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What we talk about when we talk about trauma: Content overlap and heterogeneity in the assessment of trauma exposure

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Abstract

The accurate definition and assessment of trauma exposure is the foundation for replicable studies of mental health problems following trauma exposure. However, scales developed to assess trauma exposure might vary widely in terms of item content; overlap; and specifications of trauma intensity, frequency, duration, and timing. We compared eight frequently used self-report measures of trauma exposure to address content overlap and measurement heterogeneity. Combined, these measures assess 44 disparate exposures. Mean overlap across scales was moderate (M = 0.41, range: 0.25–0.48 across scales). Pairwise overlap between scales ranged from .19 to .59. We found 18 exposures (40.9%) that were included in one scale and three exposures (6.8%) that were included in all eight scales. Four of the included scales assess trauma frequency, five assess intensity or perceived danger, two assess duration, and four assess timing. The implications of measurement heterogeneity for clinical research as well as for comparability and replication of trauma-related research are discussed.

Across mental disorders, trauma exposure is frequent and related to psychopathology (Auxémery, 2018). Severe reactions to trauma exposure, such as posttraumatic stress disorder (PTSD), are related to significant individual distress and can be costly for society (Kessler, 2000). Although a minority of trauma-exposed individuals go on to develop PTSD (Yehuda et al., 2015), trauma exposure is frequent and occurs over the life course, with most individuals exposed to at least one traumatic event (Breslau, 2002). Some large-scale epidemiological studies on the prevalence of trauma exposure use structured interviews, such as the Composite International Diagnostic Interview (CIDI; Kessler & Üstün, 2004), whereas in other studies, trauma exposure is assessed using self-report measures (Elhai et al., 2005; Forbes et al., 2020; Macia et al., 2020). A multitude of different trauma measures exists, with various instruments assessing different trauma types, including different numbers of exposures, and offering a variety of response options. An examination of the heterogeneity of self-report measures of trauma is important to ensure that we understand what we talk about when we talk about trauma and that the body of literature regarding posttraumatic sequelae is based on a solid, consistent foundation.
Self-report measures are efficient in assessing trauma exposure across many individuals quickly and inexpensively. However, there are several limitations to utilizing self-report measures. Trauma exposure is most often assessed retrospectively, and because many measures span lifetime exposure, recall bias introduces a high likelihood of inaccurate recall for some exposures, which may be further exaggerated by posttrauma psychopathology (Barry et al., 2018). Furthermore, response bias might further influence the reported exposures (Rosenman et al., 2011). In addition to these and other general limitations of self-report, specific caveats might pertain to self-reported lifetime traumatic experiences; for example, cultural differences within and across countries pose a challenge to cross-cultural comparable assessment of traumatic events (Asnaani & Hall-Clark, 2017).

In addition, the definition of a traumatic event is not agreed upon and has changed over time (Frueh et al., 2004). With the introduction of PTSD in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association [APA], 1980), a PTSD-qualifying traumatic event was defined as one outside the range of typical human experience that would cause distress in almost anyone. This definition changed in the DSM-IV (APA, 1994), in which the criterion for a traumatic event was fulfilled when a person “experienced, witnessed, or (was) confronted with an event involving “actual or threatened death or serious injury or a threat to the physical integrity of oneself or others” (i.e., Criterion A1) and their response to the event involved “intense fear, helplessness, or horror” (i.e., Criterion A2; Karam et al., 2010). The definition of a qualifying event changed again in 2013 in the DSM-5 (APA, 2013), where Criterion A2, which dealt with subjective distress, was removed (Friedman, 2013). Further, the definition of a traumatic experience differs between the PTSD criteria in the DSM-5 and the International Classification of Diseases (11th rev.; ICD-11; World Health Organization [WHO], 2019), wherein exposure to an extremely threatening or horrific event or series of events is required for a diagnosis (Cloitre, 2020). Arguably, delineating how trauma exposure is defined as an etiological precursor to PTSD has been one of the most prominent controversies in the nosological history of the disorder.

Even when limiting the construct of trauma exposure to events that meet the criteria for a PTSD diagnosis per either the DSM or ICD, one might expect differences in included exposures across measures (Cloitre, 2020). This also pertains to the fact that potentially traumatic events exist on a continuum of severity, with some events leading to higher rates of PTSD than others (Breslau & Kessler, 2001; Yehuda et al., 2015). Further, the assessment of trauma exposure across studies might not be limited to diagnosis-qualifying events, and some studies include events that might not be considered traumatic but instead are described as “stressful life events” (Elhai et al., 2005). Some researchers have found that such events might elicit at least as many symptoms of PTSD as DSM- or ICD-defined qualifying traumatic events (Mol et al., 2005), hence somewhat warranting their inclusion in cross-diagnostic studies on the consequences of exposure to traumatic and/or stressful events. Indeed, although the distinction between stress and trauma might be crucial, it has proven difficult to make (Richter-Levin & Sandi, 2021).

One would expect that if the field agreed upon the definition of what constitutes a traumatic event, the assessment of such events would overlap very much regarding both the number and content of items across self-report measures of trauma exposure. However, the number of included traumatic events varies across measures. For example, the Brief Trauma Questionnaire (BTQ; Schnurr et al., 1999) covers 10 traumatic events, whereas the Trauma History Questionnaire (THQ; Hooper et al., 2011) contains 24 traumatic events. As one would expect, previous studies have shown that when assessing the prevalence of trauma exposure, applying measures with more items generally results in a higher prevalence (Breslau & Kessler, 2001). Some of these differences can be attributed to the different purposes that various measures of that exposure serve: Some measures are intended to be screening instruments that assess exposure across a respondent’s lifetime (e.g., the Traumatic Life Events Questionnaire [TLEQ]; Kubany et al., 2000), whereas others are intended to determine whether a person has been exposed to a DSM Criterion A event (e.g., the BTQ; Schnurr et al., 1999), and still others include both traumatic and stressful life events (e.g., TLEQ, Traumatic Stress Schedule [TSS; Norris, 1990], and THQ). Hence, differences in content and the number of included items are to be expected, and it is important to consider whether comparisons are even warranted. We argue here that comparisons across measures despite differences in purpose are not only warranted but also central, as several of the included measures are used in similar ways in different studies—that is, to arrive at a measure of trauma exposure and, in many instances, create a sum score based on the exposures included in the measure (e.g., Clancy et al., 2006 [TLEQ]; Fjeldheim et al., 2014 [Life Events Checklist (LEC; Weathers et al., 2013)]; Forbes et al., 2020 [BTQ]; Lilly et al., 2009 [THQ]; Macia et al., 2020 [Trauma History Screen (THS; Carlson et al., 2011)]; Netto et al., 2016 [THQ]; Orcutt et al., 2002 [TSS]; Ulman et al., 2005 [Stressful Life Events Screening Questionnaire (SLESQ; Goodman et al., 1998)].

The number of included types of trauma exposure is not the only level at which heterogeneity might be present. The item content may differ along with the specificity or breadth of the included items. As such, events that are
included as traumatic in one measure are not included in other measures. Further, items in some scales may be broadly defined, whereas other scales might have very specific definitions of what, for example, counts as a physical assault. Related to this distinction, some measures include a catch-all item that enables the respondent to list a traumatic event that was not included in the given list. Such differences are not trivial in that the number and types of traumatic events an individual experiences have been found to relate to symptom severity and symptom expression (Contractor et al., 2018; Kaysen et al., 2010).

In addition to trauma definition, trauma descriptions, and content overlap, measures might vary in the specification of the included exposures. Hence, although self-report measures confer the possibility of rating the frequency, duration, and intensity of traumatic experiences, not all trauma exposure measures have such ratings but rather use a simple “yes” or “no” response format. Previous studies have found associations between the duration of trauma exposure and PTSD symptom severity (Kaysen et al., 2010); similarly, the timing of events in childhood or adulthood is important with regard to symptom severity as well as symptom expression and complexity (Cloitre et al., 2009). Perceived trauma intensity is somewhat related to the former DSM-IV criterion of “fear, helplessness, or horror” related to the traumatic event. Although it is not part of the PTSD criteria in the DSM-5, such perceived intensity has been found to predict PTSD symptom severity (Brewin et al., 2000). Hence, the considerable heterogeneity between measures in the assessment of trauma timing, duration, frequency, and intensity can obscure the identified associations between trauma exposure and trauma-related outcomes.

Understanding heterogeneity across trauma assessments is pertinent: If self-report trauma assessments differ in the number and nature of queried events, then the study of posttraumatic psychopathology may, in turn, be the study of reactions to vastly different exposures. The concept of assessment heterogeneity and the lack of content overlap across assessments purporting to measure the same construct is not new, as it has been demonstrated within disorder-specific symptom assessment scales for depression (Cheung & Power, 2012; Fried, 2017), anxiety (Wall & Lee, 2021), mania (Chrobak et al., 2018), and youth obsessive–compulsive disorder (Visontay et al., 2019). These studies have found substantial heterogeneity and a lack of item overlap between measures, raising questions about the common foundation for the study of said disorders and highlighting a general disagreement about the essential symptoms that constitute disorder phenotypes. Interestingly, and perhaps surprisingly, a similar analysis of content overlap in trauma exposure measures has not been conducted.

Overall, although the assessment of exposure to trauma is the foundation for the study of posttrauma psychopathology, heterogeneity across trauma measures with regard to content and specification of the traumatic experience might vary to a degree that hinders comparison, replicability, and generalizability. In the current study, we aimed to address the issue of heterogeneity and content overlap across frequently used measures of trauma exposure. Further, we compared the assessments of trauma intensity, frequency, duration, and timing across measures. We aimed to answer two main research questions: To what degree do we see an overlap between items included in commonly used measures of trauma exposure, and what are the similarities and differences in the measures’ assessments of intensity, frequency, duration, and timing of events?

**METHOD**

**Procedure**

We aimed to include trauma measures that assess a broad range of traumatic experiences and are frequently used. The goal was not to provide an exhaustive list of all trauma exposure measures but rather to include measures of trauma exposure that are commonly used in trauma research. To identify such measures, we first evaluated measures recommended by the National Center for PTSD (n.d.) We included self-report measures (i.e., we excluded interview-based measures), measures that assess trauma broadly (i.e., we excluded measures that focus solely on one type of traumatic event, such as sexual assault or combat exposure), and measures that focus on adults (i.e., we excluded measures that focus on children as participants or focus solely on experiences that occurred in childhood). We also excluded measures that focus exclusively or mainly on stressful life events rather than traumatic exposures. This procedure resulted in the inclusion of six measures: the LEC (Weathers et al., 2013b), TSS (Carlson et al., 2011), BTQ (Schnurr et al., 1999), Trauma Assessment for Adults–Brief Version (TAA; Resnick et al., 1996), SLESQ (Goodman et al., 1998), and THQ (Hooper et al., 2011). Next, we searched PubMed and PsyInfo using the terms “assessment,” “screening,” “trauma exposure,” and “traumatic stress,” which resulted in the inclusion of two additional measures, the TLEQ (Kubany et al., 2000) and the TSS (Norris, 1990). Some measures have been revised or updated; for example, the LEC was revised to match DSM-5 criteria (i.e., the LEC-5); here, we included the most up-to-date version.

We extracted the following information from each questionnaire: Does the response format include possibilities for the respondent to rate the (a) frequency of exposure, (b)
duration of exposure, (c) intensity of exposure, and (d) timing of exposure? Not all of these specifiers are relevant for all types of trauma exposure; for example, the duration of a traffic accident will most likely not be relevant, whereas the duration of exposure to intimate partner violence is, indeed, very relevant. Hence, we considered a response option as present if it was included when relevant. We also examined whether a measure included an item meant to capture traumatic events not included in the original scale (e.g., “other traumatic event”) as well as if a measure pertained to adulthood alone or included childhood exposures and whether the measures distinguished between the two.

Data analysis

We first produced lists of all queried traumatic events in the included questionnaires. We identified identical exposures across measures using a conservative approach inspired by Fried (2017) such that as long as items were roughly similar and could be assumed to pertain to the same event (e.g., THQ: “Have you ever had a serious or life-threatening illness?” and BTQ: “Have you ever had a life-threatening illness such as cancer, a heart attack, leukemia, AIDS, multiple sclerosis, etc.”), they were considered equal in terms of their intent to measure the same potentially traumatic experience. Also in line with Fried (2017), we differentiated between exposures that were specific and those that were general. By including this distinction, we were able to differentiate between exposures that pertained to different situations but were somewhat overlapping. For example, the LEC includes one item concerning sexual assault and, as such, does not distinguish between, for example, sexual assault that occurred in childhood, adolescence, or adulthood nor does it specify the age of the perpetrator. In contrast, the TLEQ has four items related to sexual assault, querying about assaults that took place in adulthood, in childhood by someone older, in childhood by someone close in age, and in adolescence. Therefore, we included four categories of sexual assault (i.e., those listed in TLEQ), and for the TLEQ, we coded these events as being assessed specifically. In contrast, for the LEC, all four items were coded as being assessed generally. This was the coding practice we applied throughout the analyses: For all categories, we included as many items as there were specific exposures, and questionnaires that matched the specific description were coded as assessing the exposure specifically, whereas questionnaires that included the exposure in an overall item were coded as assessing the item generally.

To remain conservative in the content overlap analysis, specific and generic items were considered overlapping for the purpose of calculating the Jaccard index. In Figure 1, however, we depict items as distinct, as important differences might be present. For example, the TLEQ items “sexual abuse during adolescence” and “sexual abuse as an adult” are clearly and notably different from each other, and although the TAA item, “At any time in your life, has anyone used physical force or threat of force to make you have some type of unwanted sexual contact?” encompasses both, treating these items as identical would eliminate important theoretical and empirical differences regarding the differential impacts of childhood and adult sexual abuse. All categorizations and distinctions between general and specific exposures were initially done by the first author. The categorizations were then reviewed by the second author, after which disagreements were identified and resolved through discussion.

To quantify the content overlap across measures, we calculated the Jaccard index, a similarity coefficient for binary data that ranges between 0 and 1, where 0 indicates no overlap between scales and 1 indicates perfect overlap. The Jaccard index is given by

\[
\frac{s}{u1 + u2 + s}
\]

where \(s\) is the number of shared items in the scales, whereas \(u1\) and \(u2\) are the items unique to Scale 1 and Scale 2, respectively.

RESULTS

Overview of the included measures

In total, eight trauma measures were included. The SLESQ (Goodman et al., 1998) is a 13-item self-report measure for non–treatment-seeking samples that is used to assess lifetime trauma exposure. The BTQ (Schnurr et al., 1999) is a 10-item self-report questionnaire intended to determine if an individual has experienced an event that meets DSM-IV Criterion A1 (i.e., life threat or serious injury). The LEC (Weathers et al., 2013b) is a 17-item measure used to assess a broad array of potentially traumatic experiences and is designed to accompany the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5; Weathers et al., 2013a) to facilitate the diagnosis of PTSD. The THQ (Hooper et al., 2011) contains 24 items and is intended to gather information on lifetime exposure to a range of potentially traumatic events in general, community, or clinical populations. The TSS (Carlson et al., 2011) is a 14-item measure that is used to screen for exposure to high-magnitude stressors and events associated with persistent posttraumatic distress. The TLEQ (Kubany et al., 2000) contains 21 items and is intended to assess exposure to a broad range of potentially traumatic events. The TSS (Norris, 1990) contains nine items and is used as a
screening tool for potentially traumatic events in the general population. Finally, the TAA (Resnick et al., 1996) is a 12-item measure that focuses on civilian stressors that would qualify as a DSM-IV Criterion A1 event.

**Included exposures and item overlap**

Together, the eight examined measures include a total of 120 items. We identified 44 unique trauma exposures, meaning that across measures, 44 different potentially traumatic events were assessed (see Figure 1). Individual scales captured between 22.7% (TSS) and 63.6% (THQ) of all exposures. No exposures were assessed specifically by all scales, but all eight scales assessed three exposures (physical assault, transportation accidents, and adult sexual assault) either specifically or generally (see Table 2 and Figure 1). Eighteen (40.9%) exposures were included in only one scale. As shown in Figure 1, the level of specificity was very different across scales such that some exposures were assessed specifically in some scales and generally in others. On the outer ends of the spectrum, the TLEQ contained only specific items, whereas 72.0% of BTQ items were generic.

Overlap across the measures was assessed using the Jaccard index, with a mean overlap of .41. When interpreted as a correlation coefficient, this value implies moderate similarity across measures (Cohen, 1988; Evans, 1996). For the individual scales, the TSS had the lowest amount of overlap with all other scales (.25) and the BTQ had the highest (.48; see Table 3). When looking at the scales in pairs (Table 3), the lowest degree of overlap was between the TLEQ and TSS (.19), and the highest degree of overlap was between the BTQ and THQ (.59).
<table>
<thead>
<tr>
<th>Measure</th>
<th>Author (year)</th>
<th>Criterion A establishment</th>
<th>No. of items</th>
<th>Frequency</th>
<th>Intensity/perceived danger/degree of exposure</th>
<th>Duration</th>
<th>Timing</th>
<th>“Any other event” item</th>
<th>Trauma timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stressful Life Events Screening Questionnaire–Revised</td>
<td>Goodman et al. (1998)</td>
<td>DSM-IV A1</td>
<td>13</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>L&lt;sub&gt;AC&lt;/sub&gt;&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Brief Trauma Questionnaire</td>
<td>Schnurr et al. (1999)</td>
<td>DSM-IV A1</td>
<td>10</td>
<td>–</td>
<td>+</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Life Events Checklist for DSM-5– Standard Version</td>
<td>Weathers et al. (2013)</td>
<td>DSM-5 A&lt;sup&gt;b&lt;/sup&gt;</td>
<td>17</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>Trauma History Questionnaire</td>
<td>Hooper et al. (2011)</td>
<td>–</td>
<td>24</td>
<td>+</td>
<td>–</td>
<td>+&lt;sup&gt;a&lt;/sup&gt;</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Trauma History Screen</td>
<td>Carlson et al. (2011)</td>
<td>DSM-IV AI + A2</td>
<td>14</td>
<td>+</td>
<td>+&lt;sup&gt;a&lt;/sup&gt;</td>
<td>–</td>
<td>+&lt;sup&gt;a&lt;/sup&gt;</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Traumatic Life Events Questionnaire</td>
<td>Kubany et al. (2000)</td>
<td>–</td>
<td>21</td>
<td>+</td>
<td>+</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Traumatic Stress Schedule</td>
<td>Norris (1990)</td>
<td>DSM-III A</td>
<td>9</td>
<td>–</td>
<td>+</td>
<td>–</td>
<td>+</td>
<td>+</td>
<td>A</td>
</tr>
<tr>
<td>Trauma Assessment for Adults–Brief Revised Version</td>
<td>Resnick et al. (1996)</td>
<td>DSM-IV A1</td>
<td>12</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: DSM = Diagnostic and Statistical Manual of Mental Disorders; + = fulfillment of criteria; – = no fulfillment of criteria; L = lifespan; A = adult only; L<sub>AC</sub> = lifespan with distinction between childhood and adulthood.

<sup>a</sup>Partial criteria fulfillment (i.e., the criteria are fulfilled for some exposures but not others).

<sup>b</sup>Although this measure is often administered to assess Criterion A, the interview version is recommended for accurate establishment.
TABLE 2 Exposure representation across scales

<table>
<thead>
<tr>
<th>No. of exposures</th>
<th>No. of scales</th>
<th>Proportion of exposures represented in that number of scales (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
<td>40.9</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>6.8</td>
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<td>3</td>
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<td>6.8</td>
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<td>6</td>
<td>4</td>
<td>13.6</td>
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<td>3</td>
<td>5</td>
<td>6.8</td>
</tr>
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<td>5</td>
<td>6</td>
<td>11.4</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>6.8</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>6.8</td>
</tr>
</tbody>
</table>

**Exposure specification: Frequency, intensity, duration, and timing**

Information regarding trauma specifications for each measure can be seen in Table 1. Across measures, we found that four scales assess frequency, five assess intensity or perceived danger, two assess duration, and four assess timing; hence, variation is substantial. For example, the LEC does not query respondents for event frequency, intensity, duration, or timing, whereas the TLEQ includes all of these specifications. For some measures, it was not clear if a specification was included. For example, the THS does not include a direct measure of severity or intensity, but respondents are prompted to give extra information for exposures that “really bothered you emotionally;” here, the individual can report fear, helplessness, or other reactions. The same is true for trauma timing, which is only reported for measures a respondent has indicated are causing emotional distress. More broadly, most of the measures assess trauma exposure across the lifespan, although one, the TSS, focuses on events that have occurred during the last year (i.e., only in adulthood). Across the other measures, the TLEQ allows respondents to report whether an event took place in childhood or adulthood, whereas for the SLESQ, BTQ, THS, and TAA, only some items distinguish between childhood and adulthood. The LEC and the THQ assess trauma exposure across the lifespan with no distinction between childhood and adulthood.

**Unlisted events**

For all measures except the BTQ and TLEQ, an item allowing respondents to report exposure to unqueried events is included. Hence, for most measures, an experience that is subjectively rated as traumatic will count as trauma exposure, whereas for the BTQ and TLEQ, only prespecified events count as trauma exposure.

**DISCUSSION**

The current analysis identified 44 unique trauma exposures across the eight included trauma exposure measures. Across all scales, content overlap was modest, with a mean Jaccard index value of .41. Further, 18 exposures were only assessed by one scale, and no exposure was assessed specifically across all measures; however, all eight scales assessed physical assault, transportation accidents, and adult sexual assault either specifically or generically. The inclusion of trauma specifiers (i.e., frequency, intensity, duration, and timing) varied greatly across measures, from no specifiers at all (i.e., the LEC) to all specifiers (i.e., the SLESQ). These results point to a very heterogeneous assessment of trauma exposure. Here, we discuss this heterogeneity and its implications for research on trauma and mental health.

No two measures were found to have a Jaccard index value above .59, and one pairwise Jaccard index value was as low as .19. Such low indices are partly due to variation in the number of items: For the lowest pairwise Jaccard index value, one measure, the TSS, includes nine items, whereas the other, the TLEQ, includes 21 items. However, this alone cannot explain the lack of overlap. For this particular pair of measures, the Jaccard index value would be .43 if all TSS items were included on the TLEQ. Hence, the lack of content overlap has other reasons, including a notable lack of agreement on what constitutes a traumatic event and should, therefore, be included in a measure of trauma exposure. This lack of agreement is further illustrated by the fact that 18 exposures (40.9%) are included in one measure only, and seven of the measures were found to contain an item that is included in that scale alone. Such discrepancies complicate the study of trauma exposure and hinder replicability in the field of trauma-related psychopathology. As an example, consider a situation in which two different research teams aim to address how predeployment trauma exposure impacts the risk of PTSD development following combat exposure during deployment to a warzone. To achieve this aim, one team uses the SLESQ, whereas the other uses the TLEQ; thus, the team using the TLEQ will assess exposures that are not on the SLESQ, such as natural disasters, exposure to toxins or chemicals, or witnessing family violence, and the team using the SLESQ will assess exposures that are not on the TLEQ, such as the violent death of a loved one and emotional abuse. Because of these differences, individuals might be categorized as having previous trauma exposure in one study but not the other. This discrepancy might,
<table>
<thead>
<tr>
<th></th>
<th>SLESQ</th>
<th>LEC</th>
<th>LEQ</th>
<th>THQ</th>
<th>THS</th>
<th>TLEQ</th>
<th>TSS</th>
<th>BTQ</th>
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<td>.43</td>
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<td>.48</td>
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<td>.48</td>
<td>1</td>
<td>.48</td>
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<td>.43</td>
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<td>1</td>
<td>.43</td>
<td>.43</td>
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<td>.25</td>
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<td>.25</td>
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<td>.25</td>
<td>1</td>
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<tr>
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<tr>
<td>Mean</td>
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Note: SLESQ = Stressful Life Events Questionnaire; LEC = Life Events Checklist; LEQ = Trauma History Questionnaire; THQ = Trauma History Screen; TLEQ = Traumatic Life Events Questionnaire; TSS = Traumatic Stress Schedule; BTQ = Brief Trauma Questionnaire; TAA = Trauma Assessment for Adults.

Therefore, seriously affect the studied association between previous trauma exposure and postdeployment PTSD.

When considering the exposures included across measures, the distinction between traumatic events and stressful life events is pertinent (Richter-Levin & Sandi, 2021). Although the included measures are all used to assess trauma exposures, many contain trauma types that might be considered stressful rather than traumatic. For example, the TLEQ includes miscarriage, the TSS includes “important change,” and the THS includes sudden abandonment by a partner (Carlson et al., 2011; Kubany et al., 2000; Norris, 1990). Considering previous studies illustrating that trauma severity is associated with PTSD prevalence (Breslau & Kessler, 2001; Yehuda et al., 2015), the inclusion of stressful life events that are not widely considered traumatic may influence the studied associations between exposure and mental health problems such as PTSD. This points to a more general discussion on the nature of trauma exposure that is unresolved and illustrated by different trauma definitions in the DSM (APA, 2013) and ICD (WHO, 2019).

In relation to the definition of trauma, other differences between the included measures are relevant. For example, items concerning sexual assault are different across measures in how specific they are; to what degree they specify the age of the victim and/or the offender; and how, if at all, they distinguish between various forms of sexual assault. The same can be said of physical assaults. Whereas some measures have just one item pertaining to general physical assault, others distinguish between physical assault by someone familiar to the survivor and a stranger, and some distinguish between physical assaults with or without a weapon (e.g., the LEC). A final example concerns the death of a loved one. Several measures include the sudden death of a loved one (i.e., BTQ, LEC, THS, TLEQ), whereas others (i.e., SLESQ, LEC, and TSS) further specify that the exposure is the sudden violent death of a loved one. Clearly, how specific versus general an included exposure is will make a difference in the actual assessment of trauma exposure in that a measure that includes several specific instances of an overall trauma (e.g., sexual assault) might result in a higher overall trauma exposure score if the exposures are summed. Another important difference is the degree to which the included measures account for events that have happened to others that the respondent has witnessed or heard about. This distinction is most clearly delineated in the LEC, which asks the respondent to indicate whether they experienced, witnessed, or learned about each event or were exposed as part of their job. For most other measures, the majority of items pertain to the respondent’s own exposure, with a few items meant to capture whether they witnessed or learned about a traumatic event that happened to someone else. Again,
this difference in conceptualization can make a difference, for example, when using a measure to assess a respondent’s total trauma count: The inclusion of events an individual has witnessed or learned about will increase the number of total exposures relative to the inclusion of only directly experienced events.

Leaving the issue of trauma definition aside, another important difference across measures is the timespan covered. Many measures cover trauma exposure across the lifespan, and across these measures, some specify exposures that happened in childhood or during adult life, whereas some do not make this distinction. Traumatic events that occur in childhood or adulthood might affect individuals differently, with more severe outcomes typically related to childhood trauma (Copeland et al., 2018). For example, the new ICD-II diagnosis of complex PTSD has been suggested to occur more frequently among survivors of childhood trauma compared to those who experience traumatic events during adult life (Cloitre et al., 2009). As such, the distinction between trauma that occurs at different life stages is important in context. The TSS stands out in this regard, as it asks respondents to report exposure that occurred during the last year only. Clearly, a trauma measure that assesses lifetime exposure will differ greatly from one that captures only past-year traumatic events. Hence, it is important that the application of a specific measure meet the purpose of the research question with regard to the assessment of trauma history.

Relatedly, as noted, the included measures vary greatly in how and to what degree they ask respondents to specify the frequency, intensity, duration, and timing of trauma exposure. The SLESQ contains all of these specifications; the LEC and TAA contain no specifications; and all other measures include some, but not all, specifications, and some specifications are only partially assessed. The frequency of trauma exposure is important in and of itself, as the total burden is often studied in the literature (Frazier et al., 2009). Here, it is debatable whether only the total number of different exposures should be counted or the total number of events. Clearly, the latter is only possible with measures that include a frequency specification. As mentioned, trauma timing is also important, and for some events, duration is deeply important as well (e.g., was reported intimate partner violence a one-time experience, or did it go on continuously for years?). The duration of trauma exposure has been found to contribute to the dose–response association between trauma exposure and the severity of PTSD symptoms (Kaysen et al., 2010). Notably, only one measure, the SLESQ, fully targets duration, whereas the THQ asks if an exposure occurred repeatedly for some items only. Most of the included measures ask respondents to rate exposure intensity, but the TAA, LEC, and THQ do not include prompts about intensity. As noted, intensity has been found to be associated with more severe PTSD symptoms (e.g., DSM-IV criteria related to fear, helplessness, or horror related to the traumatic event; APA, 2000; Brewin et al., 2000). Although these different specifications of trauma exposure are central, several other dimensions that are not typically addressed could be considered, such as the perceived controllability of an exposure and the degree of unpleasantness, which may, indeed, influence the risk of subsequent PTSD (Frazier et al., 2009; Larsen & Fitzgerald, 2011); neither of these was included in any measure we examined.

As mentioned, measures of trauma exposure are often included in epidemiological studies of mental health (Bronner et al., 2009; Forbes et al., 2020; Macia et al., 2020). Across such studies, researchers often argue that a higher trauma count across the lifespan can negatively impact mental health (Scott, 2007). How, then, are probable associations such as this affected by lack of content overlap and widespread heterogeneity across measures of trauma exposure? Clearly, direct comparisons of trauma exposure prevalence across studies that have applied different trauma exposure measures should be carried out with caution. Measures that include a longer list of potential exposures will generally result in a higher prevalence of trauma exposure (Breslau, 2002). Hence, the resulting associations between trauma exposure and mental health problems might also differ across studies that apply different measures of trauma exposure. Previous studies have found dose–response relationships between the number of traumatic events an individual experiences and the development of PTSD (Scott, 2007), and, as such, measures that allow for the reporting of fewer trauma types or total exposures will likely reveal weaker associations with PTSD. Moreover, the nature of PTSD symptoms might be different for different trauma types (Shevlin & Elklit, 2012), again pointing to the importance of accurate trauma exposure definition and assessment. However, an overall message from this study is that the development of one generic, exhaustive measure of trauma exposure that can be applied across all contexts for all purposes is probably neither feasible nor even desirable. As such, it is important to give careful consideration to the purpose of a study and the exhaustiveness of the chosen trauma exposure measure in the context of the study’s intent. Further, uncritical comparisons of studies that apply different measures of trauma exposure should be avoided.

Several limitations should be mentioned. First, the trauma measures included are not exhaustive. Including additional measures would have resulted in a shifted balance in exposures and their specifications. However, the included measures are frequently used, and the scope of the paper was not to present an exhaustive list but
rather to estimate the heterogeneity of trauma exposure assessment. Even with more measures, widespread heterogeneity across measures would be present. Second, categorizing traumatic events is ultimately subjective. As an example, sexual assault is conceptualized and defined differently across measures with respect to factors like age and the details of the assault. Thus, although we arrived at five categories of sexual assault, other researchers might have arrived at a different number of categories for this and other exposures. The issue of subjectivity also applies when judging whether an item is general or specific. We strived to be transparent about the categories and have shared the data files and analysis code.

OPEN PRACTICES STATEMENT

The study was not preregistered. Data and analysis code can be found here: https://osf.io/3m2ud/

OPEN RESEARCH BADGES

This article has earned an Open Materials badge for making publicly available the components of the research methodology needed to reproduce the reported procedure and analysis. All materials are available at https://osf.io/3m2ud/.

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