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Assessing the Existence of Trauma-Related Diagnostic Overshadowing in Adult Populations

THESIS

submitted in partial satisfaction of the requirements  
for the degree of

MASTER OF ARTS

in Social Ecology

by

Katherine Wislocki

Thesis Committee:  
Associate Professor Alyson Zalta, Chair  
Associate Professor Stephen Schueller  
Associate Professor Elizabeth Martin

2023



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## ABSTRACT OF THE THESIS

Assessing the Existence of Trauma-Related Diagnostic Overshadowing in Adult Populations

by

Katherine Wislocki

Master of Arts in Social Ecology

University of California, Irvine, 2023

Professor Alyson Zalta, Chair

Previous research with youth has shown that clinicians tend to diagnose and treat post-traumatic stress disorder (PTSD) in trauma-exposed clients, even when clinical presentations indicate that PTSD is not the primary diagnosis. The current study sought to examine this trauma-related diagnostic overshadowing bias in adult cases across different types of trauma exposure. Mental health professionals ( $N = 232$ ) reviewed two vignettes describing an adult seeking treatment for either obsessive-compulsive disorder (OCD) symptoms or substance use disorder (SUD) symptoms (target disorders). Each participant was randomly assigned to one vignette in which one client endorsed exposure to trauma (i.e., sexual trauma or physical trauma) and one vignette in which the client reported no trauma exposure. Following each vignette, participants responded to questions related to the diagnosis and treatment of the client. In both cases, participants were significantly less likely to choose the target diagnosis and treatment and more likely to choose a PTSD diagnosis and trauma treatment when trauma exposure was present in the vignettes. Evidence for the bias was strongest for vignettes that contained sexual trauma compared to vignettes that contained physical trauma. Evidence for the bias was also more consistent in the

OCD case compared to the SUD case. Results indicate evidence for the existence of trauma-related diagnostic overshadowing in adult populations, though the strength of this bias may be dependent on aspects of the trauma and overall clinical presentation. More work is needed to understand factors that may impact the presence of this bias.



## Introduction

Trauma exposure is prevalent in the United States, with nearly 90% of adults endorsing prior exposure to trauma (Breslau, 2009; Kilpatrick et al., 2013). Exposure to trauma is a common etiological factor for a multitude of mental health disorders (Perkonigg et al., 2000), including those specifically related to trauma exposure like post-traumatic stress disorder (PTSD). For example, previous work has indicated that lifetime trauma exposure is associated with a significantly increased risk of developing a wide range of psychiatric issues, including anxiety disorders, depressive disorders, substance use disorders, and psychosis-spectrum disorders (Perkonigg et al., 2000; Read et al., 2005). Further, certain mental health disorders may increase the likelihood of being exposed to trauma (Perkonigg et al., 2000). Thus, trauma exposure is likely to be common among psychiatric populations, even in the absence of trauma-related pathology such as PTSD.

Given the well-established link between trauma exposure and mental health symptomatology, assessment of trauma exposure is a central facet of evidence-based psychological assessment (SAMHSA, 2014). Importantly, however, evidence-based assessment and treatment of mental health symptomatology should target the presenting or primary symptoms, regardless of whether those symptoms are related to trauma exposure (American Psychiatric Association, 2013; SAMHSA, 2014). Yet research suggests that clinicians may be inclined to diagnose and treat trauma-related pathology when clients report a history of trauma, even when primary symptoms are not related to trauma (Becker-Haimes et al., 2021). This process of incorrectly attributing clinical symptoms to an underlying disorder, condition, or aspect of the individual's clinical presentation is referred to as diagnostic overshadowing (Kanne 2013; Reiss et al., 1982; Reiss & Szyszko, 1983).

Initial research on diagnostic overshadowing indicated that healthcare providers were less likely to extend a diagnosis of a mental health disorder to, and thus less likely to adequately treat, individuals with a developmental disability through experimental surveys (Jopp & Keys, 2001; Reiss et al., 1982; Reiss & Szyszko, 1983). The theoretical basis for this bias is thought to be that salient conditions (i.e., evidence of a developmental disability) overshadow other information, namely unrelated and co-occurring mental health symptomatology. Previous work has illustrated the effect of overshadowing for a wide variety of mental health conditions, including psychosis-spectrum disorders, phobias, substance use disorders (Jopp & Keys, 2001; Reiss et al., 1982; Reiss & Szyszko, 1983). Diagnostic overshadowing is thought to result in a decreased sensitivity to other information in making a diagnosis, namely that which is most specific to an individual's presentation (Jopp & Keys, 2001). With reduced sensitivity, there is an increase in the risk of both false positives (i.e., making a diagnosis when one is not necessary) and false negatives (i.e., not making a diagnosis when one is necessary; Jopp & Keys, 2001). Research has indicated that overshadowing affects three main aspects of clinical decision making: 1) the severity of the presenting problem, 2) the diagnosis that is most suitable for the presenting problem, 3) and the treatment that is optimal for the presenting problem (Jopp & Keys, 2001).

One prior study has implicated the existence of a *trauma-related diagnostic overshadowing bias*, in which trauma history overshadows other unrelated aspects of one's clinical presentation (Becker-Haimes et al., 2021). In experimental vignettes, clinicians were more likely to assign a trauma-related diagnosis in vignettes where a potentially traumatic event was disclosed, even when symptoms preceded the trauma exposure and were unfit for PTSD (Becker-Haimes et al., 2021). This effect carried over to selection of treatment strategies, indicating that providers were attending to trauma exposure, rather than the primary symptoms

that formed the client's presentation (Becker-Haimes et al., 2021). This study also showed that the magnitude of trauma-related diagnostic overshadowing differed as a function of trauma type, such that trauma-related diagnostic overshadowing was strongest when reviewing vignettes of clients with a history of sexual trauma (Becker-Haimes et al., 2021). However, it is important to note that the vignettes used in this study focused on children and no prior studies have evaluated trauma-related diagnostic overshadowing using adult cases. Thus, it is unclear whether clinicians experience trauma-related diagnostic overshadowing when evaluating adult cases.

The current study aims to address this gap by assessing the existence of a trauma-related diagnostic overshadowing bias for adult cases, as well as how this bias may differ as a function of contextual factors (i.e., trauma type). Consistent with previous research (Becker-Haimes et al., 2021; Jopp & Keyes, 2001), we used an experimental vignette-based design to evaluate whether the presence of a trauma history would affect clinicians' diagnostic and treatment decisions. We hypothesized that clinicians would be less likely to assign a target diagnosis and target treatment and more likely to assign a PTSD diagnosis and trauma-related treatment when a history of trauma was present, indicative of diagnostic overshadowing. Further, we expected that diagnostic overshadowing would be more likely to occur when the type of trauma exposure is associated with an increased risk of PTSD. Therefore, we hypothesized that the bias would be strongest in cases with prior exposure to sexual trauma compared to cases with physical trauma or no trauma. This bias may have implications for adequately and effectively assessing and treating trauma-exposed adults, which make up a large proportion of the general population (Kilpatrick et al., 2013) and those that seek treatment (Forman-Hoffman et al., 2016). Further, this bias can lead to poor resource allocation (i.e., client time, clinician time) and it may also negatively impact the relationship between trauma-exposed individuals and the mental healthcare system. Thus,

assessing the existence of this bias is paramount to mitigating its effects and delivering high-quality care to trauma-exposed populations.

## **Methods**

### **Participants**

Participants were mental health clinicians ( $N = 232$ ) with an average of 15.4 years of clinical experience ( $SD = 13.7$ ; range = 0.5 - 65.0 years). On average, clinicians were 43.7 years old ( $SD = 16.0$ ; range = 22 – 89 years old). The sample was predominantly female ( $n = 167$ ; 72.0%). Clinicians were predominantly doctoral level clinical or counseling psychologists ( $n = 105$ ; 49.5%), but also included master's level social workers or counselors ( $n = 63$ ; 29.7%), master's level clinical psychologists ( $n = 25$ ; 11.8%), bachelor's level psychologists and social workers ( $n = 7$ ; 3.3%), doctoral level social workers ( $n = 5$ ; 2.4%), and other mental health professionals ( $n = 7$ ; 3.3%). Students ( $n = 37$ ; 15.0%) were represented as well. Most clinicians endorsed some prior training in trauma-related mental health treatments ( $n = 159$ ; 68.5%). Clinicians most commonly endorsed being trained in Cognitive Processing Therapy ( $n = 79$ ; 34.1%), Trauma-Informed Care ( $n = 79$ ; 34.1%), Prolonged Exposure ( $n = 70$ ; 30.2%), and Trauma-Focused Cognitive Behavioral Therapy ( $n = 69$ ; 29.7%).

### **Procedures**

Power analysis was used to assess the necessary sample size within each block. A sample size of 25-30 clinicians per vignette was established via a priori power analysis and previous work (Becker-Haimes et al., 2021). Participating mental health professionals ( $N = 232$ ) were recruited through professional organization forums and list-servs during Spring/Summer 2022. Brief recruitment messages were sent which contained a link to the electronic survey. Participants had to endorse that they were a mental health professional and at least 18 years of

age to take the survey. The survey was created and distributed using Qualtrics. Participating clinicians completed informed consent prior to participation. Clinicians were randomized to a block with two vignettes, one that contained a history of trauma exposure and one without a history of trauma exposure. Random assignment was carried out using the randomizer function within Qualtrics. The survey took approximately 15 minutes to complete, and participants had the opportunity to opt-in to receive a \$10 USD electronic gift card for their participation. Procedures were approved by the Institutional Review Board at the University of California, Irvine.

### *Vignettes*

Two vignettes were developed by the study authors to reflect adult cases of obsessive-compulsive disorder (OCD; Case 1) and substance use disorder (SUD; Case 2). OCD and SUD were selected as the target conditions because both have distinct symptoms that can reasonably be separated from PTSD symptoms. Other conditions, such as depression, contain overlapping symptoms with PTSD (e.g., anhedonia, negative beliefs about self) that might make it more difficult to isolate the bias. Additionally, prior work on trauma-related diagnostic overshadowing among youth used an OCD case (Becker-Haimes et al., 2021), allowing us to evaluate whether the bias identified in this earlier study was present in an adult case. Vignettes were designed to ensure that sufficient symptoms and clinical impairment in both occupational and social functioning were described in a way that met the diagnostic criteria for the target disorder (i.e., OCD/SUD). In addition to describing the client's primary symptoms and the functional impact of those symptoms, each vignette described the client's demographics, history of mental health treatment, a risk assessment, and trauma history. Client age (i.e., early thirties), race (i.e., White), treatment history (no prior treatment) and level of risk (no suicidal ideation or non-suicidal self-

injury) was kept the same across both cases to ensure that these variables would not affect clinician responses. Client sex (male/female) and trauma history (no trauma, sexual trauma, physical trauma) were manipulated across experimental conditions, resulting in eight experimental conditions in which each clinician was presented with one case that did not include a trauma history and one case that did include a trauma history (see Table 1).

**Table 1.**

*Experimental Blocks*

	<b>Vignette 1</b>	<b>Vignette 2</b>
<b>Block 1:</b>	Male/OCD/Sexual Trauma	Female/SUD/No Trauma
<b>Block 2:</b>	Male/OCD/Physical Trauma	Female/SUD/No Trauma
<b>Block 3:</b>	Male/OCD/No Trauma	Female/SUD/Sexual Trauma
<b>Block 4:</b>	Male/OCD/No Trauma	Female/SUD/Physical Trauma
<b>Block 5:</b>	Female/OCD/Sexual Trauma	Male/SUD/No Trauma
<b>Block 6:</b>	Female/OCD/Physical Trauma	Male/SUD/No Trauma
<b>Block 7:</b>	Female/OCD/No Trauma	Male/SUD/Sexual Trauma
<b>Block 8:</b>	Female/OCD/No Trauma	Male/SUD/Physical Trauma

*Note.* OCD: Obsessive-Compulsive Disorder; SUD: Substance Use Disorder.

Presentation of the traumatic event (i.e., perpetrator, context, event) was standardized across vignettes. The sexual trauma was described as a sexual assault by a known perpetrator, with no other descriptive characteristics. The physical trauma was described as a motor vehicle accident that caused lingering physical injuries, with no other descriptive characteristics. In all trauma cases, they were described as singular incidents, with no other traumatic events disclosed. Psychiatric symptoms in each vignette were deliberately reported to have started prior to trauma exposure to ensure that the symptom onset could not be ascribed to the trauma. Because women are much more likely to experience a sexual trauma and are more likely to develop PTSD (Tolin & Foa, 2006), we wanted to ensure that clinician responses were based on the nature of the trauma and not the sex of the client. Therefore, we counterbalanced sex across all vignettes to ensure that client sex was not driving any effects.

After drafting the vignettes, the authors sought feedback from seven mental health clinicians that were blinded to the purpose of the study to evaluate 1) whether vignettes were realistic and reflective of a client being seen in outpatient practice, 2) what diagnosis would be most fitting for the client in the vignette, 3) what treatment options would be most applicable to the client in the vignette, 4) potential concerns surrounding the use of this vignette in research with mental health professionals. Brief edits to the vignettes were made based on the feedback from clinicians to standardize the order and presentation of clinical information.

## **Measures**

### ***Clinician Demographics***

Demographic information included items corresponding to gender identity, age, licensure, degree information, professional discipline, professional setting, theoretical orientation, caseload, clinical experience, clinical training, and client population.

### ***Vignette Ratings***

Following each vignette, clinicians were asked to answer a series of questions as to how they would diagnose and treat the client in the vignette. First, clinicians were asked to rate the likelihood that the client met the diagnostic criteria for various diagnoses on a 7-point Likert scale (1 - Extremely Unlikely, 7 - Extremely Likely). The list of diagnoses included obsessive-compulsive disorder (target diagnosis for OCD case), substance use disorder (target diagnosis for SUD case), post-traumatic stress disorder (inappropriate diagnosis indicating trauma-related diagnostic overshadowing), generalized anxiety disorder, major depressive disorder, adjustment disorder, and no diagnosis. Clinicians were then asked a forced choice question as to which diagnosis would be most fitting for the client using the same list of diagnoses.

Following diagnostic questions, clinicians were asked similar questions about treatment for the client in the vignette. Participants rated the appropriateness of several treatments for the client in the vignette on a 7-point Likert scale (1 - Completely Inappropriate, 7 - Completely Appropriate). The treatment choices included exposure and response prevention (ERP; target treatment for OCD case), motivational interviewing (MI; target treatment for SUD case), cognitive processing therapy (CPT; inappropriate treatment indicating trauma-related diagnostic overshadowing), dialectical behavioral therapy, psychodynamic psychotherapy, and other therapy (to which participants could then provide a free-response answer corresponding to their rating). Participants were then asked to select the most appropriate treatment for the client in a forced choice item using the same treatment list. For every question, clinicians had the option to forgo responding or provide a response indicating that more information was needed.

### **Data Analysis**



Preliminary analyses were conducted to evaluate whether clinician characteristics varied across the experimental conditions. Responses were included if ratings following at least one of the two vignettes was completed, resulting in slight differences in the sample size for Case #1 and Case #2. Analyses were conducted separately for each of the two cases. For each case, the following outcomes were evaluated to examine trauma-related diagnostic overshadowing: Likert and force choice ratings for the case target diagnosis (OCD/SUD); Likert and forced choice ratings for a PTSD diagnosis; Likert and forced choice ratings for the case target treatment (ERP/MI); and Likert and forced choice ratings for trauma treatment (CPT). Trauma-related diagnostic overshadowing is evidenced when ratings and selections for the case's target diagnosis and case's target treatment are lower when a trauma history is present and/or ratings and selections for a PTSD diagnosis and trauma treatment (CPT) are higher when trauma is present. Analysis of variance (ANOVA) was used to evaluate how trauma type (i.e., no trauma, sexual trauma, physical trauma) was associated with Likert ratings. Post-hoc Tukey tests were conducted to evaluate specific contrasts if the omnibus ANOVA test was significant. Chi-square analyses were used to evaluate how trauma exposure type (i.e., no trauma, sexual trauma, physical trauma) was associated with forced choice ratings of the target diagnosis/treatment, trauma-related diagnosis/treatment, or other mental health diagnosis/treatment.

In addition to these analyses, a target score was calculated to assess the total number of correct diagnostic and treatment decisions based on the forced choice questions for the case target disorder and treatment. For target score, a "0" indicated that the clinician made no correct diagnostic or treatment decisions, a "1" indicated that the clinician made either a correct diagnostic or treatment decision, and a "2" indicated that clinicians made both a correct diagnostic and treatment decision. Chi-square analyses were used to assess the association

between trauma exposure type and target score. All analyses were performed in SPSS Version 28.

## Results

### Preliminary analyses

Chi-square analyses indicated that clinician gender identity, professional status, licensure, and degree type did not significantly vary across randomized conditions ( $ps > .05$ ).

### Likert ratings of diagnosis and treatment

Table 2 reports the results from ANOVAs of the Likert diagnostic and treatment ratings by trauma exposure type for each case.

**Table 2.**

*Mean Likert Ratings of Diagnostic and Treatment Decisions by Trauma Type*

Outcome	No Trauma <i>M, SD</i>	Physical Trauma <i>M, SD</i>	Sexual Trauma <i>M, SD</i>	<i>F (df)</i>	<i>p</i>	partial $\eta^2$	No Trauma v. Sexual Trauma ( <i>p</i> )	No Trauma v. Physical Trauma ( <i>p</i> )	Physical Trauma v. Sexual Trauma ( <i>p</i> )
Case 1: OCD									
Target diagnosis	6.49 (.88)	5.75 (1.61)	5.86 (1.37)	F(2, 227) = 9.14	<.001	.08	.005	.001	.867
PTSD diagnosis	1.97 (1.45)	4.41 (1.89)	5.78 (1.26)	F(2, 219) = 127.73	<.001	.54	<.001	<.001	<.001
Target treatment	5.97 (1.63)	5.69 (1.83)	5.12 (2.01)	F(2, 216) = 4.16	.017	.04	.012	.638	.231
PTSD treatment	3.56 (2.29)	3.92 (1.97)	4.96 (1.92)	F(2, 202) = 7.71	<.001	.07	<.001	.598	.038
Case 2: SUD									
Target diagnosis	6.86 (.37)	6.89 (.32)	6.74 (.6)	F(2, 209) = 1.85	.16	.02			

PTSD diagnosis	1.96 (1.21)	5.1 (1.07)	5.56 (1.3)	F(2, 204) = 205.67	< .001	.67	<.001	<.001	.126
Target treatment	6.23 (1.41)	6.15 (1.49)	5.69 (1.85)	F(2, 200) = 2.12	.12	.02			
PTSD treatment	3.03 (2.01)	4.24 (1.63)	4.9 (1.87)	F(2, 186) = 16.64	<.001	.15	<.001	<.001	.223

*Note.* One-way ANOVA analysis of mean Likert ratings for diagnosis and treatment for target diagnosis/treatment and PTSD diagnosis/treatment choices for both cases. Target indicates the specific diagnosis or treatment most appropriate for the clinical presentation in the vignette. OCD: Obsessive-Compulsive Disorder; SUD: Substance Use Disorder, PTSD: Post-Traumatic Stress Disorder.

For the OCD case, the omnibus tests for all four outcomes (i.e., target diagnosis, PTSD diagnosis, target treatment, PTSD treatment) were statistically significant ( $ps < .05$ ) with small to large effects (partial  $n^2 = .04-.54$ ). The PTSD diagnosis ratings revealed a particularly large effect size (partial  $n^2 = .54$ ). Contrast analyses consistently revealed greater bias in all four outcomes (i.e., lower ratings of target diagnosis/treatment, higher ratings of trauma diagnosis/treatment) for cases with sexual trauma compared to cases with no trauma ( $ps < .05$ ). For diagnostic ratings (target diagnosis and PTSD diagnosis), cases with physical trauma revealed greater bias compared to cases with no trauma ( $ps < .01$ ); however, there were no significant differences between physical trauma cases and no trauma cases for treatment ratings ( $ps > .05$ ). Cases with sexual trauma corresponded with significantly greater bias than cases with physical trauma through PTSD diagnosis and PTSD treatment ratings ( $ps < .05$ ), but not based on the target diagnosis and treatment ratings ( $ps > .05$ ).

For the SUD case, the omnibus one-way ANOVA tests for two outcomes (PTSD diagnosis, PTSD treatment) were statistically significant ( $ps < .001$ ) with large effects (partial  $n^2$

= .15 - .67). PTSD diagnosis ratings revealed a notably large effect size (partial  $n^2 = .67$ ), similar to the OCD case. Yet, results from omnibus one-way ANOVA tests for target diagnosis and target treatment were both non-significant. Contrast analyses revealed consistent bias in the two significant outcomes (i.e., higher ratings of PTSD diagnosis/treatment) for cases with trauma exposure compared to cases with no trauma ( $ps < .001$ ). Further, there were no significant differences in Likert ratings for vignettes containing sexual trauma compared to vignettes containing physical trauma for the SUD case ( $ps > .05$ ).

### Forced choice ratings of diagnosis and treatment

Table 3 reports the results from chi-square analyses of the forced choice diagnostic and treatment ratings by trauma exposure type for each case.

**Table 3.**

*Forced Choice Diagnostic and Treatment Ratings by Case and Trauma Type*

	Trauma Type						$\chi^2(df)$	$p$
	No Trauma		Physical Trauma		Sexual Trauma			
	$n$	%	$n$	%	$n$	%		
<b>OCD Case Diagnosis</b>								
Target diagnosis	100	84.7%	35	63.6%	27	45.8%	53.78 (4)	<.001
PTSD diagnosis	1	0.8%	10	18.2%	25	42.4%		
Other diagnosis	17	14.4%	10	18.2%	7	11.9%		
<b>OCD Case Treatment</b>								
Target treatment	78	66.7%	34	63.0%	25	43.1%	10.01 (4)	.04
PTSD treatment	17	14.5%	11	20.4%	17	29.3%		
Other treatment	22	18.8%	9	16.7%	16	27.6%		

SUD Case Diagnosis								
Target diagnosis	106	96.4%	51	92.7%	42	84.0%	21.47 (4)	<.001
PTSD diagnosis	0	0.0%	2	3.6%	8	16.0%		
Other diagnosis	4	3.6%	2	3.6%	0	0.0%		
SUD Case Treatment								
Target treatment	71	64.5%	35	63.6%	19	38.0%	20.88 (4)	<.001
PTSD treatment	3	2.7%	4	7.3%	11	22.0%		
Other treatment	36	32.7%	16	29.1%	20	40.0%		

*Note.* Target indicates the specific diagnosis or treatment most appropriate for the clinical presentation in the vignette. OCD: Obsessive-Compulsive Disorder; SUD: Substance Use Disorder, PTSD: Post-Traumatic Stress Disorder.

Results for the OCD case indicated that diagnostic choices (both target diagnosis and PTSD diagnosis) were significantly associated with trauma exposure type ( $p < .001$ ). Specifically, there was greater evidence of bias (i.e., decreased selection rates of OCD diagnosis and increased selection rates of PTSD diagnosis) in cases of sexual trauma (45.8% OCD, 42.4% PTSD) compared to physical trauma (63.6% OCD, 18.2% PTSD) and compared to no trauma (84.7% OCD, 0.8% PTSD). Treatment choice was significantly associated with trauma exposure type in the OCD case ( $p < .05$ ). There was greater indication of bias (i.e., decreased selection rates of OCD treatment and increased selection rates of PTSD treatment) in cases of sexual trauma (43.1% ERP, 29.3% CPT) compared to physical trauma (63.0% ERP, 20.4% CPT) and compared to no trauma (66.7% ERP, 14.5% CPT).

In the SUD case, results indicated that diagnostic choices were significantly associated with trauma exposure type ( $p < .001$ ). There was greater evidence of bias (i.e., decreased

selection rates of SUD diagnosis and increased selection rates of PTSD diagnosis) in vignettes with sexual trauma (84.0% SUD, 16.0% PTSD) compared to vignettes with physical trauma (92.7% SUD, 3.6% PTSD) and compared to vignettes with no trauma (96.4% SUD, 0.0% PTSD). Notably, the overall degree of bias was less pronounced in the SUD case (16.0% selected PTSD diagnosis in the sexual trauma case) compared to the OCD case (42.4% selected PTSD diagnosis in the sexual trauma case). Treatment choices were also significantly associated with trauma exposure type in the SUD case ( $p < .001$ ). Results indicated the strongest evidence for the bias (i.e., decreased selection rates of SUD treatment and increased selection rates of PTSD treatment) in vignettes with sexual trauma (38.0% MI, 22.0% CPT) compared to vignettes with physical trauma (63.6% MI, 7.3% CPT) and vignettes with no trauma (64.5% MI, 2.7% CPT). Overall, the forced choice results for the SUD case indicate a stronger degree of bias in vignettes with sexual trauma, with minimal differences between the physical trauma and no trauma cases.

### Target score

Table 4 reports the chi-square analyses based on target score.

**Table 4.**

*Target Score by Case and Trauma Type*

	Trauma Type						$X^2(df)$	$p$
	No Trauma		Physical Trauma		Sexual Trauma			
	$n$	%	$n$	%	$n$	%		
OCD Case							24.78 (4)	<.001
No correct decisions	15	12.8%	13	24.1%	27	46.6%		
One correct decision	27	23.1%	13	24.1%	10	17.2%		

Both correct decisions	75	64.1%	28	51.9%	21	36.2%		
SUD Case							18.23 (4)	.001
No correct decisions	3	2.7%	1	1.8%	8	16.0%		
One correct decision	37	33.6%	22	40.0%	23	46.0%		
Both correct decisions	70	63.6%	32	58.2%	19	38.0%		

*Note.* Target Score reflects the cumulative score corresponding to the number of target choices.

For both the OCD and SUD cases, chi-square analysis indicated that target scores were significantly associated with trauma type ( $ps < .01$ ). Clinicians made more correct diagnostic and treatment decisions (target score = 2) in cases with no trauma history (64.1% OCD case, 63.6% SUD case), compared to cases with a physical trauma history (51.9% OCD case, 58.2% SUD case), and cases with a sexual trauma history (36.2% OCD case, 38% SUD case). Similar to previous results, evidence of the bias was strongest in cases with sexual trauma present, though physical trauma cases also evidenced greater bias than cases with no trauma.

### **Discussion**

The current study is the first to evaluate the presence of trauma-related diagnostic overshadowing bias in adult cases. Using a vignette-based experimental design, our findings indicate the presence of this bias in our sample of mental health professionals. Across different measurement approaches (Likert ratings and forced choice ratings), clinicians were less likely to select a diagnosis or treatment that was based on the target symptom presentation and more likely to select a PTSD diagnosis and trauma treatment when a trauma history was present compared to when no trauma history was present. This was the case even though our vignettes

indicated that the trauma occurred after the onset of the primary clinical symptoms. We were also careful to ensure that our symptom descriptions were specific to each diagnosis and did not include symptoms indicative of a PTSD diagnosis. Effect sizes varied in magnitude, but the largest effect sizes were found for PTSD diagnosis (large effects) and PTSD treatment ratings (medium to large effects), for both the OCD and SUD cases. Our results are consistent with previous research on trauma-related diagnostic overshadowing using vignettes that focused on youth (Becker-Haimes et al., 2021). Thus, our finding may suggest evidence for the stability of this bias across developmental periods. Given the noted role of developmental timing in the etiology of PTSD, the stability of this bias in clinical decision-making would be notable.

Our results showed that the bias was consistently strongest in cases with sexual trauma compared to cases with no trauma. This finding is similar to that of previous work on trauma-related diagnostic overshadowing in youth samples (Becker-Haimes et al., 2021). Findings were less robust for vignettes that involved physical trauma. Some analyses using Likert ratings showed differentiation between the physical trauma and no trauma cases, but other analyses using forced choice ratings did not reveal much differentiation between physical trauma and no trauma cases. These findings suggest that the nature of the trauma can affect diagnostic overshadowing. One possibility is that factors associated with an increased risk of PTSD may increase clinician bias as clinicians are using these probabilities to determine the likelihood of a potential diagnosis. Sexual trauma has been shown to be more traumatogenic than non-interpersonal traumas, such as the motor vehicle accident that was used in the physical trauma vignette for this research (Kessler et al., 2017; Tolin & Foa, 2006). Further exploration of trauma-related diagnostic overshadowing exploring different trauma types is needed including



singular versus multiple events, acute versus chronic events, and different types of exposures (e.g., natural disaster, events involving serious injury, combat).

Differences in results also occurred as a function of symptom presentation, with stronger evidence of bias in the OCD case, compared to the SUD case. Differences in findings across OCD and SUD cases may indicate that trauma-related diagnostic overshadowing varies as a function of condition and presentation, which has been alluded to in previous studies (Becker-Haimes et al., 2021; Reynolds 1998). Clinicians may recognize certain disorders as more likely to be comorbid with trauma, such as SUD, compared to other disorders that may be more likely to be overshadowed (e.g., OCD). It is also possible that mental health disorders that are viewed as more acute may lead to less diagnostic overshadowing because the clinician views the target symptoms as the most acute concern. These differences necessitate future research to understand the role of the primary condition and presentation in trauma-related diagnostic overshadowing.

There are several limitations to consider when interpreting our results. The use of professional networks and list-servs to recruit participants may not capture a representative sample of practicing mental health clinicians. The fact that clinicians were randomized to conditions suggests that selection bias did not affect the results of our study. However, future work may benefit from more diverse and representative sampling methods. Diagnostic overshadowing work has largely employed the use of experimental vignettes; however, it is unclear if this experimental approach translates to decisions that clinicians make in practice, particularly when they can do further assessment. The use of more in-depth vignettes along with experimentally manipulated quantitative measurements common in the clinical assessment process may present a more comprehensive profile for engaging in more realistic diagnostic and treatment decision-making. It is also possible that doing mock assessments with clinicians would

be a better way of evaluating the extent to which a trauma history affects diagnostic and treatment decisions. Expanding this paradigm to include opportunities for respondents to explain their decision-making (i.e., open-ended response items, qualitative interviews) may also provide a more thorough understanding of this bias and how to mitigate it. We only focused on two target conditions in our study and kept the client age and race consistent in all cases to ensure that these factors did not impact diagnosis/treatment ratings. Therefore, replication using other case presentations will be important to understand the stability of this bias.

Despite these limitations, the findings of this study have important implications for how we assess and treat individuals exposed to trauma, which is a large majority of the adult population in the United States (Kilpatrick et al., 2013). Trauma history is an important part of psychological assessment (SAMHSA, 2014), and the results here should not be perceived to disagree with that. Moreover, there has been a movement towards trauma-informed care (SAMHSA, 2014), in which clinicians should recognize and respond to the signs, symptoms, and risks of trauma to improve client engagement and better meet client needs. However, trauma-informed care does not suggest that clinicians should always diagnose and treat PTSD or trauma when a trauma history is present. Our findings suggest that the diagnosis and treatment of PTSD require greater discernment when trauma history is present. This may be particularly relevant when working with populations with high trauma exposure such as adults from communities with high levels of violence, veterans, and refugees (Kessler et al., 2017). Improving clinical decision-making with trauma-exposed individuals can be accomplished through training opportunities throughout a clinician's career. Preventing this bias through evidence-based assessment training informed by diagnostic standards is particularly important in early training to form a strong clinical foundation that will mitigate this bias.

Our findings point to several important directions for future research. Specifically, there are myriad factors that could moderate trauma-related diagnostic overshadowing bias that warrant future study. As previously noted, we purposefully designed our vignettes such that trauma exposure occurred after the onset of the primary symptoms. However, trauma exposure could precede symptoms and still be unrelated. Thus, it is possible that our approach underestimated the bias in these cases. It is also possible that provider characteristics may play a role in the expression of trauma-related diagnostic overshadowing. Previous work has demonstrated mixed evidence for provider-related moderators of diagnostic overshadowing (Jopp & Keyes 2001; Spengler 1990); however, this has yet to be explored with trauma-related diagnostic overshadowing, and specifically in adult cases. Finally, further research could develop and assess methods for mitigating this bias, potentially drawing from extant debiasing interventions (O’Sullivan & Schofield, 2018). Given evidence of the presence and strength of trauma-related diagnostic overshadowing in adult experimental cases, future work is clearly needed to elucidate its impact and implications in clinical practice.

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