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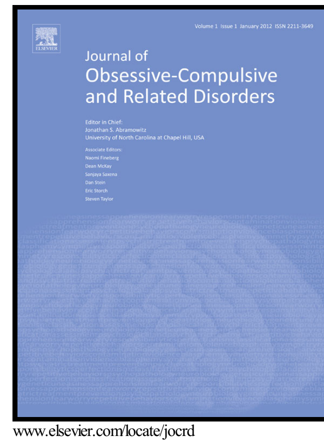

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Is a Specific Phobia of Vomiting part of the Obsessive Compulsive and Related Disorders?

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Abstract

Aims: To explore whether the phenomenology and co-morbidity of a specific phobia of vomiting (SPOV) (also known as "emetophobia") might best fit within the group of obsessive compulsive and related disorders. Method: Case review of individuals who were assessed for a SPOV (n = 83). Results: Sixty-two per-cent of cases reported being markedly or very severely preoccupied by the fear that they might vomit. A majority of people with a SPOV

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reported either often or always conducting repetitive behaviors such as compulsive washing; reassurance seeking; self-reassurance, counting or superstitious behaviors to prevent vomiting; checking others for signs of illness or checking sell-by dates. Cases that had more frequent hand washing were associated with higher scores on standardized questionnaires for a SPOV and a later age of onset. The diagnosis of OCD formed the highest degree of comorbidity. Conclusions: The results have implications for future research into the nosology and treatment of a SPOV. Clinicians should assess for repetitive behaviors in a SPOV and include them in a formulation and treatment plan. Future research should conduct prospective studies to determine which aspects of the phenomenology of a SPOV might best fit under OC and related disorders.

Keywords: emetophobia; specific phobia; vomiting; compulsions; obsessive compulsive disorder

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Is a Specific Phobia of Vomiting best conceptualized as part of the Obsessive Compulsive and Related Disorders?

Obsessive Compulsive Disorder is characterized by the presence of obsessions and/or compulsions; avoidance behaviors are common. DSM-5 has a new section of obsessive compulsive and related disorders (OCRD) which includes body dysmorphic disorder, hoarding disorder, trichotillomania and skin-picking disorder (American Psychiatric

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Association, 2013). Stein and Philips (2014) noted that when considering the overall structure of DSM-5, 11 validators guided the workgroups. These were shared symptom similarity, neural substrates, comorbidity among disorders, biomarkers, course of illness, temperamental antecedents, shared familial ties, cognitive and emotional processing abnormalities, genetic risk factors, environmental risk factors, and treatment response. Based on these validators, it was decided to include a grouping of obsessive-compulsive and related disorders (OCRD), consisting of disorders that appear closely related to OCD.

The development of ICD-11 has also focused on the clinical utility of grouping certain disorders within the same chapter as well as validators (First, Reed, Hyman, & Saxena, 2015). Differences are emerging between the DSM-5 and planned ICD-11 in the group of OCRD. Thus, in contrast to DSM-5, there are plans to include hypochondriasis (illness anxiety disorder) in the OCRD section of ICD-11 (van den Heuvel, Veale, & Stein, 2014). For both DSM-5 and ICD-11, conditions such as obsessive-compulsive disorder (OCD), body dysmorphic disorder (BDD) and hypochondriasis are regarded as being more related to the anxiety disorders end of the spectrum than others, such as tics or trichotillomania.

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We explore in this paper whether a specific phobia of vomiting (SPOV) (also known as emetophobia) should also be investigated as a potential OCRD. A SPOV is currently classified as a specific phobia ("Other type") in DSM-5 (American Psychiatric Association, 2013) and in ICD-10 (World Health Organization, 1992). There are no plans to alter this classification in ICD-11 (Emmelkamp, 2012). However it is possible that ICD-11 working group may remove the sub-typing of specific phobias believing that there is no significant evidence for classifying subtypes (Emmelkamp, 2012).

A fear of vomiting is common in the community, affecting up to 7% of women and 1.8% of men (van Hout & Bouman, 2012). It appears, though, that a SPOV is rare. The only

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epidemiological survey that has specifically asked about a phobia of vomiting (Becker et al., 2007) found a prevalence of 0.1%. This may be an underestimate as clinical observations suggest that the symptoms may sometimes be confused with those of hypochondriacal disorder, obsessive-compulsive disorder and anorexia nervosa (Boschen, 2007; Manassis & Kalman, 1990; Veale, 2009). However, a co-morbid diagnosis of OCD should only be made in the presence of additional obsessions, unrelated to a fear of vomiting. An example could be the occurrence of additional checking behaviors to prevent harm, or magical thinking, designed to stop other bad events (not just vomiting). The avoidance behaviors in SPOV are well documented and are consistent with a phobia. People with a SPOV are likely to avoid situations or activities that could increase the risk of vomiting, such as being near people who are ill or drunk; fairground rides; boats; holidays abroad; travel by airplane; drinking alcohol; crowded places; public transport; eating from salad bars or buffets, or using public toilets (Lipsitz, Fyer, Paterniti, & Klein, 2001; Veale & Lambrou, 2006). They also use safety seeking behaviors when they feel nauseous and think they may vomit; for example they may look for an escape route; keep very still or try to keep tight control of their body; take anti-nausea medication; or try to distract themselves. They may also avoid certain foods or restrict their eating in order to reduce the risk of vomiting or amount of food vomited (Veale, Costa, Murphy, & Ellison, 2012). The phenomenology of repetitive behaviors or compulsions in SPOV has not been explored in detail. In his model, Boschen (2007) suggested that a preoccupation with one's gastrointestinal state resembles the bowel obsessions seen in some OCD cases. Some checking behavior (e.g., of whether food contains certain ingredients) was also noted in a non-clinical survey of individuals with SPOV (Lipsitz et al., 2001). A recent study found that the most common comorbid diagnosis in 64 individuals recruited over the internet with SPOV was of generalized anxiety disorder (28.1%), OCD (12.5%) and hypochondriasis (12.5%) (Sykes, Boschen, & Conlon, 2015). The aim of this study was to

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explore the comorbidity and frequency of repetitive behaviors and compulsions in more detail from the case notes in a clinical sample with SPOV. The study was therefore hypothesis generating to determine whether future studies on characteristics and validators of OCRD should include a group with a SPOV.

Methods

The study consisted of a review of individuals who attended for an assessment and fulfilled diagnostic criteria in DSM-IV for a specific phobia of vomiting (American Psychiatric Association, 2000). DSM-IV was used as the interviews took place before the publication of DSM5.

Participants

83 cases, consisting of 11 males (13.3%) and 72 females (86.7%) were reviewed for the study. Their age ranged from 9 to 68 years old, with a mean of 29.42 years and standard deviation of 10.42. Eight of the cases were children and adolescents (≤17 years old). The mean age of onset when cases became aware of their fear was 8.2 years old (SD 5.21), while the mean age at which their fear of vomiting became a problem was 14.8 years old (SD 7.89). The mean duration of the disorder before presentation was 14.25 years (SD 11.69).

In terms of marital status, 40 (48.2%) were single, 40 were "cohabiting/ married" (48.2%) and 3 had missing data. For employment, 2 cases were "unemployed", 18 were "students", 38 were "employed/self-employed", 8 were "homemakers", 2 categorized their employment status as "other", and data for 5 were missing. 81 cases were Caucasian, 1 was Arabic, and 1 stated their ethnicity as "mixed".

Materials

A Structured Clinical Interview (First, Spitzer, Gibbon, & Williams, 1995) was used for a diagnosis of a specific phobia and for any other presenting problems. The following information was systematically recorded in the case notes:

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Repetitive Thinking:

The extent to which their worry about vomiting had preoccupied the individual over the previous week was rated by the individual on a scale between 0-8, where 0 = not at all, 2 = slightly, 4 = moderately, 6 = markedly, 8= extremely.

Repetitive Behaviors:

The following questions were rated by the individual on a scale from 0-3 where 0 = never; 1 = sometimes; 2 = often; 3 = always:

1) When you feel nauseous, do you reassure yourself that you are not going to vomit?

2) When you feel nauseous, do you seek reassurance from others about whether you are going to vomit?

3) Do you seek reassurance from the person/people you live with about whether they look ill or could vomit?

4) Do you recite a phrase to stop yourself from vomiting?

5) Do you excessively smell or check sell by dates of food?

6) Do you check if others are looking or feeling unwell or sick?

7) Do you wash your hands frequently or use special measures (e.g. anti-bacterial soap or very hot water) or wash them for an extra-long time?

8) Do you get any children in your care to wash their hands frequently, or to use special measures or to wash their hands for an extra-long time?

9) Do you engage in any other repetitive behaviors or counting in an effort to stop yourself vomiting?

While not all questions focused on the motivation, responses were clarified that they related to the patients' fear of vomiting, for example hand washing or checking of food to reduce the risk of vomiting rather than any other feared consequences.

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In addition, cases routinely completed the following series of questionnaires as part of their initial assessment: The Specific Phobia of Vomiting Inventory (SPOVI)(Veale et al., 2013); the Emetophobia Questionnaire (Emet-Q) version 13 (Boschen, Veale, Ellison, & Reddell, 2013); and the Health Anxiety Inventory (HAI) short version (Salkovskis, Rimes, Warwick, & Clark, 2002).

The SPOVI consists of 14 items that are scored for frequency ranging from 0 (not at all) to 4 (all the time). The total score is the sum, which ranges from 0 to 56. The scale has a two-factor structure, with one factor characterized by avoidance behavior (e.g. "I have been trying to avoid or control any thoughts or images about vomiting") and a second factor comprised of threat monitoring (e.g. "I have been focused on whether I feel ill and could vomit rather than on my surroundings"). The Cronbach's alpha of the SPOVI for a group with emetophobia was .91.

The Emet-Q is a 13-item scale with a possible range of scores from 13- 65. The Emet-Q-13 has 3 factors. Factor 1 had 6 items focused on avoidance of travel, movement, or locations. Factor II was comprised of 3 items that centred on themes of dangerousness of exposure to vomit stimuli. Factor III consisted of 4 items that were focused on avoidance of others who may vomit. The Cronbach's α for this measure is 0.82.

The HAI (Salkovskis et al., 2002) (Short-Version) is a 14 item self-report scale, which has been found to have high internal consistency in both non-clinical (α= .94) and clinical (α= .95) samples. The possible range of scores for the total is 0–42. In a previous sample, emetophobia was most strongly associated with symptoms of health anxiety (r= 0.76), which reflects the overlapping concern of people with a SPOV with developing an illness that could cause them to vomit.

Statistical Analysis

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Descriptive statistics were produced from this sample along with qualitative data about specific repetitive behaviors most engaged in by the cases. Non-parametric tests (Mann-Whitney U and Spearman's Correlation) were also conducted to explore the relationship between severity of symptoms on the SPOV and Emet-Q with the frequency of the most common repetitive behaviors. The relationship between age of onset (early onset being $<$ 20 years old and late onset $\geq$ 20 years old) with severity and frequency of repetitive behaviors was also explored using the same analysis. IBM SPSS Statistics version 22 was used for all statistical analysis.

Results

All cases fulfilled DSM-IV criteria for a specific phobia of vomiting (American Psychiatric Association, 2000). Additional comorbidities to SPOV identified are shown in *Table 3*, with the most common comorbidity found to be OCD, in 12% of cases. As a group the mean score of 28.6 on the HAI crosses the suggested cut off score of 15 for hypochondriacal disorder, indicating a relationship between symptoms of a SPOV and health anxiety (*Table 1*). Like hypochondriacal disorder, people with SPOV are frequently fearful of becoming "ill" but in SPOV the focus on becoming ill is that it would cause vomiting.

In terms of 'repetitive thinking', 62.5% (n = 40) reported being markedly or very severely (score of 6-8) preoccupied by the worry that they might vomit, including several cases who stated that it was on their mind all day. 26.6% (n = 17) reported being moderately preoccupied (scoring 3-5) and 10.9% (n = 7) reported only slight or even no preoccupation.

The following repetitive behaviors (*Table 2*) were noted:

1) Checking sell by dates: 82.2% (n = 60) reported "always" or "often" excessively checking sell by dates or other measures to reduce the risk of vomiting. Examples included "I check use-by dates at least 4 times to make sure I have read them correctly" and "I even get the packets out of the bin to re-check the date".

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2) Checking others: 80.8% (n= 59) were “always “ or “often” checking if others are looking or feeling unwell or sick to increase vigilance for the risk of vomiting. Examples include “I look at their faces to see if they look off-colour or unwell”, “I overanalyse my wife’s behavior all the time, i.e. if she is slightly quieter than normal or doesn’t eat all her dinner” and “I always ask my mum, dad and grandma: 'Do I look sick? Will I be sick? I feel sick.”

3) Hand washing: (73.6%) (*n*= 53) reported “always” or “often” using excessive hand washing or other special measures (e.g. anti-bacterial soap or very hot water). Examples included “I always carry antibacterial gel, ready to use”; “I use antibacterial soap and very hot water whilst washing in even numbers”.

4) Other rituals: 30.6% (*n*= 22) reported “always” or “often” engaging in other rituals or counting in an effort to stop themselves vomiting. Examples include “I do things done in 4’s not in sixes which sounds like sick. If the act is not done perfect on count four, do another 4”; “I touch wood before bed and touch wooden things on my way to work”; “I get up out of bed from the correct side to prevent vomiting that day”; “I touch wood and pray every night that I and my family won't be sick or ill in any way”.

5) Children hand-washing: 70.8% (*n*= 17) reported “always” or “often” ensuring children in their care have to wash their hands frequently, or to use special measures or to wash them for an extra-long time. Examples include: “I get them to use antibacterial soap in hot water, scrub nails, and use antibacterial gel”; “I will get the children to wash hands as soon as they are home from nursery”.

6) Reassuring self: 52.7% (*n*= 39) reported “always” or “often” reassuring themselves. An example was: “I tell myself like a mantra that I am not going to be sick and my children are not going to be sick”.

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7) Reassurance seeking: 51.6% (*n* = 32) reported "always" or "often" seeking reassurance from the person/people they live with about whether they look ill or could vomit. Examples "I repeatedly ask my husband if he's ok"; "I ask my partner if he thinks my daughter is ill every day"; "I always check - people at work think I'm caring, at home everyone is sick of me and most of the arguments with my husband are due to this, he has had enough of me asking the same questions over and over."

As shown in *Table 4 and 5*, there was a significant correlation between frequency of hand washing and both SPOVI and Emet-Q scoring significantly higher on both the SPOVI and Emet-Q, compared to those who stated that they didn't excessively wash their hands. No correlation was found between frequency of reassurance seeking or checking and SPOVI or Emet-Q scores. Patients with a high tendency to seek reassurance from others showed higher SPOVI scores, although this effect was not significant.

There was no significant difference between early age of onset (*n* = 48) or late (*n* = 29) between severity of symptoms on the SPOVI ($p = .285$) and EmetQ ($p = .736$) or the frequency of seeking reassurance or checking if others feel unwell (Table 6).There was however, a significant difference between frequency of hand washing between early and late onset SPOV with hand washing occurring more frequently in those who had a later age of onset (>20 years old) (see Table 6).

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Discussion

This is the largest case series of individuals with a SPOV in a clinical service. The female dominance is slightly lower at 86.7% than in previous community surveys. We observed comorbidity with OCD in 12%. We explored the phenomenology of repetitive thinking and behaviors in a SPOV. We found that between 50-80% of a clinical sample with SPOV reported repetitive thinking and behaviors that was motivated by preventing the risk of

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vomiting. More frequent handwashing was associated with more severe symptoms of SPOV and a later age of onset. The behaviors identified appeared similar to the phenomenology seen in OCD, especially for compulsive washing and superstitious behaviors. Sufferers appeared to be motivated by a desire (i) to reduce uncertainty by checking the risk of vomiting in their self or others. Here the “checking” behavior may be a form of hyper-vigilance and monitoring of the threat similar to that found in other anxiety disorders as well as OCD; (ii) to “undo” a contaminated state by washing or other special measures to prevent vomiting. This is the most similar behavior to compulsive washing in OCD and was sometimes associated with other superstitious behaviors like counting during washing; (iii) to reduce uncertainty by seeking reassurance from others or providing self-reassurance that vomiting is not going to occur. This is characteristic of the phenomenology of OCD and hypochondriasis; (iv) to prevent vomiting from occurring with magical thinking (e.g. repeating a phrase). Again this is characteristic of the phenomenology of OCD and an overinflated sense of responsibility. All these repetitive behaviors are theoretically maintaining factors in a SPOV and have the unintended consequences of increasing preoccupation and the fear of vomiting. They should therefore be part of a formulation and targeted in therapy.

The main limitation of our study is that it was based on a review of case notes and we did not have a control group (for example a group with another specific phobia or a group with OCD contamination). A full SCID was not used to determine every possible comorbid diagnosis which is probably why our figures for the frequency of GAD and hypochondriacal disorder are lower than that found by Sykes et al. (2015). However the study was limited to hypothesis generating from clinical case notes. The SCID was used for participants’ presenting problems and to exclude alternative diagnoses that might best account for their symptoms. It is possible that a full SCID may have identified additional comorbidity or an

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alternative diagnosis in a few cases. The findings of this study and Sykes et al. (2015) suggests that there is significant comorbidity with OC and related disorders.

Our data suggest that at least some cases of SPOV should be classified in the broader context of somatic or visceral obsessions in OCD that relate to losing control of bodily functions (Boschen, 2007). This group might relate to the fear of being incontinent (urine or faeces), the fear of vomiting or the fear of causing unwanted pregnancies (semen). Somatic obsessions were originally described as related to developing an illness or being ugly or defective on the Yale Brown Obsessive Compulsive Checklist (Goodman, Price, Rasmussen, & Mazure, 1989). However such obsessions are now regarded as part of body dysmorphic disorder or hypochondriasis. We suggest that these somatic or visceral obsessions might have much in common in the phenomenology of a SPOV. For example:

1) Individuals can become preoccupied, with many hours spent worrying in anticipation of a threat of losing control of a bodily function and mental planning how to prevent it. A previous study on the psychopathology of a SPOV found that "losing control" was the main fear of vomiting (Veale & Lambrou, 2006).

2) The dominant emotions are those of bodily disgust and shame (or self-disgust).

3) Some of these obsessions may be linked by an under-regulated parasympathetic activity. This has the main effect of expelling toxins and hence the symptoms of nausea, bowel movement or an urge to void urine.

4) There is frequent imagery of either flash-backs from past aversive experiences or flash-forwards in a SPOV (Price, Veale, & Brewin, 2012) or visceral obsessions (Pajak, Langhoff, Watson, & Kamboj, 2013).

5) Sufferers frequently display repetitive behaviors. In this study we demonstrated repetitive behaviors in SPOV. Previous case histories of bowel obsession have described repetitive behaviors (Beidel & Bulik, 1990; Hatch, 1997; Jenike, Vitagliano, Rabinowitz, Goff, & Baer,

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1987). A fear of incontinence may lead to frequent attempts to void urine or faeces before leaving home.

6) There may be marked avoidance and safety seeking behaviors (Veale & Lambrou, 2006). Sometimes a SPOV may present with disordered eating (e.g. idiosyncratic diets to reduce the risk of vomiting or use of anti-nausea medication.) A fear of incontinence may lead a person to restrict their fluid intake, eat a very idiosyncratic or restricted diet or use constipating drugs to control their bowels.

Lastly these data suggest that cases of SPOV may need a more elaborate psychological intervention than graded exposure which is the most evidence based treatment for a specific phobia (Wolitzky-Taylor, Horowitz, Powers, & Telch, 2008). At the very least, the formulation requires an understanding of the role of the repetitive behaviors as a maintenance factor and the importance of response prevention in reducing compulsive and safety seeking behaviors. There might also be a role for pharmacotherapy such as a selective serotonin reuptake inhibitor (SSRI) for which there is evidence in OCD. In conclusion, we hypothesize that a specific phobia of vomiting (or at least a sub-type of SPOV with repetitive behaviors, especially hand washing and later age of onset) should be investigated as part of the OCRD and somatic obsessions. Further research requires a prospective sample and specific hypotheses to be tested. One hypothesis is that a SPOV (or at least a sub-type of SPOV) is different from other Specific Phobias and more similar to an OCRD with a range of validators, and determining the clinical utility of classifying SPOV as an OCRD. Equally there are people with SPOV who do not show repetitive behaviors. This suggests that those with a milder but more common fear of vomiting (not fulfilling criteria for a specific phobia) may not show repetitive behaviors (van Hout & Bouman, 2012); mild to moderate cases of SPOV may best be conceptualized as a specific phobia and as the severity increases and there are more repetitive behaviors such as compulsive washing, then it may be best

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conceptualized as an OCRD. Another hypothesis to test is whether the cases of SPOV who are concerned by others vomiting which is contagious (compared others vomiting who are drunk or pregnant which is not contagious). This may then be associated with compulsive hand washing to reduce the risk of catching a contagion that could cause vomiting. Another hypothesis to test is whether the repetitive behaviours and demographics of those with SPOV and comorbid OCD (unrelated to vomiting) are any different to those without comorbid OCD.

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Table 1.

Assessment scores for the mean and standard deviation (SD) of assessment measures

Measure	Total or Subscales	*n*	*mean*	*SD*
Health Anxiety Inventory (HAI)	Total	66	28.6	8.9
Specific Phobia of Vomiting Inventory (SPOVI)	Total	70	39.2	12.2
	Avoidance	70	19.7	6.9
	Threat monitoring	70	19.5	6.3
Emetophobia Questionnaire-13 (Emet-Q)	Total	72	48.8	8.8
	Avoidance of travel, movement or location	72	20.6	5.2
	Dangerousness of exposure to vomit stimuli	72	11.1	3.1
	Avoidance of others who may vomit	72	17.1	3.6

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Table 2.
Numbers and percentages of patients that engage in repetitive behaviors

Repetitive Behaviour	Total	Never/ Sometimes		Often/ Always	
	n	*n*	%	*n*	%
Excessively smell or check sell by dates of food	73	13	17.8	60	82.2
Check if others are looking or feeling unwell or sick	73	14	19.2	59	80.8
Engage in any other rituals or counting in an effort to stop myself vomiting	72	50	69.4	22	30.6
Wash your hands frequently/ use special measures/ wash them for an extra-long time	72	19	26.4	53	73.6
Get children in my care to wash their hands frequently/ to wash them for an extra-long time	24	7	29.2	17	70.8
Reassure myself that I will not vomit	74	35	47.3	39	52.7
Seek reassurance from others about whether they look ill or could vomit	62	30	48.4	32	51.6

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Table 3.
Numbers and percentages of common comorbidities

Comorbidity	*n*	%
Obsessive Compulsive Disorder	10	12.04
Depression	6	7.23
Social Phobia/Anxiety	4	4.82
Eating Disorders	2	2.41
Personality Disorders	2	2.41
Post-Traumatic Stress Disorder	1	1.20
Agoraphobia	1	1.20
Panic Disorder	1	1.20
Other Specific Phobias	2	2.41
No comorbidities	59	71.08

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Table 4.
Comparing frequency of repetitive behaviours with SPOVI and Emet-Q scores

Measure	Item		*n*	*Mean (SD)*	*U*	*Z*	*p*	*d*	95% CI
Specific Phobia of Vomiting Inventory	Seek Reassurance	Low	29	35.59 (12.80)	433.50	-1.78	0.08	-0.49	[0.07, 0.08]
		High	40	41.43 (11.20)					
	Wash hands	Low	18	31.78 (12.61)	256.50	-2.53	0.01**	-0.76	[0.01, 0.01]
		High	48	40.75 (10.92)					
	Check Others	Low	13	32.85 (12.22)	243.50	-1.71	0.09	-0.62	[0.08, 0.09]
		High	54	39.89 (11.46)					
Emetophobia Questionnaire-13	Seek Reassurance	Low	30	48.53 (9.83)	598.00	-0.02	0.98	-0.01	[0.98, 0.99]
		High	40	48.63 (8.09)					
	Wash hands	Low	19	44.32 (9.88)	295.50	-2.24	0.03*	-0.68	[0.02, 0.03]
		High	48	49.98 (7.89)					
	Check others	Low	14	45.64 (11.72)	325.00	-0.81	0.43	-0.42	[0.43, 0.44]
		High	54	49.22 (7.83)					

* $p < .05$; ** $p \leq .01$

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Table 5.

Spearman's Correlation between frequency of repetitive behaviours and Emet-Q and SPOVI scores

Item	Correlation Coefficient	
	Emet-Q	SPOVI
Seek Reassurance	.216	.003
Wash hands	. 314*	.275*
Check Others	.210	.098

* *Correlation is significant at the 0.05 level (2 tailed)*

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Table 6.
Frequency of repetitive behaviours in those with early or late onset of a SPOV.

Age of Onset	Repetitive Behaviour	*n*	*Mean Rank*	*U*	*Z*	*p*
Early	Seek reassurance	48	39.59	667.50	-0.31	.757
Late		29	38.02			
Early	Wash hands	41	29.83	362.00	-2.61	.009*
Late		27	41.59			
Early	Check others	42	32.73	471.50	-1.28	.202
Late		27	38.54			

$^*p < .05$; $^{**}p < .01$; $^{***}p < .001$

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Highlights

- Case review of individuals with a Specific Phobia of Vomiting (SPOV)
- Frequent report of repetitive behaviours such as compulsive washing and checking
- These results have implications for the nosology and treatment of a SPOV
- Clinicians should assess repetitive behaviours when formulating a treatment plan

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