

Exploring the symptomatology and assessment of emetophobia: a comprehensive scoping review

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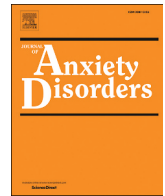
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Review

Exploring the symptomatology and assessment of emetophobia: A comprehensive scoping review

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ABSTRACT

Emetophobia, the specific fear of vomiting, is a poorly understood anxiety disorder. Despite a growing body of research, comprehensive reviews on its presentation and assessment are limited and dated. This scoping review maps, synthesises and explores existing literature on the assessment measures and symptomatology of emetophobia. Its purpose is to inform future clinical practices by identifying reliable assessment instruments and facilitating more accurate diagnosis, treatment planning, and research comparisons. Five online databases (PubMed, SCOPUS, PsycINFO, Google Scholar, PsyArXiv) were searched using terms related to emetophobia. In total, 483 unique articles were located of which 38 were eligible for inclusion (35 described symptomatology; 3 described assessment measures). Among studies exploring symptoms, 17 were single case studies, 11 were cross-sectional surveys and 7 were other designs (e.g., case series, retrospective studies). Findings indicate that emetophobia is a multifaceted condition consisting of physical, psychological and behavioural symptoms. Avoidance behaviours are the most frequently reported symptom, described in 91 % of included literature. There is little research exploring the differences in child and adult symptom presentation which may result in misdiagnosis if an adult-centric criteria is applied. Two self-report questionnaires have been created and their psychometric properties assessed but, given numerous studies relied on longer, unvalidated assessment measures, these two measures appear to need further development. This review establishes that emetophobia is a complex and debilitating condition impacting multiple domains of life. Its findings will inform future research into the development and evaluation of tailored interventions targeting the specific presentation of emetophobia.

1. Introduction

1.1. Background

Emetophobia, the specific fear of vomiting, remains a relatively neglected and poorly understood condition. Classified as an anxiety disorder within DSM-5 under the sub-category of "other types" of phobias (American Psychiatric Association, 2022), the disorder involves severe anxiety and fear surrounding vomit and vomit-related stimuli. Recent literature indicates emetophobia typically develops during early childhood, with a lifetime prevalence of 6–7 % in women and 2–3 % in men (Hunter & Antony, 2009). Despite an early onset, with symptoms emerging prior to puberty (mean age = 9.2 years; Lipsitz et al., 2001), the average duration of illness before seeking treatment is approximately 25 years (Lipsitz et al., 2001). This prolonged delay between onset and treatment illustrates limited recognition of the disorder, resulting in extended periods of suffering for individuals, similar to that

seen for eating disorders (e.g., Austin et al., 2020).

Although research suggests individuals primarily fear themselves vomiting (Boschen, 2007), some studies have reported a proportion of individuals exclusively fearing others vomiting (Veale, 2009), or a combination of both (Keyes et al., 2018). Whilst presentations may vary, individuals with emetophobia are shown to experience severe impairment across social and occupational domains (Hunter & Antony, 2009), frequently avoiding various situations and activities in an effort to prevent vomiting (de Jongh, 2012). This includes avoidance of transport such as cars and aeroplanes (e.g., de Jongh, 2012), abstaining from alcohol and alcohol-related activities, public restrooms, crowded spaces such as concerts and events, and restaurants (e.g., van Hout & Bouman, 2012). The impact on long-term life decisions has also been explored, with a study involving 94 women with emetophobia reporting that nearly half of the participants had previously avoided pregnancy because of their fear of vomiting and 5.3 % reporting having terminated a pregnancy (Price et al., 2011). It has been suggested people with

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emetophobia may experience greater limitations or impairments due to the severity of their phobia compared to other specific phobias as a result of these avoidance behaviours (Riddle-Walker et al., 2016).

In recent years, there has been an increasing focus on the physical symptoms associated with emetophobia. For example, an avoidance of certain foods and disordered eating patterns resulting in significant weight loss often resemble the clinical presentation of anorexia nervosa (Veale et al., 2012) or avoidant restrictive food intake disorder (ARFID) (Maertens et al., 2017). As a result, individuals are often misdiagnosed with eating disorders (Veale et al., 2012; see, for example, Manassis & Kalman, 1990). These disturbed eating patterns, stemming from the fear of vomiting rather than weight loss motives, have been further explored, with one study describing an individual depriving himself of food because he associated eating with vomiting (Dosanjh et al., 2017). Although nearly half of eating disorder professionals reported having encountered emetophobia in their practice, almost 30 % had never heard of the disorder, highlighting both its likely prevalence and the need for greater awareness and attention (Vandereycken, 2011).

Despite an increasing emphasis on evidence-based care in mental health practices (e.g., Lattie et al., 2022), efforts to identify and promote the use of standardised assessment measurements have been insufficient (Hunsley & Mash, 2007), especially within the field of anxiety disorders (Mughal et al., 2020), and there are no guidelines from the National Institute for Health and Care Excellence (NICE) specifically for emetophobia (National Institute for Health and Care Excellence, 2014). Standardised assessment measures are a vital component for conceptualising, formulating and implementing treatment, and are essential to providing high-quality care (Therrien & Hunsley, 2012). Although diagnostic interviews are often considered the "gold standard" for the assessment of anxiety disorders (e.g., Evans et al., 2015), they are costly. Self-report assessment tools provide an alternative; they can enhance knowledge with minimal financial cost across various research settings (Ioannidis & Maniatis, 2023). The absence of clear guidelines for specific phobias means that symptoms and treatment outcomes have been assessed using tools that have not been validated for emetophobia, with generalised anxiety measures frequently seen as a primary measures (e.g., Maack et al., 2013), and there is inconsistency across studies in the tools that have been used (e.g., Kerr, 2013; Faye et al., 2013). As measures vary in symptoms they capture, it is difficult to compare findings or draw conclusions about the relative efficacy of different treatments for emetophobia.

In both clinical and research settings, self-report questionnaires are often the primary method for assessing symptoms of anxiety disorders (e.g., Shevlin et al., 2022). Keyes et al. (2018) provided the first comprehensive synthesis of research on the phenomenology, epidemiology, comorbidity, and treatment of emetophobia, finding that two self-report measures of emetophobia are most commonly used. However, subsequent authors (e.g., Hennemann et al., 2025) have highlighted inconsistencies in the psychometric properties of these measures, and other self-report questionnaires (e.g., Liebenberg, 2018) have since been developed and used, suggesting the need for an updated review. This scoping review seeks to map existing assessment measurements, including studies published since Keyes et al.'s (2018) review. Furthermore, given that research involving larger samples of participants are often online studies where participants are not required to have a clinical diagnosis of emetophobia (e.g., van Hout & Bouman, 2012), and recurring misdiagnosis of emetophobia has been noted in literature (Veale et al., 2013), this review includes studies of self-reported emetophobia alongside those restricted to a clinical diagnosis. Through adopting broader inclusion criteria that incorporate both grey literature and case studies, both of which were excluded from Keyes et al.'s (2018) review, this scoping review aims to provide a comprehensive overview of the current symptomatology and assessment measurements for emetophobia. The purpose is to inform future clinical practice by identifying reliable instruments and facilitate more accurate diagnosis, treatment planning, and research comparisons in the field of

emetophobia.

1.2. Review questions

Given gaps in our understanding of the symptomatology and available psychometric measures regarding emetophobia, there is a need for a contemporary review to build on existing contributions in this field (e.g., Keyes et al., 2018). Therefore, the primary objectives of this review are to: 1) explore the scope of research on assessment measurements for emetophobia; and 2) explore the scope of research on the symptomatology of emetophobia. A secondary objective is to identify potential gaps in the research.

2. Methods

2.1. Study design

This review was conducted in accordance with the Joanna Briggs Institute (JBI) guidelines for conducting a scoping review (JBI Manual for Evidence Synthesis, 2024). An a priori protocol was preregistered on Open Science Framework (OSF) and can be accessed via DOI (<https://doi.org/10.17605/OSF.IO/DYFKU>). The protocol was developed in accordance with Arksey and O'Malley's (2005) iterative five-step scoping review involving: 1) Identifying the research question, 2) Identifying relevant studies, 3) Study selection, 4) Data charting, and 5) Reporting and summarising the results.

2.2. Search strategy

A preliminary search of MEDLINE, OSF, the Cochrane Database of Systematic Reviews and JBI Evidence Synthesis found no current or ongoing literature reviews focused on the symptomatology and assessment measurements for emetophobia. An extensive search strategy was developed with the guidance and expertise of an experienced health sciences research librarian. The following databases were selected to encompass a broad range of relevant research across multiple academic disciplines: PubMed, SCOPUS, PsycINFO, Google Scholar, and PsyArXiv. The combination of databases was selected to include both peer-reviewed and non-peer-reviewed articles. The searches were conducted on 5th November 2024, with the full search term details available in Supplemental File S1. Adjustments to MeSH terms were necessary to tailor the search strategies for each database. A manual search of the reference list for included articles was also conducted to identify any articles not retrieved during the database search.

2.3. Inclusion criteria

Inclusion criteria were original studies outlining the symptoms of participants with emetophobia and/or the assessment measurements used. Given research suggesting that patients with emetophobia are often misdiagnosed (Veale et al., 2013), this review included participants with either a self-reported or clinical diagnosis of emetophobia. Studies were required to explicitly identify or describe symptoms related to emetophobia, including, but not limited to, avoidance behaviours and psychological and physical responses associated with the phobia. Alternatively, studies met the inclusion criteria if they were centred on the use or development of specific tools or instruments aimed at measuring emetophobia symptoms. These tools could be either validated or unvalidated, provided they focused on emetophobia. Only studies published in the English language were included. We used the Population, Concept, Context (PCC) framework (Pollock et al., 2023) to identify relevant studies for this review, summarised in Table 1. There were no parameters on publication date, and we excluded conference abstracts, book chapters and review articles.

Table 1

Framework for determining eligibility of articles for the research questions.

	Inclusion	Exclusion
Population	Participants with emetophobia; clinical diagnosis or self-report	Studies not primarily exploring emetophobia
Concept	Assessment measurements for emetophobia; symptoms/ features of emetophobia; validated and non-validated measurements; physical, social, cognitive and behavioural symptoms; primary research	Not primary research: assessment tools not exclusively measuring emetophobia (e.g., generalised anxiety disorder)
Context	Emetophobia research	Conference abstracts; book chapters; reviews

2.4. Sources of evidence screening and selection

Following the search, all identified citations were collated and uploaded to Endnote 21, a bibliographical citation management program, with duplicates removed. Study selection occurred in two stages. The first stage consisted of the lead reviewer (MH) and a second reviewer (EP) screening article Titles and Abstracts against the eligibility criteria. All discrepancies were resolved through discussion. Following this, both reviewers undertook full-text screening. Any discrepancies were resolved through discussion and, if consensus could not be reached, a third reviewer (PJ) was consulted.

2.5. Data extraction

The Methods and Results sections of included studies were reviewed and classified into separate categories for data extraction (see Supplemental File S2). Data were extracted independently by two researchers; MH and EP. This tool was piloted prior to the protocol and the extracted data was collated into tables and a narrative summary by MH.

3. Results

The data synthesis, identification and screening process can be seen in Fig. 1 following the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR; [Stovold et al., 2014](#)) flow diagram.

3.1. Identification of the relevant studies and eligibility

The initial search yielded 671 articles, with one additional article identified from one of the References sections. After removing duplicates, 483 texts were subject to Title and Abstract screening. Of these, 115 were eligible for full-text screening, with three unable to be retrieved.

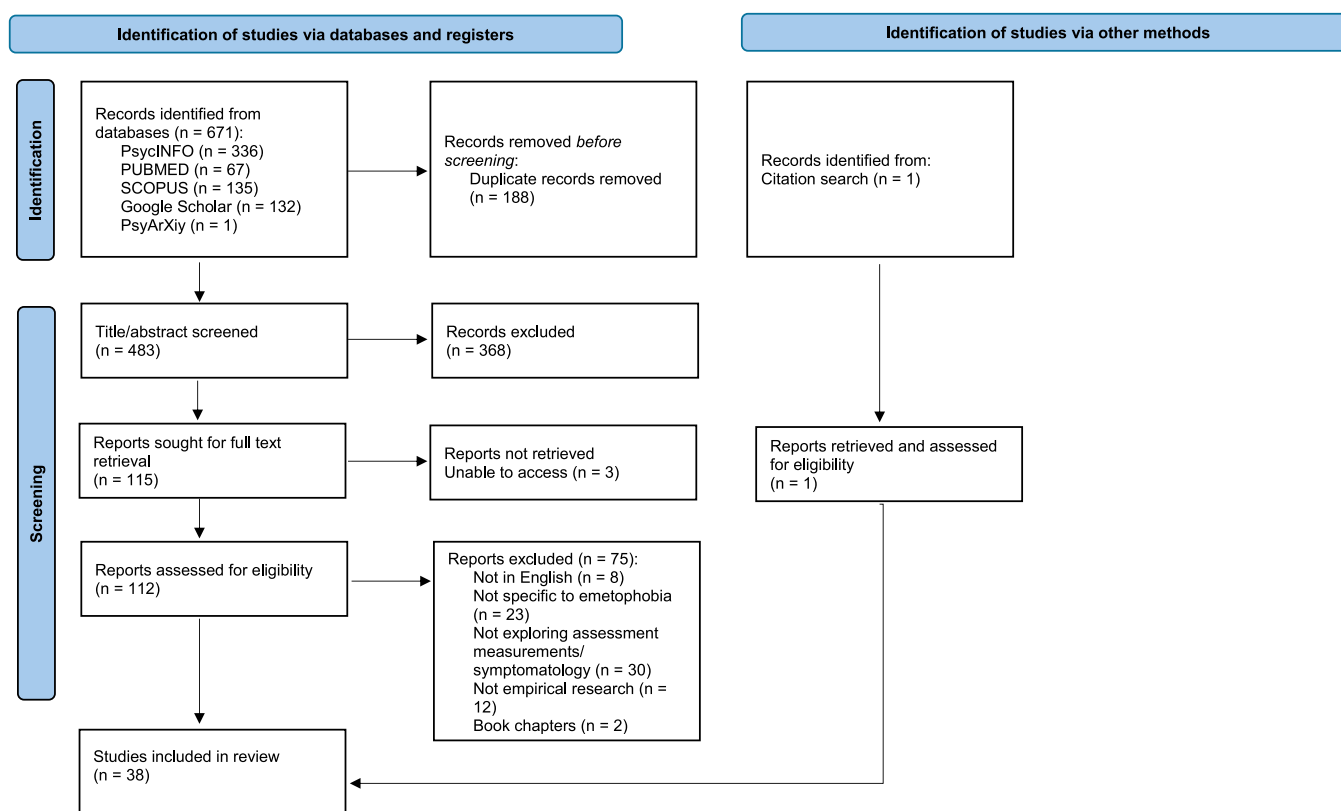
3.2. Characteristics of included studies

Of the 38 included studies within this review, 35 were related to the symptomatology of emetophobia and 3 explored assessment measures. The full extracted data for symptoms can be seen in Supplemental File S2. These studies varied in methodologies; 17 were single case studies, 11 were cross-sectional survey studies and 7 were other designs (e.g., case series, retrospective studies). A total of 11 studies (31 %) involved the use of psychometrically evaluated assessment measurements specific to emetophobia. Participants spanned age (8–75 years old), sex (83 % of studies included females), socioeconomic status and represented several countries. Less than half of studies ($n = 17$; 49 %) included participants' self-reported ethnicity, with the majority of participants White (e.g., 93 %; [Pearson, 2010](#)).

3.3. Symptomatology of emetophobia

3.3.1. Behavioural symptoms

Avoidance behaviours were the most frequently reported

**Fig. 1.** PRISMA flow diagram of the data selection process.

behavioural symptom, with at least one avoidance behaviour identified in 91 % of included articles. These behaviours consisted of avoiding: public transport (e.g., [Fix et al., 2016](#); [Kobori, 2011](#)); travelling (e.g., [Faye et al., 2013](#)); consuming alcohol (e.g., [Veale & Lambrou, 2006](#)); crowded places (e.g., [Mitamura et al., 2019](#)); engaging in social situations (e.g., [Begum, 2023](#)); visiting theme parks (e.g., [Paulus & Norton, 2016](#)); dining at restaurants (e.g., [Höller et al., 2013](#)); interacting with children or people perceived to be sick (e.g., [Lipsitz et al., 2001](#)); refraining from saying or typing the word “vomit” (e.g., [Graziano et al., 2010](#)); and not visiting hospitals or medical settings which extended to a refusal of taking medication (e.g., [Veale & Lambrou, 2006](#)). One study reported a case of a woman with emetophobia who refused to leave her house for two months due to her intense fear of vomiting ([Köksal et al., 2022](#)). Other reported avoidance behaviours included aversion of specific types of food, such as meat, fish, and dairy, eating at restaurants and consuming food of unknown origin. Five studies (14 %) identified female participants’ avoidance of pregnancy, either through birth control ([Liebenberg, 2015](#)) or termination of pregnancy ([Price et al., 2011](#)) and driven by a fear of experiencing morning sickness.

Reassurance-seeking behaviours were also frequently observed, with eight studies examining these behaviours among participants. For example, participants repeatedly asked loved ones for confirmation that they or others did not look or feel unwell (e.g., [Veale et al., 2015](#)). Such behaviours were displayed across all age groups, with parents seeking reassurance from their children that they were not sick (e.g., [Orme et al., 2022](#)), and children asking their parents for reassurance that they would not vomit (e.g., [Faye et al., 2013](#); [Graziano et al., 2010](#)). However, this was especially apparent in child case studies, with 75 % describing reassurance-seeking from a parental figure. This involved children repeatedly calling their parents when outside the home for confirmation they were not going to be sick (e.g., [Kahana & Feeny, 2005](#); [Graziano et al., 2010](#)) and waking their parents up at night ([Bogusch et al., 2018](#)). Articles also explored behaviours to prevent encountering vomit, sometimes referenced in the literature as compulsions ([Veale et al., 2015](#)), with nearly half (48 %) identifying one or more of the following behavioural responses: taking anti-sickness medication, repetitive counting, frequent cleaning with antibacterial sprays, excessive hand-washing, repeatedly checking expiration dates on food and cooking longer than necessary.

3.3.2. Psychological symptoms

A preoccupation with worrying about vomiting ($n = 13$; 37 %) was frequently observed, with one study reporting a participant who planned her daily routine around avoiding vomit ([Maack et al., 2013](#)). A recurring symptom of threat monitoring was presented in 12 studies, with participants displaying acute sensitivity to both external (e.g., people who may be unwell) and internal stimuli (e.g., bodily sensations). Additionally, 17 % of studies explored monitoring of external threats, including participants constantly scanning for ‘escape routes’ to avoid vomiting in public (e.g., [Orme et al., 2022](#)). Internal threats ($n = 7$) involved hyperawareness of bodily sensations, such as nausea or gastrointestinal (GI) processes, which participants perceived as indications of imminent vomiting ([Kahana & Feeny, 2005](#)). Emetophobic individuals also displayed hypervigilance in monitoring others and their surroundings for potential triggers. This included being hyperalert for signs of illness or cues suggesting someone might vomit ([Graziano et al., 2010](#)), as well as heightened anxiety and worry to environmental stimuli like vomit-related smells, sounds, or stories ([Orme et al., 2022](#); [McFaden & Wyness, 1983](#)). This constant vigilance added to a heightened sense of danger in daily situations.

Nine (26 %) studies found evidence of catastrophic thinking in emetophobic individuals, including fears of life-threatening consequences as a result of vomiting, such as believing they would die ([Maack et al., 2013](#); [Liebenberg & Santos, 2018](#); [Dosanjh et al., 2017](#)) or that they had a serious condition like a brain tumour ([Veale & Lambrou, 2006](#)). Some participants described a feeling of “losing control” of their

bodies ([Höller et al., 2013](#)), feeling like they were going “crazy” ([Pearson, 2010](#)), acting “hysterical” ([Pearson, 2010](#)) or preferring death over vomiting ([Pearson, 2010](#)). Social fears were also discussed in five studies, with participants primarily fearing the rejection or disgust from others if they vomited in public (e.g. [Faye et al., 2013](#)). Additionally, the mere mention of the word “vomit” triggered anxiety in some individuals (e.g. [O’Connor, 1983](#); [Lipsitz et al., 2001](#)).

Intrusive imagery and intrusive thoughts were a core symptom included in five studies. [Price et al. \(2011\)](#) explored how patients experienced flashbacks and flashforwards involving visual, taste, and even olfactory details related to vomiting, with the majority reporting this a weekly occurrence. Intrusive thoughts often centred around a fear of contamination, compulsions and perceived connections between bodily sensations and vomiting. For example, one participant recalled feeling the sensation of one toe overlapping another during a stomach-ache and developed the belief that if her toes overlapped, it would cause her to have a stomach-ache and vomit ([Paulus & Norton, 2016](#)). Others described fears of choking (e.g., [Wu et al., 2015](#)), suffocating, or swallowing their tongue as a result of vomiting ([Maack et al., 2013](#)), or intrusive thoughts such as “I’m going to throw up” ([Fix et al., 2016](#)). The inability to access safety-seeking behaviours (e.g., avoidance, reassurance-seeking) further exacerbated distress, with one participant reporting feeling highly anxious when leaving the house without hand sanitiser ([Paulus & Norton, 2016](#)).

3.3.3. Physical symptoms

A total of 29 studies (83 %) explored physical symptoms as a component of emetophobia. For instance, some studies focused primarily on the physical rehabilitation of patients due to the physical manifestation of emetophobia (e.g., [Kannappan & Middleman, 2020](#); [Williams et al., 2011](#)). Dehydration was one such physical symptom identified in the literature ([Williams et al., 2011](#)), and a more notable finding across studies was the prevalence of underweight individuals within emetophobic populations, described in five studies. Low body mass index (BMI) was documented in numerous studies (<18.5 kg/m²; [World Health Organization, 2023](#)), with [Williams et al. \(2011\)](#) reporting a patient with a BMI of 13.6, while studies also showed that a greater proportion of emetophobic participants were underweight compared to non-clinical samples ([Veale et al., 2013](#); [Höller et al., 2013](#)). One study found that 56 % of individuals with emetophobia had a lower BMI than those with other phobias ([Meule et al., 2024](#)), and poor nutrition was a related concern, with [Lipsitz et al. \(2001\)](#) identifying inadequate dietary intake among emetophobic participants.

Nausea emerged as a core symptom of emetophobia ($n = 16$; 48 %), with [Veale and Lambrou \(2006\)](#) reporting that 78 % of self-reported emetophobic participants spent over an hour per day feeling nauseous, and other studies suggesting this occurred daily in nearly half of emetophobic individuals ([Höller et al., 2013](#); [Paulus & Norton, 2016](#)). Gastrointestinal issues extended beyond nausea with 26 % of studies documenting at least one of the following symptoms: stomach-aches; acid reflux; heartburn; dizziness; belching; or diarrhoea. Intense and recurring stomach pains were displayed with some participants describing these as “chronic” (e.g., [Köksal et al., 2022](#), p. 708). Other physical symptoms included headaches and loss of appetite ([Liebenberg, 2015](#); [O’Connor, 1983](#)). Fatigue was another reported symptom ([Dattilio, 2003](#); [Kannappan & Middleman, 2020](#)), and sleep disturbances were observed in some participants (e.g., [Graziano et al., 2010](#)). Despite recurrently documenting physical symptoms associated with emetophobia, all included studies consistently found no underlying medical causes for the gastrointestinal complaints reported by participants.

Panic symptoms were prevalent ($n = 10$), with participants exhibiting the following symptoms: heart palpitations, trembling, dizziness, hot flushes, faintness, chest pain, and tightness (e.g. [Dargis & Burke, 2018](#); [Liebenberg & Santos, 2018](#)). In one case, [Mitamura \(2019\)](#) described an emetophobic woman who lost consciousness whenever she saw

someone vomit. Panic attacks were significantly more frequent in emetophobic individuals compared to the general population (e.g., Pearson, 2010). For instance, a study by Van Hout and Bouman (2012) found that half of participants surveyed online (57.9 %) reported experiencing panic attacks.

3.4. Assessment measurements

Of 671 records screened, only two self-report measures met the inclusion criteria of having been published in peer-reviewed journals, and their psychometric properties evaluated. The extracted information including psychometric properties can be found in Table 2. The review also identified 16 additional unpublished measures that, although not meeting inclusion criteria, were developed by the authors of individual

studies to assess emetophobia symptoms (see Supplemental File S3). The most frequently referenced ‘unpublished’ measure was the Emetophobia Questionnaire (e.g., Graziano et al., 2010; van Overveld et al., 2008). All identified assessment measurements in this review consisted of self-report questionnaires.

As previously noted in the review by Keyes et al. (2018), two measures designed for the assessment of emetophobia and published in peer-reviewed journals were identified: the EmetQ-13 (Boschen, Veale, Ellison, Reddell, 2013) and SPOVI (Veale et al., 2013). Whilst neither had been independently validated at the time of the systematic review, the SPOVI has since undergone independent psychometric validation (Maack et al., 2018). Both measures have been evaluated on samples of individuals with emetophobia and at least one psychometric property has been tested and recorded (see Table 3), with findings interpreted

Table 2
Summary of included papers exploring assessment measures for emetophobia.

Assessment Measure	Author(s)	Country	Aim of the study	Sample	Sample demographics	Main Findings
Specific Phobia of Vomiting Inventory (SPOVI)	Veale et al., (2013)	UK	To validate a new self-report inventory for emetophobia. The scale aimed to assist clinicians and researchers in measuring the characteristics of the disorder.	$n = 185$ (clinical: 95; community: 90)	Emetophobic: 94 % female; mean age (SD) = 32.61 (12.09). Community: 97 % female; mean age (SD) = 32.47 (11); The total sample comprised 21 % with a comorbid diagnosis and 15 % had two or more comorbid diagnoses. The most common comorbidity was depression (8.4 %); Employment (emetophobic: 5.3 % unemployed, 58 % employed; community: 5.6 % unemployed, 61.1 % employed).	The SPOVI was found to have good reliability and validity. Exploratory factor analysis suggested that the scale showed a two-factor structure reflecting avoidance behaviours and threat monitoring. SPOVI Total scores showed good one-week stability ($r = .85, p < .001$) and internal consistency: (clinical group: $\alpha = .91$; community sample: $\alpha = .81$) Significant correlations with health anxiety (HA); $r = .78, p < .001$ and depression (PHQ-9); $r = .49, p < .001$. Strong Internal consistency was shown for both one-factor ($\alpha = 0.89$) and two-factor (Avoidance $\alpha = 0.85$; Threat Monitoring $\alpha = 0.78$) models. 2-factor model showed strong correlations between factors (.96), suggesting significant scale overlap. The 1-factor model demonstrated scalar invariance across genders. Moderate positive correlations were found between the SPOVI and DASS-anxiety ($r = .31, p < .01$); and the SPOVI and anxiety sensitivity ($r = .36, p < .01$).
	Maack et al., (2018)	USA	To explore the psychometric properties of the SPOVI with a specific focus on its factor structure, measurement invariance across gender, and convergent and divergent validity.	$n = 1626$ university students	63.80 % female; 77 % White; 17.2 % Black; 1.8 % Asian; 1.8 % multicultural; 1.7 % Hispanic; 0.2 % Pacific Islander; 0.2 % Native American.	Internal consistency: clinical group: $\alpha = .82$; community sample: $\alpha = .85$. Significant correlation with the SPOVI for emetophobia symptoms on EmetQ-13 ($[r = .45, p < .001]$ in the clinical sample; and in the community sample $[r = .25, p = .02]$). Showed high levels of sensitivity and specificity for diagnosing emetophobia. ROC analysis revealed a total area under the curve of 0.988 ($p < .001$), indicating strong diagnostic accuracy. A score of > 22 was identified as the optimal cut-off to balance sensitivity and specificity.
	Boschen, Veale, Ellison, Reddell, (2013)	Australia	To develop and conduct a preliminary psychometric evaluation of a self-report measure for emetophobia symptoms.	$n = 185$ (emetophobic: 95; community: 90)	Female population (emetophobic: 93.7 %; control: 95.6 %); Mean age (SD) (emetophobia: 32.61 (12.09); control: 32.47 (11)); In the emetophobic group 63.4 % had no comorbid diagnoses, 21.1 % had one comorbid diagnosis, and 15.5 % had two or more comorbid diagnoses. Comorbid disorders identified: major depressive disorder ($n = 8, 11.3 \%$), generalised anxiety disorder ($n = 8, 11.3 \%$), obsessive-compulsive disorder ($n = 6, 8.5 \%$), somatisation disorder ($n = 5, 7.0 \%$), panic disorder without agoraphobia ($n = 4, 5.6 \%$), social anxiety disorder ($n = 4, 5.6 \%$), agoraphobia without a history of panic disorder ($n = 2, 2.8 \%$), hypochondriasis ($n = 1, 1.4 \%$), and other specific phobias ($n = 1, 1.4 \%$).	Internal consistency: clinical group: $\alpha = .82$; community sample: $\alpha = .85$. Significant correlation with the SPOVI for emetophobia symptoms on EmetQ-13 ($[r = .45, p < .001]$ in the clinical sample; and in the community sample $[r = .25, p = .02]$). Showed high levels of sensitivity and specificity for diagnosing emetophobia. ROC analysis revealed a total area under the curve of 0.988 ($p < .001$), indicating strong diagnostic accuracy. A score of > 22 was identified as the optimal cut-off to balance sensitivity and specificity.

Table 3

Psychometric validation of two published emetophobia measures.

Assessment Measurement	Internal Consistency	Test Re-Test Reliability	Response Processes	Internal Structure	Interrater Reliability	Sensitivity	Specificity	Exploratory Factor Analysis	Confirmatory Factor Analysis	Other Advanced Statistics
SPOVI (Veale et al., 2013)	+	+	0	+	0	+	+	+	+	+
EmetQ-13 (Boschen, Veale, Ellison, Reddell, 2013)	+	+	+	+	0	+	+	+	0	+

Note. + scale meets requirements; – scale does not meet requirements; ? study meets criteria only partially/methodology unclear; and 0 no information.

based on the COSMIN Risk of Bias checklist for systematic reviews of Patient-Reported Outcome Measures (Mokkink et al., 2017). Developed in the same year, they were suggested to complement each other effectively, providing a more comprehensive assessment of emetophobia symptoms when used in conjunction (Boschen, Veale, Ellison, Reddell, 2013).

3.4.1. SPOVI

The SPOVI (Veale et al., 2013) is a 14-item self-report questionnaire of emetophobia symptom severity. It describes how the patient has been affected by the fear of vomiting in the preceding week, focusing on the cognitive symptoms and avoidance behaviours associated with emetophobia (e.g., “I have been avoiding situations or activities because of my fear of vomiting”). Each item is scored on a 4-point Likert scale anchored at 0 (“not at all”) and 4 (“all the time”). Scores range from 0 to 56, with a higher total score indicating greater severity of symptoms. The cutoff for emetophobia is considered to be a score of 10 (Veale et al., 2013).

A subsequent study (Maack et al., 2018) sought to investigate the psychometric properties of the SPOVI in a sample of 1626 university students, finding that the SPOVI demonstrated acceptable internal consistency, convergent and divergent validity. Maack et al. (2018) evaluated a one-factor model of the SPOVI using confirmatory factor analysis, which demonstrated strong factor loadings ($>.65$). Whilst there was little difference in terms of overall fit between the one- and two-factor solutions, the strong between-factor correlation (.96), indicates a lack of distinctiveness between the two factors suggested by Veale et al. (2013). The one-factor model also demonstrated measurement invariance by gender. However, a higher correlation between the SPOVI and HAI ($r = .78$; Veale et al., 2013) was found compared to the SPOVI and EmetQ-13 (clinical sample: $r = .45$; Boschen, Veale, Ellison, Reddell, 2013).

3.4.2. EmetQ-13

The EmetQ-13 (Boschen, Veale, Ellison, Reddell, 2013) is a 13-item self-report inventory for emetophobia. Preliminary investigation into the psychometric properties of the scale suggested good internal consistency (clinical group: $\alpha = .82$; control group: $\alpha = .85$), factor structure, sensitivity and specificity, temporal stability and concurrent validity (see Table 2). Respondents are presented with statements such as “I avoid children who may be likely to vomit” and indicate their level of agreement on a 5-point Likert-type scale anchored at 1 (“Strongly Disagree”) to 5 (“Strongly Agree”). A global score is calculated by summing the responses for all 13 items, ranging from 13 to 65, with a score > 22 determined as the cut-off score for emetophobia (Boschen, Veale, Ellison, Reddell, 2013).

4. Discussion

This scoping review aimed to explore current research on assessment measurements and symptomatology of emetophobia, complementing and expanding on the systematic review of Keyes et al. (2018). By synthesising a broad range of study types, including case studies, findings suggest that emetophobia is a multifaceted condition, potentially

affecting physical, cognitive, and behavioural domains, offering potential direction for future research.

This review found that avoidance behaviours (and safety-seeking behaviours; e.g., Dosanjh et al., 2017) are a frequent symptom of emetophobia, including behaviours such as abstaining from alcohol (e.g., Veale & Lambrou, 2006) and avoiding crowded places (e.g., Mitamura et al., 2019). Notably, the finding that some individuals avoided pregnancy aligned with previous findings linking this choice to fears of morning sickness (Price et al., 2011). Although not included in this review because of the exclusion criteria applied, Patel and Hollins (2015) explored psychiatric management of phobias during pregnancy, with a maternity nurse reporting pregnancy as a highly distressing time for individuals with emetophobia, suggesting that this is a significant issue for expectant mothers and may impact maternity care. Beyond pregnancy, avoidance of other forms of medical care, such as hospitals (e.g., Veale & Lambrou, 2006), was also reported, which could result in long-term health consequences as individuals with emetophobia may delay or forgo necessary care for other conditions.

A prominent psychological feature of emetophobia is excessive concern about vomiting, with individuals structuring their daily routines to minimise this risk. Having been previously suggested that emetophobia is more severe than other specific phobias in terms of its pervasive disruption across different life domains (Meule et al., 2024), this behaviour may have a profound impact on social and professional functioning. A previous review by Keyes et al. (2018) noted the possibility of misdiagnosis with other psychiatric disorders, and the current study highlighted literature suggesting a recurrent misdiagnosis of emetophobia with OCD in particular (Veale et al., 2013). Therefore, the link between compulsive symptoms and emetophobia should be further investigated to ensure individuals receive appropriate and targeted treatment. However, a limitation of this review was the inclusion of studies with comorbid psychiatric conditions, so whilst these symptoms were present in a proportion of studies, it is unclear whether they are the result of a subsequent psychiatric condition or emetophobia itself.

Although physical symptoms were not explored in detail in the review by Keyes et al. (2018), the current review identified them as a frequently occurring feature, with GI issues, specifically nausea, commonly found among participants. Despite this, frequency of vomiting was not found to be significantly higher in emetophobia participants in comparison to those with panic disorder (Veale & Lambrou, 2006), and 98.3 % of the participants in one study reporting experiencing nausea without subsequent vomiting (Höller et al., 2013). Additionally, Veale and Lambrou (2006) reported that 78 % of participants self-identified as spending over an hour each day feeling nauseous. Whilst recurrent gastrointestinal complaints were reported, no participants in these studies were diagnosed with an underlying medical condition to account for their symptoms. This phenomenon may be explained by a negative feedback loop previously explored in phobia research (Kimble et al., 2014), as heightened focus on bodily sensations increases the likelihood of misinterpreting these anxiety responses as signs of impending vomiting. This, in turn, exacerbates anxiety, feeding into physical symptoms of nausea and perpetuating the negative feedback cycle (Höller et al., 2013). However, the direction of the

association has not been explicitly established, and future research is needed to explore this relationship.

As also highlighted in a previous review (Keyes et al., 2018), most studies reported participants frequently avoided foods such as meat, eggs, dairy and spicy foods to prevent vomiting (e.g., Höller et al., 2013; Dargis & Burk, 2018). Whilst research exploring the cognitions behind participants' avoidance of certain foods is limited, this form of dietary restraint may be driven by a perceived link between foods and food-borne illnesses such as salmonella. In addition to resulting nutritional deficiencies among those with emetophobia (e.g., Lipsitz et al., 2001), such restriction has also been shown to cause dehydration (Kannappan & Middleman, 2020) and low body weight (Williams et al., 2011), with one study reporting that over half of participants were underweight (Meule et al., 2024). Although a proportion of studies focused on nutritional rehabilitation, they often prioritised physical characteristics, with psychological symptoms frequently neglected (e.g., Kannappan & Middleman, 2020). This may suggest a disconnect between the assessment of physical and psychological symptoms in emetophobia, which may contribute to the recurrent misdiagnosis of anorexia nervosa as described in literature (Veale et al., 2013).

Another component of this review was exploring emetophobia assessment measures, identifying two psychometrically validated instruments; the SPOVI (Veale et al., 2013) and EmetQ-13 (Boschen, Veale, Ellison, Reddell, 2013). Whilst both are self-report questionnaires that explore avoidance behaviours associated with emetophobia, the SPOVI includes items addressing symptoms related to threat monitoring and mental planning that are not covered in the EmetQ-13. Instead, the EmetQ-13 differentiates between avoidance of situations/movement and avoidance of people, and it is suggested that both measurements be used in parallel (Veale et al., 2013). The psychometric properties of both measures were tested during their development (as also highlighted by Keyes et al., 2018), however the SPOVI was more recently evaluated by Maack et al. (2018) who confirmed several psychometric properties of this measure in a large student sample. Strong correlations between the SPOVI and measures of health anxiety in comparison to the EmetQ-13 (Maack et al., 2018) may suggest that the SPOVI better captures anxiety traits related to health concerns rather than specifically measuring emetophobia, and further research is needed to explore this in greater depth. Additionally, rather than using both measures together which may create redundancy and make assessment repetitive due to their overlap, future research should develop a single, comprehensive measure that integrates key aspects from both tools for a more streamlined assessment process.

Numerous unpublished assessment measures were identified (e.g., Mitamura, 2019), indicating that further work has been carried out since Keyes et al.'s (2018) systematic review. However, only 30 % of studies reported using validated assessment measurements specific to emetophobia, suggesting a continued reliance on non-standardised tools. Notably, all unpublished measures were considerably longer than both validated tools. Many studies also used general anxiety measures, with GAD-7 ($n = 7$; Spitzer et al., 2006) and SCARED ($n = 4$; Birmaher et al., 1997) being most common. For the assessment of physical symptoms, tools such as the Gastrointestinal Symptom Score (Adam et al., 2005) were used rather than those dedicated to emetophobia, highlighting a possible lack of physical symptom coverage in emetophobia-specific instruments. Reliance on multiple measurements can complicate the distinction between emetophobia symptoms and those of comorbid conditions such as OCD and GAD, which have been shown to be highly prevalent in emetophobic individuals (Sykes et al., 2016). The absence of dedicated tools also hinders the evaluation of interventions, as it becomes unclear whether they address emetophobia itself or its overlapping symptoms. While instruments developed in non-English languages were excluded due to translation limitations, the search identified assessment measurements developed in Japanese (Komatsu et al., 2013) and Icelandic (Fawcett, 2023), indicating some international efforts to assess emetophobia severity.

Studies exploring the different presentations of emetophobia between adults and children remain limited. Research by Faye et al. (2013) and Wu et al. (2017) illustrates that children with emetophobia often extend their avoidance behaviours to their parents, highlighting the unique role that caregivers play in the maintenance of the disorder. Whilst findings suggest that children's symptoms are frequently mediated through their caregivers, existing measures do not fully capture this dynamic potentially leading to an inaccurate representation of emetophobia in children. Future research should examine the differences in how emetophobia presents in children compared to adults, particularly in relation to measures validated solely in adult samples, and determine if instruments accurately capture emetophobia in younger populations or if there is a need for the development of assessment tools designed specifically for children.

5. Strengths and limitations

This review had several strengths, namely the inclusion of case studies, a design omitted from a previous systematic review (Keyes et al., 2018). Given that nearly half of included articles were case studies (49 %), their inclusion ensured the review was comprehensive and their findings provided valuable insight into emetophobia's presentation. Whilst case studies have limitations such as potential overrepresentation of atypical symptoms and recall bias (e.g., Nissen & Wynn, 2014), they offer rich clinical insight and form a substantial portion of existing literature in this field. Additionally, by collating the symptoms and identifying validated assessment measures, the findings from this review may assist in more accurate diagnosis and inform intervention development.

There were also some limitations of this review. First, only studies published in English were included for pragmatic reasons; studies published other languages may have been overlooked meaning emetophobia as it presents in other cultures may not be fully represented. Similarly, studies in which participants did not have a clinical diagnosis of emetophobia were included because it is often misdiagnosed (Veale et al., 2013). However, self-diagnosis can be a product of individuals misinterpreting symptoms that are better explained by another mental health condition (Fellowes, 2023), which means this review may include some participants without emetophobia, limiting certainty that symptoms are distinctly attributed to emetophobia. Despite this, incorrect self-diagnosis would account for relatively few studies, with any identified symptoms unlikely to be described only by those within this small margin of error. As this review is limited to symptomatology and validated assessment measures for emetophobia, future reviews may wish to explore other areas of the literature such as treatment, the influence of demographic characteristics on presentation and treatment outcomes, and comorbidities with other psychiatric disorders.

6. Conclusion

This scoping review synthesises findings from 38 studies investigating the symptomatology of emetophobia and identifies two validated tools for its assessment. The most frequently occurring symptom in literature was avoidance behaviours, with an associated impact on several areas of functioning. In certain cases, this extended to food restriction resulting in low body weight and nutritional deficiencies. Three potential directions for future research are recommended:

1. the differentiation between emetophobia symptoms in children and adults; and
2. development of a single, comprehensive measure that integrates key aspects from the current validated tools.
3. the role of nausea as a potential maintenance factor in emetophobia

CRediT authorship contribution statement

Harbor Molly Sheila: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Paul E Jenkins:** Writing – review & editing, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Kate Harvey:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Methodology, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.janxdis.2025.103076](https://doi.org/10.1016/j.janxdis.2025.103076).

Data Availability

No data was used for the research described in the article.

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