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Prevalence and correlates of self-stigma in Post-Traumatic Stress Disorder (PTSD)

Catrin Lewis a,b, Stan Zammit a,b, Ian Jones a and Jonathan I. Bisson a

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ABSTRACT

Background: Self-stigma refers to the internalisation of negative societal views and stereotypes. Self-stigma has been well-characterised in the context of mental disorders such as schizophrenia but has received little attention in relation to post-traumatic stress disorder (PTSD).

Objective: This work aimed to determine the prevalence of self-stigma in a sample of adults with PTSD and to establish factors associated with the internalisation of stigma in this population.

Method: Participants were 194 adults (mean age 46.07 (SD = 12.39); 64.4% female; 96.6% white Caucasian; residing in the UK), who self-reported a diagnosis of PTSD and currently screened positive for the disorder according to the PTSD Checklist for DSM-5 (PCL-5). Structured interviews and validated self-report questionnaires were used to ascertain clinical and sociodemographic information for analysis.

Results: The prevalence of self-stigma measured by the Internalized Stigma of Mental Illness Scale (ISMS) was 41.2% (95% CI 34.24–48.22). There was no evidence of an association between self-stigma and gender (β = −2.975 (95% CI −7.046–1.097) p = .151), age (β = 0.007 (95% CI −0.152–0.165) p = .953), sexual trauma (β = 0.904 (95% CI −3.668–5.476) p = .697), military trauma (β = −0.571 (95% CI −4.027–7.287) p = .571). Self-stigma was associated with lower income and higher levels of anxiety (β = 5.722 (95% CI 2.922–8.522) p = .001), depression (β = 6.937 (95% CI 4.287–9.588) p < .000), and traumatic stress symptoms (β = 3.880 (95% CI 1.401–6.359) p = .002).

Conclusions: The results indicate that self-stigma may be a significant issue among people with a diagnosis of PTSD. Further work is needed to understand the long-term impact and to develop interventions to address the internalisation of stigma in this population.

Prevalencia y correlatos del autoestigma en el Trastorno de Estrés Postraumático (TEPT)

Antecedentes: El autoestigma se refiere a la internalización de opiniones y estereotipos sociales negativos. El autoestigma ha sido bien caracterizado en los contextos de trastornos mentales como la esquizofrenia, pero ha recibido poca atención en relación al trastorno de estrés postraumático (TEPT).

Objetivo: Este trabajo tuvo como objetivo determinar la prevalencia del autoestigma en una muestra de adultos con TEPT y establecer los factores asociados con la internalización del estigma en esta población.

Método: Los participantes fueron 194 adultos (edad media 46,09 (DE = 12,39); 64,4% mujeres; 96,6% caucásicos blancos; que residían en el Reino Unido), quienes autoinformaron un diagnóstico de TEPT y que actualmente dieron positivo para el trastorno de acuerdo a la Lista de chequeo de TEPT para el DSM-5 (PCL-5). Se usaron entrevistas estructuradas y cuestionarios de auto-reporte validados para determinar la información clínica y sociodemográfica para el análisis.

Resultados: La prevalencia del autoestigma medido por la Escala de Estigma Internalizado de Enfermedad Mental (ISMS por sus siglas en inglés) fue de 41,2% (95% CI 34,24–48,22). No hubo evidencia de asociación entre estigma y género (β = −2,975 (95% CI −7,046–1,097) p = .151), edad (β = 0,007 (95% CI −0,152–0,165) p = .953), trauma sexual (β = 0,904 (95% CI −3,668–5,476) p = .697), trauma militar (β = −0,571 (95% CI −4,027–7,287) p = .571). El autoestigma se asoció con menor ingresos y mayores niveles de ansiedad (β = 5,722 (95% CI 2,922–8,522) p = .001), depresión (β = 6,937 (95% CI 4,287–9,588) p < .000) y síntomas de estrés traumático (β = 3,880 (95% CI 1,401–6,359) p = .002).

Conclusions: Los resultados indican que el autoestigma puede ser un problema importante entre las personas con un diagnóstico de TEPT. Se necesita más trabajo para comprender el impacto a largo plazo y desarrollar intervenciones que se dirijan a la internalización del estigma en esta población.

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Introduction

The stigma of mental illness is multifaceted, consisting of public stigma, which describes negative stereotypic views and beliefs held by society about individuals with a mental illness, and self-stigma, which refers to the internalisation of these invalidating beliefs (Corrigan, Watson, & Barr, 2006). The internalisation of these views is contingent upon the individual identifying with a stigmatised group and believing the stereotype to be valid (Corrigan, 2004; Corrigan et al., 2006). Self-stigma is said to arise from three associated processes, stereotype agreement, self-consciousness, and self-esteem decrements (Corrigan et al., 2006). Stereotype agreement involves endorsing perceived stereotypic views. Self-consciousness occurs when a person believes the stereotypes apply to them personally. Finally, those who internalise the stigma respond with self-esteem decrement and diminished self-efficacy (Berge & Ranney, 2005; Corrigan et al., 2006; Mills et al., 2020; Mittal et al., 2013). The definition of self-stigma encompasses a form of identity transformation that results in the loss of previously held positive self-beliefs (Yanos, Roe, Markus, & Lysaker, 2008). It is one of a range of reactions to the stigma of mental illness, with other responses including energisation, righteous anger, or the absence of an observable response (Corrigan & Watson, 2002).

Research has shown evidence of self-stigma across many different populations with lived experience of a wide range of mental disorders (Chang, Wu, Chen, & Lin, 2016; Maharjan & Panthee, 2019). A high proportion of self-stigma studies related to mental illness have focused on psychiatric disorders such as schizophrenia (Huang, Chen, Pakpour, & Lin, 2018; Lin, Chang, Wu, & Wang, 2016; Livingston & Boyd, 2010). The prevalence of self-stigma among those with schizophrenia spectrum disorder is in the region of 20%–50% (Brohan, Elgie, Sartorius, & Thornicroft, 2010; Gerlenger et al., 2013; Lien et al., 2018; Touriño et al., 2018) and among those with mood disorders, it has been estimated at around 22% (Brohan, Gauci, Sartorius, & Thornicroft, 2011). Self-stigma also appears to be an issue among those with drug and alcohol use disorders (Chang et al., 2019; Cheng et al., 2019; Hammarlund, Crapanzano, Luce, Mulligan, & Ward, 2018) and personality disorders (Dubreucq, Plasse, & Franck, 2021). Self-stigma has a significant negative impact on functional outcomes and leads to a marked increase in the societal burden of mental disorders (Tsang et al., 2016). It has been found to be associated with hopelessness (Dimitropoulos, McCullum, Colasanto, Freeman, & Gadalla, 2016; Lysaker, Roe, & Yanos, 2006; Touriño et al., 2018) and reduced quality of life (Livingston & Boyd, 2010; Yen et al., 2009). It undermines empowerment (Vauth, Klein, Wirtz, & Corrigan, 2007), reduces the likelihood of help-seeking (Vogel, Wade, & Haake, 2006), and negatively impacts adherence to treatment (Carrara & Arena Ventura, 2018; Livingston & Boyd, 2010), thereby acting as a significant barrier to recovery (Dimitropoulos et al., 2016; Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001). Understanding self-stigma is key to reducing its pervasive impact.

Despite the detailed characterisation of self-stigma in the context of disorders such as schizophrenia, we know little in relation to post-traumatic stress disorder (PTSD). To date, self-stigma studies in the traumatic-stress field have focused on military populations (Bonfils et al., 2018; Harris et al., 2015; Mittal et al., 2013). A qualitative study of treatment-seeking veterans with PTSD revealed some degree of self-stigma and a reluctance to seek treatment to circumvent a label of PTSD; however, study participants were predominantly able to resist the internalisation of stigma after engagement in therapy for their traumatic stress symptoms (Mittal et al., 2013). Another study collected data from 235 US veterans with a reduced level of functioning due to psychiatric disorder on...
admission and discharge from a recovery-oriented programme that aimed to help veterans transition back into communities through increased support and empowerment (Harris et al., 2015). The programme included interventions targeting self-stigma and data was collected using the Internalized Stigma of Mental Illness Scale (ISMIS). The ISMIS consists of five subscales, measuring alienation (the perception of being devalued or excluded as a member of society); stereotype endorsement (the degree of agreement with negative stereotypic views about mental illness); discrimination experience (concerned with the perception of mistreatment attributed to the biases of others); social withdrawal (reflecting the avoidance of others due to mental illness); and stigma resistance (the degree to which an individual can deflect stigma). This study found that veterans with a diagnosis of PTSD had higher self-stigma scores than their peers without PTSD. More recently, a study that compared ISMIS data on veterans with PTSD (n = 46) to veterans with schizophrenia spectrum disorders (n = 82) found that the latter reported greater perceived discrimination on the basis of stigma; however, no other differences were found between the two groups in terms of the internalisation of stigma (Bonfils et al., 2018). There have been no studies of self-stigma among PTSD sufferers traumatised by events other than military exposure.

Given the robust findings of an association between self-stigma and poor functional outcomes in mental disorders such as schizophrenia, addiction, and the work on military veterans with PTSD, it is important to ascertain the degree to which stigma is internalised by other people with a diagnosis of PTSD. We, therefore, aimed to determine the prevalence of self-stigma among a cohort of adults with PTSD after a variety of traumatic events and to examine factors that may be associated with the internalisation of stigma in this population.

Method

Data source
Data were obtained from the National Centre for Mental Health (NCMH), a Welsh Government-funded Research Centre that investigates psychiatric disorders across the lifespan. The Centre is operated by Cardiff, Swansea, and Bangor Universities, in partnership with the National Health Service (NHS) across Wales and England. The cohort of participant volunteers primarily included individuals who have experienced a mental disorder, but some individuals without such a history have also been recruited into the cohort. 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 sociodemographic information and details related to the participant’s 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 adults over the age of 18 years who: (1) endorsed having been given a diagnosis of PTSD by a health professional; (2) currently screened positive for the disorder according to the PTSD Checklist for DSM-5 (PCL-5) (Blevins, Weathers, Davis, Witte, & Domino, 2015); and (3) had completed the ISMIS (a validated measure of self-stigma [Ritsher, Otilingam, & Grajales, 2003]). Data on whether or not participants had received a diagnosis of PTSD (and/or any other psychiatric diagnosis) was collected at the time of the interview assessment. The PCL-5 and ISMIS were returned to the study team by post after the assessment.

Measures

PTSD
Participants were asked whether they had ever experienced a ‘major’ traumatic event and, if so, were asked to provide more information. To anchor reported traumatic stress symptoms to a single traumatic event, exposure to trauma 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 et al., 2013b). All participants who reported a traumatic event completed the PCL-5, a 20-item measure that assesses the 20 Diagnostic and Statistical Manual 5 (DSM-5) symptoms of PTSD (Blevins et al., 2015). Each set of questions reflects a symptom criterion according to the DSM-5: items (1–5) for criterion B, intrusive symptoms; items (6–7) for criterion C, avoidance symptoms; items (8–14) for criterion D, negative alterations in cognition and mood; and items (15–20) for criterion E, alterations in arousal and reactivity. The measure uses a Likert scale from not at all (0 points) to extremely (4 points). A total symptom severity score is acquired by summing the score for each of the 20 items. Participants were considered to screen positive
for probable PTSD if they described a DSM-5 fulfilling stressor for PTSD and a positive screening score (over 33) according to the PCL-5 was obtained.

**Self stigma**
The ISMIS was used to measure self-stigma (Ritsher et al., 2003), which includes five subscales, measuring: alienation; stereotype endorsement; discrimination experience; social withdrawal; and stigma resistance. It consists of 29 items, including statements such as 'having a mental illness has spoiled my life' and 'I can’t contribute anything to society because I have a mental illness'. The measure uses a 4-point Likert scale from *strongly disagree* (1 point) to *strongly agree* (4 points). Each item of the stigma-resistance sub-scale is reverse-scored so that higher scores reduce the overall total. Possible scores range from 29–116 (with scores on the subscales ranging from 6 to 24 for alienation; 7–28 for stereotype endorsement; 5–20 for discrimination experience; 6–24 for social withdrawal; and 5–20 for stigma resistance). In line with previous studies (Brohan et al., 2010; Lien et al., 2018; Ritsher & Phelan, 2004; Touriño et al., 2018), sub-scale and overall scores on the ISMIS were calculated as means and a cut-off of 2.5 of the mean score across all items. The overall presence of self-stigma was indicated by a cut-off above the mid-point of 2.5 of the mean score across all items. The scale has been shown to have high internal consistency and test-retest reliability (Ritsher et al., 2003).

**Depression and anxiety**
The Hospital Anxiety and Depression Scale (HADS) is a reliable and validated measure that includes two subscales to measure depression (HADS-D) and anxiety (HADS-A), each consisting of seven items (Zigmond & Philip Snaith, 1983). Participants were asked to rate the degree to which they experienced each symptom during the previous week. The scale uses a 4-point Likert scale from *not at all* (0 points) to *most of the time* (3 points) giving total scores of 0–21 for anxiety and depression.

**Statistical procedures**
All analyses were conducted using STATA version 13.1 (StataCorp, 2013). The prevalence of self-stigma for each subscale (alienation; stereotype endorsement; discrimination experience; social withdrawal; and stigma resistance) and of the total score were calculated by using a mean cut-off of 2.5 to indicate whether it was present or absent. Sample characteristics were examined using descriptive statistics. Due to the high degree of comorbidity between PTSD and other disorders the prevalence of self-stigma on each subscale was additionally calculated for: (1) those who self-reported PTSD to be their primary diagnosis (rather than co-morbid to another primary psychiatric diagnosis); and (2) omitting those with a comorbid psychotic disorder. This aimed to give more conservative estimates of PTSD-related self-stigma. The association between sociodemographic/psychological variables and self-stigma was investigated by a series of univariate linear regression analyses, with total score on the ISMIS as the dependent variable. We looked at factors that were hypothesised to be associated with self-stigma, namely: age; gender; income; symptoms of depression, anxiety and PTSD; and whether or not the worst reported trauma was sexual or related to combat in a war zone. To facilitate interpretation of the results, scores on the HADS and PCL-5 were standardised to a mean of zero and a standard deviation of one.

**Results**

**Sample characteristics**
The mean age of participants was 46.07 (SD = 12.39) and 64.4% (n = 125) were female. The majority of participants were white Caucasian (96.6%) and all participants had at least one self-reported psychiatric comorbidity. Sample characteristics are presented in Table 1.

**Prevalence of self-stigma**
When a cut-off of 2.5 was used to categorise the presence or absence of self-stigma, the prevalence overall was found to be 41.2% (95% CI 34.2–48.2). Using the same cut-off of 2.5 for each of the sub-scales gave the following estimates of prevalence: 68.6% (95% CI 61.9–75.2) alienation; 12.4% (95% CI 7.7–17.1) stereotype endorsement; 53.6% (95% CI 46.5–60.7) discrimination experience; 60.3% (95% CI 53.4–67.3) social withdrawal; and 28.9% (95% CI 22.4–35.3) stigma resistance. Limiting the sample to those who self-reported PTSD as their primary diagnosis (n = 122) gave an overall prevalence of 40.16% (95% CI 31.3–48.9). Including only participants without a co-morbid diagnosis of a psychotic disorder (n = 162) gave an overall prevalence of 38.9% (95% CI 31.3–46.5). Estimates of prevalence for each of the subscales were similar across the three groups (see supplementary Table 1).

**Associations between self-stigma and sociodemographic / clinical variables**
Results are presented in Table 2. There was no evidence that self-stigma was associated with gender (β = −2.975 (95% CI −7.046–1.097) p = .151) or age (β = 0.007 (95% CI −0.152–0.165) p = .953). There was
Table 1. Sample characteristics.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%) or mean (95% CIs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>69 (35.6%)</td>
</tr>
<tr>
<td>Female</td>
<td>125 (64.4%)</td>
</tr>
<tr>
<td>Age</td>
<td>46.07 (12.39%)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White Caucasian</td>
<td>185 (96.6%)</td>
</tr>
<tr>
<td>Mixed Ethnicity</td>
<td>6 (3.1%)</td>
</tr>
<tr>
<td>Highest Educational Attainment</td>
<td></td>
</tr>
<tr>
<td>None/less than equivalent to GCSE</td>
<td>20 (11.1%)</td>
</tr>
<tr>
<td>GCSE or equivalent</td>
<td>54 (30.2%)</td>
</tr>
<tr>
<td>A level or equivalent</td>
<td>51 (28.5%)</td>
</tr>
<tr>
<td>Degree or above</td>
<td>54 (30.2%)</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>Up to £10,000</td>
<td>66 (40.9%)</td>
</tr>
<tr>
<td>£10,000–£20,000</td>
<td>49 (30.4%)</td>
</tr>
<tr>
<td>£20,000–£30,000</td>
<td>21 (12.4%)</td>
</tr>
<tr>
<td>Over £30,000</td>
<td>25 (15.5%)</td>
</tr>
<tr>
<td>Psychiatric Co-morbidity</td>
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<tr>
<td>Anxiety Disorder</td>
<td>145 (74.74%)</td>
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<td>Bipolar and Related Disorders</td>
<td>29 (14.95%)</td>
</tr>
<tr>
<td>Depressive Disorder</td>
<td>100 (51.5%)</td>
</tr>
<tr>
<td>Eating Disorder</td>
<td>30 (15.46%)</td>
</tr>
<tr>
<td>Variable</td>
<td>N (%) or mean (95% CIs)</td>
</tr>
<tr>
<td>Personality Disorder</td>
<td>24 (12.37%)</td>
</tr>
<tr>
<td>Schizophrenia and other Psychotic Disorders</td>
<td>32 (16.49%)</td>
</tr>
<tr>
<td>Worst trauma</td>
<td></td>
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<tr>
<td>Transportation accident</td>
<td>13 (6.70%)</td>
</tr>
<tr>
<td>Other serious accident</td>
<td>4 (2.06%)</td>
</tr>
<tr>
<td>Childhood physical abuse</td>
<td>5 (2.58%)</td>
</tr>
<tr>
<td>Physical assault</td>
<td>32 (16.49%)</td>
</tr>
<tr>
<td>Assault with a weapon</td>
<td>10 (5.15%)</td>
</tr>
<tr>
<td>Sexual assault/abuse (child)</td>
<td>15 (7.73%)</td>
</tr>
<tr>
<td>Sexual assault/abuse (adult)</td>
<td>32 (16.49%)</td>
</tr>
<tr>
<td>Combat or exposure to a war zone</td>
<td>27 (13.92%)</td>
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<tr>
<td>Life threatening illness or injury</td>
<td>15 (7.73%)</td>
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<tr>
<td>Sudden or violent death (e.g., suicide,</td>
<td>15 (7.73%)</td>
</tr>
<tr>
<td>homicide)</td>
<td></td>
</tr>
<tr>
<td>Learning of child sexual abuse of a</td>
<td>4 (2.06%)</td>
</tr>
<tr>
<td>loved one</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>22 (11.34%)</td>
</tr>
</tbody>
</table>

Discussion

Main findings

Overall, the estimated prevalence of self-stigma was 41.2%. Looking at the specific subscales, 68.6% endorsed alienation; 12.4% stereotype endorsement; 53.6% discrimination experience; 60.3% social withdrawal. 28.9% endorsed stigma resistance. This is of a similar magnitude to that reported for schizophrenia spectrum disorders and substantially higher than the estimated prevalence for bipolar and depressive disorders (Brohan et al., 2010; Brohan et al., 2011; Gerlinger et al., 2013; Lien et al., 2018; Touriño et al., 2018). The prevalence on each sub-scale is slightly higher than those reported by previous studies looking at military related PTSD (Bonfils et al., 2018; Harris et al., 2015). These findings indicate that the internalisation of stigma among those with PTSD is a significant issue that warrants greater attention than received to date.

The results should be interpreted with caution given that all participants had at least one psychiatric comorbidity. The majority of participants in this sample were recruited via secondary care mental health services, which resulted in a sample of participants with a greater prevalence of comorbid psychotic and bipolar disorders than is characteristic of those with PTSD more broadly. To counteract the issue and to give a more conservative estimate of the prevalence of PTSD-related self-stigma, we derived estimates based on: (1) only those with a primary diagnosis of PTSD; and (2) those without a comorbid psychotic disorder. There were few differences between the estimates for these two groups and those based on the sample as a whole. Although it may be argued that an estimate of PTSD-related self-stigma should be based on participants without any other psychiatric diagnoses, it is estimated that approximately 80% of individuals with PTSD have at least one comorbid diagnosis (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Excluding participants without additional psychiatric diagnoses would thereby result in small and unrepresentative samples of participants. Taking these factors into account, we can cautiously conclude that the findings give a reasonable indication of the prevalence of PTSD related self-stigma, although it may be argued that the estimate may be more likely to represent an over-estimation rather than an under-estimation.

The results of this study did not suggest that there were any particular sub-groups at significantly increased risk of self-stigma. This is consistent with the findings of a systematic review of 127 studies of participants with mood, anxiety or schizophrenia spectrum disorders, which failed to demonstrate any consistently significant relationships between self-stigma and sociodemographic variables including gender and age (Livingston & Boyd, 2010). The findings of the current study, together with the lack of consistency across the disparate studies included in the systematic review, may indicate that individuals with a wide-range of different characteristics are susceptible to the internalisation of stigma.

The highest prevalence of self-stigma was found among those with the lowest income. Although some previous studies have reported an association...
between income and self-stigma, this finding has not been consistent (Livingston & Boyd, 2010). Our finding may indicate a direct relationship between self-stigma and a person’s ability to establish and maintain well-paid employment. Equally, both self-stigma and income may be underpinned by the severity of symptoms or other factors known to be associated with self-stigma, such as diminished self-efficacy, self-esteem, empowerment or hope (Berge & Ranney, 2005; Corrigan & Watson, 2002; Corrigan et al., 2006; Dimitropoulos et al., 2016; Livingston & Boyd, 2010; Lysaker et al., 2006; Mittal et al., 2013; Touriño et al., 2018; Vauth et al., 2007).

We found that self-stigma was associated with more severe symptoms of anxiety, depression and PTSD. This is consistent with studies conducted in other mental disorders such as schizophrenia and mood disorders, which collectively indicate a strong and robust negative association between self-stigma and other psychological variables (Livingston & Boyd, 2010). The finding may indicate that self-stigma is associated with a more severe course of mental illness. However, work to date has given little indication of the direction of effect or the pathways by which self-stigma and symptom severity are associated (Livingston & Boyd, 2010). The findings may be explained from multiple perspectives. Firstly, it has been suggested that cognitive distortions are associated with more severe symptoms leading to greater perceived stigma. On the other hand, individuals with more severe and complex symptoms may be more socially isolated from society than those with milder mental disorders and the observed associations may be based on accurate perceptions of stigma rather than cognitive distortions (Pyne et al., 2004). Alternatively, the associations may be mediated through other variables found to be associated with self-stigma, such as adherence to treatment and resistance to recovery (Carrara & Arena Ventura, 2018; Dimitropoulos et al., 2016; Link et al., 2001; Livingston & Boyd, 2010), which may serve to perpetuate or exacerbate symptoms. Individuals with trauma histories may develop negative schemas related to themselves other people and the world. These may influence the development of self-stigma, and simultaneously the experience of self-stigma may impact these schemas. It is also worth acknowledging that self-stigma, depression, anxiety and traumatic stress symptoms are all psychological constructs and conceptual symptoms are all psychological constructs and conceptual constructs as those measured in the context of anxiety, depression and PTSD.

### Strengths and limitations

This study broadens our understanding of the self-stigma in PTSD beyond military veterans. A stringent approach was taken to the identification of PTSD, requiring that participants self-reported having received a diagnosis of the disorder by a health professional and also screened positive for probable PTSD at the time of assessment according to the PCL-5 (Blevins et al., 2015). However, we did not administer a standardised interview such as the Clinician Administered PTSD Scale (CAPS) (Weathers et al., 2013). This said, the PCL-5 has been shown to be a valid and reliable way to screen for the disorder (Blevins et al., 2015; Bovin et al., 2016; Wortmann et al., 2016). Self-stigma was measured by the well-validated and commonly used ISMIS (Ritsher et al., 2003), which allowed comparisons to be drawn with other studies. We used a cut-off of 2.5 on the ISMIS to indicate the presence of self-stigma. Although this cut-off is widely used and advocated among experts, it does not have empirical support. Some research has suggested the stigma-resistance subscale of the ISMIS is conceptually different to the other sub-scales (Chang, Wu, Chen, Wang, & Lin, 2014; Sibitz, Unger,

### Table 2. Results of univariable linear regressions.

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.007</td>
<td>-0.152 to 0.165</td>
<td>.935</td>
</tr>
<tr>
<td>Gender</td>
<td>-2.975</td>
<td>-7.046 to 1.097</td>
<td>.151</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td>.002</td>
</tr>
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<td>Up to £10,000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>£10,000–£20,000</td>
<td>-8.863</td>
<td>-13.633 to -4.094</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>£20,000–£30,000</td>
<td>-7.442</td>
<td>-13.778 to -1.105</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Over £30,000</td>
<td>-12.914</td>
<td>-18.853 to -6.474</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HADS-D Score</td>
<td>6.937</td>
<td>4.287–7.588</td>
<td>.001</td>
</tr>
<tr>
<td>HADS-A Score</td>
<td>5.722</td>
<td>2.922–8.522</td>
<td>.001</td>
</tr>
<tr>
<td>PCL-5 Score</td>
<td>3.880</td>
<td>1.401–6.359</td>
<td>.002</td>
</tr>
<tr>
<td>Worst trauma:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sexual abuse</td>
<td>0.904</td>
<td>-3.668 to 5.476</td>
<td>.697</td>
</tr>
<tr>
<td>or assault as</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a child or adult</td>
<td>-0.571</td>
<td>-4.027 to 7.287</td>
<td>.571</td>
</tr>
</tbody>
</table>

Note. HADS-D: Hospital Anxiety and Depression Scale – Depression; HADS-A: Hospital Anxiety and Depression Scale – Anxiety; PCL-5: PTSD Checklist for DSM-5. Gender coded as 0 = male, 1 = female; worst trauma: sexual abuse or assault as a child or adult coded as 0 = worst trauma non-sexual, 1 = worst trauma sexual; Worst trauma: combat in a war zone: 0 = worst trauma not combat related, 1 = worst trauma combat related. To facilitate interpretation of the results, scores on the HADS and PCL-5 were standardised to a mean of zero and a standard deviation of one.
Woppmann, Zidek, & Amering, 2011). On this basis, some previous studies have summed the average of the other four subscales and considered this as an overall measure of self-stigma (Brohan et al., 2010). Our overall scores and analyses that used these scores, were based on all five sub-scales, which may be considered a limitation. As discussed earlier, a high proportion of participants had one or more psychiatric comorbidities and additional estimates of the prevalence were made to better estimate the true extent of PTSD related self-stigma. The data collected was cross-sectional in nature and we are not therefore able to ascertain cause and effect. It may be argued that participants were not entirely representative of those with PTSD more generally on the basis of a high proportion of psychiatric comorbidities such as Bipolar Disorder and Schizophrenia. Finally, the wide-ranging recruitment strategies used to build the cohort make it difficult to estimate the non-response rate of the study.

Clinical implications

The results of the current study combined with previous findings related to the burden of self-stigma, indicate that it may be an important area for intervention. Self-stigma may be reduced in one of two ways: by addressing public-stigma (Evans-Lacko, Brohan, Mojtabai, & Thornicroft, 2012); or by tackling the issue at an individual level by modifying self-beliefs (Mittal, Sullivan, Chekuri, Allee, & Corrigan, 2012). Although public-stigma is significantly associated with factors such as low levels of treatment utilisation and resistance to recovery, it has been indicated that self-stigma may fully mediate this relationship (Vogel, Wade, & Hacker, 2007). This implies that treatments may best succeed by directly targeting the internalised negative beliefs. Interventions have been developed that include psychoeducation and/or cognitive behavioural techniques to challenge and reappraise the validity of negative stereotypes, with the aim of reducing the degree to which they are internalised (Yanos, Lucksted, Drapalski, Roe, & Lysaker, 2015). Despite efforts to develop and evaluate suitable interventions, systematic reviews of the randomised controlled trial (RCT) evidence to date have found insufficient evidence to support the efficacy of interventions to reduce self-stigma among those with psychiatric diagnoses such as mood and psychotic disorders (Büchter & Messer, 2017; Griffiths, Carron-Arthur, Parsons, & Reid, 2014). This said, it is worth noting that the small effect sizes may be the result of a number of methodological flaws in addition to the possibility that existing interventions are not optimal.

There is some evidence for the effect of Honest, Open, Proud (HOP) in the reduction of self-stigma (Corrigan et al., 2015; Corrigan, Kosyluk, & Rüschi, 2013; Rüschi et al., 2014). Previously known as Coming Out Proud (COP), the three-session programme facilitated by individuals with lived experience of mental illness supports decisions around mental health disclosure, with the aim of increasing self-efficacy in coping with stigma and supporting increased well-being (Scior, Rüschi, White, & Corrigan, 2020). Another option is to modify treatments for PTSD to address self-stigma. Therapies based on cognitive behavioural therapy have the strongest evidence of effect for the treatment of traumatic stress symptoms (Lewis, Roberts, Andrew, Starling, & Bisson, 2020) and these may lend themselves to augmentation with components that promote self-empowerment.

Research implications

This study provides preliminary evidence of PTSD-related self-stigma, which gives a rationale for future research aimed at greater empirical understanding. There is a particular need for research to identify the key mechanisms by which stigma is internalised by those with PTSD and to establish the pathways that lead to poor functional outcomes. PTSD arises in different populations and there is a need to explore self-stigma specific to these. For example, the COVID-19 pandemic has precipitated traumatic stress symptoms among groups of people such as healthcare workers (Lu et al., 2021), and there is a need to understand self-stigma related to PTSD in these specific contexts. Our findings indicate a need to develop and evaluate interventions for PTSD-related self-stigma. Since previous research on stigma-reduction strategies has yielded disappointing effect sizes, there may be a need to develop novel interventions. Ideally, these would be underpinned by a more detailed theoretical understanding of self-stigma in the context of PTSD than is currently available. Development work should consider the existing evidence-base for stigma-reduction strategies and incorporate input from those with lived experience of PTSD-related self-stigma. These efforts combined would enhance our understanding of self-stigma in the context of PTSD and potentially mitigate the impact on functional outcomes.

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Data availability statement

The National Centre for Mental Health (NCMH) welcome proposals for collaboration and data is available upon reasonable request.
Disclosure statement
No potential conflict of interest was reported by the author(s).

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