Trauma Exposure and Undetected Post-Traumatic Stress Disorder (PTSD) among Adults with a Mental Disorder

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Abstract

Background: Trauma exposure and post-traumatic stress disorder (PTSD) are common among individuals with a mental disorder, but symptoms often go undetected and untreated.

Methods: The aim of this study was to determine the prevalence of PTSD among a large sample of adults with psychiatric diagnoses and to establish factors associated with symptoms going undetected. Participants were 1946 adults recruited by the National Centre for Mental Health (NCMH). Structured interviews and validated self-report questionnaires were used to ascertain clinical and demographic information for analysis.

Results: The prevalence of participants screening positive for significant PTSD symptoms that had not been detected by clinical services was 13.9% [12.4%-15.5%, 95% CI]). Factors associated with undetected PTSD were female gender; younger age of first contact with psychiatric services; and lower household income. Especially poor rates of detection were observed after traumatic events such as child abuse and sexual assault.

Conclusions: Our findings demonstrate the need for routine assessment of trauma histories and symptoms of PTSD among individuals with any mental disorder.

Introduction

Epidemiological research suggests that 60% of men and 50% of women experience at least one serious traumatic event through the course of their lives (Kessler, Sonnega et al. 1995). The lifetime prevalence of trauma exposure is higher still among individuals with a mental disorder (Mueser, Goodman et al. 1998, Switzer, Dew et al. 1999, McFarlane, Bookless et al. 2001, Howgego, Owen et al. 2005, Cusack, Grubaugh et al. 2006, Mc Farlane, Schrader et al. 2006, Ford and Fournier 2007). This may be indicative of an aetiological role of trauma in the development of disorders such as schizophrenia and bipolar disorder (Read, Perry et al. 2001, Etain, Henry et al. 2008). It is also a likely consequence of individuals with mental disorders being more at risk of traumatic events such as interpersonal violence and victimisation (Mueser, Rosenberg et al. 2002). Previous studies have reported rates of trauma exposure among individuals with serious mental illnesses that range from 49 to 100% within study samples, including a high prevalence of traumatic events like physical and sexual assault (Grubaugh, Zinzow et al. 2011). The elevated risk of trauma exposure, combined with shared vulnerability factors for the development of PTSD and other psychiatric disorders results in an increased risk of PTSD for those with other primary mental health diagnoses (Mueser, Rosenberg et al. 2002, Grubaugh, Zinzow et al. 2011). Despite these findings, PTSD often goes undetected and untreated in this population due to symptom overlap and a tendency for clinicians not to fully examine traumatic stress symptoms during clinical assessment (Mueser, Goodman et al. 1998). This represents a significant clinical concern, given that undetected PTSD is associated with higher rates of mental and physical health problems; greater use of general medical and psychiatric services; higher levels of alcohol and substance misuse; and a poorer long-term prognosis (Mueser, Rosenberg et al. 2002, Howgego, Owen et al. 2005, Ford and Fournier 2007, Lommen and Restifo 2009, Grubaugh, Zinzow et al. 2011). Previous studies have reported elevated rates of undetected PTSD among individuals with primary diagnoses such as schizophrenia and bipolar disorder (Mueser, Rosenberg et al. 2002, Howgego, Owen et al. 2005, Ford and Fournier 2007, Lommen and Restifo 2009, Grubaugh, Zinzow et al. 2011), but sample sizes have generally been small, and few studies

have sought to establish factors associated with the disorder going undetected. We used data collected by the National Centre for Mental Health (NCMH) to examine the prevalence of undetected PTSD in a large sample of adults with a history of mental disorder and to establish associated factors that may help predict the likelihood of undetected PTSD.

Method

Data source

Data was obtained from the NCMH, a Welsh Government-funded Research Centre that investigates neurodevelopmental and psychiatric disorders across the lifespan. The Centre is operated by Cardiff, Swansea and Bangor Universities, in partnership with NHS Health Boards across Wales. The cohort of participant volunteers includes individuals who have experienced a mental disorder as well as a smaller number of control participants who have not.

Participants were recruited using a variety of systematic approaches in primary and secondary health care services, including (a) the identification of potential participants by clinical care teams; and (b) screening of clinical notes. Non-systematic recruitment approaches included advertising in local/national media and engaging third-sector organisations to support and promote the research.

All adult participants with sufficient mental capacity provided written informed consent to participate. Trained researchers then administered a standardised interview assessment to ascertain details related to the participant's personal and family history of mental illness. Participants were given a pack of validated self-report questionnaires to complete and return to the research team after the initial assessment.

Sample

The sample for analysis consisted of all adults with a current or past diagnosis of a mental disorder over the age of 18, who had taken part in a standardised face-to-face interview assessment and completed the Trauma Screening Questionnaire (TSQ) (Brewin, Rose et al. 2002) as part of a questionnaire pack that was posted back to the research team, usually within two weeks of the assessment. The questionnaire pack was given to 3524 out of 4024 adult participants who had sufficient capacity to consent for themselves and complete self-report questionnaires. The questionnaire pack was returned by 2001 (57%) participants, of which 1946 had a diagnosis (current or past) of a mental disorder.

Measures

Demographic and clinical variables

Information was collected by means of a standardised face-to-face interview assessment. This included information on gender; ethnicity; qualifications; employment; household income; alcohol and illegal drug use; diagnoses of mental disorders; age of first contact with mental health services; family history of mental disorder; and the number of admissions to psychiatric hospitals. Participants were asked to self-report if they had been given any psychiatric diagnoses by a health professional. Where uncertainty surrounded a diagnosis, this was verified with the individual's clinical care team if appropriate consent had been given to do so.

Trauma exposure and PTSD

Trauma exposure and PTSD symptoms were assessed using a self-report questionnaire provided at the time of the interview assessment and returned by post. Participants were asked whether they had ever experienced a 'major' traumatic event and, if so, were asked to provide more information. To take a conservative approach to the assessment of PTSD symptoms and to anchor reported traumatic stress symptoms to a single traumatic event, exposure to traumatic events was assessed

by means of the free-text question: 'What is the worst traumatic event you have experienced in your life?' The descriptions of traumatic events were coded against a list of traumas compiled from the Life Events Checklists for DSM-5 (LEC) (Weathers 2013), with the addition of some additional traumatic events reported by the cohort that were not covered by the LEC (for example, suicide attempts). This resulted in 23 traumatic events (see supplemental table 1) that were categorised into 6 composite categories (assaultive violence; life-threatening illness or injury; witnessing death or life-threatening illness/injury; death of a child/grandchild; other injury or traumatic event; learned-about traumas). DSM-5 non-qualifying events were also coded and these included: non-life-threatening events; death of a partner; death of a parent; death other than parent/partner/child/grandchild; divorce/separation/child custody. When participants reported multiple events, the first listed trauma was taken as the 'worst' event. Two researchers independently coded each of the descriptions. If coders disagreed on any of the classifications, this was discussed with a third researcher and a consensus was reached.

All participants who reported a traumatic event completed the TSQ (Brewin, Rose et al. 2002), a valid and reliable tool used to screen for PTSD (Brewin, Rose et al. 2002). The TSQ was used to assess traumatic stress symptoms that had occurred at least twice in the past week. A cut-point off score of 6 was used, i.e. participants were required to self-report the occurrence of at least 6 symptoms occurring at least twice in the past week. Participants were considered to have significant undetected PTSD symptoms if they described a DSM-5 criterion-A fulfilling stressor for PTSD and a positive screening score according to the TSQ was obtained. Four groups were created to explore traumatic events and PTSD within the cohort: (1) Those with a lifetime diagnosis of PTSD who screened positive for the disorder (current detected PTSD); (2) those with a lifetime diagnosis of PTSD who did not screen positive for the disorder (past PTSD); (3) those without a lifetime diagnosis of PTSD who screened positive for the disorder (undetected PTSD) and (4) those without a lifetime diagnosis of PTSD who did not screen positive for the disorder (no PTSD).

Statistical procedures

After ascertaining the prevalence of significant undetected PSTD symptoms (according to the TSQ) within the cohort, rates were compared according to demographic and clinical characteristics, type of traumatic event, and primary self-reported psychiatric diagnosis. Differences in demographic characteristics were analysed with chi-square tests or one-way ANOVAs, as appropriate, to evaluate whether any differences were associated with undetected PTSD. To explore whether specific types of trauma exposure were more strongly associated with undetected PTSD than others, a chi-square test was conducted to examine the type of 'worst trauma' categorised into groups for those with significant undetected PTSD symptoms compared to rates in the other groups. Finally, to explore whether frequency of those with undetected-PTSD symptoms was higher in certain disorders than others, percentages by group were calculated and differences compared using chi-square.

Results

Trauma exposure

796 (40.9% [38.7% – 43.1%, 95% CI]) participants reported a DSM-5 PTSD qualifying traumatic event. The most commonly reported 'worst' traumas were childhood abuse (7.5%), transportation accidents (4.3%) and sexual assault (4.0%).

PTSD prevalence

438 (23%) participants screened positive on the TSQ. 247 (13%) reported a diagnosis of PTSD by a clinician. 169 (9%) both screened positive and reported a PTSD diagnosis. 78 (4%) reported a PTSD diagnosis but did not screen positive on the TSQ. 271 individuals screened positive on the TSQ but did not report a clinician PTSD diagnosis, i.e. the likely prevalence of undetected PTSD within the cohort was 13.9% [12.4%-15.5%, 95% CI]. A subgroup analysis explored whether the prevalence was higher among participants who were recruited into the study systematically via the NHS (n = 920) versus those who were recruited non-systematically from the general population (n=1026). The

percentage with undetected PTSD according to the TSQ in the group recruited from the NHS was 15% (n=134) and in the non-systematically recruited group 13% (n=137) (p=0.441).

Demographic and clinical characteristics

The distribution of demographic and clinical characteristics in relation to undetected PTSD compared to detected PTSD (both current and past) is summarised in Table 1. There was strong evidence that undetected PTSD was more prevalent in females than males (p = 0.003). Undetected PTSD was not associated with age (p = 0.210), but there was strong evidence that those with a younger age of first contact with psychiatric services were more likely to have undetected PTSD (p = 0.004). There was no evidence of a difference in the prevalence of undetected PTSD according to lifetime occupational attainment (p = 0.311), but there was for family income (p = 0.018), with undetected PTSD being more common in individuals with a lower income. There was some evidence that undetected PTSD was more prevalent among those with a lower level of educational attainment (p = 0.007). We were unable to examine whether prevalence of undetected PTSD varied by ethnicity since over 99% of the sample were categorised as being White Caucasian.

There was no evidence of a difference between detected and undetected PTSD in terms of history of alcohol use disorder (p=0.844), substance use disorders (p=0.141), number of involuntary admissions to psychiatric hospital (p = 0.3309) or family history of PTSD (p=0.338).

Table 1: Frequency (percentage) or mean (range) of demographic and clinical characteristics in individuals with undetected PTSD compared to those with self-reported clinician diagnosis (past or current) PTSD

Psychiatric diagnoses

There was evidence that the prevalence of undetected PTSD varied across diagnostic groups (p=0.003) (Table 2). The prevalence of undetected PTSD was highest among those with a personality disorder (27.8% (19.2-37.9)). The prevalence of both detected and undetected PTSD were high among this diagnostic group. The prevalence of undetected PTSD was also high among those with a

primary diagnosis of an anxiety disorder (16.5% (13.8-19.6)), bipolar disorder (14.5% (11.4-18.1)), a

psychotic disorder (16.7% (12.7-21.3)) or a depressive disorder (16.0% (13.8-18.3)). The greatest

differences between the prevalence of detected versus undetected PTSD were found for bipolar

disorder, psychotic disorders and personality disorders.

Table 2: Frequency and percentage (95% confidence intervals) of detected or undetected PTSD within each diagnostic category

Trauma types

There was a strong relationship between PTSD and trauma grouping (p < 0.001) (see table 3). The

most common trauma type for both the detected and undetected PTSD groups was assaultive

violence, though this represented a higher proportion of the trauma types for the undetected PTSD

(45%) compared to the detected PTSD group (36%). 23.25% of the cases of undetected PTSD were

accounted for by child abuse (see supplementary table 1). The other specific traumas most strongly

associated with undetected PTSD were sexual assault (8.12% of undetected PTSD cases) and

domestic abuse (7.75% of cases) (both categorised as assaultive violence) and transportation

accidents (7.38% of cases) (categorised as other injury or traumatic event). The other trauma types

that were substantially more common in those with undetected PTSD compared to those with

detected PTSD included death of a child or grandchild (5.17% vs 1.68), and witnessing an illness or

death in someone close (5.90% vs 0.42).

Table 3: Frequency and percentage of types of traumatic event within detected or undetected PTSD groups

Discussion

Main findings

Exposure to a PTSD qualifying traumatic event was reported by 40% of participants and the prevalence of participants screening positive for significant PTSD symptoms on the TSQ was 22%. These rates are lower than those reported many previous studies of individuals with mental disorders and is also slightly lower than many of the population-based studies conducted in the United States (1, 22). This may be reflective of the sample being drawn from the United Kingdom (1, 22). It may also be a consequence of the stringent approach taken to the determination of trauma exposure. Participants were asked whether they had experienced what they perceived to be a 'major' traumatic event and were only required to elaborate if a positive response was given. This may have resulted in underreporting of events that met theoretical criteria for PTSD on the basis that participants did not perceive the event to be 'majorly traumatic'.

Further analysis revealed that 13% of the cohort had significant undetected PTSD symptoms (i.e. participants screened positive for PTSD on the TSQ, but did not report a diagnosis of the disorder). This suggests that PTSD symptoms are commonly missed by healthcare services. This prevalence is lower than reported by many of the smaller studies to date, which largely focused on complex populations, such as inpatients, veterans and individuals with substance use disorders (Dansky, Roitzsch et al. 1997, Calhoun, Stechuchak et al. 2007, Bonn-Miller, Bucossi et al. 2012). These findings are more in keeping with the smaller number of large-scale studies that included a more representative sample of individuals with a mental disorder (Tagay, Herpertz et al. 2005, de Bont, van den Berg et al. 2015). The estimate of undetected PTSD within the cohort is likely to indicate a more accurate and realistic estimate of the rates of undetected PTSD among a broader population of individuals with a mental disorder. Nonetheless, the findings suggest that PTSD symptoms are common among individuals with a mental disorder and that PTSD is often overlooked.

This work went further than previous studies to indicate factors associated with undetected PTSD. It was found that female gender; younger age of first contact with psychiatric services and lower household income were associated with undetected PTSD symptoms.

In terms of the gender difference, males and females within the cohort had a similar prevalence of PTSD, which contrasts with findings from the general population (Kessler, Sonnega et al. 1995), but is consistent with findings from populations of persons with a mental disorder (Grubaugh, Zinzow et al. 2011). Despite comparable rates of PTSD symptoms were more likely to go undetected in females. This may be due, at least in part, to females reporting a greater proportion of 'worst' traumas such as childhood abuse and sexual assault, which were associated with poor rates of detection. Lower age of first contact with psychiatric services was associated with higher rates of PTSD and lower rates of detection, but this may be indicative of a more severe or complex course of mental disorder, which may in turn increase the likelihood of undetected PTSD symptoms.

Also in keeping with findings from the general population, undetected PTSD symptoms were associated with poorer socio-economic status, as indicated by lower household income and lower levels of educational attainment. Rates of probable PTSD and its detection were not associated with the number of involuntary admissions to psychiatric hospital. In terms of trauma type, undetected PTSD was commonly associated with traumas such as childhood abuse and sexual assault. This may be indicative of events that individuals have a reluctance to divulge and that clinicians are wary to ask about. Undetected PTSD symptoms were uncommon after combat exposure, perhaps due to more routine screening for PTSD in this population.

Strengths and limitations

To our knowledge, this is the largest study to date to explore factors associated with undetected PTSD symptoms within a cohort of individuals with a broad range of mental disorders. Since previous studies have largely been conducted in the US, this research highlights that undetected PTSD symptoms are equally a problem in the UK, and hence likely so in other countries. We included a broad spectrum of participants with a range of diagnoses, varying in terms of complexity and severity. This gives a more general estimate of the likely extent of undetected PTSD in psychiatric settings than studies focused on small samples of participants with specific diagnoses such as substance use disorder. Unlike other studies, we anchored the screening tool to specific traumatic events, which were judged by two researchers independently to determine whether or not they met DSM-5 criteria for a PTSD qualifying event.

There were a number of limitations. Firstly, we did not administer a standardised interview such as the Clinician Administered PTSD Scale (CAPS). However, the TSQ has been shown to be a valid and reliable way to screen for the disorder, demonstrating high levels of sensitivity and specificity when using a cut-off score of 6 (Brewin, Rose et al. 2002). Secondly, the wide-ranging recruitment strategies used to build the cohort make it difficult to estimate the non-response rate of the study. Thirdly, participants were asked to self-report diagnoses of PTSD by a health professional. It is possible that the true frequency of PTSD diagnoses documented in medical records was underreported. Equally, the study only screened for current PTSD symptoms and the rates of undetected past-PTSD are therefore unknown. The TSQ was anchored to only one traumatic event. The impact of multiple traumas was not therefore explored and the extent of symptoms may have been under-reported. It is also possible that some of the symptoms endorsed by participants were features of their primary mental illness rather than comorbid PTSD. Further, it should be noted that screening negative on the TSQ does not necessarily equate to not meeting criteria for PTSD. That said, a high number of false negatives is unlikely, given the reliability and validity of the TSQ as a

screening instrument. Studies using diagnostic measures of PTSD and more robust methods of

ascertaining diagnoses from clinical teams and the addition of a measure of screening for lifetime

PTSD would be desirable.

Clinical implications

The high prevalence of participants who reported significant PTSD symptoms on the TSQ but did not

report a clinical diagnosis, suggest that traumatic stress symptoms are often overlooked by mental

health services. This is an issue that has been documented and highlighted as clinically problematic

for decades, yet rates of PTSD detection remain far from adequate within mental health services.

Prevalence of undetected PTSD varied across primary diagnoses and was highest for personality

disorders (27.8%). It is surprising that trauma histories are not routinely explored and that PTSD is

not screened for, given that individuals with comorbid mental disorders and PTSD are likely to

exhibit a poorer prognosis and increased use of general medical and mental health services

(Grubaugh, Zinzow et al. 2011). Trauma exposure and post-traumatic stress symptoms may be

precipitating, maintaining or exacerbating factors whatever mental health issue an individual

presents with and are important to include in biopsychosocial formulations and to inform

appropriate management plans.

There are many possible reasons for the high frequency of undetected PTSD. A contributing factor

may be that individuals with a mental disorder attribute symptoms to their primary diagnosis and do

not seek specific treatment or support for PTSD. It may also be the case that clinicians misdiagnose

or find difficulty in disentangling traumatic stress symptoms from the more salient symptoms of the

primary mental disorder. For example distinguishing complex PTSD from borderline personality

disorder can be difficult as problems with emotion regulation, affective instability, and disturbed

self-concept are characteristic of both, whilst frequent flashbacks and re-living during dissociative

episodes that can occur in PTSD can be classed as psychotic phenomena if the clinician is unaware of the trauma context in which these experiences arise.

Under-detection may also stem from the previously advocated notion of a hierarchical diagnostic system, whereby diagnoses lower in the hierarchy are not made if higher level diagnoses are indicated (Foulds and Bedford 1975). Additionally, previous studies have reported that clinicians are often reluctant to discuss traumatic events for fear of complicating or exacerbating symptoms (Frueh, Cusack et al. 2006). This is compounded by documented evidence that PTSD diagnosis in psychiatric settings is positively related to clinician confidence in the ability to effectively treat traumatic stress symptoms (Salyers, Evans et al. 2004).

Although there are effective treatments for PTSD and clear guidelines for its management, the majority of the studies that inform current guidance exclude individuals with comorbidities such as severe depression, psychosis and substance abuse (Bisson, Roberts et al. 2013). However, novel treatments for complex presentations of PTSD have been developed and there is evidence to support the efficacy of these interventions (Cloitre, Courtois et al. 2011). Increasing clinician confidence in their ability to ask about trauma history and offer appropriate evidence-based treatment may reduce the issue of undetected PTSD. This work indicates the continued and pressing need to identify individuals with trauma histories and PTSD and improve patient outcomes. Routine screening seems warranted given that PTSD is a treatable but commonly missed disorder. Validated diagnostic tools exist that enable detection of the disorder easily and quickly.

Research Implications

Future work should seek to disentangle the complex relationship between PTSD and other mental disorders, in order to determine how the effect is mediated and whether it differs cross-diagnostically. Since trauma exposure and undetected PTSD among individuals with a mental

disorder are common and remain understudied, it is necessary to determine the extent of the problem amongst different diagnostic groups and across different clinical settings to establish indicators that may help predict those at greatest risk, where screening might be particularly important. Further research using longitudinal designs is needed to unravel the intricate issues of cause and effect; to determine factors underlying comorbidity; and to explore the long-term implications of undetected PTSD. While trauma focused psychological interventions show promise for the treatment of comorbid traumatic stress symptoms, we know less regarding the direct and indirect effects of these interventions on symptoms of depression and psychosis (Grubaugh, Zinzow et al. 2011). Further work is needed to evaluate, develop and disseminate appropriate treatments for comorbid PTSD. Suboptimal PTSD detection rates within mental health services currently pose a significant barrier to effective intervention and unnecessarily add to the burden of mental disorder.

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Tables

Table 1: Frequency (percentage) or mean (range) of demographic and clinical characteristics in individuals with undetected PTSD compared to those with self-reported clinician diagnosis (past or current) PTSD

Variable	Detected PTSD (current and past) (N = 247)		Undetected PTSD (N = 271)		P value
	N (%) or mean (range)		N	%	
Gender					
Male	112	(45.3%)	90	32.1%	0.002
Female	135	54.7%	190	67.9%	
Age	48.1 *[46.5-49.7]*		49.7 *[48.0-51.4]*		0.023
Age of first contact with psychiatric services	32.85 *[31.0-34.7]*		28.96 *[27.1-30.8]*		0.004
Highest level of qualification					
None/less than equivalent to GCSE	38	15.8%	82	30.9%	0.007
GCSE or equivalent	85	35.3%	72	27.2%	
A level or equivalent	62	25.7%	66	24.9%	
Degree or above	56	23.2%	45	17.0%	
Professional occupation (lifetime)					
Yes	63	25.9%	59	22.1%	0.311
No	180	74.1%	208	77.9%	
Approximate gross household income					
Up to £10,000	69	32.2%	93	42.5%	0.018
£10,000 - £20,000	63	29.4%	69	31.5%	
£20,000 - £30,000	34	15.9%	20	9.1%	
Over £30,000	48	22.4%	37	16.9%	
Family history of PTSD					
Yes	24	10.5%	21	8.0%	0.338
No	205	89.5%	242	92.0%	
History of alcohol use disorder					
Yes	34	13.9%	36	13.3%	0.844
No	211	86.1%	235	86.7%	
History of drug use disorder					
Yes	12	4.9%	22	8.1%	0.141

No	233	95.1%	249	91.9%	
Number of involuntary admissions to psychiatric hospital	1.37 (0 - 48)	1.81 (0 - 72)			0.331

Table 2: Frequency and percentage (95% confidence intervals) of detected or undetected PTSD within each diagnostic category

	Detected PTSD (current and past)		Undetected PTSD		Total	P value
Primary Diagnosis	**N**	**%**	**N**	**%**	**N**	
Anxiety Disorder	71	10.8% (8.5–13.4)	109	16.5%(13.8-19.6)	180	
Autistic Spectrum Disorders and Learning Disabilities	3	5.3% (1.1-14.6)	5	8.8% (2.9-19.3)	8	
Bipolar Disorder	22	4.9% (3.1-7.3)	65	14.5% (11.4-18.1)	87	
Schizophrenia and other Psychotic Disorders	15	4.8% (2.7-7.8)	52	16.7% (12.7-21.3)	67	0.003
Depressive Disorder	134	12.6% (10.7-14.8)	170	16.0% (13.8-18.3)	304	
Personality Disorder	15	15.5% (8.9-24.2)	27	27.8% (19.2-37.9)	42	
Other	8	6.8% (3.0-12.9)	19	16.1% (10.0-24.0)	27	

Table 3: Frequency and percentage of types of traumatic event within detected or undetected PTSD groups

	Detected PTSD		Undetected PTSD		Significance
Traumatic event	**Freq**	**%**	**Freq**	**%**	
Assaultive violence	89	36.0%	122	45.0%	
Other injury or traumatic event	71	28.7%	53	19.6%	
Witnessing death or illness	13	5.3%	28	10.3%	
Death or child/ grandchild	7	2.8%	23	8.5%	$p < 0.001$
Life threatening illness or injury	9	3.6%	14	5.2%	
Learned-about traumas	8	3.2%	31	11.4%	
DSM-5 non-qualifying events	22	8.9%	0	0	
Not divulged/missing	28	11.2%	0	0	

Supplemental material

Supplementary table 1: Frequency and percentage of types of traumatic event within detected or undetected PTSD groups

Traumatic event	Detected PTSD		Undetected PTSD	
	Freq	%	Freq	%
Assaultive violence				
Physical assault/threatened physical assault	16	6.72	16	5.90
Sexual assault or other unwanted sexual contact	25	10.50	22	8.12
Child abuse	39	16.39	63	23.25
Domestic abuse	9	3.78	21	7.75
Other injury or traumatic event				
Natural or manmade disaster/terrorism	2	0.84	4	1.48
Other serious accident [a]	8	3.36	5	1.85
Transportation accident/incident	23	9.66	20	7.38
Traumatic childbirth	2	0.84	3	1.11
Causing death or injury to another	1	0.42	0	0.00
Combat exposure/exposure to a war zone	32	13.45	3	1.11
Other life threatening traumatic events [b]	2	0.84	3	1.11
Suicide attempt	1	0.42	15	5.54
Witnessing death or illness				
Witnessed violent or unexpected death	7	2.94	4	1.48
Witnessed illness and death of someone close	1	0.42	16	5.90
Finding a loved one dead	2	0.84	3	1.11
Witnessing life threatening injury/accident/medical	2	0.84	3	1.11
Witnessing violence/attack	1	0.42	1	0.37
Death of child/ grandchild				
Death of child or grandchild	4	1.68	14	5.17
Miscarriage/ still born/ death of new born	3	1.26	9	3.32
Life threatening illness or injury				
Life threatening illness or injury	9	3.78	14	5.17
Learned about traumas				
Learned about: sexual assault	1	0.42	4	1.48
Learned about: transportation accident/other accident	1	0.42	9	3.32
Learned about: violent or accidental death of someone close	0	0	0	0
DSM V non-qualifying events				
Mental illness/breakdown/inpatient experiences/psychotic	**2**	0.84	0	0.00
Learned about: life threatening illness or injury/suicide attempt	2	0.84	0	0.00
Other non-life threatening traumatic events	7	2.94	0	0.00
Death of parent	2	0.84	0	0.00
Death other than parent/partner/child/grandchild or an	7	2.94	0	0.00
Divorce/ separation/ custody	2	0.84	0	0.00