0.63	0.64	0.59	0.62	0.62	0.56	0.65	0.60	0.57	0.61	0.66
82	0.55	0.60	0.57	0.63	0.58	0.60	0.62	0.51	0.65	0.59	0.55	0.60	0.63
83	0.56	0.50	0.57	0.60	0.65	0.67	0.65	0.60	0.61	0.58	0.58	0.63	0.70

Table 7 (*continued*)

	51	53	54	57	58	61	62	63	65	66	67	69	71
51	1.0												
53	0.70	1.0											
54	0.61	0.66	1.0										
57	0.67	0.74	0.63	1.0									
58	0.66	0.69	0.65	0.72	1.0								
61	0.65	0.79	0.66	0.72	0.71	1.0							
62	0.65	0.66	0.69	0.63	0.67	0.71	1.0						
63	0.66	0.67	0.65	0.70	0.71	0.70	0.70	1.0					
65	0.62	0.76	0.71	0.77	0.73	0.77	0.74	0.71	1.0				
66	0.67	0.69	0.69	0.74	0.74	0.70	0.74	0.71	0.77	1.0			
67	0.51	0.54	0.52	0.58	0.59	0.57	0.55	0.60	0.55	0.62	1.0		
69	0.66	0.79	0.70	0.73	0.73	0.82	0.73	0.73	0.81	0.76	0.53	1.0	
71	0.63	0.67	0.61	0.67	0.69	0.66	0.70	0.72	0.70	0.70	0.59	0.75	1.0
72	0.57	0.68	0.60	0.71	0.66	0.67	0.67	0.67	0.70	0.72	0.54	0.70	0.66
73	0.62	0.66	0.61	0.67	0.71	0.64	0.65	0.65	0.66	0.70	0.59	0.66	0.59
74	0.62	0.71	0.63	0.70	0.73	0.72	0.73	0.72	0.74	0.73	0.58	0.71	0.68
75	0.51	0.57	0.58	0.58	0.62	0.60	0.66	0.60	0.57	0.62	0.62	0.63	0.63
76	0.57	0.62	0.64	0.69	0.67	0.63	0.62	0.63	0.64	0.71	0.57	0.69	0.65
77	0.51	0.63	0.56	0.58	0.57	0.60	0.59	0.60	0.67	0.61	0.41	0.60	0.54
78	0.56	0.56	0.58	0.55	0.60	0.57	0.59	0.63	0.56	0.59	0.52	0.61	0.59
79	0.59	0.62	0.61	0.63	0.68	0.67	0.67	0.69	0.64	0.60	0.56	0.71	0.66
80	0.60	0.61	0.66	0.62	0.65	0.60	0.71	0.61	0.70	0.68	0.45	0.67	0.65
81	0.57	0.60	0.62	0.67	0.67	0.63	0.61	0.61	0.64	0.68	0.56	0.65	0.59
82	0.53	0.63	0.63	0.64	0.66	0.66	0.63	0.62	0.63	0.70	0.54	0.68	0.62
83	0.60	0.68	0.61	0.67	0.66	0.68	0.69	0.68	0.71	0.67	0.49	0.71	0.66

Table 7 (*continued*)

	72	73	74	75	76	77	78	79	80	81	82	83
72	1.0											
73	0.80	1.0										
74	0.75	0.80	1.0									
75	0.60	0.62	0.67	1.0								
76	0.77	0.77	0.73	0.67	1.0							
77	0.67	0.63	0.70	0.44	0.59	1.0						
78	0.61	0.63	0.60	0.62	0.66	0.47	1.0					
79	0.61	0.63	0.67	0.61	0.67	0.45	0.66	1.0				
80	0.67	0.65	0.73	0.59	0.68	0.70	0.55	0.62	1.0			
81	0.80	0.84	0.72	0.63	0.82	0.57	0.64	0.64	0.63	1.0		
82	0.70	0.72	0.65	0.68	0.81	0.53	0.65	0.63	0.63	0.80	1.0	
83	0.72	0.65	0.79	0.57	0.67	0.77	0.54	0.59	0.72	0.61	0.62	1.0