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Prevalence and Factor Structure of PTSD in *DSM-5* Versus *DSM-IV* in a National Sample of Sexual Minority Women

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Abstract

The impact of changes to posttraumatic stress disorder (PTSD) diagnostic criteria from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) to *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*) within diverse communities is unclear. Young adult sexual minority women are at high risk for interpersonal violence and other forms of trauma exposure compared with heterosexual populations and sexual minority men. They are also at heightened risk of PTSD. As a result, young adult sexual minority women are a key population of interest when examining the impact of diagnostic criteria changes. The goal of the current study was to evaluate the impact of changes to PTSD diagnostic criteria in sexual minority women. Using an online survey, we administered both the original PTSD Symptom Checklist-S (based on *DSM-IV* criteria) and a version adapted to assess *DSM-5* criteria to a national, nonclinical sample of young adult sexual minority women ($N = 767$). The *DSM-5* symptom criteria fit the data well in confirmatory factor analysis. Current PTSD prevalence was higher under the *DSM-5* diagnostic algorithm compared with *DSM-IV* (18.6% vs. 22.9%; $d = 0.15$). Compared with *DSM-IV*, associations between PTSD and depression were stronger using *DSM-5* criteria, whereas associations between PTSD and high-risk drinking were reduced. Findings suggest that changes to PTSD diagnostic criteria do not have a major impact on prevalence of PTSD among sexual minority women but may have some impact on observed comorbidities.

Keywords

posttraumatic stress disorder; minority stress; diagnosis; lesbian; bisexual

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Comparing PTSD in *DSM-5* Versus *DSM-IV* in a National Sample of Sexual Minority Women

The release of the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) included significant changes to posttraumatic stress disorder (PTSD) criteria (see Friedman et al., 2011). Because diagnostic criteria may not perform equally well across diverse groups, evaluation of these changes within minority populations, particularly those with elevated risk, is needed (Elhai & Palmieri, 2011). However, no research to our knowledge has examined the performance of *DSM-5* PTSD symptom structure within specific U.S. minority groups. Sexual minority women (SMW), including but not limited to cisgender and transgender women who identify as lesbian or bisexual, are a key population to study in this regard, as large population-based studies have found higher prevalence of interpersonal violence and other trauma exposure and PTSD as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000) among SMW as compared with heterosexual women and gay men (Gilman et al., 2001; Roberts et al., 2010). In addition, some data suggest that young adult SMW experience especially high risk of interpersonal violence (Roberts et al., 2010). Thus, the purpose of this article is to examine the impact of changes in PTSD criteria from *DSM-IV* to *DSM-5* among a young adult, nonclinical SMW sample.

Changes to PTSD Diagnostic Criteria in *DSM-5*

The updated *DSM-5* PTSD criteria involved two significant changes: changes to the definition of a traumatic event and changes to the symptoms themselves. Next, we review the nature of these changes and evidence of their impact in general population samples.

The first major change in *DSM-5* PTSD criteria involved alteration in the definition of a traumatic event. *DSM-IV* required a subjective reaction (i.e., reports of fear, horror, or helplessness; Criterion A2) to a qualifying traumatic event (Criterion A1). Due to concerns that *DSM-IV* definition of a traumatic event was too vague, particularly around indirect exposure to traumatic events such as witnessing or learning about traumatic experiences happening to others (e.g., Zoellner et al., 2013), Criterion A1 was narrowed in *DSM-5* to be more restrictive in specifying who was directly exposed (i.e., a family member or close friend) and the nature of the event to which they were exposed (i.e., violent or accidental actual or threatened death). Criterion A2 was removed in light of evidence that it has limited diagnostic utility (Bedard-Gilligan & Zoellner, 2008; Karam et al., 2010). Removing Criterion A2 appears to have little influence on prevalence estimates of *DSM-IV* PTSD (e.g., Bedard-Gilligan & Zoellner, 2008; Kilpatrick et al., 2009), and results in slightly increased prevalence of *DSM-5* PTSD (Elhai et al., 2012; Kilpatrick et al., 2013), although more research, particularly in diverse samples, is needed to confirm this finding.

The second major change in *DSM-5* PTSD criteria involved changes in the number of symptom clusters and the nature of symptoms. *DSM-IV* included three clusters: reexperiencing, avoidance/numbing, and arousal. Due in part to problems with model fit of the three-cluster model (for reviews, see Armour et al., 2016; Elhai & Palmieri,

2011), *DSM-5* used a four-cluster model that has demonstrated improved fit in factor analyses (Armour et al., 2016; Elhai et al., 2012; Forbes et al., 2015; Miller et al., 2013). Criterion B (reexperiencing/intrusions) had only minor changes from the *DSM-IV* (e.g., removing rumination, clarifying that nightmare content should be trauma-related). Avoidance of internal reminders (e.g., thoughts, feelings) and external reminders (e.g., people, places) were retained with minor wording changes and together now comprise effortful avoidance (Criterion C), and the remaining emotional numbing symptoms were moved to a new cluster focused on negative changes in mood and cognitions (Criterion D). In addition to minor changes to symptoms, the new Criterion D includes three symptoms not captured in *DSM-IV*: exaggerated negative expectations about oneself, others, or the world; cognitive distortions regarding trauma-related blame; and pervasive negative emotional state. Foreshortened future, formerly considered avoidance, was removed altogether. Finally, the five hyperarousal symptoms of *DSM-IV* were retained as *DSM-5* Criterion E (arousal/reactivity), a self-destructive or reckless behavior symptom was added, and minor changes were made to several symptoms (e.g., the irritability symptom was modified to include aggressive behavior). On the whole, these *DSM-5* changes to Criteria B to E appear to somewhat reduce lifetime PTSD prevalence estimates (from 10.6% to 9.4%) but have no significant impact on past-6-month diagnoses (Miller et al., 2013). Requiring at least one symptom of effortful avoidance to meet diagnostic criteria leads some individuals to meet criteria under *DSM-IV* but not *DSM-5*, and the expanded mood and hyperarousal symptoms leads some to meet criteria under *DSM-5* but not *DSM-IV* (Kilpatrick et al., 2013).

Sexual Minority Women and PTSD in DSM-5

It is important to test the assumption that changes to diagnostic criteria perform well in minority groups, especially when those groups are disproportionately diagnosed with or affected by a given condition (Asnaani et al., 2010; Elhai & Palmieri, 2011; Pole et al., 2008). Symptoms may have different meanings and may not cluster together in the same ways across different groups. In the case of PTSD, diverse groups may experience unique forms of stressors (e.g., identity-based harassment, discrimination, and trauma) that could affect symptom expression (Elhai & Palmieri, 2011).

Several studies have used confirmatory factor analysis to compare the *DSM-IV* and *DSM-5* factor structures in diverse populations. The *DSM-5* four-factor model outperformed the *DSM-IV* three-factor model in a sample of earthquake survivors in Armenia (Demirchyan et al., 2015) and sexual violence survivors in the Democratic Republic of Congo (Michalopoulos et al., 2015). Both models performed comparably well among Sri Lankans (Kuowei et al., 2018) and refugees in Switzerland (Schnyder et al., 2015), and neither performed adequately in Iraqis (Michalopoulos et al., 2015). This demonstrates that the superior fit of the *DSM-5* symptom structure is an assumption that requires testing across diverse groups.

SMW are a key group to examine in regard to PTSD diagnostic changes because they experience high risk for both trauma (especially interpersonal violence) and PTSD (Gilman et al., 2001; Roberts et al., 2010), and this risk may occur through unique mechanisms relative to heterosexual populations. From a minority stress perspective, SMW experience

chronic bias-related social stressors, such as microaggressions, explicit discrimination, harassment, and violent assault targeted to SMW because of their identity (Hatzenbuehler, 2009; Meyer, 2003). The chronic stressors experienced by SMW may, themselves, be traumatic events—as in the case of bias-based violence—or may increase vulnerability to PTSD after non-bias-based events, to which they are also highly vulnerable relative to heterosexuals (Balsam et al., 2005; Dworkin et al., 2018; Katz-Wise & Hyde, 2012). These chronic minority stressors are thought to increase risk for emotion dysregulation, interpersonal dysfunction, and cognitive shifts (Hatzenbuehler, 2009; Meyer, 2003) which, in turn, increase the prevalence of both PTSD and comorbid disorders (e.g., anxiety, depression, alcohol use disorders) (King et al., 2008; Steele et al., 2009).

Thus, from a minority stress perspective, SMW's exposure to chronic social stress could impact endorsement of the new *DSM-5* PTSD symptoms and therefore increase prevalence of *DSM-5* PTSD as well as comorbid conditions. For example, SMW may experience cognitive shifts, such as the internalization of heterosexism, which could manifest as persistent and exaggerated negative beliefs (D2) related to a trauma (Alessi et al., 2013; Dworkin et al., 2018; Szymanski & Balsam, 2011). SMW experiencing emotional dysregulation may also be more likely to endorse risky behavior (E2) based on evidence of higher risk of substance abuse, suicidality, and other related behaviors in sexual minority samples (Conron et al., 2010; McCabe et al., 2009).

The Present Study

Because young SMW are disproportionately affected by both trauma (especially interpersonal violence) and PTSD, it is important to test the assumption that PTSD diagnostic criteria perform well within this population specifically. This study thus evaluated the potential impact of changes from *DSM-IV* to *DSM-5* PTSD diagnostic criteria on factor structure model fit, prevalence estimates, and comorbidity in a national sample of young SMW. We hypothesized that (a) both the *DSM-IV* and *DSM-5* factor structures would evidence acceptable model fit, (b) the removal of Criterion A2 would result in slight increases in past-month PTSD prevalence, (c) the symptom criterion changes would not alter past-month PTSD prevalence, and (d) there would be increased likelihood of comorbidity with anxiety, depression, and alcohol misuse when using *DSM-5* compared with *DSM-IV* criteria.

Method

Participants and Procedures

Paid online advertisements were placed on Facebook and Craigslist to recruit a national sample of self-identified lesbian and bisexual women aged 18 to 25 for a larger longitudinal study (Kaysen et al., 2014; Litt et al., 2015). Interested participants completed an online consent form and web-based screening. Eligibility criteria included women who: (a) lived in the United States, (b) had a valid email address, (c) were between the ages of 18 to 25, (d) self-identified as lesbian or bisexual at the time of the assessment, and (e) were assigned female sex at birth and currently identified as women (as a result of the focus of the larger study on sex-dependent alcohol consumption variables).¹ For the larger longitudinal

study, 1,057 women provided consent and were enrolled. Data for this study were from the 12-month follow-up assessment, in which both *DSM-IV* and *DSM-5* PTSD symptoms were assessed. Of the 1,057 women enrolled, 203 did not complete the 12-month follow-up assessment. An additional 87 participants were missing data on measures of PTSD and trauma exposure, leaving 767 (72.5%) who were included in this study. There were no statistically significant differences between those who were and were not included in these analyses according to various baseline characteristics including age, $\chi^2(7) = 5.57; p = .591$, *DSM-IV* PTSD diagnosis, $\chi^2(1) = 1.13; p = .288$, and elevated anxiety, $\chi^2(1) = .54; p = .463$. However, those with elevated compared with nonelevated depression at baseline were less likely to be in the analysis sample, $\chi^2(1) = 4.01, p = .045$. Participants were paid US\$25 for completing the baseline and US\$30 for completing the follow-up assessments. All study procedures were approved by the University of Washington IRB and a federal Certificate of Confidentiality was obtained from the National Institutes of Health. The sample included 41.8% lesbian women and 58.2% bisexual women. Ethnic composition included 70.5% Caucasian, 8.8% African American, 2.4% Asian, 15.6% multiracial, and 2.7% “other.” The mean age was 20.88 years old ($SD = 2.11$).

Measures

The following measures were completed online.

Generalized anxiety.—The Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006; Swinson, 2006) was used to assess past-month anxiety symptoms. The GAD-7 has acceptable internal consistency and construct validity in the general population (Löwe et al., 2008); internal consistency was 0.92 in a past study of SMW (Lehavot & Simoni, 2011). Internal consistency was high in this sample ($\alpha = .89$). Scores of 10 or higher indicated clinically elevated anxiety (Swinson, 2006).

Depressive symptoms.—The Center for Epidemiologic Studies Depression (CES-D) Scale (Radloff, 1977) is a 20-item self-report scale modified to measure past-month depressive symptoms. Internal consistency reliability, test–retest reliability, and validity are acceptable in the general population (Radloff, 1977); prior studies of SMW reported internal consistency of 0.86 to 0.93 (Herek et al., 1997; Lehavot & Simoni, 2011). The CES-D had strong internal consistency in this sample ($\alpha = .80$). Scores of 16 or higher indicated clinically elevated depression (Radloff, 1977).

Alcohol use.—Alcohol use was assessed with a modified version of the Daily Drinking Questionnaire (DDQ; Collins et al., 1985). This measure has previously been found to have good reliability and construct validity (Kivlahan et al., 1990). Participants were asked to report the number of standard drinks consumed each day on a typical week in the last 12 months. A binary variable for low risk alcohol use was created according to NIAAA

¹Due to this sampling strategy, we use the term “women” when discussing this sample to refer to individuals who had been assigned female sex at birth and identified as women at the time that they responded to study advertisements. As a result, some women (e.g., transgender women) are not reflected in this sample, which is a notable limitation of this study. Some participants may have primarily identified with a gender identity term (e.g., genderqueer, nonbinary) other than “woman,” and others who identified as women at the time of enrollment may have changed their gender identity during study participation.

guidelines (low risk use = 3 or less drinks during a typical day and <7 drinks during a typical week).

Trauma exposure.—The Traumatic Life Experiences Questionnaire (TLEQ; Kubany et al., 2000) was used to assess the number of lifetime traumatic events participants had experienced. The TLEQ includes a comprehensive list of 22 potentially traumatic life events and assesses *DSM-IV-TR* PTSD Criterion A2 with a follow-up question regarding whether the person experienced fear, helplessness, or horror. The temporal stability of this scale has been demonstrated in prior work (Kubany et al., 2000). Participants who endorsed sexual traumas were asked to indicate whether they believed that the event occurred because they are lesbian/bisexual.

PTSD symptoms.—The PTSD Checklist (PCL; Weathers et al., 1991) was adapted to assess both past-month *DSM-IV* and *DSM-5* PTSD symptoms at the 12-month assessment. As this study was conducted prior to publication of the PCL-5 (Weathers et al., 2013), we made the following modifications to capture the proposed *DSM-5* symptom changes (APA, *DSM-5* Development, 2010), as summarized in Table 4: four new items assessed the new *DSM-5* symptoms (three in Criterion D and one in Criterion E), six items included wording changes in symptom descriptions (three in Criterion B, one in Criterion C, one in Criterion D, and one in Criterion E), and the foreshortened future item was removed. The new and modified items were administered in addition to the original 17, for a total of 27 questions paralleling both *DSM-IV* and *DSM-5* diagnostic criteria. Participants were prompted to choose a “most distressing” traumatic event from their TLEQ responses and answer the PCL questions regarding that event. This scale has acceptable internal consistency and validity (Weathers et al., 1994), and internal consistency has been reported at 0.94 among SMW specifically (Szymanski & Balsam, 2011). The 17-item *DSM-IV* PCL had strong internal consistency in this sample ($\alpha = .93$) as did the 20-item *DSM-5* PCL ($\alpha = .94$). All items used the PCL for *DSM-IV* 5-point Likert-type scale. For analysis, we treated responses of 3 to 5 (*moderately*, *quite a bit*, and *extremely*) as symptomatic and responses of 1 to 2 (*not at all* and *a little bit*) as nonsymptomatic (Weathers et al., 1991) due to data sparseness. We then used diagnostic algorithms matching *DSM-IV* and *DSM-5* symptom endorsement requirements to determine whether diagnostic criteria were met.

Data Analytic Plan

Descriptive analyses estimated the prevalence and associated 95% confidence interval of trauma exposure and PTSD using *DSM-IV* and *DSM-5* criteria. To test whether the prevalence of PTSD was different between the two criteria, we used McNemar’s test to account for the nonindependence of observations within a participant. These analyses included all 767 women.

Confirmatory factor analysis (CFA) was used to assess criteria factor structure fit using the *lavaan* package (version 0.5–10) in R 2.15.1 software. One-hundred thirty-two (15.9%) participants who did not indicate a worst traumatic event were excluded from analyses, leaving a total of 635 participants. PCL items were treated as categorical using the tetrachoric covariance matrix (Flora & Curran, 2004; Wirth & Edwards, 2007). Diagonally

weighted least squares (DWLS) estimation was used to estimate the model parameters, but the full weight matrix was used to compute the robust standard errors with a mean- and variance-adjusted test statistic (WLSMV). Fit indices reported for the models include the chi-square statistic, root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker–Lewis index (TLI). A RMSEA value of less than 0.06 and a CFI and TLI value of 0.95 or greater were chosen as indicators of good fit for the data (Hu & Bentler, 1999).

To examine cross-sectional associations between PTSD diagnoses and comorbidity, we used modified Poisson regression with robust standard errors to estimate prevalence ratios (PRs) associated with concurrent PTSD diagnosis (Spiegelman & Hertzmark, 2005). Sample sizes for analysis of each outcome were 754 (98.3%) for depression, 765 (99.7%) for anxiety, and 760 (99.1%) for high-risk drinking. Descriptive and Poisson regression analyses were performed using Stata 14.1 software (Stata Corporation, College Station, TX).

Results

Table 1 summarizes hypotheses and results. Of the 767 women in this analysis, 635 (82.8%) reported a Criterion A trauma, and 605 (78.9%) reported a trauma that additionally met *DSM-IV* Criterion A2 (i.e., 30 women reported traumas that did not meet *DSM-IV* criteria due to the absence of peritraumatic fear, horror, or helplessness). The most commonly reported index traumas were sudden death of a friend or loved one (16.0%) and unwanted sexual contact as a child (5.3%), adolescent (7.2%), or adult (6.6%). Of the index traumas, 3.8% involved unwanted sexual contact attributed by the participant to their sexual orientation. Using *DSM-IV* criteria, 18.6% of participants met criteria for past-month PTSD. A statistically significant higher prevalence of 22.9% was observed when *DSM-5* criteria were used, McNemar's $\chi^2(1) = 11.97; p < .001$. Generally, there was a high level of agreement between the two diagnostic criteria sets (Table 2).

Table 3 shows PTSD prevalence with and without the inclusion of Criterion A2. If Criterion A2 were applied similarly across *DSM-IV* and *DSM-5*, the proportion meeting PTSD criteria would be *lower* according to *DSM-5* compared with *DSM-IV*. This difference was significant when A2 was applied and not significant when A2 was not applied.

Table 3 also shows the number and percentage of women who endorsed specific *DSM-IV* and *DSM-5* PTSD symptoms. Figures 1 and 2 show factor structure and loadings from CFA analyses for *DSM-IV* and *DSM-5* models, respectively. CFA analyses indicated that acceptability of the *DSM-IV* 17-item three-factor model fit was not consistent across fit indices, with CFI and TLI suggesting acceptable fit and RMSEA indicating less than acceptable fit, $\chi^2(116) = 619.04, p < .001$; CFI = .961; TLI = .955; RMSEA = .083. In contrast, model fit was acceptable for the *DSM-5* 20-item four-factor model across all three fit indices, $\chi^2(164) = 475.10, p < .001$; CFI = .981; TLI = .978; RMSEA = .055.

Table 4 shows associations between *DSM-IV* and *DSM-5* PTSD with comorbid disorders. There was a high prevalence of depression (59.8%) and anxiety (68.8%) in this sample. The prevalence of high-risk drinking was 33.0%. There was a statistically significant association

between both depressive and anxiety symptoms with *DSM-IV* and *DSM-5* PTSD criteria. The association with depression was stronger for *DSM-5* compared with *DSM-IV*. No such difference was found for anxiety or high-risk drinking.

Discussion

Although changes to diagnostic criteria are rigorously tested in general population samples, their applicability to specific populations is often an untested assumption; indeed, no research to our knowledge has evaluated the *DSM-5* PTSD diagnostic criteria changes among U.S. minority groups. We found that, among a young, large, nationally recruited sample of SMW, *DSM-5* symptom criteria evidenced adequate fit for the symptoms of PTSD experienced by SMW, whereas the *DSM-IV* criteria did not. However, the *DSM-5* criteria were associated with a slight prevalence increase that appeared to be driven by the removal of Criterion A2, as well as some changes to patterns of comorbidity. Collectively, these findings suggest that the new symptoms and criteria structure (e.g., changes to symptom clusters) have general applicability to SMW and appear to be appropriate for use in research and clinical practice.

We tested whether *DSM-IV* and *DSM-5* PTSD latent symptom structures fit the symptom presentations of the young SMW in our sample. The four-cluster model in *DSM-5* performed well in confirmatory factor analyses, whereas the three-factor model in *DSM-IV* had more mixed support, consistent with existing studies of samples unselected for sexual orientation (Elhai et al., 2012; Forbes et al., 2015; Miller et al., 2013) and some studies of other diverse populations (Demirchyan et al., 2015; Michalopoulos et al., 2015; cf. Kuowei et al., 2018; Schnyder et al., 2015). Importantly, it is not possible to directly compare *DSM-IV* and *DSM-5* latent structures using confirmatory factor analysis given differences in the number of items from each, and the finding that the *DSM-5* structure performed adequately across all fit indices, whereas the *DSM-IV* structure did not could be attributable to the larger number of factors in the *DSM-5* structure. Nevertheless, it appears that the *DSM-5* changes, such as creating an effortful avoidance cluster of symptoms and restructuring to include a wider variety of changes in mood and cognition, are a good fit with the symptoms experienced by SMW after trauma.

As expected, the prevalence of PTSD with *DSM-5* symptoms and without A2 was higher than the prevalence of PTSD with *DSM-IV* symptoms and A2 included. This appeared to be primarily driven by the removal of A2 more so than by symptom criterion changes, as the prevalence of PTSD increased when A2 was excluded with either *DSM-IV* or *DSM-5* symptom criteria, but decreased somewhat when comparing *DSM-5* versus *DSM-IV* symptom criteria (this decrease was significant when A2 was applied and was not significant when A2 was not applied). This is consistent with past studies, in which removing Criterion A2 led to increases in prevalence (Elhai et al., 2012; Kilpatrick et al., 2013), and no change in prevalence when assessed in relation to recent symptoms (Kilpatrick et al., 2013). However, the increase in prevalence associated with A2 was larger in this study than in past studies (Elhai et al., 2012; Kilpatrick et al., 2013). Peritraumatic reactions, like those assessed by A2 (i.e., fear, horror, helplessness), are sometimes theorized as integral to the definition of PTSD and may be especially important among SMW (Bovin & Marx, 2011),

perhaps as a result of chronic exposure to minority stress. Future studies should investigate the degree to which accounting for other peritraumatic reactions, like disgust, anger, shame, numbing, and sadness, improve diagnostic accuracy in SMW.

It should be noted that we did not examine changes to A1. *DSM-5* sought to narrow the objective definition of a traumatic stressor (A1), which might be expected to decrease prevalence estimates, and this possibility should be tested in future research on SMW. In addition, whether this lower prevalence evidences increased specificity, as suggested by Elhai and colleagues (2009) and Forbes and colleagues (2011), or a failure to account for the experiences of certain affected trauma survivors, is an avenue for future research. It is possible that, in an atmosphere of chronic discrimination, the latter explanation could disproportionately impact SMW, and clinicians should be conscious of this possibility when conducting assessments.

We found high agreement (88%) between *DSM-IV* (using A2) and *DSM-5* (with symptom changes and without A2), with 15% meeting PTSD criteria and 73% not meeting criteria using both algorithms. When there was disagreement, it was more common that a case would be PTSD positive using *DSM-5* and negative with *DSM-IV*. We found an increase of 4.3% moving to *DSM-5*, which is higher than that noted by other studies (Elhai et al., 2012). One possible explanation for this is that we were unable to distinguish between experiencing the sudden natural versus unnatural death of a loved one to account for the stricter A1 definition in *DSM-5*, as this change has been identified as a primary explanation for meeting *DSM-IV* but not *DSM-5* criteria (Kilpatrick et al., 2013). Alternatively, it is possible that *DSM-5* symptoms may function differently for SMW. Research investigating aspects of SMW's experiences of trauma that make them more likely to endorse symptoms included in the *DSM-5* and/or whether there is assessment bias affecting *DSM-5* diagnoses among SMW is critical.

One *DSM-5* goal was to increase PTSD specificity and differentiation from other disorders (Forbes et al., 2011; Friedman, 2013). However, *DSM-5* PTSD has been criticized for its overlap with depression symptoms (Frueh et al., 2010; McNally, 2009). Although other studies with different subject populations have not supported this concern (Elhai et al., 2012; Hoge et al., 2014), we found higher comorbidity between PTSD and depression with *DSM-5* criteria as compared with *DSM-IV* (33.7% vs. 26.6%). It is possible that the sequelae of minority stress for SMW manifest in the types of cognitive dysfunction captured by additions to the *DSM-5* criteria (i.e., depressive rather than anxious). Indeed, about 30% of SMW endorsed negative beliefs about oneself, others, and the world, while the risk-taking item was endorsed by only 13.6% of our sample. Cognitive theories of PTSD posit that exposure to traumatic events can strengthen existing negative beliefs about oneself and the world (Dunmore et al., 2001; Elwood et al., 2009; Nishith et al., 2000), and SMW-specific stressors such as heterosexism and internalized SMW-related stigma may increase the likelihood of developing depressive distorted cognitions after trauma. Such cognitions may be an especially important target for clinical intervention.

This study had several limitations. Our sample was not a representative or random sample of SMW; participants were primarily White and represented a narrow age range. However,

demographic characteristics of the sample match national representative samples of SMW (Chandra et al., 2011), increasing confidence in external validity. Online sampling could lead to participant misrepresentation, although past research on a similar topic found that potentially invalid responses were a small minority (2%-7.5%) (Ramo et al., 2010; Ramo & Prochaska, 2012). Although web-based assessments of trauma and PTSD are also subject to concerns about participant honesty, and are additionally limited in that they preclude querying about symptoms or conducting true diagnostic assessments, research supports the reliability and validity of online assessments of these topics (Fortson et al., 2006; Read et al., 2009). In addition, although the PCL for *DSM-IV* is strongly correlated with interviewer measures (Blanchard et al., 1996), we do not know whether that extends to our *DSM-5* items. We did not evaluate functional impairment, and the TLEQ was not adjusted for the restricted A1 trauma criterion in *DSM-5*. Consequently, we might have categorized individuals as meeting PTSD criteria who technically would not, which could have lessened the observed increase in individuals meeting criteria from *DSM-IV* to *DSM-5*.

Nonetheless, this study is an important step in examining the impact of changes to the diagnostic criteria of PTSD on a subgroup that is at high risk for trauma exposure and PTSD. Changes from *DSM-IV* to *DSM-5* suggest slight increases in PTSD prevalence estimates and adequate performance in terms of the factor structure of PTSD symptom criteria among SMW. This indicates that it is likely appropriate for clinicians assessing PTSD in SMW to use *DSM-5* criteria. Further research regarding how our diagnostic criteria perform in diverse populations should be a goal of evaluating our conceptualizations of mental disorders.

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Debra Kaysen is a clinical psychologist, and a professor in the Department of Psychiatry & Behavioral Sciences at Stanford University. Her area of specialty both in research and clinical work is in the care of those who have experienced traumatic events including treatment of PTSD and comorbid disorders. Her body of research is notable for the inclusion of underserved populations such as research with Native Americans, sexual minorities, and individuals in low- and middle-income countries.

Isaac C. Rhew is a psychiatric epidemiologist and research associate professor in the Department of Psychiatry and Behavioral Sciences at the University of Washington. He also holds an adjunct appointment in the Department of Epidemiology. His research focuses on the etiology and prevention of substance use and common psychiatric conditions and the

application of innovative epidemiological and statistical methods toward the study of these problems.

Joyce Bittinger received her PhD from the University of Washington in 2012 and she completed a postdoctoral fellowship in 2014 at the University of Washington Department of Psychiatry and Behavioral Sciences. Her research focused on PTSD and memory processes and she was dedicated to training and mentoring students in clinical psychology. She passed away in 2018 after a long illness. She is greatly missed.

Michele Bedard-Gilligan is a licensed clinical psychologist and an associate professor at the University of Washington in the Department of Psychiatry and Behavioral Sciences. She received her PhD in clinical psychology from the University of Washington in 2009. Her research interests focus on recovery processes following trauma exposure with a specific interest in the treatment of PTSD and the impact of co-occurring substance use on symptoms and recovery.

Lisa A. Garberson is a research scientist in the Department of Family Medicine at the University of Washington. She received her PhD in educational psychology (Research, Evaluation, Measurement, and Statistics) from the University of Georgia. Her research interests include secondary data analysis and Medicare administrative data.

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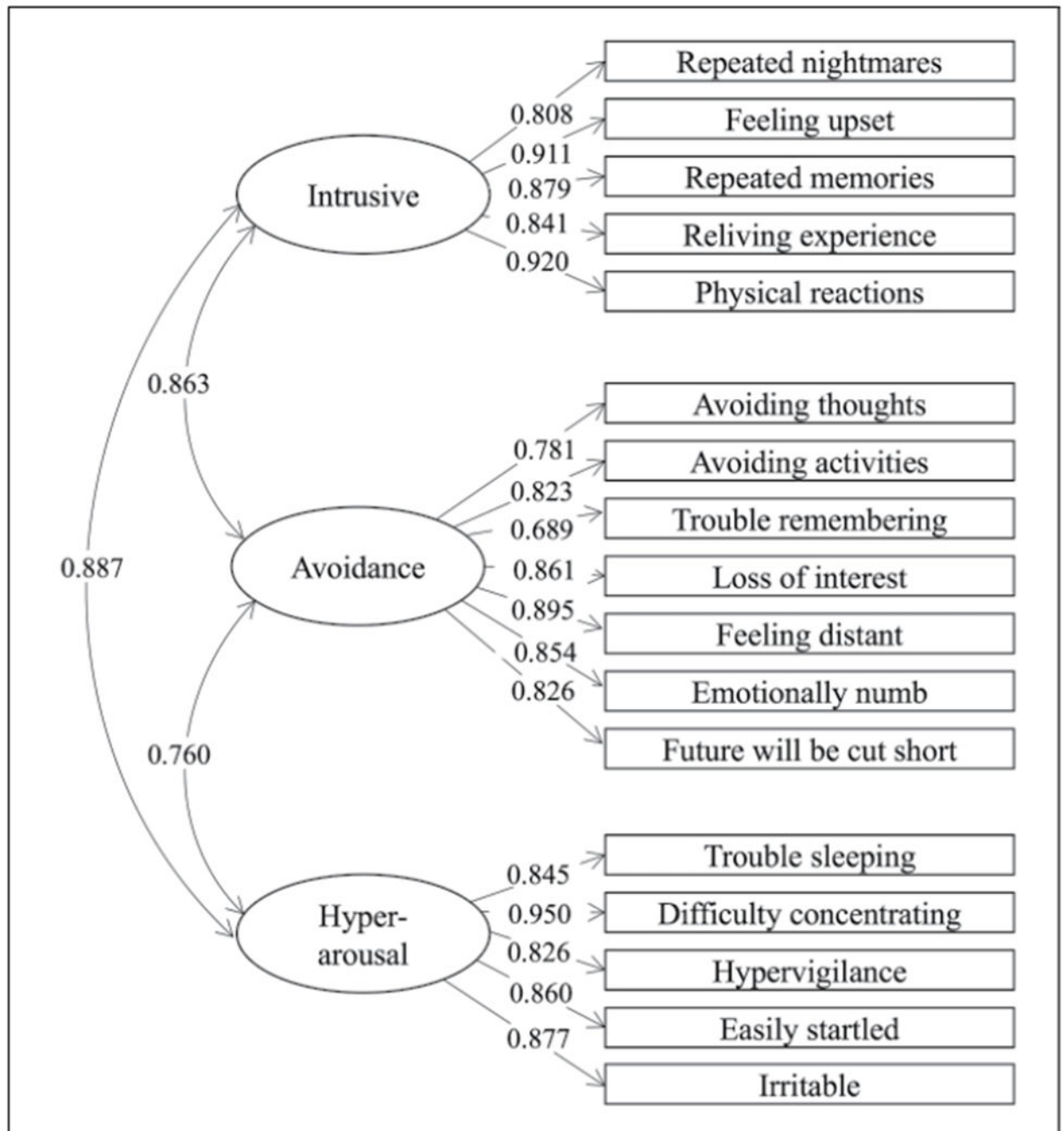


Figure 1.

Factor loadings for the *DSM-IV* PTSD three-factor model.

Note. *DSM-IV* = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); PTSD = posttraumatic stress disorder.

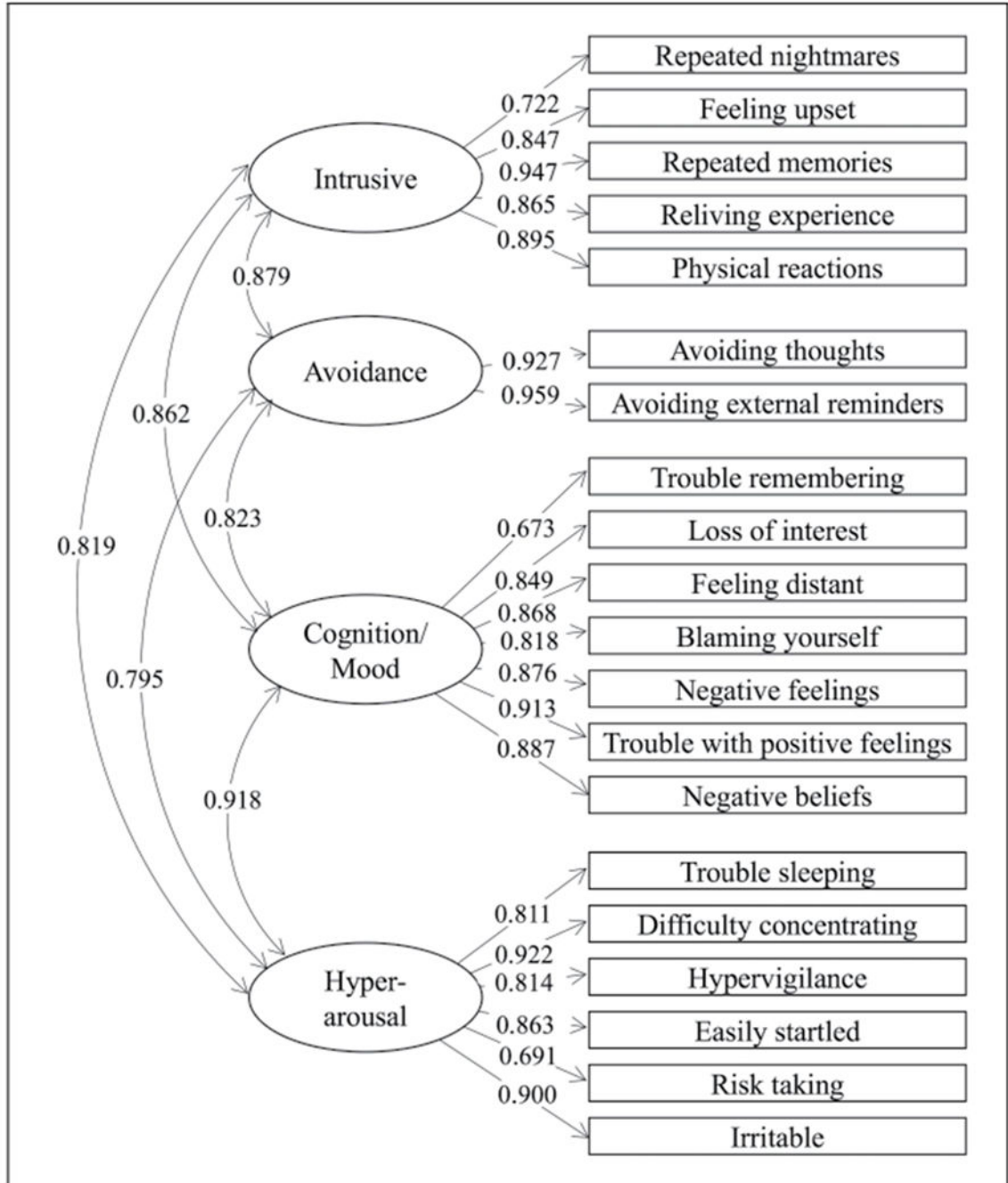


Figure 2. Factor loadings for the *DSM-5* PTSD four-factor model.
Note. *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.); PTSD = posttraumatic stress disorder.

Table 1.

Summary of Changes in PTSD Diagnostic Criteria From *DSM-IV* to *DSM-5* and Corresponding Study Results.

Change	Hypothesized Impact	Result
Narrowing of Criterion A1	<i>Not tested</i>	<i>Not tested</i>
Removal of Criterion A2	Small prevalence increase	Small prevalence increase
Changes to specific symptoms	No prevalence increase	No prevalence increase
Symptoms organized into four clusters	Improved model fit	Improved model fit

Note. PTSD = posttraumatic stress disorder; *DSM-IV* = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.).

Table 2.Distribution of Participants Meeting *DSM-IV* and/or *DSM-5* PTSD Criteria.

<i>DSM-IV</i>	<i>DSM-5</i>		Total
	Yes	No	
	<i>n</i> (Row %) (Column %)	<i>n</i> (Row %) (Column %)	
Yes, <i>n</i> (%)	114 (79.7) (64.8)	29 (20.3) (4.9)	143
No, <i>n</i> (%)	62 (9.9) (35.2)	562 (90.1) (95.1)	624
Total	176	591	767

Note. PTSD = posttraumatic stress disorder; *DSM-IV* = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.).

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Table 3.

Endorsement of Overall PTSD Diagnosis and Specific Symptoms.

<i>DSM-IV</i> PTSD Symptoms	<i>n</i> (%)	<i>DSM-5</i> PTSD Symptoms Assessed in Study	<i>n</i> (%)
Overall diagnosis		Overall diagnosis	
With Criterion A2	143 (18.6)	With Criterion A2	129 (16.8)
Without Criterion A2	192 (25.0)	Without Criterion A2	176 (22.9)
Criterion B: Intrusive symptoms			
Repeated, disturbing memories/thoughts/images	264 (34.4)	Repeated, disturbing memories	177 (23.1)
Repeated, disturbing dreams	183 (23.9)	<i>Retained in measure</i>	—
Acting/feeling like stressful experience happening	179 (23.3)	Acting/feeling like stressful experience actually happening	109 (14.2)
Upset when reminded	362 (47.2)	<i>Retained in measure</i>	—
Physical reactions	253 (33.0)	Strong physical reactions	189 (24.6)
Criterion C: Avoidance			
Avoiding thinking/talking about experience	255 (33.3)	<i>Retained in measure</i>	—
Avoiding activities/situations	274 (35.7)	Avoiding external reminders	232 (30.3)
Criterion D: Cognition/mood symptoms			
Trouble remembering parts of experience	199 (26.0)	<i>Retained in measure</i>	—
Feeling future will be cut short	187 (24.4)	<i>Removed in measure</i>	—
—	—	Blaming oneself or someone else	199 (26.0)
—	—	Strong negative feelings	233 (30.4)
Loss of interest	149 (19.4)	<i>Retained in measure</i>	—
Feeling distant or cut off	247 (32.2)	<i>Retained in measure</i>	—
Feeling emotionally numb	183 (23.9)	Trouble experiencing positive feelings	174 (22.7)
—	—	Strong negative beliefs	235 (30.6)
Criterion E: Hyperarousal			
Feeling irritated or having outbursts	225 (29.3)	Feeling irritable or acting aggressively	202 (26.3)
Hypervigilance	204 (26.6)	<i>Retained in measure</i>	—
Feeling jumpy	180 (23.5)	<i>Retained in measure</i>	—
Difficulty concentrating	234 (30.5)	<i>Retained in measure</i>	—
Trouble sleeping	270 (35.2)	<i>Retained in measure</i>	—
—	—	Risk taking	104 (13.6)

Note. PTSD = posttraumatic stress disorder; *DSM-IV* = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.).

Table 4.

Prevalence and Prevalence Ratios for Clinically Elevated Depression, Anxiety, and High-Risk Alcohol Use According to *DSM-IV* and *DSM-5* Diagnostic Criteria.

Outcome	<i>DSM-IV</i> PTSD Criteria			<i>DSM-5</i> PTSD Criteria		
	% of Those Meeting <i>DSM-IV</i> Criteria With Outcome	% of Those NOT Meeting <i>DSM-IV</i> Criteria With Outcome	PR [95% CI]	% of Those Meeting <i>DSM-5</i> Criteria With Outcome	% of Those NOT Meeting <i>DSM-5</i> Criteria With Outcome	PR [95% CI]
Depression	85.1	54.0	1.58 [1.43, 1.74]	87.9	51.5	1.71 [1.55, 1.88]
Anxiety	91.6	63.5	1.44 [1.33, 1.56]	89.8	62.5	1.44 [1.33, 1.56]
High-risk drinking	39.4	31.6	1.25 [0.99, 1.58]	33.1	33.0	1.00 [0.79, 1.28]

Note. *DSM-IV* = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.); PTSD = posttraumatic stress disorder; PR = prevalence ratio.