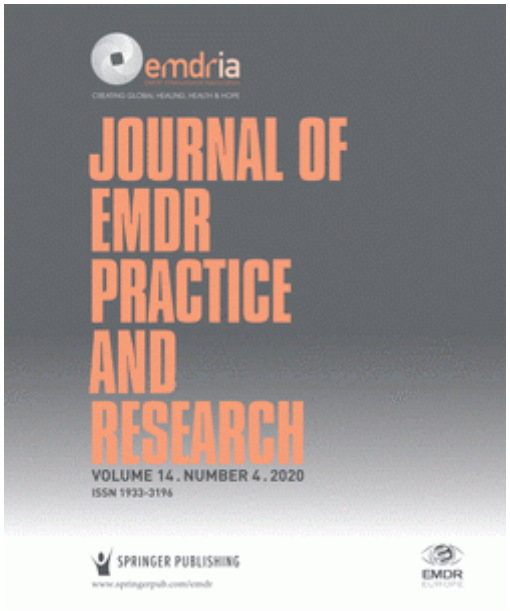

Comparing the predictors of disengagement for trauma therapy (TF-CBT and EMDR) in an adult mental health service.

Journal:	*Journal of EMDR Practice and Research*
Manuscript ID	EMDR-2023-0004.R1
Manuscript Type:	Comparative Research
Keywords:	Cognitive Behavior Therapy, CBT, EMDR Therapy, Posttraumatic Stress Disorder, PTSD, Trauma, Treatment Outcome
Abstract:	In this retrospective service evaluation predictors of disengagement from Eye Movement Desensitization and Reprocessing, and Trauma-Focused Cognitive Behavioural Therapy are investigated. Pre-existing data from a National Health Service Adult Community Mental Health Team were collected and disengagement rates were compared based on demographic, therapy, and Health of the Nation Outcome Scales scores to investigate the impact they have on disengagement rates. A non-significant, higher proportion of EMDR cases disengaged (62.8%) than TF-CBT (55.3%). There was a significant association between disengagement rates and depressed mood (77.8% moderate to severe vs. 51.2% no to mild) as well as living conditions (84.0% minor to severe vs. 53.7% no problem). No significant associations were found between disengagement and demographic variables (age, gender, and ethnicity) or time waiting for intervention.

Comparing the predictors of disengagement for trauma therapy.

Abstract

In this retrospective service evaluation, the predictors of disengagement from trauma therapy are investigated, as previous research suggests that disengagement rates may be higher than other therapies, however they are often inconsistent around why this might be.

Clients on the Post-Traumatic Stress Disorder treatment pathway received either: Eye Movement Desensitization and Reprocessing or Trauma-Focused Cognitive Behavioural Therapy.

Pre-existing data from 105 cases at a National Health Service Adult Community Mental Health Team were collected and disengagement rates were compared based on demographic, therapy, and Health of the Nation Outcome Scales scores to investigate the impact they have on disengagement rates.

Results found a ~~higher~~ different proportion of those receiving EMDR disengaged (62.8%) than those who received TF-CBT (55.3%), though this difference was non-significant. There was a significant association between disengagement rates and depressed mood (77.8% in moderate to severe group vs. 51.2% in no to mild group). There was also a significant association between disengagement rates and living conditions (84.0% in minor to severe group vs. 53.7% in no problem group).

No significant associations were found between disengagement and demographic variables (age, gender, and ethnicity) or time spent waiting for intervention.

The implications of these findings and practice recommendations are discussed.

Key Words

- Trauma Focused Cognitive Behaviour Therapy
- Eye Movement Desensitization and Reprocessing
- Service Evaluation
- Disengagement

Comparing the predictors of disengagement for trauma therapy.

- Drop-out
- Post-Traumatic Stress Disorder

Key Learning Aims

- To investigate therapy, demographic and clinical variables and their contribution to disengagement from EMDR and TF-CBT.
- To identify factors which impact rates of disengagement.
- To consider how to improvement engagement for trauma therapies based on the findings discussed.

Comparing the predictors of disengagement for trauma therapy.

Introduction

Post-Traumatic Stress Disorder (PTSD) describes a set of symptoms which follow witnessing or experiencing a traumatic event. The International Classification of Diseases 11th revision (ICD-11) outlines the following essential criteria to describe PTSD (World Health Organisation, 2019):~~, These include re-experiencing the event, functional and emotional difficulties and dissociation .~~ Exposure to a threatening even with symptoms around hypervigilance, reexperiencing in the form of nightmares, flashbacks or intrusive thoughts, and avoiding reminders of the event. These symptoms impact functioning for example in work and socialising.

Eye Movement Desensitization and Reprocessing (EMDR) and Trauma-Focused Cognitive Behavioural Therapy (TF-CBT) are both effective, trauma focussed interventions (Bisson et al., 2013; Lewis et al., 2020) recommended for people with PTSD in the UK (National Institute of Health and Care Excellence [NICE], 2018). Interventions are offered by the National Health Service, a publicly funded health service in the United Kingdom.

As in all interventions there are clients who disengage and do not complete the full intervention. The rates of disengagement from PTSD interventions has been found to be high, and can vary depending on the type of intervention, with some rates as high as 50% (Schottenbauer et al., 2008; Szafranski et al., 2017). This is higher than rates for other interventions such as ACT: 15.8% (Ong et al., 2018), ~~or~~ DBT: 28.0% (Dixon & Linardon, 2020), or ERP: 18.7% (Ong et al., 2016) and for other difficulties, such as depression: 24% (Arnow et al., 2007), ~~and~~ anxiety: 16.99% (Gersh et al., 2017), obsessive-compulsive disorder: 15.9% (Leeuwerik et al., 2019), or panic disorder: 15.4% (Swift & Greenberg, 2014). ~~.~~Disengagement rates in real world clinical settings may well be higher than these rates, due to the nature of complexity inherent in secondary care populations, many of whom have had multiple traumas, which could exclude them from being included in many randomised controlled trials.

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Client attitudes towards the intervention has been found to influence how likely they are to disengage, with interventions being seen as more credible having less disengagement (Alfonsson et al., 2016; D. S. Berke et al., 2019). Also compared to other PTSD interventions, EMDR has been suggested to be more flexible to individual needs (Dunne & Farrell, 2011) and tolerated better by clients, leading to lower rates of disengagement compared to TF-CBT (Greenwald et al., 2021).

Researchers have also found evidence for individual and contextual differences which may predict disengagement. The most consistent evidence for a predictor of disengagement is that younger people were more likely to disengage from a trauma intervention (D. Berke et al., 2019; DeViva, 2014; Garcia et al., 2011; Richardson et al., 2019), however other studies have seen that age does not significantly predict disengagement rates (Vohringer et al., 2020; Yasinski et al., 2018). Miller et. al (2008) found that people from African American families were more likely to disengage than White families and suggested a lack of cultural matching between therapist and client as a potential explanation.

However, others have suggested that differences in disengagement rates found in research may instead be due to methodological differences in the studies themselves; such as differing definitions of disengagement, variation in number of sessions per treatment and differences in categorisation of interventions (Bisson et al., 2013; Imel et al., 2013; Szafranski et al., 2017). This makes applying the research to a real-world clinical context difficult, as the service offer available in each locality nationally will vary widely due to differences in funding, commissioning and staff training, making the evidence base, made up of mostly highly controlled randomised controlled trials (RCTs), less generalisable. To overcome this many NHS trusts will use service evaluations to investigate how a specific service is operating and what could be done to better serve the population they work with, in a way that existing literature is unable to offer.

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The research into what contributes to disengagement is still growing, this service evaluation aims to add to the current base by exploring disengagement from trauma therapies at an adult CMHT in the south of England.

This service evaluation aims to investigate which variables predict dropout between two PTSD interventions (EMDR and TF-CBT) offered at a National Health Service (NHS) adult Community Mental Health Team (CMHT) in the south of England. Predictor variables, listed below, were chosen based on the existing literature and available demographic and clinical information at the time of data collection. The following evaluation questions were posed:

1. Do therapy variables (EMDR or TF-CBT as intervention, time spent waiting for intervention) impact disengagement rates?
2. Do demographic variables (age, gender, ethnicity) impact disengagement rates?
3. Does health and social functioning (as measured by the Health of the Nation Outcome Scale [HoNOS], Wing et al., 1998) impact disengagement rates?
4. What is the relationship between the proportion of sessions attended and the age of each case and time spent on a waiting list?

Method

Design

The evaluation used a case-controlled design, via a retrospective audit of pre-existing data held by the service. The dependent variables used were disengagement from the intervention offered and the proportion of sessions attended. The independent variables were sorted into the following categories:

- Demographic variables: Gender, Age and Ethnicity.
- Therapy variables: Time spent waiting for their intervention, whether their intervention was EMDR or TF-CBT.
- Overall health and social functioning: measured using the HoNOS (Wing et al., 1998), a 12 item clinician-rated measure designed to gauge health and social care outcomes in mental health services for adults (James et al., 2018).

Participants

Data was collected from referrals entered onto the trauma intervention waiting list at an NHS CMHT in the south of England. All available and accessible referrals were sampled, covering a period of 8 years and 3 months. In total 105 cases were used in the evaluation, with cases removed for those who had not given consent for their data to be used in evaluations and for four who had died during their intervention.

Procedure

All data relating to individual care (including demographic information, clinical notes, correspondence, etc.) was entered and maintained using the SystemOne database as a part of routine clinical practice by staff in the CMHT. For each case, the clinical notes dated between their referral for trauma intervention and discharge from the service were analysed to collect the therapy and demographic variables needed. Cases were assigned to categories of “Therapy Completed” or

"Therapy Not Completed" based on the final case notes and reason for discharge entered by their practitioner. Any reason other than the practitioner reporting that the therapy had been completed was combined into the "Therapy Not Completed" category (i.e., if the practitioner reported "moving away", "patient requested discharge", "disengaged", etc.) as these were all viewed as expressions of disengagement. The only outcome cleansed from the data was the death of the individual themselves, as this was viewed as a factor unrelated to engagement, and further information about cause of or contributors ~~,~~ to death were not accessible at the point of data collection.

Disengagement was defined as withdrawing from the service before an intervention is agreed to have been completed by the practitioner. This included times when the client did not attend any offered sessions in which to agree an intervention (EMDR or TF-CBT) and was discharged without being seen. The process by which clients disengaged from the service was not captured, which does limit the more specific predictive capabilities of the data. However, this was decided due to the non-standardised nature of the clinical notes available, meaning their content and level of detail varied, thus making such analysis less suited to the methods selected for this service evaluation.

Demographic variables such as age at discharge, gender and ethnicity were collected from the information held on the system. Number of sessions offered, attended and missed were calculated by reading through the case notes of each client and counting the incidences of each with their practitioner for this referral.

HoNOS scores were collected from the questionnaire on the system for each case, dated closest in time to their referral to the CMHT. Twenty-six cases did not have any HoNOS scores available and so were removed from analysis for these variables.

Due to the low sample size, all categorical variables were converted to two or three levels, depending on appropriateness, to retain statistical power. Ethnicity was converted to "White", "Black and Minority Ethnic (BME)" or "None Recorded", therapy outcome was converted to either "Therapy Completed" or "Therapy Not Completed" and individual HoNOS question scores were

converted to either “high” or “low” scores, based on the spread of data across cases (for instance “no problem to mild problem” and “minor problem to severe problem”), as only 79 cases had completed scores on their file. The HoNOS total scores were kept as continuous data for the analysis. The proportion of sessions attended was calculated based on the number of sessions attended and the number missed or cancelled.

Statistical Analysis

A chi-squared test of homogeneity was used to analyse all categorical variables, as the dependent variable (DV) was categorical (therapy outcome) and the independent variables (IV) were also categorical (intervention used, gender, ethnicity and HoNOS converted scores). All data used was independent of one another and none of the cells had an expected count of less than five, meaning that the two main assumptions of a chi-squared test of homogeneity were met (Field, 2013).

An independent samples t-test was carried out to see if there was a difference in the average HoNOS total score between those who completed therapy or discharged early. HoNOS totals are interval data and had independence from one another, the data had homogeneity of variance as assessed by Levene’s test (p = .505) and examination of the histogram showed normality of distribution, satisfying all of the assumptions of the test.

A one-way ANOVA was carried out to see if there was a difference in age and the outcome. The variables had independence from each other, however one outlier was identified via boxplots, a graphing technique used to summarise a dataset visually (Field, 2013). However, the data was retained for the analysis as removing it had little to no impact on the results of the analysis itself (Field, 2013). The age of each case was found to be not normally distributed by the Shapiro-Wilks’ test (p < .05). Despite this the ANOVA is considered robust to non-normality (Maxwell et al., 2017) so the analysis went ahead. There was homogeneity of variances, as assessed by Levene's test, p = .746, based on the median as this offers a suitable balance of robustness and statistical power in light of the observed outliers (Field, 2013).

A one-way ANOVA was carried out to see if there was a difference in the number of days spent waiting for an intervention and the outcome. The variables had independence from each other, and no outliers were identified. Due to the low sample size, a regression was not conducted (Bujang et al., 2018) and due to the uneven sample sizes of those who completed therapy (*n*= 37) and those who disengaged (*n*= 68) a MANOVA was not conducted as the risk of a type 2 error was considered too great (Field, 2013).

Three one-way ANOVAs were carried out to see if the intervention used (EMDR vs TF-CBT), gender (Male vs Female) and ethnicities of participants (White vs BME) impacted the proportion of sessions attended. Again, these three variables had independence. However, there were six significant outliers identified via boxplots however the data was retained for the analysis as removing it had little to no impact on the results (Field, 2013). There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p > .05$). Proportion of sessions attended were normally distributed ($p > .05$).

The proportion of sessions attended was a negatively skewed distribution, with a skewness of -0.78 (*SE* = 0.24) and kurtosis of -0.82 (*SE* = 0.48). Age was normally distributed on a histogram, with a skewness of 0.14 (*SE* = 0.24) and kurtosis of -0.91 (*SE* = 0.47). Number of days spent waiting for intervention was positively skewed and kurtosed, with a skewness of 2.91 (*SE* = 0.25) and kurtosis of 13.09 (*SE* = 0.50). Total HoNOS score was normally distributed on a histogram, with a skewness of -0.01 (*SE* = 0.27) and kurtosis of -0.71 (*SE* = 0.54). The deviations from normality are mitigated by the size of the sample, according to central limit theorem (Field, 2013), and can be overcome by using bootstrapping, a method that allows a single dataset to be resampled and simulate more samples for the purpose of hypothesis testing (Field, 2013). As the scatterplots for each correlation showed linear relationships, three Pearson's correlation analyses were conducted to investigate the relationship between the proportion of sessions attended with the age, the number of days spent waiting for intervention, and the total HoNOS score.

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Results

Demographic information

A total of 105 cases were used in this evaluation. This sample was made up of 65.7% (*n*= 69) females, 34.3% (36) males with an overall mean age at discharge of 39.31 years. The sample was 42.9% (*n*= 45) White ethnicity, 38.1% (*n*= 40) Black and Minority ethnicity with 19% (*n*= 20) not having a recorded ethnicity on the system. In total 41% (*n*= 43) cases received an EMDR intervention with a mean 282.83 days spent waiting from referral for their first appointment, 44.8% (*n*= 47) received a TF-CBT intervention with a mean 329.11 days spent waiting from referral for their first appointment and 14.3% (*n*= 15) were discharged before a specific intervention had been agreed, with a mean 244.80 days spent waiting from referral for their first appointment. The mean proportion of sessions attended was 64.6% and 35.2% (*n*= 37) of the cases were discharged having completed their intervention, while 64.8% (*n*= 68) of cases disengaged from treatment before an agreed ending.

ANOVA results

A one-way ANOVA was carried out to see if there was a difference between intervention outcome (IV) and age of participants (DV). There was no significant difference in outcome of intervention for different ages ($F(40, 64) = 1.173$, $p = .280$).

A one-way ANOVA was carried out to see if there was a difference between intervention outcome (IV) and the number of days spent waiting for the intervention (DV). There was no significant difference in outcome of intervention for different wait times ($F(82, 8) = .752$, $p = .760$).

Three one-way ANOVAs were carried out to see if the intervention used (IV: EMDR vs TF-CBT), gender (IV: Male vs Female) and ethnicities of participants (IV: White vs BME) impacted the proportion of sessions attended (DV). There was no significant effect on the proportion of sessions attended from gender ($F(1, 104) = .795$, $p = .375$), ethnicity ($F(2, 104) = .024$, $p = .977$) or

intervention used, when only those who received an intervention were included in the analysis (F(1, 89) = 1.598, p = .210).

Chi square results

Of those who received EMDR 62.850.9% (n= 27) disengaged, compared to 55.349.1% of those who received TF-CBT (n= 26). There was no statistically significant difference in proportions, see table 1.

Of the seventy-nine cases who completed the HoNOS at referral for a trauma intervention, more than half (63.3%, n= 50) of them disengaged before the intervention was completed. Fewer of those who scored as having no to mild problems with depressed mood (51.2%, n= 22) disengaged, compared to those who scored as having moderate to severe problems with depressed (77.8%, n= 28). This was a statistically significant difference in proportions, see table 2. Of those who scored as having no problem with their living conditions more than half (53.7%, n= 29) disengaged. ~~While~~ However, the majority of those who scored as having minor to severe problems with their living conditions (84.0%, n= 21) disengaged. This was a statistically significant difference in proportions, see table 2.

No other statistically significant results were found in the chi squared analyses.

T-test results

There were 29 cases that completed therapy and 50 that disengaged early. HoNOS totals were higher for those who disengaged early (M = 16.70, SD = 7.50) compared to those who completed therapy (M = 14.07, SD = 7.01). However, this difference in means was found to be non-significant (t(77) = -1.539, p = .128).

Correlation results

A Pearson's r correlation was run to investigate the relationship between the proportion of sessions attended and the age of each case, as the relationship between the two was seen to be linear on the scatterplot and as data were not normally distributed, bootstrapping was used to obtain bias corrected accelerated 95% confidence intervals (-.140, .232). There was no statistically significant correlation between proportion of sessions attended (M = 64.59, SD = 35.35) and age (M = 39.31, SD = 11.28), $r(103) = .046$, $p = .641$.

A Pearson's r correlation was run to investigate the relationship between the proportion of sessions attended and the number of days waiting for intervention, as the relationship between the two was seen to be linear on the scatterplot and as data were not normally distributed, bootstrapping was used to obtain bias corrected accelerated 95% confidence intervals (-.158, .147). There was no statistically significant correlation between proportion of sessions attended (M = 64.59, SD = 35.35) and number of days waiting for intervention (M = 304.13, SD = 249.71), $r(89) = -.003$, $p = .981$.

A Pearson's r correlation was run to investigate the relationship between the proportion of sessions attended and the total HoNOS score for each case. The relationship between the two on a scatterplot was seen to be linear and as one of the covariables was skewed bootstrapping was used to obtain bias corrected accelerated 95% condifdence intervals (-.320, .107). There was no statistically significant relationship between the proportion of sessions attended (M = 64.59, SD = 35.35) and the total HoNOS score (M = 15.73, SD = 7.39), $r(71) = -.097$, $p = .393$.

Discussion

This service evaluation aimed to investigate what variables, including health and social functioning, impacted disengagement rate for trauma therapy for an adult CMHT in the south of England.

It found ~~higher~~ larger, though non-significant, rates of overall disengagement (64.8% of cases) than the "as high as 50%" some research suggested (Schottenbauer et al., 2008), however this may be due to differences in case selection or exclusion criteria. In looking at the factors which impact disengagement, this service evaluation adds to the current literature on the topic, in particular for specialist mental health services within the NHS.

Whether an individual was offered EMDR, or TF-CBT did not have a statistically significant effect on how likely they were to disengage, which is consistent with evidence that they are both suitable interventions for PTSD (Bisson et al., 2013) and that disengagement from an intervention is likely affected by more nuanced and interpersonal factors, such as the perceived credibility of the intervention(Alfonsson et al., 2016; D. Berke et al., 2019; D. S. Berke et al., 2019) ~~(Alfonsson et al., 2016; D. S. Berke et al., 2019; Taylor, 2003)~~. Time spent waiting for an intervention was also found to not predict disengagement rates, meaning that there were no therapy variables found to significantly predict disengagement in this evaluation. Other research has found that shorter waiting times may be a predictor of disengagement (Richardson et al., 2019), so these findings may be due low sample sizes and type 2 errors. The total HoNOS score, which indicates an aggregate of the total severity of difficulty across the domains, was not found to predict disengagement or to relate to session attendance. This is surprising, as prior research has found that greater overall difficulty is linked to disengagement from therapy for CBT for psychosis (Richardson et al., 2019).

Demographic variables that were included in this investigation (age, gender, and ethnicity) also showed no significant impact on disengagement rates. These findings add to the already conflicted evidence around the roles of age (D. Berke et al., 2019; DeViva, 2014; Garcia et al., 2011; Vohringer et al., 2020; Yasinski et al., 2018), ethnicity (Garcia et al., 2011; Horrell, 2008; Miller et al., 2008) and

gender (Békés et al., 2016; Blain et al., 2010; Porche et al., 2011) in disengagement, suggesting they have limited use as predictors of disengagement from PTSD interventions.

Factors which were significantly associated with disengagement were found in the HoNOS scores, in particular problems with depressed mood and problems with living conditions, see Table 2. This evaluation found that being rated as having moderate to severe difficulties with depressed mood was significantly associated with disengagement, meaning that depressed mood may act as a barrier to completing a PTSD intervention. However, prior research has found that a large proportion of individuals with depression and PTSD showed clinically significant improvement in both difficulties prior to disengaging from treatment (Szafranski et al., 2019; Szafranski et al., 2017). This could mean that those who were rated at referral as having a more severe problem with depressed mood disengaged from their intervention because they felt they had made a "good enough" improvement. This conclusion should be held lightly though, as no routine outcome measures were collected about difficulty severity for enough cases to be able to include this in the evaluation, though similar findings have been found before (Richardson et al., 2019).

Difficulties with living conditions in the HoNOS focusses on the suitability of accommodation, including quality of living, daily routines, and hygiene but does not capture the specific nature encountered by each person; looking in more detail at the individual impacts of different living conditions would be helpful area of future research. Being rated as having minor to severe problems with living conditions was significantly associated with disengagement. This finding fits current research which highlights that disengagement may be clients not being able to attend due to the demands of daily living (Najavits, 2015; Schottenbauer et al., 2008). However, without detailed information about the context surrounding these problems this conclusion needs to be considered carefully; as the data makes no distinction between the sources of difficulty, instead focussing on reported severity. There is a risk of assuming that those in societally subjugated positions experience

these difficulties similarly to those in positions of privilege, that "severe" means the same for everyone (Burnham, 2018).

Clinical implications

Should we accept the conclusion that more severe difficulties with depressed mood contribute to disengagement from an intervention, then it makes sense to incorporate screening and monitoring of these difficulties as a part of the assessment and treatment process. An evidence-based measure is often used in improving access to psychological therapies (IAPT) service as a part of the session for just this purpose. For depression, the Patient Health Questionnaire (PHQ-9) is routinely used in NHS settings (Kroenke & Spitzer, 2002) due to its validity and reliability (Kroenke et al., 2001). Doing so would allow clinicians to identify clients who may be at risk of disengaging early and adapt their formulation and intervention accordingly, or to better understand disengagement when it occurs in the context of reduced difficulties with depressed mood (Szafranski et al., 2019; Szafranski et al., 2017). It would be helpful to offer ~~behavioural activation as a piece of work~~an intervention which targets depression while clients are awaiting their therapy and also at the beginning of therapy to improve engagement before their trauma intervention (Turner & Leach, 2012). For cases identified at referral as more suited for CBT interventions; behavioural activation (Martell et al., 2001) or cognitive restructuring (Beck, 2020) are both supported by a wide evidence base. While for those cases identified as being more appropriate for an EMDR intervention, the DeprEnd protocol (Hofmann et al., 2016) could be considered. This protocol works with the understanding that depression is a stress and trauma-based difficulty (Hase et al., 2017) and uses EMDR to process episodic triggers and negative belief systems, similar to how it is used in PTSD treatment (Hofmann et al., 2016). Other protocols may have been applied to the work clients received, however this was not routinely captured on the system and as such remains an unknown.

The size of the proportion of those who disengaged with mild to severe difficulties with their living conditions (see table 2) points towards this being a contributor to disengagement for clients. The

HoNOS only captures the severity of the difficulty itself, not necessarily the contributing factors. This means that someone who has an acute problem (such as damage to the home, or the water being turned off) can rate as highly as someone with more chronic difficulty (such as living in unsecure accommodation or in an unsafe environment due to domestic violence or other environmental factors). It would be useful for this information to be collected and clarified at assessment and referral so that it may be acted upon by the wider team, such as colleagues in safeguarding, care coordination, and therapeutic services for additional support.

With this in mind it is important to involve clients in all decisions about their care and to aim to coproduce a shared understanding of both their difficulty and which intervention will be the best fit for them (James & Quirk, 2017).

Limitations of this evaluation

These results may be limited by the small sample size, as with a larger scale sample a logistic regression could have been carried out (Bujang et al., 2018; Field, 2013) which would have more statistical power reducing. Several strategies were used to retain as large a sample as possible, such as reducing categories to two main groups (i.e., White vs BME) and incorporating "none-recorded" data as their own group (such as those who had no ethnicity recorded). These were employed to try and maintain as much statistical power as possible, however it meant a lot of depth of the data was lost, resulting in a reasonable albeit rudimentary set of analyses. Another consequence of the small sample size was that instead of fewer, more powerful tests being carried out there were instead many, less powerful tests. This increases the likelihood that any significant findings were the result of type 1 errors. On the other hand, the low overall sample size and reduced statistical power of non-parametric tests means that there is a greater likelihood that the non-significant findings were due to type 2 errors. As these analyses were exploratory, a larger sample size would allow regression analyses to be conducted, reducing the overall type 1 error risk.

Another limitation of this service evaluation is

Furthermore, as information regarding comorbid mental health difficulties was limited to what would routinely be captured by the HoNOS. It may be that other comorbid difficulties could contribute to disengagement. For instance, research has found higher rates of disengagement when there are comorbid personality presentations (Cooper & Conklin, 2015), higher rates of anxiety (Belleau et al., 2017), or axis 1 difficulties identified with the "Structured Clinical Interview for DSM-IV Axis I Disorders, Patient Edition" (Wnuk et al., 2013). It is likely that a proportion of the cases captured by this service evaluation, coming from a complex secondary care group, had comorbidities that were not recorded on the system and may have contributed to their disengagement.

Therefore, these conclusions must be held lightly, within the context of prior research and with the reality that "disengagement" is a somewhat subjective thing to measure. Within this service there were limited options to select on the system to elaborate on a person disengaging from their intervention, this means clinicians must use their best judgement when selecting the option to describe the ending from options such as "no further treatment appropriate", "disengaged" or "intervention complete", among others. None of the options available capture the richness or personal context surrounding an individual and why they have withdrawn, nor are the options all mutually exclusive. For instance, a person may "disengage" before their final session as they felt their "intervention was complete" which would mean that there was "no further treatment appropriate". Likewise, as these definitions are not fully operationalised, the meanings of each option may vary from clinician to clinician and lead to problems with their reliability. For example, clinician A might decide to only use " no further treatment appropriate" when they have exhausted all interventions available with a client, while clinician B may use it to mean that it is no longer appropriate to use the current intervention with that person anymore.

Future research

To better understand the factors which influence disengagement from PTSD interventions larger scale studies need to be carried out. Furthermore, the development of an operational definition for

"disengagement" should be prioritised. Without an agreed definition researchers have developed their own which is thought to have led to the discrepancy in their findings (Schottenbauer et al., 2008). By measuring the severity of difficulty with outcome measures at the start and end of therapy, a more specific definition could be devised by investigating the different contexts of disengagement.

Alternatively, smaller scale research projects using qualitative methods such as content analysis to review the content of clinical notes or interviews with practitioners may be able to identify more nuanced predictors of disengagement, which are not as readily captured by routine outcome measures or data systems. These may include contextual factors, such as difficulty accessing public transport during worker strike action, education level (Belleau et al., 2017), etc.

Key Practice Points

- While few variables were found to predict disengagement from intervention, there are common themes to consider ~~(such as EMDR having a higher disengagement rate than TF-CBT)~~ when deciding on the interventions to offer within a service.
- It is important to use outcome measures routinely to track difficulty severity and progress made. Screening for difficulties with depressed mood with the PHQ-9 would allow for targeted behavioural activation work to be carried out while clients are awaiting their therapy, reducing the risk of disengagement once therapy starts.
- More emphasis should be given to assessing living problems and the specific impacts these have on a client, becoming a part of their formulation. Signposting to relevant services and support should be offered, where appropriate, to aid clients to finish their intervention.

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Tables and Figures

Table 1. *Differences in disengagement rates by categorical variables identified from clinical notes.*

Categorical variables from clinical notes	Proportion of sample	Disengagement rates (overall: 64.8%, *n* = 68)	Chi-square, significance and Odds Ratio (*OR*)
Intervention			
EMDR	47.8% (*n* = 43)	62.850.9% (*n* = 27)	χ^2 = .518, *p* = .472
TF-CBT	52.2% (*n* = 47)	55.349.1% (*n* = 26)	*OR* = .734 (95% CI: .315, 1.707)
Gender			
Male	34.3% (*n* = 36)	63.9% (*n* = 23)	χ^2 = .018, *p* = .892
Female	65.7% (*n* = 69)	65.2% (*n* = 45)	*OR* = 1.060 (95% CI: .457, 2.458)
Ethnicity			
White	52.9% (*n* = 45)	57.1% (*n* = 32)	χ^2 = 1.163, *p* = .281
BME	47.1% (*n* = 40)	42.9% (*n* =24)	*OR* = .609 (95% CI: .247, 1.504)

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Table 2. *Differences in disengagement rates by HoNOS categorical variables identified from clinical notes.*

HoNOS categorical variables	Proportion of sample	Disengagement rates (overall: 63.3%, *n* = 50)	Chi-square, significance and Odds Ratio (*OR*)
1. Overactive, aggressive, disruptive or agitated behaviour			
No problem	53.2% (*n* = 42)	61.9% (*n* = 26)	χ^2 = .074, *p* = .785
Minor to severe problem	46.8% (*n* = 37)	64.9% (*n* = 24)	*OR* = 1.136 (95% CI: .453, 2.846)
2. Non-accidental self-injury			
No to minor problem	49.4% (*n* = 39)	61.5% (*n* = 24)	χ^2 = .102, *p* = .750
Mild to severe problem	50.6% (*n* = 40)	65.0% (*n* = 26)	*OR* = 1.161 (95% CI: .465, 2.900)
3. Problem drinking or drug-taking			
No problem	65.8% (*n* = 52)	55.8% (*n* = 29)	χ^2 = 3.705, *p* = .054
Minor to severe problem	34.2% (*n* = 27)	77.8% (*n* = 21)	*OR* = 2.776 (95% CI: .962, 8.009)
4. Cognitive problems			
No problem	77.2% (*n* = 61)	59.0% (*n* = 36)	χ^2 = 2.106, *p* = .147
Minor to severe problem	22.8% (*n* = 18)	77.8% (*n* = 14)	*OR* = 2.431 (95% CI: .716, 8.255)
5. Physical illness or disability problems			
No to minor problem	49.4% (*n* = 39)	71.8% (*n* = 28)	χ^2 = 2.397, *p* = .122
Mild to severe problem	50.6% (*n* = 40)	55.0% (*n* = 22)	*OR* = .480 (95% CI: .188, 1.223)

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6.	Problems with hallucinations and delusions			
	No problem	78.5% (*n* = 62)	64.5% (*n* = 40)	χ^2 = 0.186, *p* = .666
	Minor to severe problem	21.5% (*n* = 17)	58.8% (*n* = 10)	*OR* = .786 (95% CI: .262, 2.354)
7.	Problems with depressed mood			
	No to mild problem	54.4% (*n* = 43)	51.2% (*n* = 22)	χ^2 = 5.974 *p* = .015, two-tailed
	Moderate to severe problem	45.6% (*n* = 36)	77.8% (*n* = 28)	*OR* = 3.341 (95% CI: 1.245, 8.968)
8.	Other mental and behavioural problems			
	No to mild problem	35.4% (*n* = 28)	57.1% (*n* = 16)	χ^2 = .706, *p* = .401
	Moderate to severe problem	64.6% (*n* = 51)	66.7% (*n* = 34)	*OR* = 1.500 (95% CI: .581, 3.872)
9.	Problems with relationships			
	No to mild problem	68.4% (*n* = 54)	59.3% (*n* = 32)	χ^2 = 1.194, *p* = .275
	Moderate to severe problem	34.6% (*n* = 25)	72.0% (*n* = 18)	*OR* = 1.768 (95% CI: .632, 4.942)
10.	Problems with activities of daily living			
	No problem	50.6% (*n* = 40)	55.0% (*n* = 22)	χ^2 = 2.397, *p* = .122
	Minor to severe problem	49.4% (*n* = 39)	71.8% (*n* = 28)	*OR* = 2.083 (95% CI: .818, 5.306)
11.	Problems with living conditions			
	No problem	68.4% (*n* = 54)	53.7% (*n* = 29)	χ^2 = 6.751 *p* = .009, two-tailed

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	Minor to severe problem	31.6% (*n* = 25)	84.0% (*n* = 21)	*OR* = 4.526 (95% CI: 1.369, 14.960)
12.	Problems with occupation and activities			
	No to minor problem	38.0% (*n* = 30)	56.7% (*n* = 17)	χ^2 = .914, *p* = .339
	Mild to severe problem	62.0% (*n* = 49)	67.3% (*n* = 33)	*OR* = 1.577 (95% CI: .618, 4.026)