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BASIC RESEARCH ARTICLE

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What's in a name? A data-driven method to identify optimal psychotherapy classifications to advance treatment research on co-occurring PTSD and substance use disorders

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ABSTRACT

Background/Objective: The present study leveraged the expertise of an international group of posttraumatic stress and substance use disorder (PTSD+SUD) intervention researchers to identify which methods of categorizing interventions which target SUD, PTSD, or PTSD+SUD for populations with both PTSD+SUD may be optimal for advancing future systematic reviews, meta-analyses, and comparative effectiveness studies which strive to compare effects across a broad variety of psychotherapy types.

Method: A two-step process was used to evaluate the categorization terminology. First, we searched the literature for pre-existing categories of PTSD+SUD interventions from PTSD+SUD clinical trials, systematic and literature reviews. Then, we surveyed international trauma and substance use subject matter experts about their opinions on pre-existing intervention categorization and ideal categorization nomenclature.

Results: Mixed method analyses revealed that a proliferation of PTSD+SUD treatment research over the last twenty years brought with it an abundance of ways to characterize the treatments that have been evaluated. Results from our survey of experts (N = 27) revealed that interventions for PTSD+SUD can be classified in many ways that appear to overlap highly with one another. Many experts (11/27; 41%) selected the categories of 'trauma-focused and non-trauma focused' as an optimal way to distinguish treatment types. Although several experts reinforced this point during the subsequent meeting, it became clear that no method of categorizing treatments is without flaws.

Conclusion: One possible categorization (trauma-focused/non-trauma focused) was identified. Revised language and nomenclature for classification of PTSD+SUD treatments are needed in order to accommodate the needs of this advancing field.

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PALABRAS CLAVE

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关键词

创伤后应激障碍; 物质使用障碍; 双重诊断; 治疗分类; 并发障碍

HIGHLIGHTS

- Experts in PTSD+SUD clinical trials were surveyed to identify principles for treatment classification of PTSD+SUD behavioural therapies.
- Results indicated some consensus around 'trauma-focused' vs 'non-trauma-focused' as one designation but further agreement is needed.

¿Qué importancia tiene el nombre? Un método basado en datos para identificar clasificaciones óptimas de la psicoterapia para avanzar en la investigación del tratamiento de la comorbilidad de TEPT y Trastornos por Uso de Sustancias

Antecedentes/Objetivo: El presente estudio aprovechó la experticia de un grupo internacional de investigadores de intervención en trastorno de estrés postraumático y trastorno por uso de sustancias (TEPT+TUS) para identificar qué métodos de categorización de las intervenciones con foco en TUS, TEPT y TEPT+TUS para poblaciones con ambos TEPT+TUS serían óptimos para avanzar en futuras revisiones sistemáticas, meta-análisis y estudios comparativos de efectividad que busquen comparar efectos en una amplia variedad de tipos de psicoterapia.

Método: Se utilizó un proceso de dos etapas para evaluar la terminología de categorización. Primero, buscamos en la literatura categorías pre-existentes de intervenciones para TEPT+TUS en ensayos clínicos de TEPT+TUS, revisiones sistemáticas y de la literatura. Después, entrevistamos a expertos internacionales en la materia de trauma y uso de sustancias sobre su opinión de la categorización pre-existente de las intervenciones y la nomenclatura ideal de categorización.

Resultados: Métodos de análisis mixtos revelaron que una proliferación de investigación de tratamientos para TEPT+TUS en los últimos veinte años trajo consigo una abundancia de

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formas de categorizar los tratamientos que han sido evaluados. Los resultados de nuestra encuesta de expertos (*N* = 27) revelaron que las intervenciones para TEPT+TUS pueden ser clasificadas en muchas formas que parecen sobreponerse altamente entre sí. Muchos expertos (11/27; 41%) seleccionaron las categorías de 'centrados en el trauma y no centrados en el trauma' como una forma óptima de distinguir los tipos de tratamiento. Aunque varios expertos reforzaron este punto en la reunión subsecuente, quedó claro que ningún método de categorización de los tratamientos está libre de defectos.
Conclusión: Se identificó una posible categorización (centrado en el trauma/No centrado en el trauma). Se necesita lenguaje y nomenclatura revisada para la clasificación de tratamientos de TEPT+TUS a fin de acomodar las necesidades de este campo en desarrollo.

名字之下是什么?一种通过确定最佳心理治疗类别以提高对并发PTSD 和物质使用障碍治疗研究的数据驱动方法

背景/目的: 本研究利用了一个国际创伤后应激障碍和物质使用障碍 (PTSD+SUD) 干预研究人员的专业知识, 以确定对于PTSD+SUD并发患者 针对 SUD, PTSD 或 PTSD+SUD 的干预措施分类方法可能是推进未来系统综述, 元分析和旨在比较各种心理治疗类型效果的比较有效性研究的最佳选择。
方法: 使用两步过程来评估分类术语。首先, 我们从 PTSD+SUD 临床试验, 系统和文献综述中检索了文献中预先存在的 PTSD+SUD 干预类别。然后, 我们调查了解了国际创伤和物质使用主题专家对现有干预分类和理想分类命名法的看法。
结果: 混合方法分析表明, 过去 20 年 PTSD+SUD 治疗研究的激增带来了许多表征已评估治疗的方法。我们对27名专家的调查结果显示, PTSD+SUD 的干预措施可以按许多似乎彼此高度重叠的方式进行分类。许多专家 (11/27; 41%) 选择了'创伤聚焦和非创伤聚焦'的类别作为区分治疗类型的最佳方式。尽管几位专家在随后会议中强调了这一点, 但很明显, 任何对治疗进行分类的方法都没有缺陷。
结论: 确定了一种可能的分类 (创伤聚焦/非创伤聚焦) 。需要修订用于 PTSD + SUD 治疗分类的语言和命名法, 以适应这一先进领域的需求。

1. Introduction

Clinical presentations of those exposed to trauma are often complex, multifaceted, and heterogeneous (Back, Sonne, Killeen, Dansky, & Brady, 2003; Brady, Back, & Coffey, 2004; Breslau, Reboussin, Anthony, & Storr, 2005; Donovan, Padin-Rivera, & Kowaliw, 2001; Jacobsen, Southwick, & Kosten, 2001; Stewart & Conrod, 2008). In the past 25 years, a substantial body of research has documented the ubiquitous co-occurrence of post-traumatic stress disorder (PTSD) and substance use disorders (SUD) (Back et al., 2003; Brady et al., 2004; Donovan et al., 2001; Hien, Cohen, & Campbell, 2005; Hien & Hien, 1998; Norman, Haller, Hamblen, Southwick, & Pietrzak, 2018; Stewart & Conrod, 2008; Triffleman, 2003; Vujanovic & Back, 2019). This comorbidity is particularly problematic as patients with comorbid PTSD and SUD (PTSD+SUD) evince poorer treatment adherence, treatment response, mental health functioning, social functioning, and longer hospital stays compared to those with either disorder alone (Driessen et al., 2008; McCauley, Killeen, Gros, Brady, & Back, 2012; Norman, Tate, Anderson, & Brown, 2007). Consequently, a diverse array of approaches to PTSD +SUD treatment has been developed and tested. The vast heterogeneity of these approaches raises questions regarding which common elements can be used to group and classify PTSD+SUD intervention types together, and such information is pertinent to comparative effectiveness analyses which seek to identify 'active ingredients' underpinning efficacy across interventions. This manuscript presents a mixed-methods approach to identifying optimal methods of categorizing psychotherapies for PTSD+SUD, which is critically important to ushering the PTSD+SUD field into its next developmental phase of comparative effectiveness trials, integrative data analysis and meta-analysis with individual patient data.

Historically, PTSD and SUD have been treated sequentially, focusing on SUD prior to the administration of PTSD interventions. This approach was developed in part because of clinician concerns that treating PTSD when patients were using substances or only recently abstinent would exacerbate SUD symptoms and lead to relapse (Becker, Zayfert, & Anderson, 2004; Pitman et al., 1991). Evidence-based psychosocial treatments for SUD are well-established and include a range of behavioural interventions such as motivational interviewing/motivational enhancement therapy, cognitive behavioural therapies (including relapse prevention therapy), contingency management, and twelve-step facilitation (Gold & Brady, 2003). Likewise, evidence-based treatments for PTSD have been clearly delineated along with the dissemination of multiple clinical practice guidelines (CPG) for PTSD (Hamblen et al., 2019). Treatments that are strongly recommended for PTSD by several CPGs include Prolonged Exposure therapy (PE) (Foa, Hembree, Rothbaum, & Rauch, 2019), Cognitive Processing Therapy (CPT) (Resick et al., 2017), and Cognitive-Behavioural Therapy for PTSD (Forman-Hoffman et al., 2018). However, many early trials testing interventions for SUD-only or PTSD-only often excluded participants with PTSD+SUD, or did

not estimate effects of the intervention on the comorbid condition, thus rendering conclusions about the efficacy of these monotherapies for co-occurring disorders unclear (Leeman et al., 2017; Ronconi, Shiner, & Watts, 2014).

More recently, concurrent treatments that simultaneously address both sets of symptoms were developed and included parallel treatment approaches (i.e. treating PTSD and SUD with separate interventions and/or in separate clinics with different providers but during the same general treatment period), integrated treatments (i.e. treating PTSD and SUD with one provider in a single treatment episode that addresses both disorders), or single-disorder treatments delivered to individuals with PTSD+SUD based on theories suggesting that targeting one disorder may yield improvements in the other (e.g. a self-medication hypothesis that suggests that targeting PTSD may yield SUD improvements (Khantzian, 1985)). Examples of concurrent treatments include Concurrent Treatment of PTSD and SUD Prolonged Exposure (COPE) (Back et al., 2014), Integrated CBT for AUD (McGovern, et al., 2009), Seeking Safety (Najavits, 2002), and others. To date, more than 20 randomized controlled trials have examined the treatment of PTSD+SUD. The studies have been consistent in finding that concurrent PTSD+SUD interventions are efficacious and safe, without increasing substance use or clinical worsening (Roberts, Roberts, Jones, & Bisson, 2015; Simpson, Lehavot, & Petrakis, 2017). Further, integrated trauma-focused treatments for PTSD+SUD have outperformed SUD-only treatments in many (Hien, Cohen, Miele, Litt, & Capstick, 2004; McGovern, et al., 2009; Roberts et al., 2015), but not all (Ruglass et al., 2017) trials. Accordingly, some CPGs now recommend treating PTSD and SUD concurrently using evidence-based, integrated approaches for both disorders (VA/DoD clinical practice guidelines [Internet]).

Taken together, a diverse 'menu' of efficacious interventions for PTSD+SUD now exist that combine a range of PTSD and SUD treatment elements. As effective PTSD+SUD treatment approaches evolve, the vast heterogeneity in intervention approaches gives way to a series of critical questions including: which interventions work optimally for which clients; what elements shared across some interventions but not others are particularly important and for whom; and how to match client preferences to empirically supported treatment elements. Approaching these important questions requires 'naming' and categorizing PTSD+SUD interventions based on their shared and unique elements.

1.1. Methods of categorizing psychosocial PTSD +SUD intervention types

Systematic reviews and meta-analyses of treatments for PTSD+SUD show that these interventions are regularly compared to each other (Back et al., 2012; Kaysen et al., 2014; Roberts et al., 2015; Simpson et al., 2017; Van Dam, Vedel, Ehring, & Emmelkamp, 2012). However, the frameworks used to distinguish them vary. For example, treatment guidelines (VA/DoD clinical practice guidelines [Internet]), meta-analyses, and systematic reviews focused PTSD+SUD intervention studies classified psychosocial interventions as 'trauma-focused' versus 'non-trauma-focused' (Roberts et al., 2015; Van Dam et al., 2012); 'present-focused' versus 'past-focused' (Najavits & Hien, 2013); and 'exposure-based' versus 'non-exposure-based' (McCauley et al., 2012). Trauma-focused and non-trauma-focused reflect the broadest of these three distinctions, focusing on whether trauma-related content is delivered at all in the interventions. The present-focused versus past-focused distinction adds specificity to the question of trauma-focused versus not by examining whether trauma content is delivered and *how*. Finally, exposure-based versus non-exposure-based interventions reflect an alternative approach to classifying how trauma content is delivered, if at all, by examining whether exposure techniques specifically are employed or not.

Although these types of classification are not mutually exclusive in their frameworks and often overlap, they are commonly invoked across different studies and offer subtle distinctions regarding treatment categorization that gesture towards distinct core treatment components within their groupings.

1.1.1. 'Trauma-focused' versus 'non-trauma-focused'

Arguably the most common distinction between PTSD+SUD interventions invoked is whether they are 'trauma-focused' versus 'non-trauma-focused' (e.g. Roberts et al., 2015; Van Dam et al., 2012). Such a distinction may have its origins in stage-based models of trauma recovery such as Herman's Stage Model of Trauma Recovery (Herman, 1997) and related an integrative framework of PTSD+SUD (Courtois, Hien, Litt, Lopez-Castro, & Ruglass, 2020). For example, in one framework (Courtois et al., 2020), PTSD+SUD treatments have been classified as Stage 1 (safety and stabilization) and Stage 2 (trauma memory processing). Stage 1 PTSD+SUD models focus on the establishment of safety and stabilization, which involves gaining control over intense and often disabling psychological and substance use symptoms. Stage 1 treatments typically do not focus directly on processing the memory of traumatic events, and for this reason have been referred to as 'non-trauma-focused' treatments in several reviews (Roberts et al., 2015; Van Dam et al., 2012). Stage 2 treatments centre on reviewing and reappraising of the client's relevant trauma memories, typically through narrative work or imaginal exposure (e.g. PE; (Foa et al., 2019; Norman et al., 2019; Ruglass

et al., 2017)). As such, Stage 2 treatments are typically referred to as 'trauma-focused'.

1.1.2. Contextualizing trauma frameworks

Delineating between whether an intervention focuses on trauma content or not may be useful in identifying key active ingredients of the intervention. However, how would an intervention that discusses trauma and PTSD symptoms in the present, without a historical focus (i.e. without trauma processing) be classified? In order to capture this nuance, some PTSD+SUD intervention researchers have drawn on Herman's Stage Model of Trauma Recovery (Herman, 1997) and related it not to the distinction of trauma-focused versus non-trauma-focused interventions, but rather 'present-focused' versus 'past-focused interventions' (Najavits, 2014). This method of categorizing PTSD+SUD treatment types focuses more explicitly on the nature of *how* the trauma component of PTSD+SUD treatment is addressed rather than *whether* it is address (Norman et al., 2019). Present-focused integrated PTSD+SUD treatment models may include components that address trauma but do so indirectly by focusing on trauma-related symptoms or problems experienced by the person in the present. Thus, trauma-related problems that the patient is experiencing currently (e.g. trouble asking for help or setting boundaries in relationships, self-nurturing, case management needs) are discussed, while memories of the trauma, what the patient experienced, and thoughts and feelings about the traumatic events are not. Present-focused models may involve helping patients understand the impact of currently experienced traumatic stress and PTSD symptoms on their cravings or problematic substance use (McGovern et al., 2009). Drawing upon cognitive behavioural models of SUD treatment (Epstein & McCrady, 2009; Najavits & Hien, 2013), cognitive restructuring, coping with high-risk situations that may trigger relapse, and affect management are emphasized. In contrast, past-focused treatments emphasize revisiting the traumatic memory explicitly, processing the thoughts or emotions related to the experience (e.g. fear, shame, anger, guilt), and altering unhelpful beliefs regarding the experience or its sequelae (Foa et al., 2019; Resick et al., 2017).

1.1.3. 'Exposure-based' versus 'non-exposure-based'

Even more specific regarding how trauma components are addressed is a distinction between whether or not trauma components involve exposure (i.e. 'exposure-based') or not (i.e. 'non-exposure-based') (McCauley et al., 2012). Exposure-based interventions are arguably both inherently trauma-focused and past-focused, as they involve systematic exposure to trauma memories and cues, often through the application of prolonged exposure for PTSD (Foa et al., 2019) or related interventions. Conversely, other interventions may be trauma-focused, as they involve engaging with trauma content and information, past-focused, as they focus on historical appraisals, but not exposure-based. For example, cognitive processing therapy for PTSD involves probing historical appraisals of traumatic events without the systematic application of exposure models (Resick, Monson, & Chard, 2017). This distinction therefore emphasizes not only whether trauma content is focused on, but specifically whether exposure (versus, for example, cognitive interventions) is the primary means through which it occurs.

In sum, although existing distinctions used to categorize PTSD+SUD treatments may aim to represent theorized fundamental differences in what these treatments do and how they work, the field varies substantially in terms of the linguistic and conceptual terms it uses to this end. Clearly, these methods of distinguishing between PTSD+SUD interventions overlap to a great extent in theory and practice. Indeed, seemingly semantic distinctions between them may be an artefact in part due to disciplinary differences in the fields from which the treatments were developed and whether they were historically SUD or PTSD-focused (e.g. see point made by (Najavits et al., 2020) which elaborates some of the 'cultural' differences in these previously disparate fields). However, these differences may be more than semantic because they suggest distinct, core mechanisms that unite and distinguish between treatments and, theoretically, drive their outcomes. For example, classifying groups of interventions as 'trauma-focused' versus 'non-trauma-focused' suggests that whether or not trauma content is discussed at all is an active ingredient to PTSD+SUD interventions. Alternatively, classifying interventions as 'present' versus 'past' focused suggests that their temporal orientation is of utmost importance, rather than whether they discuss trauma content. Critically, this would suggest that an intervention that discusses trauma-content in the present context exclusively may yield fundamentally different outcomes than one that focuses on trauma memories and appraisals. Finally, exposure-based versus non-exposure-based models indicate that it is not only discussing trauma in and of itself that 'matters', nor only the temporal orientation of the discussion, but whether exposure-based techniques are applied to these content domains or not.

Regardless of whether these are semantics or distinct core mechanisms, such variability in categorization has meaningful consequences for PTSD+SUD intervention research and clinical practice. For example, although methods of categorizing PTSD+SUD interventions are not the same thing as the 'active ingredients' underpinning these interventions, the categorization of PTSD +SUD interventions will greatly impact whether research accurately identifies or inadvertently moves away from such key mechanisms. Indeed, future

research focused on identifying which components of PTSD+SUD interventions account for improvement in various clinical outcomes, and for whom, is essential to optimizing and expediting PTSD+SUD treatments. Such components can be determined by synthesizing PTSD+SUD treatment research through meta-analysis, individual patient data analysis, systematic reviews, and randomized controlled trial designs that compare categories of treatments that share key components to others that do not. However, this undertaking requires consensus regarding what intervention components fundamentally define and differentiate one intervention from another – an understanding that is informed by, and reflected in, the way that PTSD+SUD interventions are categorized. Indeed, it is this understanding that directs researchers in how to group PTSD+SUD interventions in meta-analysis in order to identify key intervention components, or to carefully select comparators in clinical trial designs in order to determine active intervention ingredients. The lack of consensus regarding how to classify PTSD+SUD interventions therefore hampers the ability to identify which types of interventions may be optimal for which outcomes and clients. In other words, if researchers and clinicians cannot agree on what is similar and what is different in PTSD+SUD interventions, they cannot look across these interventions and learn about why they do and do not work. Knowledge regarding key defining components of various PTSD+SUD interventions can also inform clinical trial design by highlighting particularly key characteristics of a PTSD+SUD intervention that may be isolated and tested through ideal comparator selection and dismantling studies.

Arguably, comparing individual PTSD+SUD interventions to each other may be more important than identifying how to classify these interventions. However, focusing exclusively on comparisons between individual PTSD+SUD interventions and neglecting what common and divergent elements across them are important and why it is problematic. Almost half of real-world clinicians report that they never use intervention manuals, with the vast majority of them (93%) reporting that they use them never, rarely, or sometimes (Addis & Krasnow, 2000). Further, one of the most endorsed critiques of intervention manuals is the lack of flexibility that real-world clinicians perceive them to allow (Addis & Krasnow, 2000). Focusing exclusively on which PTSD+SUD intervention manuals yield better outcomes than others fails to provide meaningful information about which evidence-based *principles* of PTSD+SUD intervention may be important to integrate into clinical practice and why. Identifying such principles requires the capacity to look across PTSD+SUD interventions and detect their key commonalities and differences, eventually isolating these variables in order to evaluate their importance.

Therefore, the present study leveraged the expertise of PTSD+SUD intervention researchers to identify which methods of naming and categorizing PTSD+SUD interventions may be optimal and why. Our goals were twofold: First, we aimed to examine how existing PTSD+SUD interventions may be organized depending on the form of classification used. Second, we aimed to identify which methods of distinguishing between PTSD+SUD interventions are optimal according to subject matter experts and why.

2. Method

2.1. Overview of procedures

A two-step process was used to evaluate the categorization terminology. First, we searched the literature for pre-existing categories of PTSD+SUD interventions from PTSD+SUD clinical trial systematic and literature reviews. Then, we surveyed an international group of trauma and substance use subject matter experts' using Qualtrics XM (Qualtrics, 2005) about their opinions on pre-existing intervention categorization and ideal categorization nomenclature. We also held a meeting of international experts in the PTSD+SUD field to review and discuss the results of the surveys.

2.2. Phase 1: search for terms in literature

A literature search and review of all existing published guidelines (VA, ARHQ, PTSD Repository), systematic reviews, and meta-analyses (Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; Forman-Hoffman et al., 2018; Gerger, Munder, & Barth, 2014; Lenz, Henesy, & Callender, 2016; McCauley et al., 2012; Najavits & Hien, 2013; Petrakis & Simpson, 2017; Roberts et al., 2015; Simpson et al., 2017; Van Dam et al., 2012; Watts et al., 2013) were conducted, which led to generation of a list of categories used to classify PTSD+SUD interventions and treatments, and a list of PTSD+SUD treatments included in these reviews. The list of categories is therefore not exhaustive, nor mutually exclusive but rather identified terms used to group, categorize, and describe psychosocial PTSD+SUD interventions in the literature. For example, in the surveyed literature, Cognitive Processing Therapy (CPT) was categorized as 'trauma-focused cognitive therapy' and 'trauma-focused treatment' (Hamblen et al., 2019). See Table 1 for list of treatment categorization and specific PTSD+SUD interventions.

2.3. Phase 2: survey of experts

2.3.1. Participants

Participant selection aimed to include an international group of clinical trialists and researchers in the PTSD+SUD field. A total of 46 individuals were invited to participate from a pool of principal investigators who are participating in Project Harmony; a National Institute on Alcohol Abuse and Alcoholism-funded project that seeks

Table 1. Intervention and Treatment Classification Types.

13 Interventions	8 Treatment Classifications
Brief Eclectic Psychotherapy	Exposure Based Treatment
Cognitive Behavioural Therapy for Posttraumatic Stress Disorder	Non-Exposure Based Treatment
Cognitive Processing Therapy	Non-Trauma Focused Cognitive Behavioural Treatment
Cognitive Therapy	Non-Trauma Focused Treatment
Eye Movement Desensitization and Reprocessing	Past Focused Treatment
Integrated Cognitive Behavioural Therapy for Posttraumatic Stress	Present Focused Treatment
Narrative Exposure Therapy	Trauma Focused Cognitive Treatment
Prolonged Exposure	Trauma Focused Treatment
Seeking Safety	
Seeking Safety Plus Exposure Therapy Revised	
Stress Inoculation Training	
Substance Dependence Posttraumatic Stress Disorder	
Transcend	

to harmonize and analyse item-level data from over 40 clinical trials of PTSD+SUD interventions (Hien et al., 2019). Appropriate Institutional Review Board exemption for the study was obtained. The survey was completed by 27 participants. Experts volunteered their time for this project and did not receive any monetary compensation. Many of the experts have implemented these treatments themselves (i.e. are clinician-scientists) and had high familiarity with the interventions and study populations.

2.3.2. Survey

Experts were provided a brief survey that inquired about their years of practicing PTSD+SUD interventions and the specific interventions that they use in their work (from the list generated during Phase 1). Next, experts were presented with a list of each intervention (e.g. (Cognitive Processing Therapy, Seeking Safety) and all categorization terms (e.g. Trauma-Focused Treatment, Present-Focused Treatment) ide-ntified from Phase 1, and were asked to indicate whether or not each intervention could be classified within that particular category. They were informed that they could select multiple classification options for each intervention, if applicable (e.g. they could select both 'trauma-focused cognitive treatment' and 'trauma-focused treatment' to categorize Cognitive Processing Therapy).

Then, experts were provided with the list of categorization terms and asked to identify any combination of two terms that were the optimal method of distinguishing between PTSD+SUD treatments. The survey elaborated that, 'For example, you might choose "trauma-focused therapy" and "non-trauma focused therapy" as the most representative two categories. You might also choose "present-focused therapy" and "past-focused therapy", or "present-focused therapy" and "trauma-focused therapy", or whichever other combination of two categories makes sense to you.' Experts were then provided with a free entry text box in order to solicit qualitative feedback and were asked to elaborate on why they selected the categorization method that they chose. We elected to ask participants to choose two categories for classifying PTSD+SUD interventions specifically to maintain consistency with current practices of distinguishing between PTSD+SUD interventions which follow this format. Finally, their expert opinions were queried in open-ended prompts to determine if they felt there was a better way of categorizing these interventions up to this point and were given space to describe it using an open text field. The results of the survey were presented to all content experts at a meeting that was held virtually during the 36th annual International Society for Traumatic Stress Studies meeting in November, 2020. The authors presented survey results in tabular form, with open-ended qualitative responses, and a priori determined themes based upon the co-authors organization of the quantitative and qualitative survey data to facilitate a discussion regarding these results among the experts.

3. Results

The international group of expert survey respondents reported academic/research (n = 20), clinical (n = 2), combined academic and clinical (n = 2), and other (n = 2; programme evaluation, administrative) affiliations. On average, expert survey respondents reported 20.89 (SD = 6.21) years of research or clinical experience and 14.57 (SD = 7.91) years of experience practicing PTSD+SUD interventions. Table 2 presents the specific PTSD+SUD interventions that participants reported being most familiar with or using the most in their work (they were allowed to select multiple). The most interventions that survey experts reported using most commonly or being most familiar with were Prolonged Exposure (74.1%), Cognitive Processing Therapy (55.6%), Seeking Safety (48.1%), and the Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE; 40.7%).

3.1. Categorization of PTSD+SUD interventions

On average, all interventions were classified within more than one category. The average number of categories that survey experts assigned to a PTSD+SUD intervention ranged from 1.72 (Cognitive Therapy) to 2.86 (Brief Eclectic Therapy). Table 3 presents the number of participants who categorized each intervention (as opposed to left that question blank), the frequencies with which each intervention was classified under various categories, and the average number of categories that survey experts classified it within. The number of votes endorsing a category for a particular intervention varied widely. For example, few survey experts classified Transcend in any of the categories with, at most, three

Table 2. Per cent of expert survey respondents that endorsed PTSD+SUD interventions as most familiar or commonly used.

Intervention	%
Prolonged Exposure	74.1%
Cognitive Processing Therapy	55.6%
Seeking Safety	48.1%
Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE)	40.7%
Cognitive Behavioural Therapy for Posttraumatic Stress Disorder	33.3%
Cognitive Therapy	22.2%
Other	18.5%
Eye Movement Desensitization and Reprocessing	14.8%
Integrated Cognitive Behavioural Therapy for Posttraumatic Stress Disorder and Alcohol Use Disorder	14.8%
Integrative/Eclectic	14.8%
Seeking Safety Plus Exposure Therapy Revised	11.1%
Narrative Exposure Therapy	7.4%
No Particular Treatment	3.7%
Stress Inoculation Therapy	3.7%
Substance Dependence Posttraumatic Stress Disorder Therapy	3.7%
Brief Eclectic Psychotherapy	0%
Transcend	0%

Participants were allowed to select multiple options.

experts classifying it as a trauma-focused treatment. Alternatively, 20 experts classified Prolonged Exposure as an exposure-based treatment. Trauma-focused treatments/trauma-focused cognitive treatments were the most endorsed category for the most interventions (nine interventions). Exposure-based treatments and present-focused treatments were the second and third most endorsed categories for the most interventions (five and four, respectively).

3.2. Preferred methods of categorizing PTSD +SUD interventions

Table 4 illustrates the per cent of participants who endorsed each method of categorizing PTSD+SUD interventions. Trauma-Focused versus Non-Trauma-Focused interventions was the most popular method of distinguishing between PTSD+SUD interventions, with 47.6% respondents endorsing this categorization method. The second and third most popular methods were Exposure versus Trauma-Focused (14.3%) and Present versus Trauma-Focused (14.3%). If Trauma-Focused versus Non-Trauma-Focused was adopted as the primary method of categorizing treatments, then the majority of votes in Table 3 would classify Cognitive Processing Therapy, Prolonged Exposure, Eye Movement Desensitization and Reprocessing, Cognitive Behavioural Therapy for PTSD,[1] Transcend, Integrated Cognitive Behavioural Therapy for PTSD and Alcohol Use Disorder, Seeking Safety Plus Exposure Therapy Revised, Brief Eclectic Therapy, and Narrative Exposure Therapy as trauma-focused. Conversely, Seeking Safety and Stress Inoculation Therapy would be classified as non-trauma focused and Substance Dependence PTSD Therapy and Cognitive Therapy would be tied across categories.

3.2.1. Themes in qualitative expert survey open-ended responses and presentation of quantitative and qualitative results to an experts meeting

Themes were derived by reviewing open-ended prompts in the survey itself. Several study authors reviewed responses to the questionnaires and discussed them to identify potential themes. Once one of the study authors identified formalized themes, another author reviewed the responses and proposed themes and proposed revisions to them. The themes identified by the authors that emerged when asking respondents to justify why they selected the categorization method that they did.

3.2.1.1. Theme 1. Trauma-focused versus non-trauma focused as pragmatic.

One of the main themes focused on the pragmatic utility of the trauma-focused versus non-trauma focused distinction, particularly relative to present- versus past-focused or cognitive and exposure-based methods. Specifically, respondents highlighted that defining interventions as Trauma-Focused or Non-Trauma Focused may allow for more reliable classification of PTSD+SUD interventions than other categorization methods.

(A) '1. The research data support that this is an important distinction 2. I think we could get agreement on what is and what is not a trauma focused treatment[.] I don't like present and past because that seems less clear to me. For example, you can do cognitive restructuring on a current thought but the evidence to support that thought might be past focused.'

(B) 'I think the distinction is between thoughts that are trauma focused and those that are not – given that not all non-trauma focused treatment are necessarily present focused, I think the broader term is most descriptive.'

(C) ' . . . from a pragmatic perspective, it's probably easier to distinguish trauma-focused vs. not trauma-focused because it's hard to totally disentangle cognitive and exposure approaches. Arguably, there's no such thing as pure exposure without cognitive change [. . .] and you can't do trauma-focused cognitive work without some level of exposure.'

(D) 'All therapies (that I know of) can be categorized as either exposure and non-exposure [or] trauma-focused and non-trauma focused.'

3.2.1.2. Theme 2. Trauma-focused versus non-trauma focused as an empirically supported mechanism.

Respondents also highlighted that the trauma-focused versus non-trauma focused distinction reflected an

Table 3. Number of people who categorized PTSD+SUD interventions within each intervention category and average number of categories assigned to intervention.

	Cognitive Processing Therapy	Prolonged Exposure	Eye Movement Desensitization and Reprocessing	Substance Dependence Posttraumatic Stress Disorder Therapy	Cognitive Behavioural Therapy for Posttraumatic Stress Disorder	Transcend	Integrated Cognitive Behavioural Therapy for Posttraumatic Stress Disorder and Alcohol Use Disorder	Seeking Safety	Seeking Safety Plus Exposure Therapy Revised	Stress Inoculation Training	Brief Eclectic Psychotherapy	Narrative Exposure Therapy	Cognitive Therapy
Number of participants who categorized this intervention	20	21	21	7	17	4	13	21	14	17	7	18	18
Exposure Based Treatment	10	20	15	2	5	1	2	0	13	0	4	15	0
Non-Exposure Based Treatment	3	0	3	2	5	1	3	14	1	10	3	0	12
Non-Trauma Focused Cognitive Behavioural Treatment	1	0	1	3	3	0	4	7	2	4	1	1	5
Non-Trauma Focused Treatment	0	0	0	3	2	0	0	10	1	9	2	0	3
Past Focused Treatment	7	7	6	1	1	1	1	0	4	0	2	10	1
Present Focused Treatment	1	1	2	4	7	1	5	15	7	11	2	1	2
Trauma Focused Cognitive Treatment	17	2	3	1	8	0	5	2	3	0	2	3	5
Trauma Focused Treatment	15	18	13	3	10	3	5	3	7	1	4	10	3
Average number of categories interventions were classified within (SD)	2.70 (.73)	2.29 (.64)	2.05 (.74)	2.71 (.76)	2.41 (1.00)	1.75 (.96)	1.92 (.86)	2.43 (.81)	2.71 (1.14)	2.06 (.56)	2.86 (1.87)	2.22 (.81)	1.72 (.67)

Note. The most commonly endorsed category for each intervention is highlighted in grey. Participants were allowed to select more than one category per intervention.

Table 4. Per cent endorsement for various methods of categorizing PTSD-SUD interventions.

Classification	% Endorsed
Trauma-focused versus Non-trauma focused	47.6%
Exposure-based versus Trauma-focused	14.3%
Present-focused versus Trauma-focused	14.3%
Trauma-focused versus Non-trauma focused cognitive behavioural therapy	9.5%
Exposure-based versus Non-trauma focused	4.8%
Present-focused versus Past-focused	4.8%
Exposure-based versus Non-exposure-based	4.8%

empirically supported distinction and potentially core mechanism of differential efficacy of PTSD+SUD interventions. For example, respondents noted that:

(A) ' . . . This is an important distinction in the wider PTSD literature that is related to differences in efficacy for PTSD as an outcome.'
(B) 'It's relevant to a core empirical question in trauma treatment, which is that if you think that your patient's presenting problems are because of traumatic event exposure, do you have to address the trauma head-on, or can you use non-trauma-focused strategies to relieve symptoms and still achieve sustainable improvements? Are you reinforcing avoidance if you use non-trauma-focused treatment? Does that matter if your patient gets better? It's another way of asking whether we have to force reluctant patients to confront past experiences that they don't want to confront if they want to get better.'

3.2.1.3. Theme 3. Questions regarding the validity of the trauma-focused versus non-trauma focused distinction. Despite the above themes, there were some respondents who raised concerns about the use of a trauma-focused versus non-trauma focused distinction. They specifically problematized the notion of defining interventions by what they are not:

(A) ' . . . Non-trauma-focused treatment only specifies what is NOT done but not what is done instead'
(B) '[To] define anything by what it is not (e.g. "non trauma focused") is problematic on many levels. (1) [As] one example, Seeking Safety for example, is clearly trauma focused but does not focus on the past; same [with] the McGovern ICBT model. (2) "Non" is confusing. One wouldn't say "non-children" to mean adults or "non-men" to mean women. (3) The term is politicized – it comes from the PE branch of trauma treatment that views PE as the sine qua non of trauma treatment, whereas it's just one of many models. (4) The term implies that other treatments are lacking something ("non").'

3.2.1.4. Theme 4. Lack of consensus and need to develop guidelines for classifying PTSD+SUD treatment categorizations to enhance treatment advances. Finally, both when justifying their method of treatment categorization and when offering alternative methods of categorization, respondents highlighted a need to incorporate SUD foci into treatment categorization methods:

I: "In my opinion, the distinction between trauma-focused and non-trauma focused is most important as this is an important distinction in the wider PTSD literature that is related to differences in efficacy for PTSD as an outcome. It may additionally be important to categorize the SUD-related part, but I can't find any fitting categories above."

J: "I wish that there was a category that had the phrase integrated or concurrent in it. I ended up leaning towards trauma focused treatment as that was the most overarching umbrella term but that doesn't quite capture that it's a treatment that addresses both the trauma and SUD. I do like the present focused vs past focused distinction as well but misses the idea of it treating both trauma/PTSD and SUD."

K: 'What about when treatment also includes other outcomes (substance abuse; depression)?'

L: [Participant suggested an alternative method of categorization which was] "Integrated Trauma Focused Treatment or Integrated Past Focused Treatment or Integrated Present Focused Treatment".

4. Discussion

The goals of the present study were to examine existing PTSD+SUD intervention classifications in order to identify which methods of distinguishing between PTSD +SUD interventions are optimal according to experts in the field and why. Our hope was to gain clarity and consensus in PTSD+SUD treatment classifications as the field of PTSD+SUD psychotherapy research evolves to require more comparative effectiveness trials and the capacity to identify shared and non-overlapping active ingredients in order to facilitate guidance regarding personalized treatment priorities and implementation.

Towards these ends, our mixed methods study revealed that a proliferation of PTSD+SUD treatment research over the last twenty years has brought with it an abundance of ways to characterize the treatments that have been developed and evaluated. In addition to a review of the literature, we surveyed a diverse group of researchers with a range of expertise specific to treatments for PTSD+SUD. Results from our survey of

experts revealed that interventions for PTSD+SUD can be classified in many ways that appear to overlap highly with one another. The survey also indicated that most experts selected the categories of 'trauma-focused and non-trauma-focused' as an optimal way to distinguish treatment types. Although several experts reinforced this point during our subsequent meeting, it also became clear that no method of categorizing treatments is without flaws.

Several reasons for the use of the trauma-focused versus non-trauma-focused classification emerged in the survey and presentation of results to the experts. Research evidence has pointed to trauma-focused treatments as the most effective for treating PTSD (Forman-Hoffman et al., 2018), and the PTSD+SUD field has drawn strongly from the 'PTSD world' where the primacy of PTSD over SUD might be expected to naturally give rise to such a focus. Given research suggesting that targeting PTSD has positive downstream effects on SUD (Hien et al., 2010; Najavits & Hien, 2013), and that trauma-focused treatments effectively reduce PTSD symptoms (Mills et al., 2012), focusing on trauma processing may be relevant to SUD outcomes and treatment descriptions/formulations as well. Also, trauma-focused/non-trauma-focused is a broad category that cuts across different genres of therapy, allowing the classification of interventions across modalities. Furthermore, the utility of this classification may help providers in SUD treatment settings who prefer non-trauma focused approaches to consider implementing trauma-focused therapies for their interested clients.

However, there are several caveats to consider when conceptualizing PTSD+SUD using a trauma-focused versus non-trauma focused nexus, as highlighted by the experts. Firstly, consensus is lacking with regard to what 'counts' as trauma-focused. Do these include treatments with an exposure-based component only? Do they involve processing past traumatic events? How central does trauma need to be for a treatment to be considered trauma-focused? Another issue was that the term non-trauma focused was not preferred by some, either because it implied an absence of something, or because it was too much of a 'catch all' and may not accurately represent the treatment components as developed. Indeed, several of the treatments categorized as non-trauma focused do address past traumas/PTSD and its impact on current functioning, albeit without engaging in trauma processing. Although the evidence is mixed, some patients with PTSD+SUD benefit from this type of treatment, demonstrating reductions in PTSD severity out to 12 months post-treatment (Hien et al., 2010) and there is preference for this approach in community settings (Ruglass et al., 2017). Thus, designating interventions as non-trauma focused may disregard their attention to PTSD-related pathology, even if this attention is in the form of a more coping-oriented and psychoeducational way than trauma processing interventions. Ultimately, these results suggest that a shift towards accuracy and specificity in our nomenclature is needed.

Survey results also found that using the categorization of 'present-focused' therapy was another broad and widely used category. Present-focused emphasizes a coping skills model compared to emotional processing of the past. A primary substance use therapy such as relapse prevention, which has been widely shown as impactful to both substance use and other mental health symptoms such as PTSD, anxiety, and depression (Simpson et al., 2017) could be classified as a present-focused therapy, as could the *Seeking Safety* model. However, as with trauma-focused interventions, such terminology is not without limitations. Indeed, during our discussions of study results, several experts highlighted that 'past-focused' interventions teach skills and strategies to be utilized in the *present*, and thus these distinctions blur.

Another popular method of distinguishing between PTSD+SUD interventions was 'exposure-based' versus 'trauma-focused'. This distinction seems somewhat paradoxical as 18 out of 21 respondents classified the clearly exposure-based intervention of Prolonged Exposure as 'trauma-focused'. It is possible that respondents who selected this category misunderstood the question and, rather than suggesting an optimal dichotomy with which to distinguish between interventions, suggested that delineating interventions based on whether they are trauma-focused *or* whether they are exposure-based may be most optimal. Indeed, the qualitative justifications for this choice support this point. (e.g. 'A first descriptor identifies whether the treatment focuses on trauma. The second identifies whether the therapy includes exposure, an integral component of efficacious treatment.') 'All therapies (that I know of) can be categorized as either exposure and non-exposure [or] trauma-focused and no-trauma focused.'). This category of response may therefore reflect additional support for either a trauma-focused versus non-trauma-focused distinction, an exposure-based versus non-exposure-based distinction, or both.

Other terms that seemed to overlap in categorization of treatments with trauma-focused were cognitive-behavioural trauma-focused, exposure-based, and past-focused. Each of these captured a smaller segment of treatments. However, as mentioned, few treatments, including ones with a heavy emphasis on trauma processing, focus exclusively or even predominantly on the past. Finally, the issue of how to address some of the constructs that are important for interventions designed to provide treatment for PTSD+SUD concurrently, such as the terms 'integrated,' 'sequential' also did not yield great clarity and have largely been used to identify timing of intervention combinations rather than what comprises the interventions themselves.

In terms of how these forms of categorization are applied to specific PTSD+SUD interventions, Prolonged

Exposure showed the most consensus in categorization (i.e. as an exposure-based treatment and trauma-focused treatment). However, even this intervention received less consensus regarding whether it is past- versus present-focused, illuminating the potential lack of clarity that such a categorization method may entail. Less intervention category consensus occurred with interventions such as Substance Dependence PTSD Therapy, Integrated Cognitive Behavioural Treatment for PTSD, or Brief Eclectic Therapy. These interventions may have been less extensively researched, may be less used in clinical practice, or may be less often associated with PTSD+SUD treatment. If experts were less familiar with these interventions, they may have been less reliable in classifying them. Indeed, these interventions were categorized by lower numbers of participants, which may have contributed to the lack of consensus in classifying them. Taken together, these findings suggest that there is no perfect definition or complete group consensus, but do suggest the importance of examining the extent to which trauma-processing occurs as one axis on which to compare interventions.

4.1. Limitations

Our survey and treatment component definitions and classifications were guided by the available evidence base. Consequently, our focus did not include definitions not contained in all published articles for PTSD+SUD treatments (e.g. skills-based versus trauma processing (Forman-Hoffman et al., 2018)). Similarly, we did not include other treatment approaches that might also be used by practitioners working with patients with both disorders, such as SUD only interventions that may positively impact PTSD outcomes or PTSD only interventions that may positively impact SUD outcomes. Further, some treatments may not have been identified in our literature review. Another consideration is that terminology that we identified were extracted from studies that were predominantly PTSD-focused relative to the SUD – focused, thus the PTSD field may be overrepresented and SUD field underrepresented in our survey – indeed, we presented our results at a meeting at the 2020 International Society for Traumatic Stress Studies. Related, when asking our respondents to choose optimal methods of categorizing PTSD+SUD interventions, we specifically asked them to pick *two* categories. It may be that PTSD+SUD interventions are better organized with a larger range of available categories than what was allowed in the present study, and future research should investigate this. Finally, our sample size of experts was small and limited to researchers who have received federal funding to systematically study the assessment and treatment of PTSD+SUD. Although many of the experts have also worked as clinicians implementing many of the intervention models, since the survey did not engage a group of clinicians from the community, it remains an open question for future research whether researchers and clinicians agree on what is similar and what is different in PTSD+SUD interventions. Thus, the expert opinions may not be representative of practitioners who work with this patient population in other settings that are not primary academic or SUD settings. Relatedly, an important inquiry for future investigations would be to examine how participant's primary affiliation is related to the methods with which they tend to categorizing PTSD +SUD interventions. Such information would be important in order to determine whether and how these categorization methods are steeped within particular therapeutic orientations, and therefore the extent of their potential utility to clinicians who practice other modalities.

Nevertheless, given the heterogeneity in the available evidence-based and promising treatment approaches for this comorbid condition, our focus was representative of researchers who systematically studied this disorder combination and shed light on the direction of subsequent work.

4.2. Conclusions

The past two decades witnessed substantial strides in the development and advancement of treatments focused on the unique needs of patients with comorbid PTSD+SUD. As a field, we are now at the cusp of beginning more comparative effectiveness studies, integrative data analyses, meta-analyses and data repositories which require the need to further classify and summarize broader treatment types and techniques to facilitate implementation of efficacious interventions. Thus, having consensus of some of the dimensions for consideration is needed. Our present efforts to identify existing classification approaches serves to highlight the significant heterogeneity in how these treatments are classified by experts in the field. There is no perfect definition because any distinction fails to reflect some consideration versus another.

Although we have elaborated on the one possible candidate categorization–*trauma-focused/non-trauma focused*–for the field to adopt as it moves forward, we do not view this as the definitive categorization method. Rather, our findings highlight the importance of having a number of axes for consideration of combined PTSD +SUD treatments including trauma-focused" versus 'non-trauma-focused' [28; 36]; 'present-focused' versus 'past-focused' (Najavits & Hien, 2013); and 'exposure-based' versus "non-exposure-based (McCauley et al., 2012). Distinguishing between these three modes of PTSD+SUD interventions can also improve communication among practitioners, researchers, and policy makers also enhance understanding of treatment components. Indeed, when PTSD+SUD intervention researchers are seeking comparators for clinical trials that are designed to advance the field and illuminate which specific PTSD+SUD intervention components are particularly important and for whom, these three axes may be particularly important dimensions with

which to weigh comparator selection against. We hope this paper serves as a launching point to re-evaluate our classification and nomenclature systems and develop a new language that adequately describes the frameworks of these combined treatments, moving to include practitioners in the conversation. As the number of clinical trials for individuals with PTSD+SUD grows to a critical mass, refining our categorizations with consensus from the experts of the increasing number of interventions for PTSD and SUD can better inform decisions for patients with different treatment needs.

Note

1. CBT for PTSD treatment is typically categorized as a non-trauma focused treatment (e.g. Back et al., 2012; Najavits, 2002).

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Data availability statement

The data that support the findings of this study are not publicly available due to containing information that could compromise the privacy of research participants, but are available from the corresponding author.

Statement of ethics

Rutgers University Institutional Review Board approved this study [protocol reference number Pro2018001200]. All participants provided informed consent and no identifying information was collected.

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