Article:
Richardson, T. orcid.org/0000-0002-5357-4281, Ferrie, O., Smith, D. et al. (6 more authors) (2025) Neighbourhood socioeconomic deprivation associated with poorer psychological therapy outcomes for PTSD: an audit of a single NHS talking therapies (IAPT) service. The Cognitive Behaviour Therapist, 18. e9. ISSN 1754-470X

https://doi.org/10.1017/s1754470x25000029

The Cognitive Behaviour Therapist (2025), vol. 18, e9, page 1 of 12
doi:10.1017/S1754470X25000029

BABCP
www.babcp.com

ORIGINAL RESEARCH

Neighbourhood socioeconomic deprivation associated with poorer psychological therapy outcomes for PTSD: an audit of a single NHS Talking Therapies (IAPT) service

Thomas Richardson[1], Olivia Ferrie[1], Dianna Smith[1], Colm Ellis-Nee[2], Tanya Smart[2], Ellenor Gray[2], Neil Roberts[3], Jaime Delgadillo[4] and Miriam Simmons-Dauvin[2]

[1]University of Southampton, Southampton, UK, [2]Solent NHS Trust, UK, [3]Cardiff University, Cardiff, UK and [4]University of Sheffield, Sheffield, UK
Corresponding author: Thomas Richardson; Email: T.H.Richardson@soton.ac.uk

(Received 30 September 2023; revised 3 January 2025; accepted 6 January 2025)

Abstract

Economic variables such as socioeconomic status and debt are linked with an increased risk of a range of mental health problems and appear to increase the risk of developing of post-traumatic stress disorder (PTSD). Previous research has shown that people living in more deprived areas have more severe symptoms of depression and anxiety after treatment in England's NHS Talking Therapies services. However, no research has examined if there is a relationship between neighbourhood deprivation and outcomes for PTSD specifically. This study was an audit of existing data from a single NHS Talking Therapies service. The postcodes of 138 service users who had received psychological therapy for PTSD were used to link data from the English Indices of Deprivation. This was analysed with the PCL-5 measure of PTSD symptoms pre- and post-treatment. There was no significant association between neighbourhood deprivation measures on risk of drop-out from therapy for PTSD, number of sessions received or PTSD symptom severity at the start of treatment. However, post-treatment PCL-5 scores were significantly more severe for those living in highly deprived neighbourhoods, with lower estimated income and greater health and disability. There was also a non-significant trend for the same pattern based on employment and crime rates. There was no impact of access to housing and services or living environment. Those living in more deprived neighbourhoods experienced less of a reduction in PTSD symptoms after treatment from NHS Talking Therapies services. Given the small sample size in a single city, this finding needs to be replicated with a larger sample.

Key learning aims

(1) Previous literature has shown that socioeconomic deprivation increases the risk of a range of mental health problems.
(2) Existing research suggests that economic variables such as income and employment are associated with greater incidence of PTSD.
(3) In the current study, those living in more deprived areas experienced less of a reduction in PTSD symptoms following psychological therapy through NHS Talking Therapies.
(4) The relatively poorer treatment outcomes in the current study are not explained by differences in baseline PTSD severity or drop-out rates, which were not significantly different comparing patients from different socioeconomic strata.

Keywords: CBT; deprivation; EMDR; IAPT; NHS Talking Therapies; post-traumatic stress disorder; poverty; PTSD; socioeconomic status; trauma

Introduction

There is an observed relationship between low socioeconomic status and an increased risk of a range of mental health problems (Kivimäki *et al.*, 2020). A systematic review concluded that the prevalence of common mental disorders such as depression and anxiety also increases during times of economic recession (Frasquilho *et al.*, 2015). A range of specific financial variables have been linked to poor mental health, for example a meta-analysis found more than a 3-fold risk of a mental health problem for those in unsecured debt (Richardson *et al.*, 2013), and energy poverty has been found to lead to poorer mental health over time (Bentley *et al.*, 2023).

There is a small body of research about the link between economic variables and post-traumatic stress disorder (PTSD) specifically. Bryant-Davis *et al.* (2010) found in African American women in the USA that income predicted higher rates of PTSD. van der Velden *et al.* (2023), in the Netherlands, found that crime victims who had financial problems had twice the risk of developing PTSD. Systematic reviews have concluded that low income and financial difficulties predict development of PTSD in trauma patients (Visser *et al.*, 2017), and that lower socio-economic status predicts the development of PTSD in adults following earthquakes (Tang *et al.*, 2017). A study after the Fukushima nuclear disaster in Japan found that more severe PTSD symptoms were predicted by unemployment and lower income (Shiga *et al.*, 2021), and ten longitudinal studies of trauma survivors showed that lower educational levels predicted greater PTSD severity (Shalev *et al.*, 2019). A large cohort study also found a greater risk of receving a PTSD diagnosis in those who had experienced previous financial hardship (Holmes *et al.*, 2022).

Lower socioeconomic status and poverty may also increase exposure to traumatic events. An analysis in Australia found that the children of mothers with lower education were more at risk from childhood sexual abuse (Martin *et al.*, 2011). In London, violent crimes, robbery and sexual offences are 2.1 times more common in the most deprived 10% of areas compared with the 10% of most affluent areas (Trust for London, 2023). In the UK, those who are unemployed are also more at risk of both experiencing traumatic events and developing PTSD (McManus *et al.*, 2016). However, research with lower income black women in the USA suggests that material hardship increases the risk of developing PTSD beyond increasing the risk of traumatic events (Holmes *et al.*, 2021).

A meta-analysis of the impact of socioeconomic variables on treatment outcomes for depression (both medication and psychological therapies), found that depression scores were higher post-treatment for those who were unemployed, but showed no significant association with specific financial variables (Buckman *et al.*, 2022). A systematic review also found no impact from socioeconomic deprivation on drop-out from psychological therapies for common mental disorders; however, there were a small number of studies included in the review (Firth *et al.*, 2021).

Research has shown that deprivation can impact outcomes from England's NHS Talking Therapies programme (formerly known as Increasing Access to Psychological Therapies, IAPT). More deprived areas have a greater prevalence of mental health problems, but poorer recovery and reliable improvement rates, and those referred in deprived areas are less likely to access therapy (Clark *et al.*, 2018; Delgadillo *et al.*, 2016; Delgadillo *et al.*, 2018). A more granular analysis of deprivation using individual postcodes to identify neighbourhood deprivation found that, in a sample of 44,805 individuals who had attended IAPT, lower neighbourhood income and higher crime rates were linked with more severe symptoms of depression and anxiety post-treatment, with more sessions required to attain symptomatic improvements (Finegan *et al.*, 2020).

Psychological therapies, in particular eye-movement desensitization reprocessing (EMDR) and trauma focused cognitive behavioural therapy (CBT), have been shown to be effective and cost-effective for PTSD (Lewis *et al.*, 2020; Mavranezouli *et al.*, 2020), and both are recommended in National Institute for Health and Care Excellence (NICE) guidelines (NICE, 2018) and offered in NHS Talking Therapies services (National Collaborating Centre for Mental Health, 2018). As previously discussed, there is research indicating greater risk of PTSD and more severe symptoms

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

depending on socioeconomic variables. There is also research showing that depression and anxiety outcomes are poorer for those in deprived areas who access NHS Talking Therapies services (Delgadillo *et al.*, 2016). However, to the authors' knowledge no previous research has examined the impact of deprivation on outcomes from PTSD specifically. This study therefore aimed to analyse outcomes from a single service to determine if neighbourhood deprivation impacts:

(1) PTSD symptom severity at the start of therapy.
(2) Likelihood of completing therapy.
(3) Number of sessions attended.
(4) Change in PTSD symptoms after therapy.

Method

Design and service

This was a clinical audit of routine healthcare data collected from a single NHS Talking Therapies Service. The service was based in a city in the south of England with high levels of deprivation, relative to other areas of England. During the study period, patients were initially assessed by a psychological wellbeing practitioner (PWP) and then if the PWP suspected the patient had symptoms of PTSD, the patient was then offered a further assessment with a cognitive behaviour therapist in order to ascertain provisional diagnosis of PTSD. Once given a provisional diagnosis of PTSD, patients were then encouraged to attend (but not all did) a 3-session psychoeducation course about trauma. Those who declined the course, or had completed the course were put on a waiting list for individual TF-CBT or individual EMDR. Exclusion criteria were out-of-area GP, serious mental illness requiring Secondary Mental Health team input, PTSD not primary diagnosis, alcohol or drug dependence (use/misuse is OK), risk to self or others so severe that it cannot be managed in Primary care, patients expressing a preference for longer term therapy/not CBT/not EMDR. There was no exclusion for particular trauma types such as sexual abuse, and no specific screening for identifying complex PTSD.

Procedure

Participants were included if they had started psychological therapy (CBT for EMDR) for PTSD, had complete data on therapy outcomes (a pre- and post-treatment completed trauma measure, number of sessions attended, whether disengaged or completed therapy), and had not opted-out of their medical record data being used for audit and research. This was approved as a clinical audit by the NHS trust managing the service, and ethical approval was obtained from the University of Southampton ethics committee.

Measures

The PTSD Checklist for DSM-5 (PCL-5) (Blevins *et al.*, 2015) is a commonly used 20-item measure of PTSD symptom severity designed to map onto diagnostic criteria for PTSD. Distress over the past month for specific symptoms such as 'Feeling very upset when something reminded you of the stressful experience?' and 'Being "superalert" or watchful or on guard?' are rated from 'not at all' (0) to 'extremely' (4). A composite severity score ranges from 0 to 80, with higher scores representing more severe symptoms. Cronbach's alpha for the current sample's first PCL-5 total was 0.91. This measure was used in the current sample for PTSD referrals at a regular basis, the first and last total scores were analysed here. In the current sample, 89.9% ($n = 123$) scored equal to or above the suggested cut-off point of 31 at the start of treatment. The current service used this

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

measure as a screen but with no absolute cut-off, so some service users under the cut-off may have been treated under the PTSD pathway depending on the assessment.

Postcodes from individual patient records were linked to their corresponding neighbourhood's socioeconomic characteristics based on the Index of Multiple Deprivation (IMD; Department for Communities and Local Government, 2015). The IMD is a measure of socioeconomic deprivation assigned to geographical areas in England (e.g. neighbourhoods, referred to as lower-layer super output areas). The IMD ranks each neighbourhood from the most to the least deprived, based on the following indicators: income, unemployment, education level, health and disability, crime, barriers to housing and services, and quality of the local environment. IMD scores can be clustered into deciles (where 1 is most deprived, and 10 is least deprived areas), enabling the examination of relative neighbourhood deprivation levels as an ordinal variable. The current data source is the most recent data from 2019 (https://imd-by-postcode.opendatacommunities.org/imd/2019).

Participants

$N = 138$ participants had complete data and were included. The sample was 74.6% ($n = 103$) female, 23.9% ($n = 33$) male, and 1.4% ($n = 2$) not recorded. Ethnicity was 85.5% ($n = 118$) white. Ages ranged from 16 to 69 years, with a mean of 31.7 years ($SD = 11.9$). Specific trauma type was not recorded for 43.5% ($n = 60$) of the sample, a range of different trauma types were recorded for the remaining sample, most commonly domestic abusive relationship (partner) (10.1%, $n = 14$), childhood sexual abuse (9.4%, $n = 13$) and sexual abuse as an adult (7.2%, $n = 10$). Data were collected between August 2020 and June 2022. Specific type of treatments where recorded were PTSD group only (13.8%, $n = 17$), PTSD group plus individual CBT (34.1%, $n = 42$), PTSD group plus EMDR (9.8%, $n = 12$), individual CBT (13%, $n = 16$), individual EMDR (1.6%, $n = 2$), compassion focused therapy group only (2.4%, $n = 3$), individual CBT (13%, $n = 16$), other individual therapies (6.5%, $n = 8$) and other or multiple pathways (8.1%, $n = 10$).

Statistical analysis

There was no missing data. Due to the restricted sample size, the indices (1–10) for all variables were collapsed into two categories based on the median representing the lower and higher levels of deprivation. This meant that which deciles were included in the group varied depending on the specific deprivation variable used and the spread of scores. Chi-square was used to examine associations between deprivation and drop-out from therapy. MANOVA was used to examine associations with the number of therapy sessions attended and with PCL-5 severity post-treatment. There were two individuals who disengaged after one session and therefore there was no post-PCL-5 score, so that pre-PCL-5 score was used as per an intent-to-treat analysis. A MANOVA for each deprivation variable was used to analyse changes in symptoms from first to last PCL-5 administered, and interaction with deprivation variables. Given the preliminary and exploratory nature of the research and small sample size, a significance of $p = .05$–$.10$ was considered a non-significant trend. A power analysis found that for overall deprivation split into two groups the current sample size had power of .94 to detect a small effect size (.3) for a MANOVA. An analysis of differences in single *vs* multiple incident trauma based on deprivation was not possible due to the small number of participants who had experienced single-incident trauma (26.1%, $n = 36$ single trauma; 73.2%, $n = 101$ multiple trauma). PCL-5 pre- and post-scores were both normally distributed with kurtosis and skewness between –2 and +2. There was also data on specific trauma type, but again due to sample size this could not be analysed. All analyses were completed using SPSS.

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

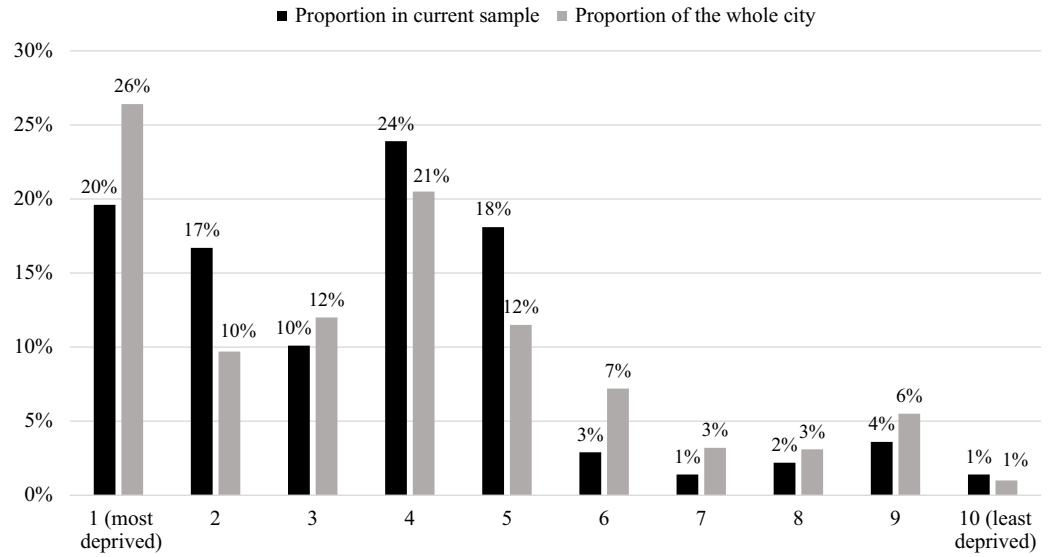

Figure 1. Number of participants in each decile of overall deprivation: current sample *vs* the whole city.

Results

Deprivation decile

Figure 1 displays the proportion of participants in each of the 10 IMD deciles for overall deprivation, showing that the 88.5% ($n = 122$) were in the most deprived 5 out of 10 deciles. Figure 1 also displays a comparison with the deprivation deciles for the city as a whole, demonstrating a similar pattern of deprivation.

Therapy completion

Overall, 46% ($n = 63$) of those referred completed therapy as per the nationally defined service criteria (at least two sessions attended). Chi-square analyses showed no association between therapy completion based on overall deprivation; $\chi^2(\text{d.f.} = 1,\ n = 138) = 1.6,\ p > .05$; income $\chi^2(\text{d.f.} = 1,\ n = 138) = .7,\ p > .05$; employment $\chi^2(\text{d.f.} = 1,\ n = 138) = 0.0,\ p > .05$; health and disability $\chi^2(\text{d.f.} = 1,\ n = 138) = 1.8,\ p > .05$; crime $\chi^2(\text{d.f.} = 1,\ n = 138) = 0.1,\ p > .05$; barriers to housing and services $\chi^2(\text{d.f.} = 1,\ n = 138) = 0.0,\ p > .05$; or living environment $\chi^2(\text{d.f.} = 1,\ n = 138) = .2,\ p > .05$.

Number of sessions and pre-therapy PTSD scores

Pre-treatment PCL-5 scores ranged from 13 to 80 with a mean of 51.1 ($SD = 14.8$). The total number of sessions ranged from 1 to 31 sessions with a mean of 11.44 ($SD = 7.2$), and was normally distributed: kurtosis = –.34, skewness = .57). A MANOVA analysed differences between all deprivation variables and total number of sessions attended and PCL-5 total scores at the start of therapy. There was no significant association between number of sessions attended and overall deprivation, $F = 0.4,\ p > .05$; income, $F = 0.2,\ p > .05$; employment, $F = 0.2,\ p > .05$; education, $F = 0.2, p > .05$; health and disability, $F = 0.6, p > .05$; crime, $F = 0.0, p > .05$; barriers to housing and services, $F = 0.0,\ p > .05$; or living environment, $F = 0.0,\ p > .05$. There was no significant association between PCL-5 scores at the start of therapy and overall deprivation, $F = 0.3, p > .05$; income, $F = 1.1, p > .05$; employment, $F = 0.9, p > .05$; health and disability, $F = 0.5, p > .05$; crime, $F = 0.7,\ p > .05$; barriers to housing and services, $F = 0.4,\ p > .05$; or living environment, $F = 0.1, p > .05$

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

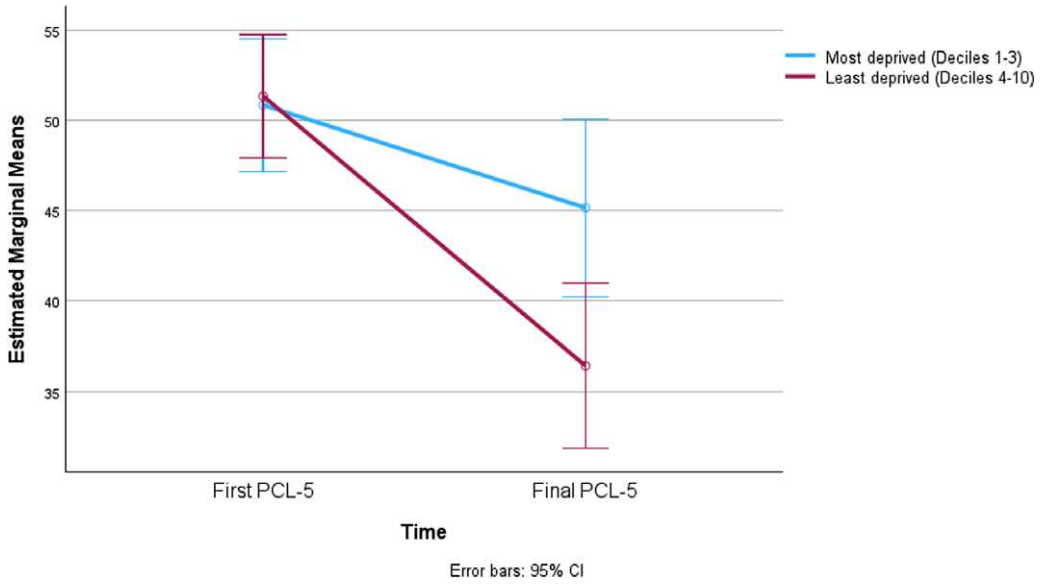

Figure 2. Changes in PCL-5 scores over time by overall deprivation decile.

Changes over time

A series of MANOVAs were used to determine changes over time (first to last) for total PCL-5 scores based on each neighbourhood deprivation variable. There was a significant main effect over time with a reduction in PCL-5 scores from pre to post: $F = 43.5$, $p < .001$, with a large effect size: partial eta squared = .24. For overall deprivation there was a significant interaction with a large effect size between change over time and deprivation: $F = 8.8$, $p < .01$, partial eta squared = .06; this is shown in Fig. 2.

The results for remaining deprivation variables are displayed in Table 1. There was a statistically significant interaction with large effect sizes, between change in scores and income decile (shown in Fig. 3) and health and disability decile (shown in Fig. 4), with a smaller reduction in PCL-5 scores over time for those from more deprived areas. These interactions are displayed in Figs 3 and 4. There was no interaction between change in PCL-5 scores over time and access to housing and services, education and skills or living environment. There was also a non-significant trend for a smaller reduction in PCL-5 scores over time for those from neighbourhoods with lower employment rates and higher crime rates.

Discussion

This service evaluation aimed to examine if neighbourhood deprivation variables are associated with PTSD severity and treatment outcomes within a single NHS Talking Therapies service. In the current sample, although there were high levels of overall deprivation in the treatment-seeking PTSD sample, this did not appear to be any higher than the whole city. This is not in line with previous research showing greater risk of developing PTSD in those with low income and financial difficulties (van der Velden *et al.*, 2023; Visser *et al.*, 2017), and previous research at GP commissioning level in England finding greater prevalence of mental health problems in more deprived areas (Delgadillo *et al.*, 2018). However, the current sample was within a single city with high levels of deprivation, so replication with a sample with greater variation in socioeconomic deprivation levels is needed to see whether those seeking treatment for PTSD are disproportionately from deprived areas in NHS Talking Therapies services.

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

Table 1. Changes in PCL-5 scores over time based on deprivation variables

Variable	*n*	First PCL-5 mean	Final PCL-5 mean	*F*	*p*	Partial eta squared
Index of Deprivation decile	—					
Most deprived (deciles 1–3)	64	50.9	45.2	8.8	$p<.01$	.06
Least deprived (4–10)	74	51.4	36.4			
Income decile	—					
Lowest income (deciles 1–4)	70	50.7	43.5	8.7	$p<.05$	.04
Highest income (deciles 5–10)	68	51.6	37.4			
Employment decile	—					
Lowest Employment (deciles 1–5)	79	51.1	43	3.2	$p=.076$	.10
Highest Employment (deciles 6–10)	59	51.1	37.2			
Education and skills decile	—					
Lowest education and skills (deciles 1–5)	71	51.3	41.7	0.5	$p>.10$	.00
Highest education and skills (deciles 6–10)	67	51.0	39.2			
Health and disability decile	—					
Highest health problems and disability (deciles 1–3)	71	50	45.1	14.7	$p<.001$	.10
Lowest health problems and disability (deciles 4–10)	67	52.3	35.6			
Crime rate decile	—					
Highest crime rate (deciles 1–2)	78	50.6	42.6	3.6	$p=.065$	.03
Lowest crime rate (deciles 3–10)	60	51.8	37.8			
Housing and access to services decile	—					
Poor access to housing and services (deciles 1–4)	56	50.3	39.5	0.0	$p>.10$	.0
Better access to housing and services (deciles 5–10)	82	51.7	41.1			
Living environment decile	—					
Poorer living environment (decile 1)	62	52.2	38.8	0.0	$p>.10$	.02
Better living environment (deciles 2–9)	76	50.3	41.9			

There were no statistically significant differences in therapy completion rates by deprivation decile, in line with a recent systematic review (Firth *et al.*, 2021). There were also no significant differences in the number of sessions attended during treatment for PTSD, against a previous larger analysis finding more sessions were accessed for those from deprived areas attending NHS Talking Therapies for all reasons (Finegan *et al.*, 2020). Therefore, it might be that deprivation does not impact session treatment length within NHS Talking Therapies for PTSD specifically. However, for this and drop-out, due to low sample size the current study may be underpowered to detect such differences, and replication in a larger sample would be advisable. There were also no significant differences in PTSD symptom severity at the start of therapy. Previous research has shown that unemployment, lower educational attainment and income predict more PTSD symptoms (Shalev *et al.*, 2019; Shiga *et al.*, 2021), and research within NHS Talking Therapies services has shown that deprivation impacts symptom severity for depression and anxiety symptoms (Firth *et al.*, 2021).

Despite deprivation not impacting baseline PTSD symptom severity, risk of drop-out and number of sessions, there were significant trends for overall deprivation, income and health and disability variables, with non-significant trends for employment and crime rate. For all variables, those from more deprived areas had significantly less reduction in PTSD symptoms post-treatment, with large effect sizes. This is in line with Finegan *et al.* (2020) who found that the same neighbourhood variables of income and crime level predicted less reduced anxiety and depression symptoms in similar services. This study adds that this also appears to be the case for PTSD treatment specifically. The exact mechanisms for this are unclear and warrant further research. It might be that those in deprived areas do not feel as safe and are subject to higher levels of ongoing victimisation and repeated ongoing trauma, which may then reduce the effectiveness of treatment.

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

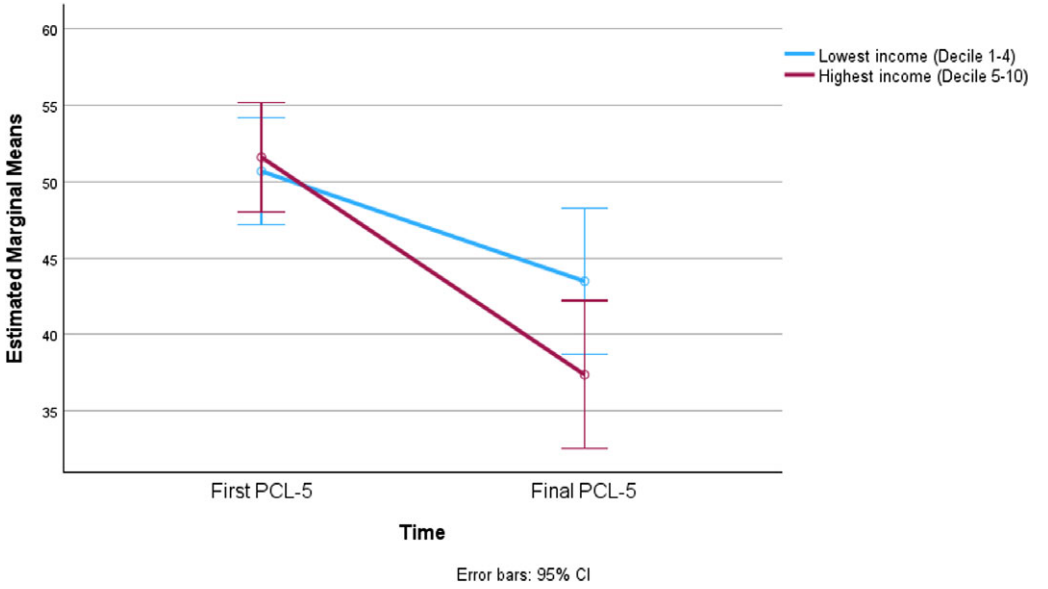

Figure 3. Changes in PCL-5 scores over time by income decile.

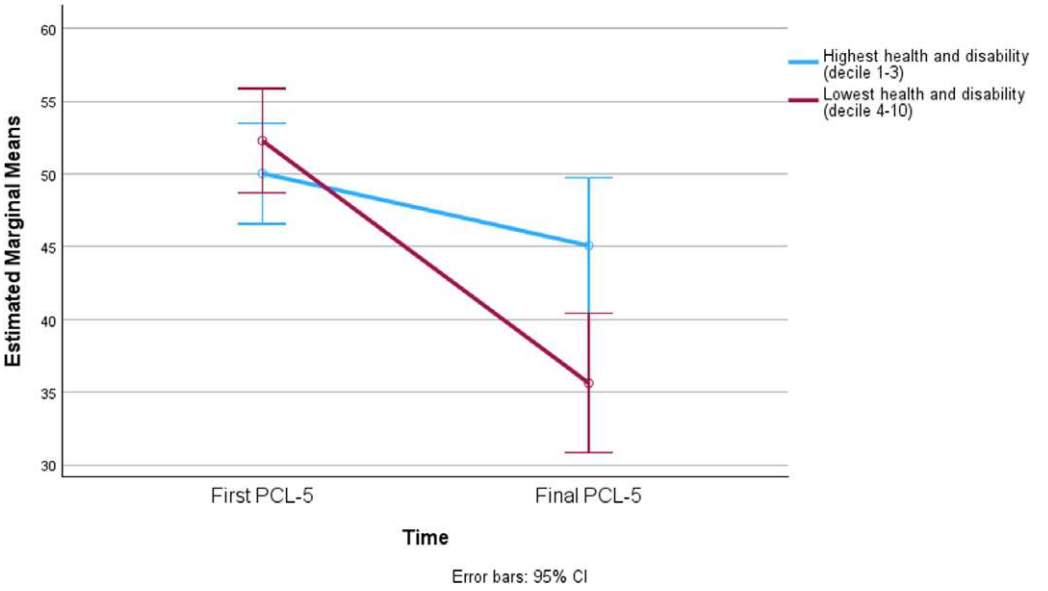

Figure 4. Changes in PCL-5 scores over time by health and disability decile.

It might also be that the content of the therapy differs for those from more deprived areas: A common misconception about trauma focused CBT is that talking about trauma memories might be re-traumatising and that stabilisation is also required (Murray *et al.*, 2022). It may be that therapists avoid key components of effective PTSD treatment such as reliving of memories in their clients who are experiencing poverty and lifestyle instability that comes with it. Other issues, such as risk management or safeguarding issues, may necessarily take priority at times. It is possible that those from more deprived and high crime areas experience ongoing victimisation and

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

re-traumatisation which may reduce the effectiveness of psychological therapies for PTSD. Deprivation may be linked to a number of stresses such as food poverty, disability benefits and caring roles which may all impact mental health and outcomes form psychological therapy. The specific finding of an impact of disability decile here also suggests that physical illnesses and disability may play a role in this effect. Diabetes, for example, is more common in those of lower socioeconomic status (Espelt *et al*., 2011), and is also linked to poorer outcomes from NHS Talking Therapies in terms of anxiety and depression outcomes (Delgadillo *et al*., 2018).

It may be that more sessions are required for those from deprived background to achieve a similar reduction in PTSD symptoms, although more research is needed on this. With such social determinants of mental health outcomes, it may also be that more external support outside of the therapy room may be required, for example housing and crime victim support or financial advice: it has been suggested that money and debt advice is integrated into NHS Talking Therapies nationally (Bond, 2023). This research adds further support to the recommendation in the same report that a question about finances is introduced into standard screening procedures within these settings (Bond, 2023). It is important to ask in detail about finances and living situation such as neighbourhood when assessing a new service user for potential trauma therapy, and to discuss how these variables may impact on treatment. Due to limited sessions numbers in NHS Talking Therapies services, it may be necessary to introduce a longer review or follow-up periods with this client group to ensure therapeutic support is not ended prematurely.

This study is limited by a single service with largely white ethnicity. The service had relatively high levels of deprivation, so a comparison with more affluent areas might show larger effects. Unemployment has been shown to predict a worse outcome from EMDR (Wright *et al*., 2024), but we did not have data about employment in the current study. Due to the sample size, only comparing the highest and lowest on deprivation was possible; a larger data set would allow us to look at more detail at specific deciles (1–10). This would also resolve the need in the current study to split deprivations by median, resulting in inconsistency over what deprivation indices were included within these two groups depending on the specific IMD variable being analysed and the range of scores within this. This would also allow examination of differences in single *vs* multiple trauma and differences in specific trauma types. It would also allow for demographic variables such as age and gender and baseline PTSD symptom severity to be controlled for in a regression model. There was a high level of multiple trauma, and the levels of complex PTSD in the current sample and impact of deprivation on this group specifically is not known. Data collection occurred during the COVID-19 pandemic, which may have impacted both financial strain and mental health of the current sample. Several statistical analyses with a liberal significance cut-off as an exploratory analysis also needs to be considered. There is insufficient sample size to see whether the impact of deprivation may have differed for these different therapies offered. Finally, it is worth considering that the PCL-5 is strongly correlated with depression symptoms (e.g. Roberts *et al*., 2021), and changes in symptoms based on deprivation could be partially due to high levels of depression in those in more deprived areas. An analysis examining interactions between deprivation, PTSD and depression symptoms is warranted. Finally, it is important to note that the IMD variable is for a neighbourhood, and individual data, for example on self-reported current financial difficulties, has the potential to have a stronger link with PTSD therapy outcomes.

Future research in other services should attempt to replicate these findings in larger and broader populations as well as trying to determine the mechanisms by which effects might be reduced due to deprivation in those seeking treatment for PTSD. Future research should also consider whether there are differential effects of deprivation on treatment for individuals presenting with complex PTSD. Prior research indicates that highly deprived neighbourhoods have commensurately high referrals for psychological care, but there is a treatment gap whereby referred patients in these neighbourhoods are less likely to start treatment (Delgadillo *et al*., 2016; Sweetman et al., 2023). However, it is unclear whether those from more deprived areas are more likely to be referred or self-refer, and then to access treatment for PTSD specifically. For NHS

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

Talking Therapies services, overall those living in more deprived areas are less likely to be offered therapy (The Health Foundation, 2019). In the UK the adult psychiatric morbidity survey found that only half of those with PTSD were receiving mental health treatment and this was usually for problems other than PTSD (McManus *et al.*, 2016). Given that the same survey showed a higher prevalence of both experiencing traumatic events and screening positive for PTSD in those who were unemployed compared with employed (McManus *et al.*, 2016), it is possible that those experiencing poverty and living in deprived areas are more likely to have significant unmet met of undiagnosed and untreated PTSD.

In conclusion, this study suggests for the first time that those attending NHS Talking Therapies services for PTSD treatment experience less of a reduction in symptoms post-treatment if they are from areas of high socioeconomic deprivation.

Key practice points

(1) Clinicians should be aware that those from more deprived areas may be less likely to benefit from PTSD treatment.
(2) Debt and money advice could be integrated within existing NHS Talking Therapies services.
(3) It is important that psychological services consider local contextual drivers for presenting problems and ensure the number of sessions offered are adequate to support clients fully. Finances and living situation should be asked about during assessment for PTSD therapy.

Further reading

Finegan, M., Firth, N., & Delgadillo, J. (2020). Adverse impact of neighbourhood socioeconomic deprivation on psychological treatment outcomes: the role of area-level income and crime. *Psychotherapy Research*, *30*, 546–554.

Firth, N., Barkham, M., Delgadillo, J., Allery, K., Woodward, J., & O'Cathain, A. (2021). Socioeconomic deprivation and dropout from contemporary psychological intervention for common mental disorders: a systematic review. *Administration and Policy in Mental Health and Mental Health Services Research*, 1–16.

Murray, H., Grey, N., Warnock-Parkes, E., Kerr, A., Wild, J., Clark, D. M., & Ehlers, A. (2022). Ten misconceptions about trauma-focused CBT for PTSD. *the Cognitive Behaviour Therapist*, *15*, e33.

Visser, E., Gosens, T., Den Oudsten, B. L., & De Vries, J. (2017). The course, prediction, and treatment of acute and posttraumatic stress in trauma patients: a systematic review. *Journal of Trauma and Acute Care Surgery*, *82*, 1158–1183.

Data availability statement. Data is available upon reasonable request from the authors.

Acknowledgements. The authors thank Solent NHS Trust Academy of Research and Improvement for supporting this project.

Author contributions. **Thomas Richardson:** Conceptualization (lead), Formal analysis (equal), Methodology (equal), Writing - original draft (lead); **Olivia Ferrie:** Conceptualization (supporting), Data curation (supporting), Methodology (supporting); **Dianna Smith:** Conceptualization (supporting), Formal analysis (supporting), Methodology (supporting), Writing - review & editing (supporting); **Colm Ellis-Nee:** Data curation (lead), Investigation (supporting), Methodology (supporting), Project administration (lead), Writing - review & editing (supporting); **Tanya Smart:** Conceptualization (supporting), Data curation (supporting), Investigation (supporting), Methodology (supporting), Supervision (supporting), Writing - review & editing (supporting); **Ellenor Gray:** Conceptualization (supporting), Data curation (supporting), Investigation (supporting), Methodology (supporting), Project administration (supporting), Writing - review & editing (supporting); **Neil Roberts:** Conceptualization (supporting), Data curation (supporting), Formal analysis (supporting), Methodology (supporting), Writing - review & editing (supporting); **Jaime Delgadillo:** Conceptualization (supporting), Formal analysis (supporting), Methodology (supporting), Writing - review & editing (supporting); **Miriam Simmons-Dauvin:** Conceptualization (equal), Data curation (equal), Formal analysis (equal), Writing - review & editing (equal).

Financial support. No funding received.

Competing interests. T.R. wrote and receives royalties for the use of 'Space from Money Worries', an online CBT package developed by Silvercloud health designed to tackle the link between financial difficulties and mental health problems which is used in NHS Talking Therapies services. T.R. is an advisor and shareholder for a company (TellJo) which identifies and

supports those with financial vulnerability. T.R. is an associated editor of *the Cognitive Behaviour Therapist* but had no editorial role for this paper. N.R. is a co-developer of an internet-based guided self-help intervention for PTSD called SPRING, and may receive future profits if the intervention is monetized. The other authors declare no competing interests.

Ethical standards. The authors have abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS.

References

Bentley, R., Daniel, L., Li, Y., Baker, E., & Li, A. (2023). The effect of energy poverty on mental health, cardiovascular disease and respiratory health: a longitudinal analysis. *The Lancet Regional Health–Western Pacific*.

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): development and initial psychometric evaluation. *Journal of Traumatic Stress*, *28*, 489–498.

Bond, N. (2023). *Breaking the Cycle: The Case for Integrating Money and Mental Health Support During the Cost of Living Crisis*. https://www.moneyandmentalhealth.org/wp-content/uploads/2023/07/Breaking-the-Cycle-July-2023.pdf

Bryant-Davis, T., Ullman, S. E., Tsong, Y., Tillman, S., & Smith, K. (2010). Struggling to survive: sexual assault, poverty, and mental health outcomes of African American women. *American Journal of Orthopsychiatry*, *80*, 61–70. https://doi.org/10.1111/j.1939-0025.2010.01007.x

Buckman, J. E., Saunders, R., Stott, J., Cohen, Z. D., Arundell, L.-L., Eley, T. C., Hollon, S. D., Kendrick, T., Ambler, G., & Watkins, E. (2022). Socioeconomic indicators of treatment prognosis for adults with depression: a systematic review and individual patient data meta-analysis. *JAMA Psychiatry*, *79*, 406–416.

Clark, D. M., Canvin, L., Green, J., Layard, R., Pilling, S., & Janecka, M. (2018). Transparency about the outcomes of mental health services (IAPT approach): an analysis of public data. *The Lancet*, *391*, 679–686.

Delgadillo, J., Asaria, M., Ali, S., & Gilbody, S. (2016). On poverty, politics and psychology: the socioeconomic gradient of mental healthcare utilisation and outcomes. *British Journal of Psychiatry*, *209*, 429–430.

Delgadillo, J., Farnfield, A., & North, A. (2018). Social inequalities in the demand, supply and utilisation of psychological treatment. *Counselling and Psychotherapy Research*, *18*, 114–121.

Department for Communities and Local Government (2015). *The English Indices of Deprivation 2015*. London, Department for Communities and Local Government, 1–94.

Espelt, A., Arroola, L., Borrell, C., Larranga, I., Sandin, M., Scolar-Pujolar, A. (2011). Socioeconomic position and Type 2 diabetes mellitus in Europe 1999–2009: a panorama of inequalities. *Current Diabetes Reviews*, *7*.

Finegan, M., Firth, N., & Delgadillo, J. (2020). Adverse impact of neighbourhood socioeconomic deprivation on psychological treatment outcomes: the role of area-level income and crime. *Psychotherapy Research*, *30*, 546–554.

Firth, N., Barkham, M., Delgadillo, J., Allery, K., Woodward, J., & O'Cathain, A. (2021). Socioeconomic deprivation and dropout from contemporary psychological intervention for common mental disorders: a systematic review. *Administration and Policy in Mental Health and Mental Health Services Research*, *49*, 490–505.

Frasquilho, D., Matos, M. G., Salonna, F., Guerreiro, D., Storti, C. C., Gaspar, T., & Caldas-de-Almeida, J. M. (2015). Mental health outcomes in times of economic recession: a systematic literature review. *BMC Public Health*, *16*, 1–40.

Holmes, S. C., Austin, A. E., & Smith, M. V. (2022). Understanding the association between material hardship and posttraumatic stress disorder: a test of the social selection and social causation hypotheses and an exploration of gender differences. *Social Psychiatry and Psychiatric Epidemiology*, *57*, 57–66.

Holmes, S. C., Callinan, L., Facemire, V. C., Williams, M. T., Ciarleglio, M. M., & Smith, M. V. (2021). Material hardship is associated with posttraumatic stress disorder symptoms among low-income black women. *Journal of Traumatic Stress*, *34*, 905–916.

Kivimäki, M., Batty, G. D., Pentti, J., Shipley, M. J., Sipilä, P. N., Nyberg, S. T., Suominen, S. B., Oksanen, T., Stenholm, S., & Virtanen, M. (2020). Association between socioeconomic status and the development of mental and physical health conditions in adulthood: a multi-cohort study. *The Lancet Public Health*, *5*, e140–e149.

Lewis, C., Roberts, N. P., Andrew, M., Starling, E., & Bisson, J. I. (2020). Psychological therapies for post-traumatic stress disorder in adults: systematic review and meta-analysis. *European Journal of Psychotraumatology*, *11*, 1729633.

Martin, A., Najman, J. M., Williams, G. M., Bor, W., Gorton, E., & Alati, R. (2011). Longitudinal analysis of maternal risk factors for childhood sexual abuse: early attitudes and behaviours, socioeconomic status, and mental health. *Australian & New Zealand Journal of Psychiatry*, *45*, 629–637.

Mavranezouli, I., Megnin-Viggars, O., Grey, N., Bhutani, G., Leach, J., Daly, C., Dias, S., Welton, N. J., Katona, C., & El-Leithy, S. (2020). Cost-effectiveness of psychological treatments for post-traumatic stress disorder in adults. *PloS One*, *15*, e0232245.

McManus, S., Bebbington, P. E., Jenkins, R., & Brugha, T. (2016). *Mental Health and Wellbeing in England: The Adult Psychiatric Morbidity Survey* 2014. NHS Digital.

Murray, H., Grey, N., Warnock-Parkes, E., Kerr, A., Wild, J., Clark, D. M., & Ehlers, A. (2022). Ten misconceptions about trauma-focused CBT for PTSD. *the Cognitive Behaviour Therapist*, *15*, e33.

https://doi.org/10.1017/S1754470X25000029 Published online by Cambridge University Press

National Collaborating Centre for Mental Health (2018). *The Improving Access to Psychological Therapies Manual Version 6*. https://www.england.nhs.uk/wp-content/uploads/2018/06/the-nhs-talking-therapies-manual-v6.pdf

NICE (2018). Post-traumatic stress disorder. NICE guideline, www.nice.org.uk/guidance/ng116

Richardson, T., Elliott, P., & Roberts, R. (2013). The relationship between personal unsecured debt and mental and physical health: a systematic review and meta-analysis. *Clinical Psychology Review*, *33*, 1148–1162.

Roberts, N. P., Kitchiner, N. J., Lewis, C. E., Downes, A. J., & Bisson, J. I. (2021). Psychometric properties of the PTSD Checklist for DSM-5 in a sample of trauma exposed mental health service users. *European Journal of Psychotraumatology*, *12*, 1863578. https://doi.org/10.1080/20008198.2020.1863578

Shalev, A. Y., Gevonden, M., Ratanatharathorn, A., Laska, E., Van Der Mei, W. F., Qi, W., Lowe, S., Lai, B. S., Bryant, R. A., & Delahanty, D. (2019). Estimating the risk of PTSD in recent trauma survivors: results of the International Consortium to Predict PTSD (ICPP). *World Psychiatry*, *18*, 77–87.

Shiga, T., Zhang, W., Ohira, T., Suzuki, Y., Maeda, M., Mashiko, H., Yabe, H., Iwasa, H., Nakano, H., & Yasumura, S. (2021). Socioeconomic status, damage-related conditions, and PTSD following the Fukushima-daiichi nuclear power plant accident: The Fukushima Health Management Survey. *Fukushima Journal of Medical Science*, *67*, 71–82.

Sweetman, J., Knapp, P., McMillan, D., Fairhurst, C., Delgadillo, J., & Hewitt, C. (2023). Risk factors for initial appointment non-attendance at Improving Access to Psychological Therapy (IAPT) services: a retrospective analysis. *Psychotherapy Research*, *33*, 535–550. https://doi.org/10.1080/10503307.2022.2140616

Tang, B., Deng, Q., Glik, D., Dong, J., & Zhang, L. (2017). A meta-analysis of risk factors for post-traumatic stress disorder (PTSD) in adults and children after earthquakes. *International Journal of Environmental Research and Public Health*, *14*, 1537.

The Health Foundation (2019). *In Deprived Areas, Patients Referred for Psychological Therapy are Less Likely to Receive Treatment*. https://www.health.org.uk/news-and-comment/charts-and-infographics/referrals-for-psychological-therapy-from-patients-in-deprive

Trust for London (2023). *Crime and Income Deprivation*. ~https://trustforlondon.org.uk/data/crime-and-income-deprivation/#:~:text = Overall%2C%2052%25%20more%20crimes%20were,the%20least%20income%2Ddeprived%2010%25

van der Velden, P. G., Contino, C., Muffels, R., Verheijen, M. S., & Das, M. (2023). The impact of pre-and post-trauma financial problems on posttraumatic stress symptoms, anxiety and depression symptoms, and emotional support: a prospective population-based comparative study. *Journal of Anxiety Disorders*, *96*, 102714.

Visser, E., Gosens, T., Den Oudsten, B. L., & De Vries, J. (2017). The course, prediction, and treatment of acute and posttraumatic stress in trauma patients: a systematic review. *Journal of Trauma and Acute Care Surgery*, *82*, 1158–1183.

Wright, S. L., Karyotaki, E., Cuijpers, P., Bisson, J., Papola, D., Witteveen, A., Suliman, S., Spies, G., Ahmadi, K., & Capezzani, L. (2024). EMDR *v*. other psychological therapies for PTSD: a systematic review and individual participant data meta-analysis. *Psychological Medicine*, *54*, 1580–1588.

Cite this article: Richardson T, Ferrie O, Smith D, Ellis-Nee C, Smart T, Gray E, Roberts N, Delgadillo J, and Simmons-Dauvin M (2025). Neighbourhood socioeconomic deprivation associated with poorer psychological therapy outcomes for PTSD: an audit of a single NHS Talking Therapies (IAPT) service. *The Cognitive Behaviour Therapist* 1–12. https://doi.org/10.1017/S1754470X25000029