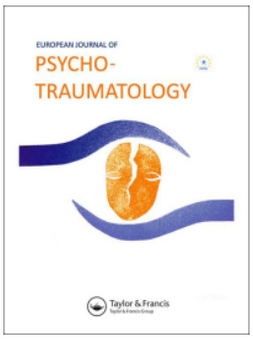

European Journal of Psychotraumatology

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/zept20

Provision of online eye movement and desensitisation therapy (EMDR) for people with post-traumatic stress disorder (PTSD): a multi-method service evaluation

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To cite this article: Daniela Strelchuk, Katrina Turner, Sophie Smith, Jonathan Bisson, Nicola Wiles & Stan Zammit (2023) Provision of online eye movement and desensitisation therapy (EMDR) for people with post-traumatic stress disorder (PTSD): a multi-method service evaluation, European Journal of Psychotraumatology, 14:2, 2281182, DOI: 10.1080/20008066.2023.2281182

To link to this article: https://doi.org/10.1080/20008066.2023.2281182

EUROPEAN JOURNAL OF PSYCHOTRAUMATOLOGY
2023, VOL. 14, NO. 2, 2281182
https://doi.org/10.1080/20008066.2023.2281182

BASIC RESEARCH ARTICLE

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Provision of online eye movement and desensitisation therapy (EMDR) for people with post-traumatic stress disorder (PTSD): a multi-method service evaluation

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ABSTRACT

Background: The evidence for the effectiveness of online EMDR for PTSD is scarce.
Objective: This service evaluation aimed to assess how online EMDR compared to in-person EMDR, in terms of its potential effectiveness and acceptability to therapists and patients.
Method: The evaluation was carried out in the Cardiff and Vale University Health Board Traumatic Stress Service. We compared the outcome of therapy (PTSD scores at end of treatment), number of sessions, drop-out rate, and adverse events using linear/logistic regression in those receiving online EMDR over a 12-month period with those who had received in-person therapy in the year previous to that. Interviews with therapists and clients who had provided or undertaken online EMDR explored their views and experiences of treatment. Interviews were analysed thematically.
Results: 33 people received in-person EMDR (15.3 sessions, SD = 1.4), and 45 received online EMDR (12.4 sessions, SD = 0.9). 24 individuals completed therapy in-person, and 32 online. There was no evidence of a difference in therapy completion, drop-out rates or adverse events between the two delivery modes. There was weak evidence that those who completed EMDR online and had available data ($N = 29$), had slightly lower PTSD scores at the end of therapy compared to those who received in-person EMDR ($N = 24$) (17.1 (SD = 3.2) versus 24.5 (SD = 3.0), mean difference = 7.8, 95% CI −0.3, 15.9, $p = .06$). However, groups were not randomised and only those who completed treatment were analysed, so estimates may be biased. 11 patients and five therapists were interviewed. Overall, both therapists and clients viewed online EMDR as safe and effective. Benefits mentioned by clients included feeling more in control and not having to travel. Clients' concerns related to lack of privacy and 'transition time/space' between therapy and their daily lives.
Conclusion: Results suggest that online EMDR is an acceptable, safe and effective alternative to in-person EMDR for PTSD in this service.

Prestación de terapia en línea de desensibilización y reprocesamiento por medio de movimientos oculares (EMDR) para personas con trastorno de estrés postraumático (TEPT): evaluación de servicios multimétodo

Antecedentes: Las pruebas de la efectividad de la EMDR en línea para el TEPT son escasas.
Objetivo: Esta evaluación del servicio tenía como objetivo valorar cómo se comparaba la EMDR en línea con la EMDR en persona, en términos de su eficacia potencial y aceptabilidad para terapeutas y pacientes.
Método: La evaluación se llevó a cabo en el Cardiff and Vale University Health Board Traumatic Stress Service. Se compararon los resultados de la terapia (puntuaciones de TEPT al final del tratamiento), el número de sesiones, la tasa de abandono y los acontecimientos adversos mediante regresión lineal/logística en los que recibieron EMDR en línea durante un período de 12 meses con los que habían recibido terapia en persona el año anterior. Las entrevistas con terapeutas y clientes que habían proporcionado o realizado EMDR en línea exploraron sus puntos de vista y experiencias del tratamiento. Las entrevistas se analizaron temáticamente.
Resultados: 33 personas recibieron EMDR en persona (15,3 sesiones, DE = 1,4), y 45 recibieron EMDR en línea (12,4 sesiones, DE = 0,9). 24 personas completaron la terapia en persona y 32

ARTICLE HISTORY
Received 29 March 2023
Revised 17 October 2023
Accepted 18 October 2023

KEYWORDS
Online EMDR; service evaluation; PTSD; multi-method; qualitative interviews

PALABRAS CLAVE
EMDR online; evaluación de servicios; TEPT; multimétodo

关键词
在线 EMDR；服务评价；PTSD；多种方法

HIGHLIGHTS

- This service evaluation assessed how online Eye Movement Desensitisation and Reprocessing (EMDR) compared to in-person EMDR in people with PTSD.
- Individuals receiving online EMDR had lower PTSD scores at the end of therapy, but the evidence for this was weak and as this was not a randomised trial we do not know whether this was due to the mode of therapy or other characteristics of clients receiving online therapy.
- Clients and therapists generally viewed online EMDR as being safe and effective, and supported the availability of online EMDR for PTSD.

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/20008066.2023.2281182.

en línea. No hubo pruebas de una diferencia en la finalización de la terapia, las tasas de abandono o los eventos adversos entre los dos modos de entrega. Hubo pruebas débiles de que los que completaron EMDR en línea y tenían datos disponibles ($N = 29$), tenían puntuaciones de TEPT ligeramente más bajas al final de la terapia en comparación con los que recibieron EMDR en persona ($N = 24$) (17,1 (SD = 3,2) versus 24,5 (SD = 3,0), diferencia media = 7,8, IC del 95% −0,3, 15,9, $p = ,06$). Sin embargo, los grupos no fueron aleatorizados y sólo se analizaron los que completaron el tratamiento, por lo que las estimaciones pueden estar sesgadas. Se entrevistó a 11 pacientes y cinco terapeutas. En general, tanto los terapeutas como los clientes consideraron que la EMDR en línea era segura y eficaz. Entre las ventajas mencionadas por los clientes se encontraban la sensación de tener más control y no tener que desplazarse. Las quejas de los pacientes se referían a la falta de privacidad y al 'tiempo/espacio de transición' entre la terapia y su vida cotidiana.
Conclusión: Los resultados sugieren que la EMDR en línea es una alternativa aceptable, segura y eficaz a la EMDR en persona para el TEPT en este servicio.

为创伤后应激障碍（PTSD）患者提供在线眼动和脱敏治疗（EMDR）：多方法服务评估

背景：在线 EMDR 对 PTSD 有效的证据很少。
目的：该服务评估旨在评估在线 EMDR 与面对面 EMDR 相比，其潜在有效性以及治疗师和患者的可接受性。
方法：评估在卡迪夫和维尔大学健康委员会创伤应激服务中心进行。我们使用线性/逻辑回归比较了 12个月内接受在线 EMDR 治疗的患者与在前一年亲自接受治疗患者的治疗结果（治疗结束时的 PTSD 评分）、疗程次数、退出率和不良事件。对提供或进行在线 EMDR 的治疗师和客户进行采访，探讨他们的观点和治疗经历。 对访谈进行了主题分析。
结果：33 人接受了现场 EMDR（15.3 次疗程，SD = 1.4），45 人接受了在线 EMDR（12.4 次疗程，SD = 0.9）。 24 人亲自完成治疗，32 人在线完成治疗。没有证据表明两种治疗方式之间的治疗完成率、退出率或不良事件存在差异。有微弱的证据表明，与接受现场 EMDR 的患者 ($N = 24$) 相比，在线完成 EMDR 并拥有可用数据的患者 ($N = 29$) 在治疗结束时的 PTSD 评分略低 (17.1 (SD = 3.2)) 对比 24.5 (SD = 3.0)，平均差 = 7.8，95%CI −0.3, 15.9，$p = .06$)。 然而，分组并未随机化，仅对完成治疗的患者进行分析，因此估计可能存在偏差。11 名患者和 5 名治疗师接受了采访。 总体而言，治疗师和客户都认为在线 EMDR 安全有效。 客户提到的好处包括感觉更有控制力并且不必出差。客户担心缺乏隐私以及治疗与日常生活之间的'过渡时间/空间'。
结论：结果表明，在线 EMDR 是该服务中针对 PTSD 的一种可接受的、安全且有效的替代面对面 EMDR 的方法。

1. Introduction

Eye movement and desensitisation therapy (EMDR) is a highly effective trauma-focused psychological therapy that is a first-line NICE recommended treatment for post-traumatic stress disorder (PTSD) (NICE, 2018). EMDR is an eight phase-treatment (i.e. history taking, client preparation, assessment, desensitisation, installation, body scan, closure and re-evaluation) based on the adaptive information processing model, in which trauma processing is facilitated by the use of bilateral stimulation (e.g. eye movements or tapping) (Shapiro, 2018). Prior to trauma processing (phases four to six), the client is introduced to emotion regulation procedures such as relaxation or grounding exercises.

The effectiveness of in-person EMDR for PTSD has been widely examined (Cuijpers et al., 2020). For example, comparisons of EMDR with waiting list and usual care have consistently shown that EMDR is superior to these in treating PTSD (Bisson JI et al., 2013; Chen et al., 2014; Roberts et al., 2019). Early reviews and meta-analyses comparing the efficacy of CBT with EMDR in PTSD showed that these therapies yield comparable results (Bisson et al., 2013; Seidler & Wagner, 2006; Watts et al., 2013), although a more recent meta-analysis found that EMDR was slightly superior to trauma-focused cognitive behavioural therapy (TF-CBT) (Chen et al., 2015).

However, the evidence for the effectiveness of online (i.e. video call) EMDR for PTSD is scarce (Lenferink et al., 2020). There has been some reluctance to deliver trauma-focused therapies online because of concerns that recalling very traumatic memories could be distressing for clients, and lead to dissociation and potential risk of harm (Becker et al., 2004; Sansen et al., 2019). However, the restrictions imposed by the COVID-19 pandemic challenged services to adapt their mode of delivering therapy from an in-person to an online format.

A recent RCT which compared the effectiveness of in-person CBT with guided, internet-based CBT in people with PTSD, found that guided internet-based CBT was non inferior to in-person CBT at the end of treatment (mean difference 1.01, one-sided 95% CI, $-\infty$ to 3.9, $p = .012$) (Bisson et al., 2022). NICE guidelines suggest that people with PTSD could be offered computerised TF-CBT if they prefer it over in-person TF-CBT, as long as their PTSD symptoms are not severe (i.e. no dissociative symptoms), and the risk to themselves or others is low (NICE, 2018).

No studies have examined how effective online EMDR is compared to in-person EMDR in people with PTSD, but small-scale studies have shown that online EMDR can decrease anxiety and depression (Lazzaroni et al., 2021; Tarquinio et al., 2021). An uncontrolled open trial that combined CBT with self-guided EMDR found reductions in clinician reported PTSD symptoms (Spence et al., 2013), but the combination of two interventions made it difficult to disentangle the impact of online EMDR from CBT, and the EMDR protocol was more similar to a form of self-help rather than therapist-delivered EMDR. The only randomised controlled trial (RCT) that has so far compared the efficacy of online EMDR with CBT in people with acute stress disorder showed that both treatments reduced PTSD and depression by ~55%, and anxiety by ~30% (Perri et al., 2021). Furthermore, a real-world service evaluation of online EMDR in people with various mental health difficulties (of which PTSD was the most prevalent) found an important decrease in the PTSD scores pre- to post-therapy (effect size 1.69) (McGowan et al., 2021).

Whilst results of these studies show promising results, the quality of the evidence for the effectiveness of online EMDR for PTSD is very low (Lenferink et al., 2020). Given the flexibility associated with online therapy, and therapists' and patients' interest in continuing to offer/receive online EMDR in the future (Bursnall et al., 2022), it is important for services to understand the potential benefits and acceptability of online EMDR.

This service evaluation assessed online EMDR compared to in-person EMDR, in terms of its potential effectiveness and acceptability to therapists and patients. The specific objectives of this evaluation were to (1) compare the change in PTSD symptoms (as measured by the PTSD Checklist for DSM-5 (PCL-5) (Bovin et al., 2016) pre- to post-therapy between online and in-person EMDR; (2) compare the number of sessions attended, drop-out rates and adverse events between online and in-person EMDR; and (3) explore therapists' and clients' views and experiences of online EMDR for PTSD.

2. Methods

This was a multi-method evaluation of online EMDR offered to people with PTSD in the Cardiff and Vale University Health Board (CVUHB) Traumatic Stress Service (TSS) during the COVID-19 pandemic. The TSS is a multi-disciplinary service which offers assessment, psychological therapy and medication reviews for adults with PTSD. The TSS accepts referrals from primary and secondary care services, and conducts specialist assessments for all people referred. Following assessment, patients are placed on a waiting list which is, on average, 18 months long. Most people seen in the TSS meet criteria for complex-PTSD related to interpersonal traumas, often originating during childhood.

When starting therapy, clients are given the option of EMDR or TF-CBT. Typically, clients are offered up to 12 therapy sessions, but this can be extended, should clients need it. EMDR is delivered by six EMDR therapists (of whom five are female). Therapists are aged 50–60 years old, and their median experience of providing EMDR is six years (range 0–13 years). In the context of COVID-19 lockdown, TSS therapists adapted their mode of delivering therapy from in-person to online therapy. An evaluation of the acceptability and potential effectiveness of online EMDR was required to help inform the provision of online therapy post-lockdown.

2.1. Data collection for the quantitative analyses

A member of the evaluation team (DS) who was independent of the TSS was granted access to the clinical database (PARIS) and client files for the sole purpose of collecting and analysing data for this service evaluation. All clients who had received in-person EMDR between January 2019 and March 2020, and all those who received online EMDR between April 2020 and June 2021 were identified for inclusion in this evaluation. Anonymised data (i.e. age, sex, therapy mode, number of sessions received, cancellations, non-attendances and adverse events (defined as dissociation severe enough to require discontinuation of the session, self-harm between session or worsening mental state requiring crisis team intervention)), and PCL-5 scores pre- and post-therapy were extracted from PARIS. When data were not available on PARIS, DS consulted clients' files or liaised with clients' therapists to obtain data, where possible.

2.2. Data collection for the qualitative interviews

2.2.1. Therapist recruitment

The evaluation team emailed invitation letters and participant information sheets to all EMDR therapists in the TSS to take part in a qualitative interview. Those expressing an interest were then contacted to arrange an interview.

2.2.2. Client recruitment

The evaluation team screened all individuals who were offered online EMDR over the timeframe of interest, and liaised with their EMDR therapists to discuss suitability for the interview. Clients who had completed therapy in the previous nine months or who had received at least eight sessions of online EMDR (if therapy still ongoing) were eligible for interview.

Invitation letters and information sheets were posted to individuals identified, directly from the service. Those who expressed an interest were then telephoned by DS to discuss the evaluation and arrange a time for the interview.

2.2.3. Data collection

Topic guides for clients and therapists were developed in parallel to ensure key areas were discussed with both groups. This helped us compare findings across the interviews, highlighting similarities and differences and increasing the confidence with which conclusions could be drawn. With the interviewee consent, the interviews were audio-recorded and transcribed verbatim. Interviews with clients and therapists explored the benefits, challenges, perceived safety and effectiveness of online EMDR, and suggestions for improving future delivery of online EMDR. Therapist interviews also explored their views on the differences between online and in-person EMDR.

2.3. Ethical considerations

This project was classified as service evaluation (Health Research Authority, 2017), and therefore did not require formal HRA ethical approval. The evaluation was reviewed and received favourable opinion from the CVUHB Research and Development Office. All interviewees gave written informed consent to take part in the evaluation interviews.

2.4. Data analysis

2.4.1. Quantitative analyses

Quantitative data were analysed in Stata v16 (StataCorp., 2019). We described (means (SD) or median (IQR) as appropriate, *n* (%)) and compared (using linear/logistic regression) the baseline characteristics of clients who received online and in-person EMDR to examine whether there were any differences between the two groups. Differences in means or ORs, 95% CIs and *p* values were reported.

For both treatment modes, we reported (1) the average (mean (SD)) number of EMDR sessions clients attended; and (2) the number and proportion of clients who (a) completed therapy as planned; or (b) did not complete therapy (i.e. withdrew from therapy, moved out of area, were discharged for non-compliance). 95% confidence intervals for proportions were calculated using the exact binomial method.

We used linear regression to compare the PCL-5 scores at the end of therapy between people who received online and in-person EMDR, adjusting for the baseline PCL-5 scores. Only those who completed therapy as planned were included in this analysis. We reported the difference in means, 95% CI and the *p* value.

Where clients were offered online EMDR and then switched to in-person EMDR (or vice-versa), we only included in the main analyses individuals who had received at least 75% of their sessions using one mode of therapy. For these individuals, we used the PCL-5 scores from the start and end of therapy, ignoring the change in the delivery method. In sensitivity analyses, we restricted analyses to those who received the entirety of their EMDR online or in person. As four clients switched from TF-CBT to EMDR, we also carried out a sensitivity analysis which was restricted to those who had received EMDR only.

2.4.2. Qualitative analyses

All interview transcripts were anonymised and then analysed thematically (Braun & Clarke, 2006), so that comparisons could be made within and across the interviews. A subset of client and therapist transcripts were independently coded by two different researchers, who then met to discuss their coding and interpretation of the data. This helped to control for researcher bias, and encouraged discussion and reflection about the data. When meeting, the two researchers compared and combined the codes they had used to create one coding frame for each set of interviews. The two coding frames were then independently applied by the same researchers to another sample of transcripts, and new codes were added as needed. The researchers then met again to discuss their coding and interpretation of the data. There was a good level of agreement between their coding and where discrepancies occurred, these were discussed. This resulted in further codes being added and existing codes being clarified. The coding frames were then finalised, and the transcripts were imported into the software package NVivo to allow electronic coding and data retrieval. Once all the transcripts were coded, data were analysed using an approach based on framework analysis (Ritchie & Spencer, 1994), where data coded under specific codes were summarised in tables. In these tables, rows represented participants and columns the different codes. Team members then read and re-read the summaries provided, noting key themes and deviant cases, interpreting and reflecting upon the accounts given.

3. Results

3.1. Quantitative results

3.1.1. Baseline characteristics

There were 33 people who received in-person EMDR, and 45 people who received online EMDR included in our analyses (see Figure 1). 111 people were excluded from analyses (Figure 1). The in-person and online groups included in this analysis were similar in age (mean 43.6 years (SD = 1.9); and 41.1 years (SD =

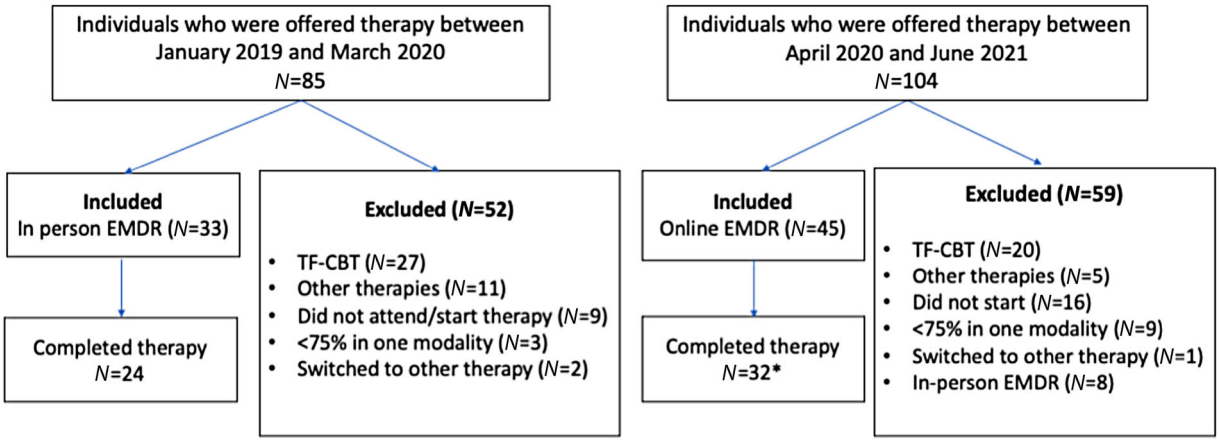

Figure 1. The figure shows the number of individuals who were offered therapy in the TSS between January 2019 and June 2021, therapy type, mode of delivery and completion rates. *Of those, only 29 people had complete data on their post-therapy PCL-5 scores and were included in analysis comparing change in pre- to post-therapy PTSD scores.

1.8), respectively), sex (70% and 71% female), and PCL-5 scores at the start of therapy (mean 60.2 (SD = 2.2); and 61.2 (SD = 1.8)) (Table 1).

Of those who received EMDR, 24 individuals completed therapy in-person, and 32 online. Those completing were similar to non-completers in terms of sex and severity of PTSD symptoms at the start of therapy, although the non-completers were younger (Supplement 1).

3.1.2. Comparisons with clients not included in evaluation

52 and 59 people, respectively, have been excluded from the analyses during the in-person and online EMDR period (Figure 1). Reasons for exclusion during the in-person and online EMDR period included: received trauma-focused CBT (TF-CBT) ($N = 27$ and $N = 20$, respectively) or other forms of therapy ($N = 11$ and $N = 5$, respectively), not attended/started therapy ($N = 9$ and $N = 16$, respectively), received less than 75% of therapy in one modality ($N = 3$ and $N = 9$, respectively), switched from EMDR to other therapies ($N = 2$ and $N = 1$, respectively), or received in-person EMDR during the online EMDR period ($N = 8$) (Figure 1).

Comparisons between clients included ($N = 78$ (33 + 45 during the in-person and online EMDR period, respectively)) and those excluded ($N = 111$ (52 + 59 during the in-person and online EMDR, respectively)) showed that they were similar in terms of their age (42.2 years (SD = 1.3) and 41.3 years (SD = 1.2 respectively)) and sex (71% and 75% were female) (Table 2).

3.1.3. Therapy attendance

On average, clients receiving online EMDR had fewer sessions than those receiving in-person EMDR (mean 12.4 (SD = 0.9) and 15.3 (SD = 1.4) sessions respectively; $p = .08$) (Table 3). However, there was no difference between the two groups in the number of missed appointments (referred throughout as 'did not attend' (DNA)) (mean appointments DNA'd = 0.44 (SD = 0.2) versus 0.81 (SD = 0.2 in the in-person versus online group respectively, $p = .20$), or in the number of 'unable to attend' appointments (UTAs), defined as session cancellation (mean UTAs = 0.67 (SD = 0.2) versus 0.70 (SD = 0.2), $p = .9$)). Similar proportions completed therapy as planned in both groups (73%

Table 1. Baseline characteristics of those who received online versus in-person EMDR

	In-person EMDR ($N = 33$)	Online EMDR ($N = 45$)	ORs or Difference in means (95% CI)	*P* Value
Age (years): mean (SD)	43.6 (2.0)	41.1 (1.8)	2.5 (−2.8, 7.8)	.35
Female: *n* (%)	23 (70%)	32 (71%)	0.93 (0.3, 2.5)	.93
PCL-5 score: mean (SD)	60.2 (2.2)	61.2 (1.8)	−1.04 (−6.6, 4.5)	.71
Received other therapies prior to EMDR: *n* (%)	0	4 (9%)	1.10 (1.0, 1.2)	.08

Table 2. Comparison of age and gender of those included versus excluded from evaluation.

	Included in the evaluation $N = 78$		Excluded from the evaluation $N = 111$		Comparison	
	Mean or *N*	SD	Mean or *N* (%)	SD	OR or Difference in means (95% CI)	*P* value
Age	42.2	1.3	41.3	1.2	0.91 (−2.56, 4.38)	.60
Female	55 (71%)	–	83 (75%)	–	0.81 (0.42, 1.54)	.52

Table 3. Therapy attendance in those who received online and in-person EMDR.

	In person EMDR	Online EMDR	OR or difference in means (95% CI)	*P* value
Number of sessions attended: mean (SD)	15.3 (1.4)	12.4 (0.9)	2.9 (−0.31, 6.12)	.08
Number of DNAs[a]: mean (SD) or median [IQR]	0.44 (0.2)	0.81 (0.2)	−0.37 (−0.94, 0.20)	.20
Number of UTAs[b]: mean (SD) or median [IQR]	0.67 (0.2)	0.70 (0.2)	−0.03 (−0.6, 0.5)	.90
Outcome of therapy				
Completed therapy as planned: *n* (%)	24 (73%)	32 (71%)	1.08 (0.39, 2.95)	.88
Withdrew from therapy/moved out of area/discharged for non-compliance: *n* (%)	9 (27%)	13 (29%)		

[a]DNA = did not attend.
[b]UTA = unable to attend.

Table 4. Post-therapy PTSD scores in the in-person and online EMDR groups.

	In-person EMDR		Online EMDR		Comparison[a]	
	N	Mean (SD)	*N*	Mean (SD)	Difference in means (95% CI)	*P* value
Post-therapy PCL-5 score	24	24.5 (3.0)	29[b]	17.1 (3.2)	7.8 (−0.3, 15.9)	.059

[a]Adjusted for PTSD (PCL-5) baseline values.
[b]Although 32 people completed therapy online, only 29 had complete data on their post-therapy PCL-5 scores.

for in-person, 71% for online), and the drop-out rates were similar (27% versus 29%, $p = .88$).

3.1.4. Change in PTSD scores pre- and post-therapy

Analyses were conducted on those who completed therapy, and had available PCL-5 scores at the end of treatment ($N = 24$ in the in-person EMDR group, and $N = 29$ in the online EMDR group). Those receiving online EMDR had slightly lower PCL-5 scores (mean) at the end of therapy than those receiving in-person EMDR (17.1 (SD = 3.2) versus 24.5 (SD = 3.0) respectively). The mean difference in PCL-5 scores after adjusting for scores at the start of therapy was 7.8 points, 95% CI −0.3, 15.9, $p = .06$ (Table 4).

3.1.5. Adverse events

There were two adverse events (i.e. attempted suicide and self-harm) recorded in the in-person EMDR group.

3.1.6. Sensitivity analyses

Similar to main analyses, when we restricted analyses to those individuals who received the entirety of their therapy either in-person ($n = 19$) or online ($n = 26$), PCL-5 score change was slightly higher for those who received online EMDR (mean difference 8.2, 95% CI −0.1, 16.6, $p = .05$) (Table 5). We found similar results when we restricted analyses to those who received EMDR only, and had not switched from another form of therapy (e.g. TF-CBT) to EMDR (mean difference 7.5, 95% CI −0.4, 15.3, $p = .06$).

3.2. Qualitative results

3.2.1. Therapist characteristics

All eligible therapists ($n = 5$) were invited and agreed to take part in the interview (one further therapist was not invited to take part as they were involved in this evaluation). Therapists were interviewed in June 2021, four via videocall, and one over the telephone (mean duration 40 min). All therapists were female, and aged 50–60 years old. Therapists' median experience of providing EMDR was five years (range 0–11 years).

3.2.2. Client characteristics

31 clients were invited to take part in the interviews. Of those, 17 expressed an interest, three declined and 14 did not respond to the invitation letter. Of 17 who originally expressed an interest, 15 accepted the invitation to participate, and 11 (7 female) were interviewed by telephone in July/August 2021 (four were not available on the day of the interview and could either not be reached to re-arrange, or had limited availability within the time constraints of our evaluation). Five clients were not invited to take part in the interviews as, after liaising with their therapists, we were advised that clients were not in the right place emotionally to take part in an interview within the time constraints of our evaluation.

Table 5. Sensitivity analyses.

	In-person EMDR		Online EMDR		Comparison	
	N	Mean (SD)	*N*	Mean (SD)	Difference in means (95% CI)[a]	*P* value
Post-therapy PCL-5 score in those who received the entirety of their EMDR therapy in-person or online	19	23.3 (3.3)	26	15.2 (3.0)	8.2 (−0.1, 16.6)	.05
Post-therapy PCL-5 score in those who received EMDR only[b]	24	24.5 (3.0)	25	16.2 (3.2)	7.5 (−0.4, 15.3)	.06

[a]Adjusted for the PTSD (PCL-5) baseline values in both set of analyses.
[b]This analysis is restricted to those who received EMDR only (i.e. have not switched from another form of therapy) (e.g. CBT to EMDR).

Clients interviewed were aged 27–57 years (mean 38.9 years (SD 8.4)). On average, interviews lasted 26 min.

3.2.3. Key findings

Key findings are organised below under subheadings that reflect the main areas explored during the interviews. Quotes are used to illustrate points made. They have been tagged according to whether the interviewee is a therapist (T) or client (C), followed by the interviewee's unique ID number.

3.2.3.1. Therapists' views and experiences of delivering online EMDR.

3.2.3.1.1. Differences between online and in-person EMDR. Most therapists reported that delivering EMDR online did not really affect the therapist/client relationship or impact on issues such as trust. They explained this was because building trust was a complex issue which was built gradually, and depended on clients feeling understood and respected rather than on the mode of delivering therapy.

In terms of the specific phases of EMDR, therapists said the history taking (Phase 1), closure and re-evaluation (Phase 7 and 8) phases were similar for online and in-person EMDR. However, there were differences relating to preparation (Phase 2) and processing (Phases 3–6). For example, grounding clients, which is part of phase 2, felt different during online EMDR, as the client and the therapist were not able to share the same sensory stimuli (e.g. seeing the same objects when naming these). Some therapists also said that they did not feel confident sharing their screen with clients during the psycho-education phase (Phase 2), and therefore tended to talk more. Others said that they spent more time in this phase than they normally would have when delivering EMDR in person, especially if there were concerns around dissociation.

During online EMDR, therapists were more likely to use tapping rather than eye movements for bilateral stimulation. This was because some clients used their phones for accessing therapy, and it was hard to ensure adequate lateral eye movements during bilateral stimulation.

Therapists explained that, in their view, tapping was effective but, as it did not take up as much working memory space as eye movements, they had to be more proactive to ensure clients did not become overwhelmed during processing.

> I'm a big believer that eye movements are the best because they use … more attention and I think sometimes the tapping is a bit too easy in the sense that it doesn't take much memory space, so … you have to work a little bit harder at increasing the working memory by changing the tapping. (T3)

3.2.3.1.2. Benefits and challenges of online EMDR. Therapists described how conducting the sessions online meant they did not need to travel or worry about room bookings, could email clients directly, and could easily reschedule an appointment if needed. Some also thought that clients felt safer and more comfortable accessing treatment from their own homes, and may have found it easier to say things online rather than in person. However, therapists found technical issues such as slow laptops and poor internet connection stressful. They also commented that some clients wanted to wait for in-person EMDR, as they felt they could connect better to their therapist this way, did not have adequate technology to do therapy online, were concerned about being overheard by family members, or did not want to discuss traumatic memories in their own home.

> There's one person who's had to wait for in-person because he lives with his partner, three children … they've got a tiny house … so there's no privacy … And another one who really felt that he didn't want to be exploring his memories … in his own home 'cos he said I've got no escape, it's lockdown. (T5)

It was also mentioned that some clients were very casual about their online therapy sessions, which sometimes reduced clients' concentration.

> I've had one [client] that was kind of relaxing so much they were pretty much lying down which was really off-putting to see them on an angle. (T2)

3.2.3.1.3. Perceived safety and effectiveness of online EMDR. Therapists said that they had not encountered clear safety issues, although there were times when they felt that the risk level of some of their patients was quite high. Although not commonly encountered, if a client was highly dissociative, therapists tried to see them in person or, if online, delayed trauma processing until it felt safe to do so. Therapists also had the option of pausing therapy and re-starting once in-person appointments were possible again. Therapists also mentioned that, as a service, they had been encouraged not to deliver online therapy to clients who indicated during the screening and initial phases of history taking that they had problems with dissociation or grounding themselves.

When asked how they managed clients who became distressed, therapists generally said that they increased working memory during bilateral stimulation and used the Flash or the Constant Installation and Present Orientation to Safety techniques to minimise distress levels. One therapist said that they had done a bit less processing than they would have probably done in person. Some therapists also explained that they had a backup plan that involved the therapist calling someone who was in the house with the client if needed.

All therapists interviewed said they found online EMDR to be effective 'I've been blown away at how well it has worked online' (T5). However, one therapist said that online EMDR should only be provided by experienced professionals, and clients should be assessed for suitability for online EMDR in terms of whether

> the client is showing an ability to be able to respond to interventions at the very early history taking and preparation stages such as … grounding, safe place, resource building … if it looks like the client has any difficulty in being able to access those images, thoughts, feelings … then perhaps online EMDR is not a good idea. (T4)

Another therapist said that online EMDR was not their preferred modality of delivering therapy because they felt that 'something's just missing which I guess is that kind of in the room therapist/client attunement' (T2). Similarly, another therapist said that although online EMDR had felt as effective as in-person EMDR, it was only after she had returned to providing clients in-person EMDR that she had realised how many more cues therapists picked up when seeing clients in person.

3.2.3.1.4. Improvements to online EMDR. Therapists' suggestions for improving online EMDR included providing them with work phones to improve communication with clients, ensuring both clients and therapists have laptops and good internet connection, training therapists in how to work online, and how to keep clients safe and ground them remotely.

All therapists said that it would be good to continue to offer online EMDR during future pandemic restrictions, and as an alternative to in-person EMDR. They commented that online therapy offered more flexibility to individuals with childcare responsibilities or disabilities that limited their ability to travel, and for individuals who worked away from home and therefore were unable to attend appointments in person.

Lastly, some therapists mentioned the importance of having blended models of offering therapy (i.e. both online and in-person), and offering online EMDR as part of a range of options.

3.2.3.2. Clients' iews and experiences of receiving online EMDR

3.2.3.2.1. Reasons for accepting online EMDR and expectations. Most participants provided at least one of the following reasons for accepting online EMDR: they were grateful to have the opportunity to receive therapy in the middle of a global pandemic; the waiting list for in-person EMDR was very long; and the severity of their illness meant they would accept any form of therapy. Most clients also described having been initially hesitant about receiving online EMDR, due to the lack of in-person contact, and because they were unsure what to expect.

3.2.3.2.2. Benefits and challenges of online EMDR. Many clients viewed online EMDR as improving access to treatment and commented that it would be helpful for people who had limited mobility due to physical or mental health conditions, were unable to afford travel costs, had no access to a car, lived in remote areas, or had childcare responsibilities.

> I found it easier to be honest. From an anxiety standpoint, having to travel to go to meet somebody probably would have escalated the anxiety … and I think it was also probably just as good as what it would be if it was face-to-face. (C7)

Five clients talked about the online nature of the therapy helping them to feel safe as they did not need to leave their house during the pandemic. They also mentioned feeling more comfortable doing it online as they felt 'more in control of what's happening' (P11). This included being able to create more of a distance between themselves and the therapist when discussing personal topics.

> I think face-to-face I'd probably have been a bit more anxious of talking to somebody in the flesh about my traumatic experiences. I thought it'd be a bit too personal for me. (C6)

However, some of the clients had experienced challenges with the online format. Four individuals suggested they would have felt safer having in-person appointments, and having the physical support of the therapist in the room with them, particularly during the processing phase of EMDR (though most individuals who expressed this opinion had received some in-person EMDR sessions prior to the lockdown). Some clients also gave accounts that suggested the client-therapist relationship was not as strong as it would have been if EMDR had been held in person, as there was not the same level of connection and ability to read body language.

A challenge often described was the absence of 'transition time/space' to get into an appropriate mindset before the start, and at the end, of each therapy session.

> When you go to an actual office … you can kind of get into the mindset of 'ok I'm going to do some therapeutic work now'. It's a little difficult to do that at home … it's kind of transitioning between being at home and relaxed and being at home and doing therapeutic work. (C1)

Completing therapy at home also meant some individuals (mostly those with young families) worried about privacy and whether family members could hear their therapy session, and found it harder to focus. Additionally, one individual did not want to process memories in their own home because they did not want to associate their personal space with past trauma.

Over half the sample mentioned they experienced some difficulties with internet connectivity at some

point during therapy, although most of these individuals also said it had not interfered with the therapeutic process.

3.2.3.2.3. Perceived safety and effectiveness. Nine clients reported online EMDR had dramatically improved their PTSD symptoms.

> My panic attacks reduced very, very significantly. I was able to reduce or eliminate most of my medication … I was on I think four meds when I started, I'm on one now. It made a really big difference. (C1)

However, two clients reported they had found online EMDR ineffective or only partially effective, and both seemed to struggle to develop a safe-/trusting-enough relationship with their therapist, resulting in one client changing therapist and the other pausing therapy until they could resume in-person.

> I felt like I couldn't be held in the same way so I found it [therapy] very, very difficult, the fact that I felt their [therapist's] face was just filling the screen … you're looking eye to eye … I found it very distressing. (C11)

Around a quarter of the clients interviewed, particularly those living alone, mentioned that before starting online therapy they had concerns about how they might feel immediately after the session, or about the outcomes of online EMDR, but after starting therapy, most of their concerns dissipated.

> I did sort of worry that oh maybe this isn't going to be very effective because it's online … but as it turns out it worked really, really very well for me. (C2)

3.2.3.2.4. Future use. All clients said online EMDR should continue to be available. Seven clients said it should be a permanent part of the mental health support pathway, because it 'will be life-saving.' (P04). Four clients commented in-person EMDR or a hybrid model should be prioritised. Some clients explained that individuals who were at an acute phase of their illness may not benefit from online EMDR, as they thought it might increase the risk of self-harm.

Future improvements to online EMDR included more explanation around what the therapy entails prior to the start of treatment (e.g. an information leaflet), and the provision of videoconferencing equipment to clients.

4. Discussion

4.1. Summary

Results of this evaluation suggest that both therapists and clients within the TSS generally view online EMDR as being safe and effective, and support the availability of online EMDR for PTSD in secondary care. Clients and therapists described a number of benefits to online therapy, such as clients feeling more in control, not having to travel and therefore being more accessible for those with caring responsibilities. The main challenges appeared to be concerns about privacy, the lack of 'transition time/space' for clients to get into an appropriate mindset before the start, and at the end, of each therapy session, and IT difficulties. Whilst therapists and clients viewed online EMDR as safe and effective, it was thought that online therapy might not be appropriate where there are concerns about dissociation or suicidality. Although the quantitative data did not suggest that people in the online group were at higher risk of dissociating, providing an option to wait for/switch to in-person therapy may be important in such situations, and for clients who struggle to form a trusting-enough therapeutic relationship online. Recommendations for future provision of online EMDR include ensuring therapists and clients have appropriate videoconferencing equipment, and providing training to help therapists feel more confident about managing online clients who become distressed during processing.

Data from this evaluation also show that the PCL-5 scores at the end of therapy in the online group were slightly lower than in the in-person group. It is possible that, for some people, online EMDR may work better than in-person EMDR. However, it is also possible that whilst PCL-5 scores at the start of therapy were similar across the two groups, clients able to engage with online therapy were higher functioning or less disabled by their PTSD, and therefore the lower PCL-5 score post-therapy in this group might not be related to the way therapy was delivered. There was no evidence (within the constraints of this evaluation) that online EMDR was any less safe/well-tolerated than in-person EMDR.

4.2. Strengths and limitations

We used a multi-method (quantitative and qualitative) evaluation to examine whether offering online EMDR is acceptable and safe for clients with PTSD within this single service, and this is the first evaluation to directly compare the two modes of delivering therapy.

The quantitative data were collected prospectively by the service, and members of the evaluation team had direct access to all data, thus eliminating the possibility of client recall bias in terms of the outcome measures. However, we acknowledge that there was a small sample size in each group, which limits the confidence with which we can draw conclusions about the effectiveness and safety of online EMDR compared to in-person EMDR. Although the two groups appeared equivalent on the measures employed, as this study did not have a randomised design, other differences could not be excluded. For example, there was no available data on other client characteristics (e.g. level of functioning, cognitive ability, personality characteristics), which may have

helped us understand better why online clients had slightly lower PCL-5 scores at the end of therapy compared to those who received therapy in person.

Furthermore, the group differences between online and in-person EMDR needs to be interpreted with caution as our analyses were conducted only on people who completed treatment, and outcome data were missing for a few individuals, both of which may have biased our results. In addition, therapists had the option of delaying online treatment for those who were at high risk of dissociation until in-person treatment was again available, which could have potentially inflated the effect of online EMDR. Another limitation of the study is the fact that the two groups of participants were treated at different time points.

We interviewed clients and therapists until we reached data saturation, and got important insights on their views of online EMDR. However, the client response rate was relatively low, and therefore it is possible that clients who did not respond to our invitation may hold different views to the ones presented here.

4.3. Comparison with literature

Our study indicates that online EMDR may be as acceptable, safe and effective as in-person EMDR within our service. Whilst no studies have so far examined the effectiveness of online EMDR compared to in-person EMDR, two observational studies found that online EMDR reduced anxiety and depression in healthcare workers and young adults (Lazzaroni et al., 2021; Tarquinio et al., 2021). A RCT which compared online EMDR to online TF-CBT showed that both treatments were equally effective at reducing anxiety and depression in people with acute stress disorder (Perri et al., 2021).

Furthermore, an evaluation of the provision of online EMDR in the UK during the COVID-19 pandemic also found an important reduction in the PCL-5 scores from pre- (mean 41.5, SD = 22.2) to post-therapy (mean 13.3, SD = 10.9) (McGowan et al., 2021), which is comparable to findings of our evaluation (mean pre-therapy 58.9, SD = 2.1; mean post-therapy 13.7, SD = 2.5).

Overall, most therapists and clients in our evaluation said that online EMDR was a safe and effective mode of delivering therapy. A questionnaire-based survey which explored therapists' experiences of online EMDR reported that therapists rated 91% of the online EMDR sessions as 'good' or 'very good' (Mischler et al., 2021). In addition, it was shown that the patient-reported subjective unit of disturbance (SUD) when recalling trauma decreased by more than 70% from the beginning to the end of the online EMDR sessions, which is similar to the SUD decrease reported in the in-person EMDR sessions (Ironson et al., 2002; Wilson et al., 1995).

Most clients in our evaluation and some of their therapists reported initial concerns about receiving or offering online EMDR, which generally dissipated after having started therapy. Similar to our findings, a large survey with therapists ($n = 562$) and patients ($n = 148$) reported that more than 70% of those patients who had received in-person EMDR were initially concerned about switching to online EMDR, but once they started, 72% of them felt comfortable with it (Bursnall et al., 2022). Furthermore, the same study showed that whilst more than 50% of therapists were initially reluctant to provide online EMDR, this reduced to 11% after one year of providing therapy online. Given the potential biases favouring in-person therapy, future trials comparing online with in-person EMDR, may need to carefully assess the presence of clinical and personal equipoise prior to delivering online EMDR.

5. Conclusions

Results of this evaluation suggest that online EMDR is an acceptable, safe and effective alternative to in-person EMDR for PTSD in this service. However, RCTs are needed to provide an evidence base for future recommendations. If found to be effective in large RCTs, online EMDR would potentially increase access to therapy for those people living in remote places, too anxious to leave the house, or with mobility difficulties or childcare responsibilities.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This study was funded by the NIHR Biomedical Research Centre at University Hospitals Bristol and Weston NHS Foundation Trust and the University of Bristol (grant number BRC-1215-20011). The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, the National Institute for Health Research or the Department of Health. The sponsor of the study is the University of Bristol.

Data availability statement

The data that support the findings of this study are available from the corresponding author, [DS], upon reasonable request.

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References

Becker, C. B., Zayfert, C., & Anderson, E. (2004, March). A survey of psychologists' attitudes towards and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy*, *42*(3), 277–292. https://doi.org/10.1016/S0005-7967(03)00138-4

Bisson, J. I., Ariti, C., Cullen, K., Kitchiner, N., Lewis, C., Roberts, N. P., Simon, N., Smallman, K., Addison, K., Bell, V., Brookes-Howell, L., Cosgrove, S., Ehlers, A., Fitzsimmons, D., Foscarini-Craggs, P., Harris, S. R. S., Kelson, M., Lovell, K., McKenna, M., … Williams-Thomas, R. (2022). Guided, internet based, cognitive behavioural therapy for post-traumatic stress disorder: Pragmatic, multicentre, randomised controlled non-inferiority trial (RAPID). *BMJ*, *377*, e069405. https://doi.org/10.1136/bmj-2021-069405

Bisson, J. I., Roberts, N. P., Andrew, M., Cooper, R., & Lewis, C. (2013, December). Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults. *Cochrane Database of Systematic Reviews*, (12), CD003388. https://doi.org/10.1002/14651858.CD003388.pub4

Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016, November). Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders-fifth edition (PCL-5) in veterans. *Psychological Assessment*, *28*(11), 1379–1391. https://doi.org/10.1037/pas0000254

Braun, V., & Clarke, V. (2006). Qualitative research in psychology using thematic analysis in psychology using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. http://www.tandfonline.com/action/journalInformation?journalCode = uqrp20%5Cnhttp://www.tandfonline.com/action/journalInformation?journalCode = uqrp20.

Bursnall, M., Thomas, B. D., Berntsson, H., Strong, E., Brayne, M., & Hind, D. (2022, February). Clinician and patient experience of internet-mediated Eye movement desensitisation and reprocessing therapy. *Journal of Psychosocial Rehabilitation and Mental Health*, *9*(3), 251–262. https://doi.org/10.1007/s40737-022-00260-0

Chen, L., Zhang, G., Hu, M., & Liang, X. (2015). Eye movement desensitization and reprocessing versus cognitive-behavioral therapy for adult posttraumatic stress disorder: Systematic review and meta-analysis. *Journal of Nervous and Mental Disease*, *203*(6), 443–451. https://doi.org/10.1097/NMD.0000000000000306

Chen, Y.-R., Hung, K.-W., Tsai, J.-C., Chu, H., Chung, M.-H., Chen, S.-R., Liao, Y.-M., Ou, K.-L., Chang, Y.-C., & Chou, K.-R. (2014, August). Efficacy of eye-movement desensitization and reprocessing for patients with post-traumatic-stress disorder: A meta-analysis of randomized controlled trials. *PLoS One*, *9*(8), e103676–e103676. https://doi.org/10.1371/journal.pone.0103676

Cuijpers, P., van Veen, S. C., Sijbrandij, M., Yoder, W., & Cristea, I. A. (2020, May). Eye movement desensitization and reprocessing for mental health problems: A systematic review and meta-analysis. *Cognitive Behaviour Therapy*, *49*(3), 165–180. https://doi.org/10.1080/16506073.2019.1703801

Health Research Authority. (2017). Defining research table Oct 2017. Retrieved January 06, 2023, from https://www.hra-decisiontools.org.uk/research/docs/definingresearchtable_oct2017-1.pdf.

Ironson, G., Freund, B., Strauss, J. L., & Williams, J. (2002, January). Comparison of two treatments for traumatic stress: A community-based study of EMDR and prolonged exposure. *Journal of Clinical Psychology*, *58*(1), 113–128. https://doi.org/10.1002/jclp.1132

Lazzaroni, E., Invernizzi, R., Fogliato, E., Pagani, M., & Maslovaric, G. (2021). Coronavirus disease 2019 emergency and remote Eye movement desensitization and reprocessing group therapy With adolescents and young adults: Overcoming lockdown With the butterfly Hug. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.701381

Lenferink, L. I. M., Meyerbröker, K., & Boelen, P. A. (2020, November). PTSD treatment in times of COVID-19: A systematic review of the effects of online EMDR. *Psychiatry Research*, *293*, 113438. https://doi.org/10.1016/j.psychres.2020.113438

McGowan, I. W., Fisher, N., Havens, J., & Proudlock, S. (2021). An evaluation of eye movement desensitization and reprocessing therapy delivered remotely during the Covid–19 pandemic. *BMC Psychiatry*, *21*(1), 560. https://doi.org/10.1186/s12888-021-03571-x

Mischler, C., Hofmann, A., Behnke, A., Matits, L., Lehnung, M., Varadarajan, S., Rojas, R., Kolassa, I. T., & Tumani, V. (2021). Therapists' experiences with the effectiveness and feasibility of videoconference-based Eye movement desensitization and reprocessing. *Frontiers in Psychology*, *12*, 748712. https://doi.org/10.3389/fpsyg.2021.748712

NICE. (2018). Post-traumatic stress disorder. https://www.nice.org.uk/guidance/ng116 (accessed May 28, 2020).

Perri, R. L., Castelli, P., La Rosa, C., Zucchi, T., & Onofri, A. (2021, April). COVID-19, isolation, quarantine: On the efficacy of internet-based Eye movement desensitization and reprocessing (EMDR) and cognitive-behavioral therapy (CBT) for ongoing trauma. *Brain Sciences*, *11*(5), https://doi.org/10.3390/brainsci11050579

Ritchie, J., & Spencer, L. (1994). Analyzing qualitative data. In A. Bryman, & R. Burgess (Eds.), *Analyzing qualitative data* (pp. 173–194). Routledge.

Roberts, N. P., Kitchiner, N. J., Kenardy, J., Lewis, C. E., & Bisson, J. I. (2019, December). Early psychological intervention following recent trauma: A systematic review and meta-analysis. *European Journal of Psychotraumatology*, *10*(1), 1–25. https://doi.org/10.1080/20008198.2019.1695486

Sansen, L. M., Saupe, L. B., Steidl, A., Fegert, J. M., Hoffmann, U., & Neuner, F. (2019). Daring to process the trauma: Using a web-based training to reduce psychotherapists' fears and reservations around implementing trauma-focused therapy. *European Journal of Psychotraumatology*, *10*(1), 1696590. https://doi.org/10.1080/20008198.2019.1696590

Seidler, G. H., & Wagner, F. E. (2006). Comparing the efficacy of EMDR and trauma-focused cognitive-behavioral therapy in the treatment of PTSD: A meta-analytic study. *Psychological Medicine*, *36*(11), 1515–1522. https://doi.org/10.1017/S0033291706007963

Shapiro, F. (2018). *Eye movement desensitization and reprocessing (EMDR) therapy: Basic principles, protocols and procedures* (3rd ed). The Guilford Press.

Spence, J., Titov, N., Johnston, L., Dear, B. F., Wootton, B., Terides, M., & Zou, J. (2013). Internet-delivered eye movement desensitization and reprocessing (iEMDR): An open trial. *F1000Research*, *2*, 79. https://doi.org/10.12688/f1000research.2-79.v2

StataCorp. (2019). *Stata statistical software: Release 16*. StataCorp LLC.

Tarquinio, C., Brennstuhl, M.-J., Rydberg, J. A., Bassan, F., Peter, L., Tarquinio, C. L., Auxéméry, Y., Rotonda, C., & Tarquinio, P. (2021, January). EMDR in telemental health counseling for healthcare workers caring for COVID-19 patients: A pilot study. *Issues in Mental Health Nursing*, *42*(1), 3–14. https://doi.org/10.1080/01612840.2020.1818014

Watts, B. V., Schnurr, P. P., Mayo, L., Young-Xu, Y., Weeks, W. B., & Friedman, M. J. (2013). Meta-analysis of the efficacy of treatments for posttraumatic stress disorder. *The Journal of Clinical Psychiatry*, *74*(6), 541–550. https://doi.org/10.4088/JCP.12r08225

Wilson, S. A., Becker, L. A., & Tinker, R. H. (1995, December). Eye movement desensitization and reprocessing (EMDR) treatment for psychologically traumatized individuals. *Journal of Consulting and Clinical Psychology*, *63*(6), 928–937. https://doi.org/10.1037//0022-006x.63.6.928