

CASE STUDY

# A combined EMDR/CBT-based approach for the successful management of cyclical vomiting syndrome: a case study

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(Received 3 July 2023; revised 15 January 2024; accepted 29 February 2024)

## Abstract

Cyclical vomiting syndrome (CVS) is an extremely debilitating condition that can have an adverse impact on physical health and can significantly disrupt social and occupational functioning. It is a poorly understood illness in terms of aetiology, and most research has focused on the pharmacological management of the condition. This article describes a case study of a combined cognitive behavioural therapy (CBT) and eye movement desensitisation and reprocessing (EMDR)-based intervention with an adult with past trauma who had a 20-year history of CVS accompanied by high cannabis use. Therapy led to improvements in physical health and social functioning, reduced use of cannabis, and a significant reduction in the frequency and severity of vomiting episodes and associated hospital admission. Implications for future research and management of the illness are discussed.

## Key learning aims

- (1) To understand how the presence of co-morbid untreated trauma in individuals with CVS may result in unhelpful coping strategies that can worsen the course of the illness.
- (2) To explore how the addition of psychological therapy to routine care of gastrointestinal disorders such as CVS can improve treatment outcome.
- (3) To consider how offering an individualised and flexible approach to appointments may benefit individuals who find it more difficult to engage in psychological therapy.

**Keywords:** Case study; CBT; Imagery rescripting; Long-term physical health conditions; Substance misuse; Trauma therapy

## Introduction: theoretical and research basis for treatment

Cyclical vomiting syndrome (CVS) is a gastrointestinal condition characterised by recurrent episodic attacks of vomiting and intense nausea lasting from one hour to five days, with a complete resolution of symptoms between attacks. Attacks are associated with pallor and lethargy and usually stereotypical in the individual patient (ICD-11 8A80.4; World Health Organization, 2019/2021). Individuals can experience between one and seventy episodes a year although the average is around twelve (Fleisher and Matar, 1993) and during the acute phase, the individual may vomit 10–14 times per hour (Thurler and Kuo, 2013). Although individuals often experience symptom-free periods between episodes, the illness can be extremely debilitating and there is evidence that severity can worsen as episodes increase in frequency and intensity over time (Fleisher, 1997).

Although it is a known condition of childhood, CVS tends to be under-recognised in the adult population, although there are signs it is becoming more common (Thurler and Kuo, 2013). The unpredictable course of the illness can have a significant impact on anticipatory anxiety (Levinthal *et al.*, 2021) and cause a pronounced disruption to an individual's social and occupational functioning. The illness is characterised by four temporal phases of illness (prodrome, vomiting, recovery and inter-episode phase) and 80% of sufferers are able to identify triggers such as eating or the anticipatory anxiety/excitement preceding events such as exams, family conflict and parties (Trabell and Li, 2008). Over time such triggers can themselves become associated with nausea and vomiting through classical conditioning (McRonald and Fleisher, 2005).

CVS is a functional disorder in that no organic disease has been identified as causing the symptoms (Fleisher, 1997), although Levinthal (2016) describes that CVS shares neurobiological mechanisms with chronic migraine, epilepsy and panic disorder. Dysfunction of the autonomic nervous system and specifically the sympathetic nervous system has been identified in 43% of CVS patients (Hejazi *et al.*, 2011). Whilst 90% of the subjects in another study (Venkatesan *et al.*, 2010), were also found to have an impairment of the sympathetic nervous system.

The likelihood of developing CVS has been linked to traumatic life events (Abell *et al.*, 2008; Fleisher *et al.*, 2005) and other psychiatric conditions. For example, Namin *et al.* (2007) identified that 84% of a study of 31 adults diagnosed with CVS had an anxiety disorder and 78% mild to severe depression, although they concluded it was difficult to establish whether these conditions were a cause or consequence of the CVS. Chronic cannabis use has been linked to CVS, 'cannabinoid hyperemesis' (Allen *et al.*, 2004), although not everyone who is a heavy cannabis user develops CVS (Levinthal, 2016) and cannabis use can sometimes halt episodes (Venkatesan *et al.*, 2010).

In terms of effective treatment for CVS, Levinthal (2016) suggests its relatively low occurrence and episodic presentation has been a barrier to the development of prospective randomised therapeutic trials. Treatment is generally focused on prophylactic therapy and managing the acute phase of the illness with an overall aim of increasing the individual's quality of life and reducing health care utilisation (Thurler and Kuo, 2013).

A number of authors (Fleisher, 1997; Levinthal, 2016) suggest that general lifestyle changes such as regular sleep, a balanced diet and exercise can improve the management of CVS. The identification and elimination of triggers to vomiting episodes is also an essential component of any treatment programme (Hejazi and McCallum, 2014; Pritchard and O'Neill, 2010).

Several studies have demonstrated that the use of medication such as anti-emetics, anti-depressants and analgesics across the different phases of the illness can improve outcomes. For example, Namin *et al.* (2007) identified a good response to long-term use of amitriptyline and a review by Hejazi and McCallum (2014) concluded that tricyclic anti-depressants were the main treatment for controlling symptoms. However, not all patients experience a sustained improvement with prophylactic medication, and psychiatric disorders and heavy marijuana use can remain risk factors even when high doses of tricyclic anti-depressants are prescribed (Hejazi *et al.*, 2010).

In contrast to a pharmacological approach to treatment, and despite the increased incidence of psychiatric conditions in individuals with CVS, far fewer studies have examined the psychological management of CVS. A number of models for understanding anxiety-related disorders describe how an individual can develop hypervigilance to internal bodily sensations. For example, in emetophobia (specific phobia of vomiting), Boschen (2007) suggests that individuals develop interoceptive sensitivity so that changes in gastrointestinal cues are immediately interpreted as a sign by the individual that vomiting is imminent. Selective attention and hypervigilance for vomiting can then increase sensations of nausea in a vicious circle (Veale and Lambrou, 2006). This somatization/hypervigilance cycle has also been recognised in some gastrointestinal disorders. Craske *et al.* (2011), describe how patients with irritable bowel syndrome (IBS) display hypervigilance and hypersensitivity to visceral sensations and consequently, anxiety about future episodes can produce low-level somatic cues that elicit a conditional distress/pain response.

They developed a cognitive behaviour therapy (CBT) protocol for the treatment of IBS that included attentional control techniques to shift attention away from visceral sensations and cognitive therapy to challenge associated threat-focused appraisals.

One of the few studies of the effects of psychological therapy on CVS is a case study by Slutsker *et al.* (2010), which described the use of CBT and biofeedback training in a 13-year-old boy with CVS. This consisted of a four-stage treatment plan: psychoeducation, mapping of CVS, cognitive restructuring and biofeedback training (described in more detail later). The treatment was very successful and the boy was symptom-free after 4 months of treatment and at the 4-month follow-up appointment.

### Presenting problem

John (aged 41) had a diagnosis of CVS and was referred for psychological therapy because of a past traumatic event. The trauma occurred aged 18 when he witnessed the disclosure of severe sexual abuse between two close family members. This led to a court case and a protracted family rift where John became caught up in the cross-fire of which person to believe. He described that this led to a deep sense of shame that this event had occurred within his family, and he felt immense guilt that until recently, he had not believed the person making the accusation. He also experienced regular flashbacks to the event when the disclosure took place and to the subsequent court case. John's presentation was considered too complex for primary care psychological services, so he was referred to a psychology service in secondary care. John had experienced epigastric pain in his late teens, then episodes of persistent vomiting before being diagnosed with CVS in 2010. In terms of medical history, John had been diagnosed with epilepsy in childhood but had grown out of this and had never experienced migraine. He started smoking cannabis aged 13/14 and his use increased significantly in response to the trauma with no periods of abstinence since. With regard to family history, a sibling and a cousin had diagnoses of CVS, with one having experienced the traumatic event described above and both being individuals who smoked cannabis.

John's episodes of persistent vomiting could last for days and initially he would try to manage them at home with prescribed medication and by standing under a hot shower. However, on most occasions, the episode escalated and he frequently presented to the emergency department or was admitted to hospital. In between these major episodes, he experienced more minor episodes of gastritis and nausea which were treated by the GP. In addition to the disruption to his work and social life, the CVS was also physically very debilitating. Years of persistent vomiting had resulted in significant weight loss, eroded tooth enamel and on two occasions a tear to the oesophagus. His consultant gastroenterologist had arranged a series of investigations to identify a physical cause to the vomiting but these had all been unremarkable.

In terms of the pharmacological management of the CVS, John was prescribed a variety of medication but not anti-depressants as these made him irritable. He described that he had received very useful advice and support from the national and international branches of the Cyclical Vomiting Syndrome Association [CVSA (<https://www.cvsaonline.org/>) and CVSA-UK (<https://cvsa.org.uk/>)] and that he had found it particularly helpful to speak to other individuals with lived experience of the illness. In contrast, he described that he often experienced an unhelpful response in the emergency department, despite having a letter from his consultant advising on the best treatment plan during an acute episode. On one occasion a doctor had actually stopped his analgesics, suggesting that John's issues were solely related to cannabis use. In 2017, he received a course of hypnotherapy but although this helped him to relax, it did not reduce the frequency or severity of CVS episodes. Prior to this referral, he had resisted suggestions from his consultant gastroenterologist that he be referred for therapy to treat the trauma. He thinks this was partly due to his lack of knowledge about the impact of trauma but also stigma, reporting that 'I'm a man's man, you don't show your emotions and your problems aren't as important'.

## Assessment

John was initially difficult to engage in therapy and failed to attend his second appointment. However, he resumed contact with his therapist after he was sent some information about the potential link between cyclical vomiting and excess cannabis use (cannabinoid hyperemesis), stating that in addition to addressing the trauma, he was motivated to reduce his cannabis use. Therapy consisted of weekly sessions, although it was put on hold for several weeks during the first lockdown period of COVID-19 as John preferred to wait for face-to-face sessions to resume rather than try telephone or online therapy.

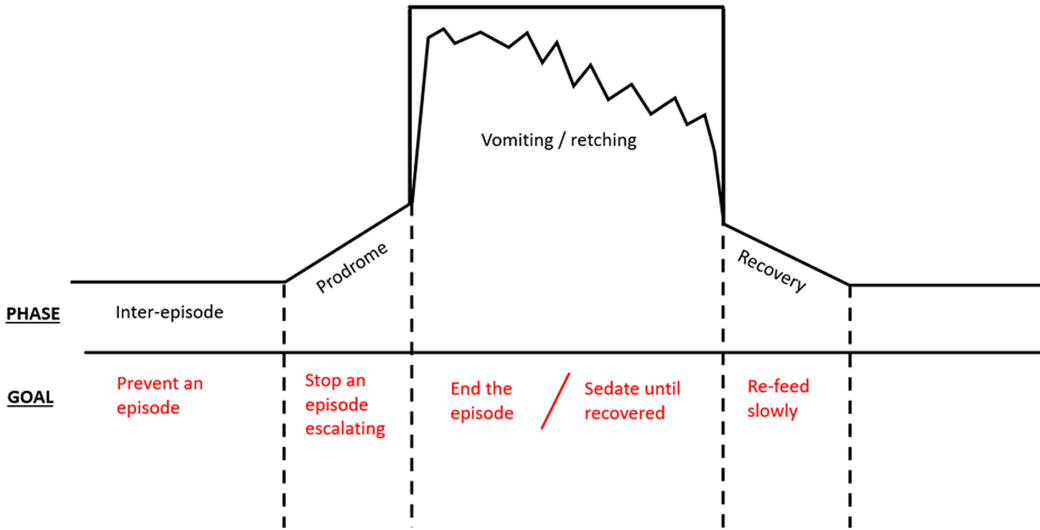
John worked as a landscape gardener and had a supportive partner and family. Although he had two teenage children from a previous relationship, he and his current partner did not feel able to have a child together due to the chaotic and disruptive impact of CVS on his life. A comprehensive psychological assessment revealed no other trauma other than that already identified. His alcohol consumption was minimal, but his cannabis use was significant, and he estimated he was smoking approximately 12 joints a day, costing around £480 a month. This daily use had occurred with no periods of abstinence for over 15 years and although he felt that the cannabis helped him to relax and get to sleep, he was aware that it also negatively impacted his mood, levels of motivation and relationship with his partner. Despite being aware of the negative consequences of his cannabis use, he described experiencing a strong drive to carry on using it. For this reason, he would meet criteria for cannabis dependence as defined by ICD-11 (ICD-11 6C41.2). He was not taking any psychiatric medication at the time of referral.

The Beck Depression Inventory II (BDI-II; Beck *et al.*, 1996) is a 21-item self-report inventory measuring severity of depression over the previous 2 weeks; 0–13 is considered minimal range, 14–19 is mild, 20–28 is moderate, and 29–63 is severe. John scored 9 on this scale, indicating minimal levels of depression. The Beck Anxiety Inventory (BAI; Beck *et al.*, 1988) consists of 21 self-reported items with a 4-point scale and is used to assess the intensity of physical and cognitive anxiety symptoms during the previous week. Scores may range from 0 to 63: minimal anxiety levels (0–7), mild anxiety (8–15), moderate anxiety (16–25), and severe anxiety (26–63). John scored 11 on the BAI suggesting, mild levels of anxiety, although objectively he appeared more anxious than this so may have been under-reporting his symptoms. The PTSD Checklist for DSM-5 (PCL-5) is a 20-item self-report measure that assesses the presence and severity of PTSD symptoms. Scores range from 0 to 80, with scores of 31–33 suggesting a diagnosis of PTSD (Weathers *et al.*, 2013). John's score of 42 indicated significant levels of trauma and the type of traumatic event and range of symptoms meant he would meet criteria for PTSD (American Psychiatric Association, 2013). The BDI-11 and BAI were completed at the first session when John appeared to have some ambivalence about therapy indicated by his failure to attend his second appointment. The PCL-5 was completed a couple of weeks later, so it is possible he was more candid about his symptoms at the subsequent appointment when the therapeutic relationship was more established. When John himself was later asked about this discrepancy, he suggested his cannabis use may have been blocking his anxiety symptoms, hence the initial low score on the BAI.

We agreed the following goals of therapy: to process the trauma associated with the past event and to improve management of his CVS with the latter incorporating some components of the treatment programme suggested by Slutsker *et al.* (2010).

## Formulation and course of therapy

The intervention phase of therapy initially focused on psychoeducation about CVS as an illness, the link with cannabis use, the fight and flight response and the impact of unprocessed trauma on emotional wellbeing. Eye movement desensitisation and reprocessing (EMDR) was the preferred intervention for processing of the trauma, as unlike other interventions such as trauma-focused CBT, the traumatic event does not need to be discussed in detail, something



**Figure 1.** The four phases of cyclical vomiting syndrome and their associated goals of management (adapted from Fleisher *et al.*, 2005; p. 2).

that John found very difficult. Previously, John reported using cannabis to ‘chill myself out’ in response to any stress he encountered. Therefore, because his cannabis use could have increased in response to the emotional impact of EMDR, careful attention was given to resource-building and stabilisation and included lifestyle improvements focused on establishing a regular sleep pattern, healthy eating, and regular exercise. These were important because previously John had relied on cannabis to help him sleep but the cannabis use led to him eating snacks rather than regular meals and to a lack of motivation for exercise. In addition, a less distressing memory of when he lost his dog was processed first, allowing John to develop a sense of how the EMDR worked before moving on to processing of the main traumatic event. John engaged well with EMDR and despite his initial reticence, once he had completed the processing phase of therapy, he was able to talk more openly about the past traumatic event and the impact it had on his family.

Therapy then returned to a CBT-based approach for the management of CVS and the establishment of treatment goals for each phase of the illness: the prodrome phase which describes the appearance of symptoms and where the goal is to stop an episode escalating, the vomiting phase which aims to bring the vomiting under control, the recovery phase where the goal is to promote rest/restore hydration and nutrition, and the inter-episode phase where the goal is the prevention of subsequent episodes. This is illustrated in Fig. 1.

The next stage of therapy incorporated the ‘mapping of CVS’ (Slutsker *et al.*, 2010) and led to the development of a detailed formulation which explained the triggers, symptoms and maintenance factors to his CVS such as increased interoceptive sensitivity and associated monitoring of symptoms (illustrated in Fig. 2).

A management plan covering the four phases of the illness was collaboratively developed incorporating some of the strategies that John already found effective in addition to the grounding techniques from the stabilisation and resource-building stage of EMDR. The plan also included other techniques based on previous research which were practised in session and then tested out in trigger situations. The preventative/inter-episode phase focused on general lifestyle advice but included specific advice related to triggers – for example a feeling of fullness after a heavy meal often led to an escalation of gastrointestinal symptoms so this could be avoided by planning

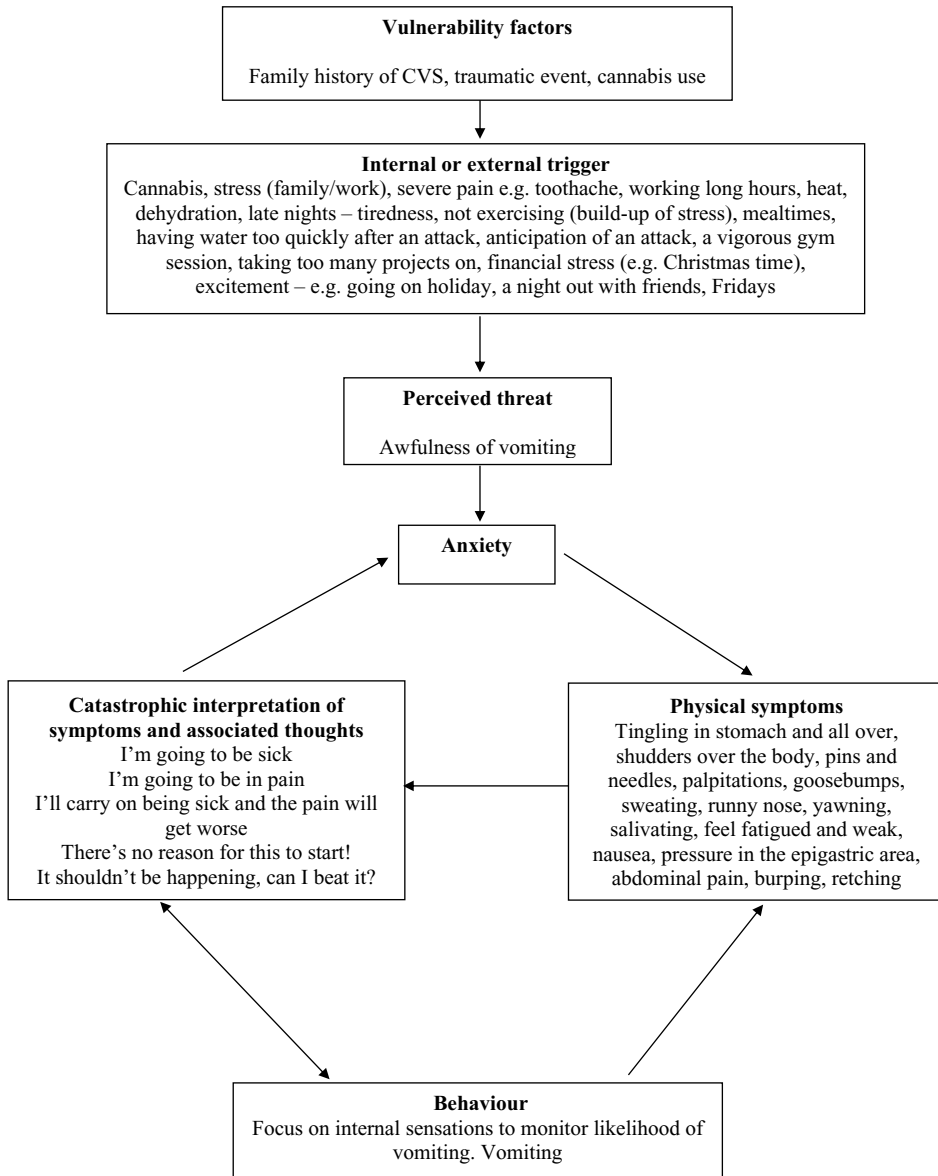


Figure 2. Cycle of vomiting (adapted from Clark, 1986).

smaller meals. The prodrome phase included more specific strategies to minimise hypervigilance of gastrointestinal symptoms such as distraction techniques (listing football teams in his head or holding an ice cube in his hand) to re-focus his attention from abdominal sensations. Biofeedback techniques helped to reduce sympathetic activity in the prodrome phase. Within session this included pairing a pulse oximeter with specific breathing exercises directed at the parasympathetic nervous system to slow down the heart rate. Pulse oximeters are relatively cheap to buy but John chose to replicate this at home using a ‘Fit Bit’-type watch. These techniques helped John to develop a sense of mastery over his illness so that during cognitive restructuring, the inevitability

**Table 1.** John's action plan for managing CVS

<p><b>Preventative</b> (between episodes)</p> <ul style="list-style-type: none"> <li>• Reduce/eliminate cannabis use and don't start using more when stressed, in pain, not sleeping or ill</li> <li>• Go to the gym/use weights or walk the dog to manage stress</li> <li>• Try and talk through my worries rather than bottling them up</li> <li>• Keep hydrated at all times (particularly after exercise or in hot weather)</li> <li>• Follow a healthy diet with regular meals. Ensure I get plenty of sleep</li> <li>• Meals out: no alcohol, lots of water, don't over-eat. Diazepam in pocket – just in case</li> <li>• If I'm not eating or drinking properly then avoid intense exercise</li> <li>• Ensure I have proper time off at the weekend. Take regular holidays</li> <li>• Ensure I don't get too hot – on holiday go in the pool</li> <li>• Watch finances at times I don't get paid – e.g. the run-up to Christmas – reduces stress</li> <li>• Avoid taking too many home projects on at once</li> <li>• Use medication – Lansoprazole and Propranolol as prescribed</li> </ul> <p><b>Prodrome</b> (to prevent symptoms escalating)</p> <ul style="list-style-type: none"> <li>• Focus on my breathing, say 'breathe in, breathe out'. Extend the out breath</li> <li>• Use a Fit Bit watch to slow down my heart and reduce the palpitations</li> <li>• Distract my thoughts – music, naming things in my head or objects in the room, someone talking to me, go to my 'calm place'</li> <li>• Use grounding strategies – stroking silky tags, stroking my hair and legs, smells (e.g. aftershave), hold on to a cold object like a pool ball, pebble or ice cube</li> <li>• Splash my face with ice cold water. Run my hands under hot water</li> <li>• Put my head between my knees</li> <li>• Use prescribed travel sickness patches to help with my anxiety</li> </ul> <p><b>During an episode</b> (to bring it under control as soon as possible and manage the pain)</p> <ul style="list-style-type: none"> <li>• Boiling hot shower, let it run on my back. Or bath of hot water</li> <li>• Open the windows and breathe in fresh cold air</li> <li>• Pour cold water on my face and head</li> <li>• Use prescribed medication – Buscopan, Diazepam, Cocodymol</li> <li>• If after 50–60 minutes the medication has not worked, take the Oromorph</li> <li>• Rest on the bed and try and sleep</li> <li>• Resist the temptation to drink large amounts of water – just have sips</li> <li>• If I'm unable to control it, I may need to go to hospital (take my advice letter with me)</li> <li>• IV morphine, anti-emetics and fluids to re-hydrate me</li> </ul> <p><b>After an attack</b> (to prevent it re-starting and allow myself to recover)</p> <ul style="list-style-type: none"> <li>• Drink warm flat lemonade or tea – just sip them</li> <li>• Eat ice cream once I can tolerate fluids</li> <li>• Build myself up using rusks, porridge and later protein shakes</li> <li>• Have small meals or snacks throughout the day until I'm able to tolerate normal-sized meals</li> <li>• Avoid weighing myself otherwise I become pre-occupied and depressed about weight loss</li> </ul>
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of a vomiting episode could be challenged. This plan was constantly updated and fine-tuned as new information emerged with each trigger and minor setback encountered (see Table 1).

Towards the end of therapy, sessions reduced to fortnightly followed by three further follow-up sessions which were a month apart.

## Outcome of therapy

The treatment of John's past trauma, reduced use of cannabis and improved management of CVS led to a significant reduction in the number of episodes of illness and admissions to hospital. In 2018 and 2019, he had approximately 10 episodes of vomiting each year which were severe enough for him to access the emergency department or require admission to hospital, in addition to more minor relapses managed at home. In 2020 and 2021, he only had two episodes of vomiting each year that led to attendance at the emergency department, no hospital admissions and he reported experiencing far fewer minor episodes. His score on the BAI had reduced from 11 to 7, whilst his score on the BDI-2 had reduced from 9 to 5. On the PCL-5 scale, his score had reduced from 42 (severe trauma) to 15 (mild trauma); see Fig. 3.

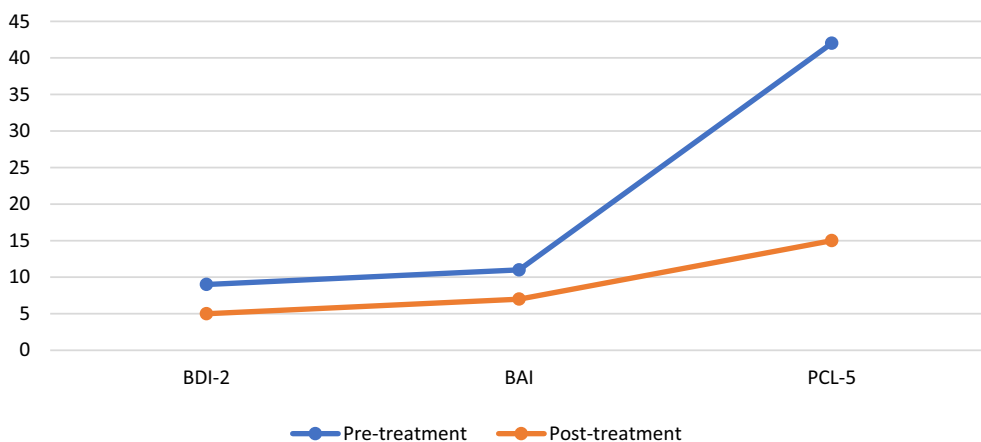


Figure 3. Rating scale scores pre- and post-treatment.

Evidence for the PCL for *DSM-IV* suggests 5 points as a minimum threshold for determining whether an individual has responded to treatment and 10 points as a minimum threshold for determining whether the improvement is clinically meaningful (American Psychiatric Association, 2013).

However, the greatest change was in the qualitative improvement to John's life. He reduced his expenditure on cannabis from £480 to £120 a month and gained over 12 kilograms in weight (a positive outcome given he was previously underweight due to the cannabis use, unhealthy eating pattern and repeated vomiting). The reduction in cannabis use led to greater energy and motivation for exercise, DIY and other home-based activities. His relationship with his family improved as he felt more able to talk about the past and everyday worries rather than blocking things out with cannabis. His reduced expenditure on cannabis meant he was able to afford dental treatment to correct his damaged enamel and this greatly increased his self-esteem. He and his partner decided that now his illness was more under control, they could consider having a child together and they have recently had a baby.

When asked what aspects of therapy he felt had helped, John reported that 'Before therapy, I couldn't look after myself, let alone considering having a baby, but now I feel I understand my illness and my triggers. The trauma doesn't burn in the back of my mind anymore and I'm training my brain to file and process things better. I don't think of the last episode, I just reset my brain, use the breathing and grounding techniques and think, "I can beat this!". Now I've got control measures in place and my episodes have reduced, I feel good in myself and I can do more stuff like play with my baby rather than just smoking cannabis because I was bored'.

## Discussion

One criticism of the current study is that the formulation did not explore imagery associated with vomiting and there may have been intrusive distressing images of previous vomiting episodes which increased the patient's levels of anxiety. Therefore cognitive interventions for CVS may need to be enhanced by the inclusion of interventions that focus on imagery. For example, intrusive images could be targeted by rescripting or the use of competence imagery where the patient imagines themselves doing an action they feel competent in and this can increase confidence and self-efficacy (Moran and O'Brien, 2005). Alternatively, and where appropriate, EMDR could be used to process distressing images or memories associated with previous episodes of vomiting.



A major criticism of this report is the significant lack of data because information concerning changes in psychometric scores, cannabis use, weight and vomiting episodes was only recorded pre- and post-therapy rather than on a weekly basis. Therefore it is difficult to state with any certainty which aspects of the treatment programme have been responsible for the improvement in the patient's condition, but it is likely to be a combination of factors such as better understanding and management of the illness, resolution of past trauma and changes in lifestyle including reduced cannabis use. Psychoeducation about the potential harmful effects of cannabis and lifestyle changes such as increased exercise appear to be the main factors which encouraged John to reduce his cannabis consumption. His residual cannabis use, even at a low level, remained a potential risk factor for further vomiting episodes in the future, but he declined further interventions to treat this. It is also relevant that although John had some difficulty engaging with regular therapy sessions, this was managed with some minor adjustments. So for example therapy was put on hold until he could be seen face-to-face, there was greater tolerance towards missed appointments and sessions could be spaced out towards the end of therapy. However, such flexibility is not always available to therapists working in primary care-based psychological services.

Venkatesan *et al.* (2010) have suggested that the increased occurrence of an impaired sympathetic nervous system within the CVS population has implications for treatment as well as diagnosis. In addition, Levinthal (2016) proposes that a comprehensive disease model for CVS based on measurable components such as genetic influences, co-morbidities, and physiological markers would facilitate the development of a CVS threshold which would allow the provision of effective individualised treatment programmes. In this way, treatment could evolve into a biopsychosocial care model based on lifestyle modification, prophylactic and abortive medication and evidence-based psychotherapy (Venkatesan *et al.*, 2019).

This case study has explored how CBT can be incorporated into the psychological understanding and management of CVS and how EMDR can be used to treat past trauma. This is particularly relevant given the significant levels of co-morbid anxiety and trauma amongst the CVS population described earlier and that anticipatory anxiety can increase nausea and contribute to a 'coalescent pattern of attacks' (Fleisher, 2008). A higher level of intolerance of uncertainty has also been linked to worse quality of life for individuals with CVS (Levinthal *et al.*, 2021) and has led to their recommendation that CBT is used to treat this.

In addition to better quality of life for the individual, improved management of CVS has implications for healthcare utilisation and the associated cost to the NHS. An observational, retrospective cohort study in the US by Chen *et al.* (2022) found a significantly greater health care resource use for individuals with CVS relative to non-CVS controls leading to total health care costs which were 4.1 times higher.

Sometimes a more proactive approach is required in order to engage some individuals in therapy. John had historically resisted offers of psychological therapy to treat his trauma and initially there were some difficulties with engagement. When questioned about this, John reported that the first session had made him feel that he was 'just another patient' and that he felt it would be another example of a health professional 'trying to tell you and not listening'. However, when following his non-attendance the therapist then sent him a letter encouraging him to resume therapy and some further information about CVS, this suggested to him that they were 'interested and willing to help' and resulted in him getting back in touch to request another appointment.

This case study has illustrated the importance of persistence in the application of treatment programmes for CVS so that rather than being discouraged by a subsequent vomiting episode, setbacks can be regarded as an opportunity to fine-tune the management plan. A review and update of the plan could then be provided by the different professionals involved in the case as part of a routine appointment with the gastroenterology clinic.

### Key practice points

- (1) Although the use of medication can improve the management of gastrointestinal disorders such as CVS, many individuals continue to experience distressing symptoms and the use of psychological approaches can reduce these.
- (2) Because of this, it is important that when appropriate, individuals with gastrointestinal disorders are offered psychological therapy to optimise the management of their condition. This might be as part of their routine contact with the Gastroenterology service or a separate referral to a primary care psychological service such as NHS Talking Therapies.
- (3) The care of individuals with various gastrointestinal disorders can be enhanced by the development of a comprehensive management plan with contributions from different professionals such as consultant gastroenterologists, specialist nurses, psychologists and dieticians. It can also include advice on relevant charities and support groups. The plan needs to describe care during the acute and routine phases of the illness and be shared with all services including the general practitioner and emergency department.
- (4) Use of imagery in CBT can help to identify salient memories that are maintaining distress and these can then be targeted in therapy.

### Further reading

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**Data availability statement.** The data that support the findings in this study are available on request from the corresponding author (KA). The data are not publicly available due to their containing information that could compromise the privacy of the individual described in this study.

**Acknowledgements.** I would like to extend my gratitude to ‘John’ for consenting to sharing anonymised details of his therapy in order to improve the experience of other individuals with CVS. I would also like to thank Blynda Killian, President of the Cyclic Vomiting Syndrome Association (CVSA), my EMDR supervision group, the Trust Research Department, IT Department and Academic Library for their help and support and Laura Stringer who assisted with some of the diagrams.

**Author contributions.** **Kate Ashcroft:** Conceptualization (lead), Writing – original draft (lead).

**Financial support.** This case study received no specific grant from any funding agency, commercial or not-for-profit sectors.

**Competing interests.** The author declares no potential competing interests with respect to the research, authorship, and/or publication of this article.

**Ethical standards.** The author has abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS. All identifying information that was not deemed central to the conceptualization and treatment of this client has been removed or anonymised to maintain confidentiality. The patient has viewed the completed case study and has provided written consent for it to be submitted for publication.

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**Cite this article:** Ashcroft K (2024). A combined EMDR/CBT-based approach for the successful management of cyclical vomiting syndrome: a case study. *The Cognitive Behaviour Therapist*. <https://doi.org/10.1017/S1754470X24000114>