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Journal article

The impact on eye movement and desensitization reprocessing of incomplete memory in a drug-facilitated rape: A single case study
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Abstract

In a drug-facilitated sexual assault (DFSA), the person's level of intoxication may result in incomplete memory. This paper describes eye movement and desensitisation reprocessing (EMDR) with client-centred adaptations to address an incomplete trauma memory in a 26-year-old woman. The client was experiencing PTSD, characterised by nightmares and derealisation. Therapy followed standard EMDR procedures with three minor modifications to help the client maintain current awareness. Although the memory remained incomplete, the client-centred adaptations promoted working through of the clients' trauma responses (e.g., disorientation, physical sensations) and a sense of competence and self-confidence were restored. At the end of reprocessing, and at follow-up, the client was no longer experiencing nightmares or derealisation and her wellbeing had improved.

Introduction

Eye Movement and Desensitisation Reprocessing (EMDR) has been established as an effective treatment for post-traumatic stress disorder (PTSD) following rape and sexual assault (Regehr et al., 2013). EMDR consists of structured 8-phases from history-taking, stabilisation and preparation, through trauma memory activation and processing, addressing past, present and future aspects of the trauma memory (Shapiro, 2018). Accessing the trauma memory is a key aspect of EMDR and only a few studies have addressed EMDR with impaired trauma memories. In one such study, EMDR was utilised with three people with moderate to severe dementia experiencing physical aggression, shouting, screaming, and agitation, hypothesised to arise from underlying unprocessed trauma, as the verbalisations and behaviours were suggestive of past traumas they were known to have experienced (Amano & Toichi, 2014). Due to the dementia, they could not recall the trauma memories, and the authors developed an ‘on-the-spot method’ of EMDR delivery for when the person was experiencing the above phenomena. Bilateral stimulation was delivered through tapping, and a sense of safety was installed with such words as “I am safe now” or “it’s over.” The behavioural disturbance decreased substantially and changes in the verbalisations suggested memory processing had occurred. Building on this work with impaired memory, this paper describes EMDR with incomplete memory due to intoxication at the time of trauma, with a woman who was unable to recall most of a drug-facilitated sexual assault (DFSA) (drink being spiked).

Drug- or alcohol-facilitated rape is defined as rape in which intoxication results in the person lacking capacity to consent or resist (Kilpatrick et al., 2007). Involuntary drug facilitated sexual assault (DFSA-I: Fields et al., 2022) involves forcible or covert drugging, whereas DFSA-V is where the person voluntarily consumed substances or alcohol. In a US rape treatment centre, over 50% of the 390 adults assessed had experienced DFSA, and

DFSA-I increased from 25 to 33% over a two-year period (Richer et al., 2017). The UK Office for National Statistics (ONS) reporting on sexual offences for the year ending March 2020 stated that 5% of survivors reported that they thought that the perpetrator had drugged them, with this figure rising to 15% when the offender was a stranger (ONS, 2020).

PTSD development has been found to be more likely following DSFA-I and non-DFSA than DFSA-V (Zinzow et al., 2010). It was hypothesised that DFSA-V survivors felt they had more power to prevent future trauma, due to their voluntarily having used substances. Whereas DFSA-I survivors may also have to manage the lack of power and control due to the premeditation and deceit of their perpetrator, increasing trauma-related distress. Greater alcohol intoxication has been associated with experiencing more PTSD phenomena and at higher frequency, particularly reexperiencing (Jaffe et al., 2017). Although Fields et al. (2022) found no differences in individual PTSD phenomena, including re-experiencing, between a DFSA-I, -V, and non-DFSA group. Furthermore, several studies have suggested that DFSA may be associated with less severe trauma-related distress (Jaffe, Hahn, & Gilmore, 2019). However, such distress may be of a longer duration (Gong, et al, 2019). Similarly, following treatment, both DFSA-I and -V was associated with more trauma-related distress at a 6-month follow-up assessment than non-DFSA (Jaffe et al., 2021).

Again, there are mixed findings with regard to the impact of incomplete memory on PTSD, with differing explanations of the link between impaired memory and trauma-related distress. DFSA-I survivors were found to experience greater memory impairment than DFSA-V and non-DFSA groups, and memory impairment was found to be associated with a lower number of PTSD experiences, including hypervigilance, and less anhedonia (Fields et al., 2022). Survivors with intact memory may initially have greater trauma-related distress as they remember the assault. However, being able to access the memory may mean they are able to resolve the trauma more quickly through trauma-focused therapies. Impaired memory

of sexual assault has also been linked to increased lifetime PTSD (Zinzow et al., 2010). Trauma-related distress may be increased by concern about what happened in the time that cannot be remembered, including what someone else was doing to their body or questions about what they themselves might have done or how they responded.

Other studies have found memory impairment to have no impact on PTSD severity (McConnell et al., 2017), as trauma-related distress may be linked to memories of events preceding or following the assault or to efforts to reconstruct or fill in gaps in memory. Indeed, similar levels of re-experiencing phenomena were found for those with impaired and intact memories (Fields et al., 2022). Van der Kolk (1994) suggested trauma may be stored in somatic memory: the body keeps the score. These somatic memories may not be voluntarily recalled, however once triggered may lead to somatosensory experiences, such as flashbacks, intense emotions and/or physical sensations, ‘affect without recollection’ (King, 2001). These experiences may include feeling a heavy weight, feeling paralysed, having a surge of emotion in response to a smell, and can be particularly distressing, as the intrusions cannot be linked with the memory that led to them.

Survivors with impaired memories are vulnerable to imagining worst-case scenarios, and they may feel that they have repressed aspects of the memory because something particularly disturbing happened to them. They may ruminate on the fragments of the memory they can recall, in attempt to fill in the gaps (Gauntlett-Gilbert et al., 2004). Memory retrieval can become a focus of therapeutic work (Fields et al., 2018). Bryant (1996) hypothesized that gaps in memory for the traumatic event may be filled in by information gathered after the event, e.g. from witnesses, or by imagination. These pseudomemories can be experienced as intrusions similar to flashbacks, and may be gradually constructed, accounting for the delayed onset of PTSD (Alway et al., 2016). As these pseudomemories may be generated from imagination, there may be a risk that invalid memories are ‘recalled’, further escalating

trauma-related distress and the creation of ‘false memories’. There has been concern expressed that EMDR may decrease memory accuracy and increase susceptibility to misinformation, with one study finding results consistent with this concern in a laboratory-based memory paradigm (Houben et al., 2018). However, a meta-analysis on the small number of studies investigating this effect concluded that eye movements had no significant effect on memory accuracy and endorsement of misinformation (Kenchel et al., 2022). Despite this, therapists are still advised to follow guidance aimed at minimising the risk of the creation of invalid memories, e.g. the use of hypnosis with EMDR (Shapiro, 2018).

When the survivor cannot recall the preparator’s identity, they may experience generalized safety concerns. Furthermore, inability to recall the context of the assault may hinder the evaluation of negative self-beliefs, (e.g., “I am to blame”) an important aspect of trauma-focused therapies. In particular, DFSA-I has been associated shame, guilt and self-blame for not preventing themselves from being drugged by the perpetrator (Fields et al., 2022).

DFSA may have further consequences for survivors. They may fear being blamed for the assault due to their state of intoxication (Sims et al., 2007; Fields et al., 2022). Indeed, DFSA survivors demonstrated a greater sense of responsibility (Testa et al., 2003), and greater feelings of shame and guilt about the assault (Fitzgerald & Riley, 2000). Research has repeatedly shown that DFSA survivors are less likely to seek post-rape medical care, including referral for mental health support (Resnick et al., 2000; Zinzow et al., 2012; Walsh et al., 2016). However, once receiving support, DFSA survivors have been found to attend significantly more therapy sessions than non-DFSA (Richer et al., 2017), reflecting the increasing complexity of the therapeutic work.

In the midst of these mixed and contradictory findings, the author, an EMDR practitioner, was faced with questions such as:

Would the client's incomplete memory due to intoxication mean that fragmented memories cannot be integrated with autobiographical memories and remain as fragments to be relived, i.e. flashbacks?

Would the client have enough memory of the trauma available to update negative self-beliefs about blame and responsibility?

May EMDR promote 'filling in' of memories, leading to pseudomemories that could be experienced as intrusions, increasing distress?

If the client cannot recall aspects of the trauma, can somatic memories be processed? Or may they remain inaccessible and lead to intense emotions, physical sensations and behavioural avoidance of triggers?

This paper hopes to start to address such questions.

Method

Participant

The client gave informed written consent for her material to be used for this paper and her identity has been disguised by omission and alteration of non-crucial information. The client was a 26-year-old white British woman. She was single and employed full-time as a graphic designer. She had no prior history of mental health concerns. She was referred to her local National Health Service (NHS) Increasing Access to Psychological Therapies (IAPT) service by her General Practitioner (GP) for night terrors: waking up sweating, shaking and highly anxious. These started just after she had been raped, aged 20. Initially, the night terrors diminished with a trial of anti-depressants (citalopram 10 mg). They restarted

three years later, following a move to a new city. At the time of the referral, the client was waking between four and eight times a night with night terrors and had become aware these were due to nightmares.

Due to the waiting list in the IAPT service, the therapy assessment commenced 11 months following the GP referral (week 33). Prior to the therapy assessment, there were two telephone screening assessments, including self-report measures, to ensure the client was suitable for the service (weeks 1 and 3). In the therapy assessment, the client described her main concerns as nightmares with a theme of guilt, “feeling spacey” and “going off into my own world”. The client described brief dissociative episodes, particularly if listening to music and following drinking alcohol, even one/two units. She lacked confidence in her memory and questioned whether she might have done something stupid to embarrass herself or someone else. She struggled to differentiate between the nightmares and reality, sometimes apologising to people for things she had done in her dreams.

The client gave an account of the rape. She was at a large industry event and was given a glass of sparkling wine. She later assumed that someone must have put a drug in her glass, as she started to feel very intoxicated, far more than was warranted by the alcohol she had consumed. Due to this intoxication, her memory of events were patchy and hazy. She remembered one moment from mid-rape and one moment afterwards when she was trying to find her colleagues. She did not tell many people what had happened, not wanting them to become upset. However, she found the story pouring out of her when she had been drinking and the next day she would experience intense guilt for burdening people with her story.

Procedure

The client attended six baseline assessment sessions, followed by 17 weekly 90-minute treatment sessions over six months. The client attended two ending sessions immediately following treatment. Follow-up assessments were completed at four months, nine months and 19 months.

Measures

Measures completed every session were the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001), Generalised Anxiety Disorder Assessment-7 (GAD-7; Spitzer et al., 2006) and the Work and Social Adjustment Scale (WSAS; Mundt et al., 2002). The Impact of Events Scale – Revised (IES-R; Weiss & Marmar, 2007) and Dissociative Experiences Scale II (DES-II; Carlson & Putnam, 1993) were administered at assessment, 9- and 19-months' follow-up.

The PHQ-9 is a nine-item depression scale based on the criteria for depressive disorders in the DSM-IV-TR (APA, 2000). Studies have showed the PHQ-9 is a reliable and valid measure of depression severity (e.g. Kroenke et al., 2001). The GAD-7 is a seven-item scale that is used to assess the severity of GAD and has been shown to be a valid measure for screening the presence and severity of GAD (e.g. Spitzer et al., 2006). For the WSAS, clients rate their functioning in: ability to work, home management, social and private leisure activities, and close relationships. The WSAS has been shown to be a reliable and valid measure of impaired functioning (Mundt et al., 2002).

The IES-R is a 22-item self-report measure that assesses distress caused by traumatic events. The IES-R gives a total score (ranging from 0 to 88) and subscale scores can be calculated for intrusion, avoidance, and hyperarousal. Total scores of 24 or more suggest that PTSD is a clinical concern. Total scores of 33 and above suggest a probable diagnosis of

PTSD. The IES-R has been shown to be a reliable and valid measure to assess post-trauma phenomena (Beck et al., 2008).

The DES-II measures different types of dissociation, including both problematic dissociative, and more everyday dissociative, experiences (e.g., daydreaming). The clients rate each item as the percentage of time that item applies to them and an average score is calculated. Scores above 30 suggest further screening for dissociative disorders is warranted.

Client Scores

The clinical range in which the client’s scores fell will be used to interpret the measures. Statistical analysis of the scores was not undertaken, due to the discrepancy between clinical and statistical significance (e.g., LeFort, 1993). During the initial assessment sessions, the PHQ-9 scores fell in the moderate range, the GAD-7 scores fell in the mild range and the WSAS scores fell in the mild range. (See figure 1.)

Figure 1 about here

At assessment, the client’s IES-R score indicated the presence of PTSD. The client scored highest on the avoidance subscale. The DES-II score was below that suggestive dissociative disorders. (See table 1.)

Table 1 about here

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

Therapy

Therapy followed standard EMDR procedures (Shapiro, 1995) with three minor modifications to help the client maintain current awareness, described below. The negative self-beliefs addressed focused on self-defectiveness and responsibility. During the preparation phase, grounding techniques were introduced for when the client was “feeling spacey”. The client found grounding techniques based on touch most effective, e.g., gripping with her toes, feeling the chair underneath her. She also found splashing her face with cold water very effective and used face wipes when she could not splash with cold water, e.g., on public transport.

The client chose to start working with the negative cognition (NC) “I am disgusting” as this was most distressing, the accompanying image was a fragment of memory from the attack: a silhouette of man’s figure in a dark room. Initially, the client experienced significant tiredness during reprocessing and briefly fell asleep on occasions. Experientially, the client felt this tiredness differed from “feeling spacey”. Clinically this was hypothesised to be re-experiencing of fluctuating consciousness during the attack. She had a sensation of the room swimming, as if she was heavily intoxicated. She re-experienced a strong bitter taste at one point, clinically this was hypothesised as re-experiencing the taste of the substance that had been put in her drink. The administration of the bilateral stimulation (BLS) was changed to hand taps when she was unable to keep her eyes open. The client and therapist walked around the room on occasions to help keep her awake. The compromised consciousness she was re-experiencing suggested that it was highly unlikely she could have consented for the sexual

activity or the attacker could have thought that she was consenting, which she found validating. The tiredness resolved as the processing progressed.

The client remembered more about the assault, e.g., what the room looked like (an airing cupboard), having to dress herself and find a toilet to clean herself up. This further validated the idea that the attacker could not have presumed she was consenting, as he left her unconscious and dishevelled. The target image changed to an image of the airing cupboard. The client spontaneously changed her positive cognition (PC) and NC from the self-defectiveness to the responsibility domain, i.e., NC: "I am to blame", PC: "I am innocent".

The client realised that when she had experienced memory loss on nights out, it was due to talking about the rape, rather than connected with how much she had drunk (i.e. memory loss after even one/two glasses of wine). She felt the sleepiness/black outs were a form of avoidance to protect her from painful feelings. From session nine, it was agreed she would start to talk out loud during BLS once the sleepiness had arrived, in order to keep her awake. She then re-experienced further disturbing physical sensations in her body, including her genitals. These were hypothesised to be re-experiencing phenomena arising from the memory of the start of the rape. This felt forceful and validated that she was raped, that he forced himself on her. She had long held the idea that the perpetrator might not know that she did not consent, as in her drugged state, she might have appeared to consent. However, the sensations she re-experienced suggested that the attack was more violent than she had remembered, and the attacker must have known that she did not consent to use force against her. Fortunately, the client found these deeply unpleasant physical sensations validating and was increasingly aware of how impaired her consciousness had been during the assault, she commented "it weren't my fault".

Later in the reprocessing, the worst aspect of the trauma changed to her lack of memory. The client had been hoping that reprocessing would bring back the entire memory

so she would have the “evidence” that she was not to blame. The target image was a fragment of memory when she had come back into consciousness, lying on her back in the airing cupboard, facing the door, naked with her clothes all around her. The NC was “I am to blame because I don’t have the memories to prove myself innocent”. In EMDR, the therapist may offer a ‘cognitive interweave’ (Shapiro, 2018). This is information that may facilitate the client forming an association between the trauma material and more adaptive knowledge they hold. The client is free to follow any association they chose in the processing, they can follow the interweave, or ignore it, if it does not resonate for them. (As such, this differs from cognitive restructuring.) Interweaves asked if the client could trust her sense of herself enough to not need any “evidence”, e.g., “is it usual for you to look like you are consenting when you are not?”. The client still wondered whether she had done something that might have suggested she consented initially. Interweaves focused on whether any apparent initial consent could mean that he was not guilty of using force against her and having sex with her when she had compromised consciousness.

At the end of therapy, the client endorsed the belief “I am innocent”. She reported that the memory now felt in the past and just like a regular memory, albeit an upsetting one.

Post-treatment

The client could identify clear triggers in day-to-day life for any nightmares or brief dissociative episodes she experienced. Not only had her PTSD-phenomena resolved, she identified a broader impact in terms of her feeling far less guilty, more content with life and with herself, and allowing herself to prioritise her needs. She remained slightly disappointed that she still had missing aspects to her memory; particularly the attacker’s face. She was understandably concerned that she might see him at another industry event and not recognise

him, or even possibly recognise him. At this stage, the PHQ-9 and GAD-7 scores fell in the healthy range and the WSAS scores fell in the non-clinical range.

Follow-up

Four months (week 87). The client remained PTSD-free and had not experienced any nightmares or regular episodes of derealisation. She had recently walked past the building where the rape occurred and later realised that she had not noticed, when previously she would have found it upsetting.

Nine months (week 107). The client continued to experience a full recovery from PTSD. She did not experience any nightmares. She had the occasional, brief dissociative experiences, like “jumping out of her skin” when she was surprised by something. She continued to function at a high level. She and some colleagues bravely reported a boss at work who had been sexually harassing female staff. The PHQ-9 and GAD-7 scores remained in the healthy range and the WSAS scores remained in the non-clinical range. The IES-R no longer indicated the presence of PTSD. The DES-II had halved since assessment.

19 months (week 153). The client continued to experience a full recovery. She had improved further on all measures since the last follow-up. She had the occasional feeling of derealisation, which lasted around 10-15 seconds. She was aware of what was happening and how to ground herself. She had not remembered any further aspects of the trauma since therapy had ended. She remembered how frustrated she had been over the incomplete memory. However, she now felt that she had accepted this and that it may be protective as she did not have a complete distressing memory to live with.

Discussion

This paper presented client-centred adaptations for reprocessing of DFSA-I in a client with incomplete trauma memory, due to intoxication. This demonstrates that EMDR can be used clinically even in the absence of full memory of the traumatic event.

Early in therapy, the client seemed to process the experience of fluctuating consciousness during the attack. This was relived as extreme tiredness and dizziness. Minor modifications were made to the standard EMDR protocol to assist with reprocessing re-experiencing of compromised consciousness. First, the application of BLS was changed to hand taps when the client was unable to keep her eyes open due to tiredness. Second, the client and therapist walked around the room between sets of BLS to help increase the client's alertness. Third, the client spoke outloud during the application of BLS once the sleepiness had arrived. These minor modifications allowed the reprocessing to continue and the client appeared to process her experience of compromised consciousness.

Following this, a different function of the tiredness became evident. The client began to relive extremely distressing and painful physical sensations of the rape. It seemed that the tiredness, and falling asleep, was a form of avoidance, serving to protect her from such unpleasant sensations. This understanding of the tiredness was supported by the client's observation that she had experienced memory loss "black outs" on social evenings when she had discussed the rape, regardless of the amount of alcohol she had consumed.

Through the reprocessing, the client was able to recall more about the rape (c.f. Fields et al., 2018). This indicated these memories had been encoded even when the client had been heavily intoxicated. The client may previously been unable to recall these memories due to avoidance. She had not wanted to think about the rape due to her feelings of guilt and responsibility. As she felt validated and safe in sessions, she was able to focus on the memory and recall more aspects. The client found that recalling further aspects was helpful and did

not lead to further intrusions and distress. The client appeared to fully process the trauma, including somatic memories. There was no suggestion that the client continued to experience intense emotional responses, physical arousal or behavioural avoidance of triggers. The client had been able to walk past the building where the assault had occurred and not even noticed at the time.

A weakness of the single case design is that other factors, e.g. the passage of time, could also account for the results, rather than the therapy. Multiple baseline assessments showed the client's scores decreased on the GAD-7 and the WSAS in the time she spent on the waiting list, however the scores remained in the clinical ranges. The PHQ-9 score remained at the same level throughout the waiting list period, again in the clinical range. It was only after the commencement of therapy that scores on these outcome measures begin to consistently fall and reach non-clinical ranges. However, the weakness of the study design should be taken into consideration when evaluating the effectiveness of the therapy.

Despite the client recalling more aspects of the trauma, the memory remained incomplete. However, this did not seem to prevent successful integration into the client's autobiographical memories. The client had been aware that the trauma memory had felt different to her other memories, raw and more distressing. At the end of reprocessing, she noticed the qualitative difference in the trauma memory and commented that it had become a regular memory. The client reported the nightmares based on the trauma diminished and eventually stopped. This further indicates the fragmented memories had been successfully processed and integrated.

As the memory remained incomplete, it is unlikely that it had been 'filled in' through imagination (Bryant, 1996). It could perhaps be argued that some of the recalled aspects may

be imaginings. However, these did not then go on to be experienced as intrusions, and served to decrease distress, rather than lead to further distress.

Giving credence to concerns about whether a client with an incomplete memory could successfully update negative beliefs regarding blame and responsibility (Fields et al, 2022), the client herself had wanted the “evidence” from her memory to prove that she was not to blame. Aspects of the experience that she was able to recall during reprocessing helped her to realise that it could not have appeared to the perpetrator that she was consenting, for example the forcefulness that he used against her. Interweaves highlighting who held responsibility (i.e., the perpetrator) and therefore who needed to hold the blame and guilt, facilitated the final aspects of reprocessing.

This paper described the reprocessing journey of one particular client. It is hoped that the minor modifications described here might benefit other clients, particularly those with compromised consciousness during the traumatic event. Through these modifications, this client was able to undertake a process that resulted in her recalling more aspects of the trauma, which were useful in updating her sense of self-blame. However, other clients may not be so fortunate, and these modifications cannot guarantee a successful resolution to reprocessing.

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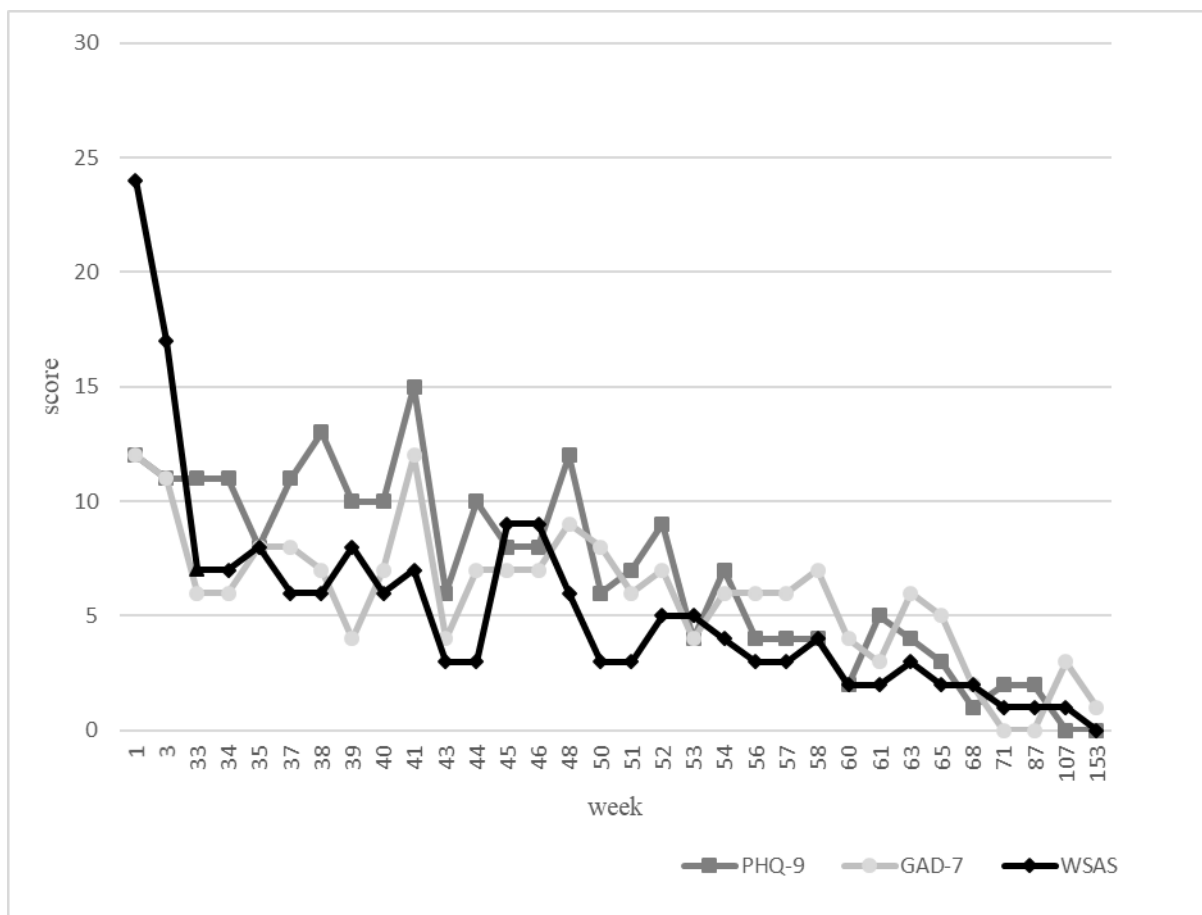
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Figure 1: PHQ-9, GAD-7 and WSAS Scores from Initial Assessment to Final Follow-up



(Please note: due to page constraints, the intervals between weeks are not evenly spaced)

Table 1: IES-R and DES-II Scores at Assessment and Follow-up

	Subscale	Assessment (week 34)	9-month follow- up (week 107)	19-month follow-up (week 153)
IES-R	Total	34 (probable diagnosis of PTSD)	8 (below the level of clinical concern)	3
	Intrusions	10	3	2
	Avoidance	17	3	1
	Hyperarousal	7	2	0
DES-II	Average percentage	14 (below cut off for dissociative disorders)	7	1