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Cognitive behaviour therapy for specific phobia of vomiting (Emetophobia): A pilot randomized controlled trial

Lori Riddle-Walker[a,*], David Veale[b], Cynthia Chapman[c], Frank Ogle[d], Donna Rosko[a], Sadia Najmi[e], Lana M. Walker[f], Pete Maceachern[g], Thomas Hicks[a]

[a] Argosy University, San Diego Campus, College of Behavioral Sciences, CA, USA
[b] Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK
[c] Private Practice, Carlsbad, CA, USA
[d] Private Practice, San Diego, CA, USA
[e] San Diego State University, Department of Psychology CA, USA
[f] Talking Feather Communications, Surprise, AZ, USA
[g] Palomar Community College, San Marcos, CA, USA

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ABSTRACT

This is the first randomised controlled trial to evaluate a protocol for cognitive behaviour therapy (CBT) for a Specific Phobia of Vomiting (SPOV) compared with a wait list and to use assessment scales that are specific for a SPOV.
Method: 24 participants (23 women and 1 man) were randomly allocated to either 12 sessions of CBT or a wait list.
Results: At the end of the treatment, CBT was significantly more efficacious than the wait list with a large effect size (Cohen's $d = 1.53$) on the Specific Phobia of Vomiting Inventory between the two groups after 12 sessions. Six (50%) of the participants receiving CBT achieved clinically significant change compared to 2 (16%) participants in the wait list group. Eight (58.3%) participants receiving CBT achieved reliable improvement compared to 2 (16%) participants in the wait list group.
Conclusions: A SPOV is a condition treatable by CBT but further developments are required to increase efficacy.

1. Introduction

A specific phobia of vomiting (SPOV) (also known as "emetophobia") is a neglected area of research. Its inclusion with Specific Phobia 'Other type' in the DSM may partly account for this (Boschen, 2007). A SPOV occurs predominantly in women and commonly develops in childhood with an average duration of 25 years before treatment (Lipsitz, Fyer, Paterniti, & Klein, 2001; Veale & Lambrou, 2006). Epidemiological studies suggest that the prevalence of specific phobias in general is extremely common with a 12-month prevalence of about 7–13% (Becker et al., 2007; Boyd et al., 1990; Kessler, Chiu, Demler, & Walters, 2005; Stinson et al., 2007). Of these, only one study specifically enquired about a specific phobia of vomiting, which had a prevalence of 0.1% (Becker et al., 2007).

Although a SPOV therefore appears relatively uncommon in the community compared with specific phobias in general (Becker et al., 2007), its prevalence may have been deflated in this study by misdiagnosis or comorbidity being given precedent (Boschen, 2007; Manassis & Kalman, 1990; Veale, 2009). For example, obsessive-compulsive symptoms may be observed in the compulsive washing or superstitious behaviours in SPOV that are performed in order to prevent vomiting (Veale, Hennig, & Gledhill, 2015). Hypochondriacal disorder may be misdiagnosed from the significant degree of worrying, reassurance seeking and checking behaviour about possible infections or food poisoning that could cause a person to vomit. Anorexia nervosa may be misdiagnosed when a person is underweight and restricting food to reduce the risk of vomiting. The person may have no disturbance in body image or in their self-evaluation, and may have no fear of gaining weight or becoming fat (Manassis & Kalman, 1990).

A SPOV therefore appears to be rare in the community from one study but this finding is partly at odds with a study that found that 8.8% of the community report a "fear of vomiting" (van Hout

* Corresponding author at: 502 W. El Norte Parkway, Escondido, CA 92026, USA.
E-mail address: llrwalker@sbcglobal.net (L. Riddle-Walker).

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& Bouman, 2012). Clinicians report it is one of the more common specific phobias for treatment seeking. This could be because people with a SPOV are often significantly handicapped by the degree of their avoidance behaviour compared with other specific phobias e.g. they may avoid a desired pregnancy, have a termination of pregnancy or avoid a surgical procedure (Veale & Lambrou, 2006). Lastly, the avoidance of certain types of food and disordered eating may cause the individual to become significantly underweight (Veale, Costa, Murphy, & Ellison, 2012) (Manassis & Kalman, 1990). A SPOV may manifest itself in three main ways: a fear of vomiting themselves, a fear of others vomiting (which may then lead to contagion and vomiting themselves) and a fear of vomiting in front of others and being evaluated negatively (Lipsitz et al., 2001; van Hout & Bouman, 2012).

To our knowledge, there has been no randomised controlled trial for treating a SPOV. A meta-analysis of randomised controlled trials that treated specific phobias in general found *in-vivo* exposure to have the most evidence (Wolitzky-Taylor, Horowitz, Powers, & Telch, 2008). However, this review did not include any trials with a SPOV. It is not known whether a SPOV responds to exposure as well as other specific phobias or whether a protocol should include repeated exposure to actual vomiting. In addition, a generic protocol for exposure may at least need to be modified to include the repetitive (or "compulsive") behaviours that can occur in emetophobia or to update early aversive memories of vomiting (Veale, Murphy, Ellison, Kanakam, & Costa, 2013). Most case reports in adults or children with SPOV treated by various forms of cognitive behaviour therapy that included exposure. There are potential practical problems with repeated exposure to oneself vomiting, and so most of the case reports have included various forms of graded exposure to cues of vomiting (Lesage & Lamontagne, 1985; Maack, Deacon, & Zhao, 2013; McFadyen & Wyness, 1983). This has been supplemented by exposure to a video of others vomiting (Phillips, 1985), adding exposure to interoceptive cues (e.g. creating sensation of nausea) (Hunter & Antony, 2009), adding cognitive therapy and behavioural experiments that included exposure (Kobori, 2011), delivering CBT with exposure in a group format (Ahlen, Edberg, Di Schiena, & Bergström, 2015), adding cognitive restructuring and parent training to exposure (Graziano, Callueng, & Geffken, 2010), adding a feeding program to exposure (Williams, Field, Riegel, & Paul, 2011), adding fluoxetine and clobazepam to exposure (Faye, Gawande, Tadke, Kirpekar, & Bhave, 2013), adding hypnotherapy to exposure (Wijesinghe, 1974) and lastly adding systemic behaviour therapy to exposure (O'Connor, 1983). Four case reports are described without exposure – one of imaginal coping (Moran & O'Brien, 2005), one of psychotherapy (Manassis & Kalman, 1990) and two reports of hypnotherapy including a form of imagery rescripting (McKenzie, 1994; Ritow, 1979). None of these single cases had an experimental design, and there is likely to be a publication bias of successful cases. Four of those reports involved atypical cases; for example, two of the reports were concerned predominantly with fear of others vomiting (McFadyen & Wyness, 1983; McKenzie, 1994) and two were of atypical social phobia or a preoccupation with nausea (Lesage & Lamontagne, 1985; McNally, 1997). None described a clear theoretical model of SPOV and only one recent study used a validated measure of a SPOV (Ahlen et al., 2015).

Boschen (2007) first developed a model of a SPOV in which he suggested that people with SPOV may be more vulnerable to expressing anxiety through gastrointestinal somatic symptoms such as nausea and "butterflies", and these were misinterpreted as evidence of imminent vomiting. Veale (2009) emphasised the role of emotional conditioning in which vomiting has become associated with fear and disgust. Past aversive experiences of vomiting (and their cues) become fused with the present often through imagery (Price, Veale, & Brewin, 2012; Veale, Murphy, et al., 2013) so that the memories are re-experienced as if they are about to be repeated. Once the association is learned, the core catastrophic appraisal is of nausea as impending vomit and loss of control and the evaluation of vomiting as one of extreme awfulness leading to further anxiety and disgust. There are various responses that then maintain the fear including: (a) experiential avoidance of thoughts and images of the self or others vomiting and interoceptive cues for nausea, (b) avoidance of external cues that could lead to vomiting; (c) hyper-vigilance for monitoring external threats; (d) self-focussed attention and hyper-vigilance for nausea and other gastro-intestinal sensations; (e) worry, self-reassurance and mental planning of escape routes from others vomiting; (f) magical thinking and neutralizing to stop oneself from vomiting; (g) safety-seeking behaviours, including compulsive checking and reassurance seeking (Veale, Hennig, et al., 2015).

A treatment protocol of CBT (Veale, 2009) based on this model includes psycho-education, a formulation of cognitive processes and behaviours maintaining the fear, imagery re-scripting of past aversive experiences of vomiting (Holmes, Arntz, & Smucker, 2007; Veale, Page, Woodward, & Salkovskis, 2015), exposure in vivo to cues of vomiting, exposure in imagination and role-plays of vomiting, as well as the dropping of safety-seeking and compulsive behaviours. This model and protocol has not been previously evaluated. Our aim in this RCT was to determine if CBT with this protocol is more clinically effective than a wait list with specific outcome measures for SPOV.

2. Method

The results are reported according to the CONSORT checklist.

2.1. Trial design

A randomised controlled trial in which participants were allocated to either cognitive behaviour therapy or a wait list in equal ratio. There were no changes to the design after the trial commenced.

2.2. Participants

The eligibility criterion for participation was the diagnosis of SPOV, using the Structured Clinical Interview for DSM-IV (First, Spitzer, Gibbon, & Williams, 1995). Additional inclusion criteria were as follows: (a) the diagnosis of SPOV must be regarded by the clinician and participant as their principle diagnosis, (b) aged 18 or above; (c) on stable psychotropic medication for 12 weeks prior to randomisation (if relevant); (d) no plans to commence or increase the dose of any psychotropic medication; (e) willingness/ability to travel to the clinic weekly; and (f) a total score of at least 15 on the Specific Phobia of Vomiting Inventory (Veale, Ellison, et al., 2013). Exclusion criteria were as follows: (a) those with an exclusive fear of others vomiting (not of self) as this is atypical; (b) those with a diagnosis of schizophrenia or other psychotic disorder, alcohol or substance dependence, domestic violence, other violent or self-destructive behaviours, or other issue that required treatment in its own right or may interfere in the delivery of therapy; (c) those with suicidal or homicidal intent; (d) those whose English was not sufficiently fluent for CBT; (e) those currently receiving another form of psychotherapy; (f) those who had received CBT for SPOV within the past 6 months.

Participants were provided with a rationale and description of the treatment during the initial phone screening and intake session with the principal investigator. The setting for the study was outpatient private-practice office locations in San Diego County, which included one in La Mesa ($n = 4$), one in Carlsbad ($n = 4$), and one in