

Cognitive-behavioral therapy for a patient diagnosed with emetophobia – case study

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Summary

The aim of this paper is to present the application of cognitive-behavioral therapy in the treatment of emetophobia. The fear of vomiting (emetophobia) is a specific phobia, the mild form affects over 3% of the population, predominantly women. The main symptoms are associated with the fear of experiencing nausea and other gastrointestinal sensations. These sensations are interpreted as a signal of impending vomiting, leading to discomfort and avoidance of eating and social situations. The symptoms may resemble other somatic and psychological disorders and can co-occur with various mental health conditions. The therapy requires an individualized approach and may be more demanding compared to treating other phobias.

The article includes a description of the therapy process with an adult patient struggling with emetophobia. Diagnosis was conducted through an interview and the EmetQ-13 questionnaire. The applied therapeutic techniques are presented, along with an understanding of the symptoms considering therapeutic models explaining the development of emetophobia and the mechanisms sustaining it. Key processes playing a crucial role in dysfunction were identified. After 10 sessions of cognitive-behavioral therapy, the patient no longer met the diagnostic criteria for the fear of vomiting, overcoming avoidance behaviors.

Key words: emetophobia, cognitive-behavioral therapy, case study

Introduction

Emetophobia, or the fear of vomiting, is an anxiety disorder in the form of a specific phobia. It is estimated to affect 0.1% of the general population annually. However, the milder form of fear of vomiting is much more common, with prevalence estimated between 3.1% and 8.8% in society. Emetophobia is four times more frequently diagnosed in women than in men [1]. Meeting the diagnostic criteria for specific phobias is required to diagnose it. According to the classification of mental disorders by the American Psychiatric Association – DSM-5 [2], to diagnose a phobia, including emetophobia, the following criteria must be met:

- fear or anxiety about vomiting,
- immediate anxiety response,
- avoidance or extreme suffering,
- life limitations,
- symptoms lasting a minimum of 6 months.

According to the World Health Organization's classification – ICD-11, a specific phobia can be diagnosed when there is fear associated with the presence (physical or imagined) of specific objects or stimuli. Symptoms cause subjective distress as well as avoidance behaviors towards stimuli that evoke fear [3].

Among all specific phobias, emetophobia is one of the more challenging in therapy, because it is associated with many avoidance behaviors. Additionally, its occurrence is usually linked to a significant deterioration in social and professional functioning [1]. Studies indicate that the impact of the fear of vomiting on an individual's functioning is much more destructive than other phobias, such as fear of heights or arachnophobia [4]. One of the best-documented forms of therapy for phobias, including emetophobia, is cognitive-behavioral therapy (CBT). There are also reports suggesting the effectiveness of Eye Movement Desensitization and Reprocessing (EMDR) therapy in treating the fear of vomiting [1].

Emetophobia typically develops in late childhood and adolescence [4]. There is data suggesting that traumatic experiences can contribute to its development. There is also evidence indicating associative learning in emetophobia [5], whereby vomiting may be conditioned to neutral stimuli in the form of life events. Other studies highlight the significant role of disgust propensity and sensitivity in the etiology of the fear of vomiting [6].

Clinical picture of emetophobia

The main symptoms of emetophobia revolve around irrational fear of vomiting and nausea. In individuals suffering from the fear of vomiting, noticeable changes occur in at least four areas: somatic, cognitive, behavioral, and psychosocial, in addition to the evident emotional distress. Somatic symptoms in emetophobia are related to discomfort in the abdominal and gastrointestinal areas, combined with absorption and monitoring of one's body and the sensations it produces. This may include various intensities of abdominal pain, noticeable discomfort, nausea, and increased intestinal transit. With the involvement of cognitive processing, these symptoms become even more pronounced and intensified.

Selective attention is a cognitive process responsible for intense preoccupation with one's body. It leads to a selective focus on symptoms originating from body organs associated with danger. Thinking processes revolve around the sphere of eating – what to eat, how much to eat, and, importantly, ensuring that meals are consumed in “safe” places, where the individual can isolate themselves in case of nausea or vomiting. This planning can take the form of anticipatory anxiety and activate specific reaction

patterns. Other examples of thought processes include various thoughts related to activities, planning activities, locations, and meetings to minimize the risk of vomiting, especially in social situations.

The vegetative and cognitive aspects of emetophobia lead to behavioral consequences, including but not limited to: self-starvation or significant reduction in the number of meals, eating meals in solitude, eating easily digestible dishes, and limiting activities outside the home. Usually, these involve various attempts to avoid or minimize time spent away from home. Typically, individuals prefer to spend their free time near home, reluctantly going to malls, restaurants, or other places associated with potential threats. Difficulties may also arise in finding employment or attending school. In practice, these difficulties often lead to consequences such as tension in relationships or relationship breakdown, as well as professional functioning below the individual's capabilities. Over time, the only activities for individuals suffering from the fear of vomiting may become visits to a nearby store and walks.

Diagnosis

A directed interview and questionnaires are the basis for diagnosing emetophobia. In the interview, attention should be paid to the duration of symptoms, the presence of fear in a phobic situation, or a reaction to the thought or image of the phobic object. Questions about reactions when feeling nauseous, as well as interpretations of interoceptive sensations, can be helpful. Questionnaires to assess the severity of symptoms of fear of vomiting and changes in the psychotherapeutic process are also available. Questionnaires characterized by high validity and reliability include: the Specific Phobia of Vomiting Inventory (SPOVI) [7] and EmetQ-13, which is significantly associated with the dimension of avoidance of the vomiting stimulus [8]. The EmetQ-13 questionnaire consists of 13 items, examining possible avoidance behaviors exhibited by the respondent in situations where they might encounter a fear-triggering stimulus. The score is the sum of points obtained by the respondent and ranges from 13 to 65 points. The cut-off point, above which a diagnosis of specific phobia related to health is likely, is a score above 22 points [8].

Emetophobia may resemble various medical conditions with some symptoms. Therefore, it is essential in the diagnostic process to exclude other possible ailments. In the case of somatic problems, it is especially important to exclude gastroesophageal reflux, erosion, gastric ulcers, and food intolerances. Given the similarity of the fear of vomiting to symptoms of other psychiatric conditions, it is crucial to differentiate it, especially from social anxiety, panic disorder, obsessive-compulsive disorder, and eating disorders [9]. Additionally, the diagnosis of emetophobia may be made after ruling out, by an internist or gastroenterologist, diseases that may contribute to gastrointestinal problems.

Comorbidity

In the case of emetophobia, as with other specific phobias, the co-occurrence of other mental disorders is often observed, with a particular focus on anxiety disorders, depressive disorders, bipolar disorders, personality disorders, and substance-related disorders [9]. In anxiety disorders, social phobia seems to be the most frequently coexisting with the fear of vomiting. It is noteworthy that according to research, in almost 68% (67.6%), specific phobia proved to be primary [10]. This result suggests that working on emetophobia will be one of the main therapeutic goals for the majority of patients with comorbidity. It is estimated that 27.7% of patients with emetophobia have comorbidities with another disorder, and in 15.9%, at least two diagnoses coexist [4].

Models of emetophobia

Several models of emetophobia exist in the literature, which slightly differ from each other in the way they approach the problem and view triggering stimuli. One model of emetophobia is the cognitive approach proposed by Mark Boschen [11]. The author presents the fear of vomiting as a consequence of the interaction of several different factors. In this model, emetophobia is broken down into three main areas: predisposing factors, acute phase and sustaining phase. Predisposing factors in the first area are responsible for individual susceptibility to the occurrence/development of emetophobia symptoms. In this approach, factors responsible for increasing the likelihood of developing the fear of vomiting include the presence of anxiety as a personal trait and biological predispositions to somatization in anxiety. Such susceptibility creates appropriate conditions and, along with triggering factors, contributes to the occurrence of emetophobia symptoms.

Another model is proposed by Maack et al. [4], presenting a cognitive-behavioral approach to the fear of vomiting. In this approach, maladaptive beliefs play a key role. Their content translates into increased attention, especially to physiological symptoms. Excessive focus and perception of potentially threatening stimuli lead to catastrophic thoughts, and then to fear or panic. Reaction to perceived threat and the presence of fear involves safety behaviors, which bring short-term relief. When used regularly, they become the only choice for individuals suffering from emetophobia. Safety behaviors can take various forms, with the most common being avoidance of situations and stimuli associated with fear. An example might be not eating certain dishes, eating only at home and avoiding larger crowds and places.

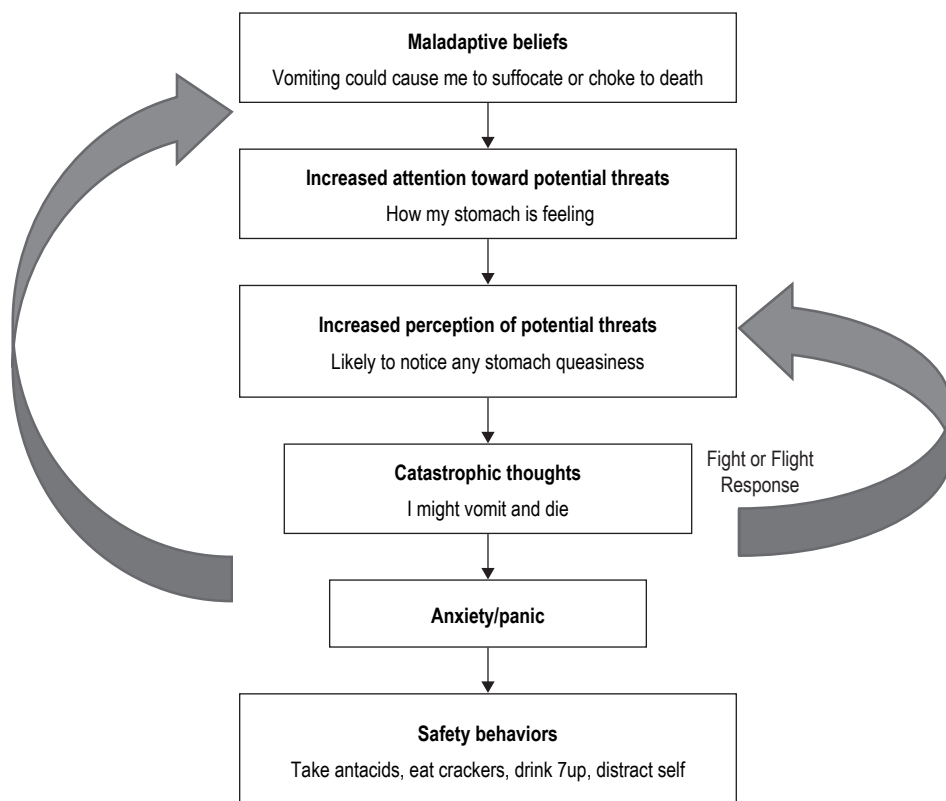


Figure. Cognitive-behavioral model of emetophobia (Maack, Deacon, Zhao)

Cognitive specifics of emetophobia

Every psychological disorder can be described using a cognitive model containing characteristic contents and cognitive processes – this assumption is referred to as cognitive specificity [12]. According to the cognitive-behavioral model of the fear of vomiting, dysfunctional beliefs play a crucial role in generating symptoms. These beliefs primarily relate to somatic experiences, especially nausea, queasiness, rumbling in the stomach, and intestinal churning. Based on their life experiences, patients identify such symptoms as a signal of imminent danger, for example, “if I feel nauseous, it means I will vomit.” Belief contents may also include other potential threats associated with experiencing nausea or vomiting, such as “the longer I feel nauseous, the greater the risk that I will vomit.” Individuals may assume that these symptoms indicate a serious illness or even lead to death. It also happens that patients with a fear of vomiting have life experiences related to the negative reactions of their surroundings to vomiting situations. Among this group of individuals, assumptions related to anticipating the threatening reactions of the environment to the predicted vomiting episode can be

observed, for example, “if I vomit, I will be rejected/ridiculed.” Cognitive distortions characteristic of this disorder are also part of the cognitive specificity of emetophobia. Cognitive distortions refer to errors in thinking [13]. Examples of such errors in the fear of vomiting include selective attention, excessive generalizations, and catastrophizing. The content of these distortions is associated with the perceived threat, its inevitability, the predicted course of events, along with selective concentration on bodily symptoms.

Cognitive-behavioral therapy for emetophobia

As research results indicate, cognitive-behavioral therapy is effective in treating specific phobias, including emetophobia [14, 15]. The cognitive-behavioral approach focuses on the role of cognitive processes, including thinking patterns, in generating emotions and specific behavioral and physiological reactions. These reactions secondarily reinforce the patient’s thinking pattern. In the case of emetophobia, the following processes play a significant role in activating and maintaining symptoms: anticipatory thinking, erroneous interpretations of interoceptive symptoms, and cognitive distortions, especially selective attention. Anticipatory thinking refers to the predictions made by the patient about the occurrence of threatening somatic symptoms. This process is linked with the other two – by anticipating the occurrence of symptoms, as well as the possibility of vomiting, the patient selectively begins to process information from their body, focusing on specific areas.

Cognitive-behavioral therapy for emetophobia focuses on working on the key processes described above. An essential element to start with is psychoeducation. Patient engagement in therapy and its final outcome depend, among other things, on understanding the cause of the condition.

The use of other therapeutic approaches in the treatment of specific phobias

Specific phobias are a common diagnosis in clinical practice. The diagnosis of specific phobia encompasses a range of potential triggers and avoidance behaviors. There are various techniques and therapeutic approaches that are applicable in the treatment of specific phobias. Their selection and application may sometimes be justified by the phobia-triggering stimulus. In addition to cognitive-behavioral psychotherapy, research, including meta-analyses, indicates the effectiveness of in vivo exposure [16], imaginal exposure [16] and cognitive therapies [17]. The effectiveness of systematic desensitization has also been demonstrated [18]. The effectiveness of in vivo exposure and other forms of exposure (imaginal, virtual reality) remains at a similar level in follow-up studies [16]. Systematic desensitization shows slightly lower effectiveness than exposure therapies, but it is associated with fewer dropouts [18]. There are also examples of successful application of exposure therapy in the treatment of emetophobia with symptom reduction lasting at least 3 years after its completion [4]. However, the results of other studies indicate reluctance of patients diagnosed with emetophobia to participate in exposure therapies [11, 19]. Patients treated for simple phobias generally show less acceptance of exposure techniques and are more likely to drop out during

therapy [18]. There are also reports of successful use of acceptance and commitment therapy (ACT) [20] and EMDR [1, 19] in the treatment of emetophobia. Therefore, before undertaking exposure work with a patient diagnosed with a specific phobia, it is worth considering the potential benefits, as well as motivation for therapy and the possibility of implementing other possible forms of therapy.

Also importantly, there are descriptions of therapies that have resulted in significant symptom reduction, indicating the effectiveness of a transdiagnostic approach in the treatment of emetophobia, where the treatment considers the co-occurrence of other anxiety disorders [21, 22]. Such an approach is justified by research on the comorbidity of anxiety disorders and their mutual influence on each other.

Case description

A 22-year-old female patient with a secondary education level and no current employment presented herself for therapy. She had no significant medical history, had never been hospitalized, and had not sought help from a psychologist or psychiatrist before. She was raised in full family with no history of mental health issues. The patient reported a strong fear of vomiting both at home and in public places, prompting her to seek psychotherapeutic assistance. On the EmetQ-13 questionnaire, she scored 42 points. The patient had been experiencing symptoms for approximately four years, causing significant psychological distress and avoidance of social activities. Any activities outside her residence were associated with avoiding meals and a quick return home. She reported somatic sensations, mainly in the abdominal and pelvic regions, as well as feelings of nausea. These sensations were also present at home and intensified during stressful situations. The patient monitored their presence and interpreted them as signals of imminent vomiting, further enhancing bodily discomfort. These symptoms significantly disrupted psychosocial functioning. In primary school, the patient vomited during a class in the presence of other students. She also recalled a viral gastroenteritis episode during which she vomited for several days, creating lasting discomfort.

The current dysfunction developed after completing high school, accompanied by stress related to graduation and job searching. She also experienced another viral gastroenteritis, contracted from someone in her environment. After this episode, she began to experience anxiety related to, among other things, viral infections that lead to gastrointestinal discomfort. Every social situation was accompanied by discomfort in the stomach and abdominal pain. These symptoms were interpreted as evidence of re-infection. Over the following months, the fear of vomiting developed and also extended to the home environment.

Psychoeducation

The primary goal of emetophobia therapy is psychoeducation. The patient was introduced to an alternative way of understanding interoceptive symptoms compared to her previous perception. This process involved normalizing symptoms experienced by the patient. Psychoeducation addressed the role of automatic thoughts and predictions

in symptom generation and intensification. The cognitive-behavioral model of the fear of vomiting by Maack et al was introduced to the patient [4]. She was also asked to carefully observe her symptoms, identifying triggering factors, using a self-observation diary as a tool. An example of such a diary entry is provided below. It helps monitor the relationship between thoughts, interpretations, emotions, and somatic experiences. Additionally, the Subjective Vomiting Probability Scale (SVPS) was introduced, allowing the patient to observe how her interpretations and beliefs regarding the likelihood of vomiting related to real events. This scale allows the patient to estimate, on a scale from 0 to 100%, the likelihood of vomiting at a given moment, where 100 means absolute certainty and 0 indicates no belief that vomiting might occur in that situation.

Psychoeducational experiments were conducted to focus on thinking about the body and the possibility of nausea, intensifying the patient's sensations. These experiments aimed to illustrate the connection between thinking, attention processes and bodily experiences. Further stages of therapeutic work, related to psychoeducation, focused on the patient's thought processes and safety behaviors, strategies for coping with the problem that exacerbated dysfunction. Verbal and behavioral reattribution strategies were applied in the ongoing therapeutic process.

Table 1. Example of self-observation diary

Stimulus/ situation	Automatic thoughts	Emotions	Safety behaviors	Somatic symptoms	SVS (0–100 %)
Eating a heavy meal	I'm about to vomit	Anxiety	Interrupting the meal, leaving the table	Nausea, tachycardia	100 %

Verbal reattribution

Reattribution aims to change dysfunctional assumptions and beliefs, as well as reinterpret meanings through the use of verbal or behavioral techniques [23]. During the work with the patient, verbal reattribution of somatic symptom interpretations involved various techniques such as discussing automatic thoughts, Socratic dialogue, collecting evidence for and against, creating alternative thoughts and hypotheses, and identifying and modifying cognitive distortions. Typical distortions in emetophobia include catastrophizing, selective attention and generalization. The patient was instructed to monitor these distortions, which were then discussed, and cognitive restructuring work was undertaken.

Verbal reattribution strategies, preceded by psychoeducation, primarily served the reinterpretation of interoceptive symptoms. Seeking alternative explanations for bodily sensations, identifying other factors that could cause similar discomfort, and analyzing past events when symptoms were present but catastrophe did not occur were found to be helpful. A detailed analysis of somatic symptoms related to poisoning, vomiting and emetophobia was also conducted. The patient discovered that food poisoning and stomach flu were associated only with stomach discomfort, while the fear of vomit-

ing usually involved a spectrum of other symptoms such as palpitations, feeling hot and body tremors. Verbal reattribution strategies were just one part of the therapeutic work, complementing behavioral reattribution strategies.

Behavioral reattribution

Due to the fact that individuals with emetophobia exhibit deficits in differentiating situations and interoceptive feelings, meaning certain situations and somatic sensations are generalized and become a signal of danger, behavioral reattribution strategies aimed to teach and reinforce differentiation. In working on behavioral reattribution, two techniques were applied: exposure and behavioral experiments. Both aimed to gather evidence to challenge catastrophic interpretations of somatic sensations and limit safety behaviors. Exposure involves opening up to interoceptive sensations in situations where avoidance behaviors arise. It helps falsify and de-catastrophize negative, anxious thoughts, facilitating the reinterpretation of interoceptive sensations. The outcome of exposure is the perception of somatic stimuli as neutral, non-threatening reactions of the body to stress, resulting in reduced anxiety reactions.

Behavioral experiments resemble scientific research in their form. The patient acts as a researcher, testing a hypothesis while maintaining neutrality and objectivity. The creation of the experiment plan was preceded by an explanation of its purpose. The experiment's purpose was to falsify and modify the patient's negative thoughts and predictions. In emetophobia, experiments focus on situations triggering nausea and vomiting sensations. The patient agreed to finish a heavy meal completely, which she had previously avoided, fearing it would lead to vomiting. Her task was to finish the meal and, in the first instance, continue monitoring the level of anxiety, fear of vomiting and interoceptive sensations. The SVS scale was used to assess the likelihood of vomiting. The next day, her task was again to finish a heavy meal, then redirect attention to other pre-determined activities. The patient discovered that thinking about the meal she had eaten, focusing on her body, and fear of vomiting intensified her anxiety and bodily sensations. She concluded that after a meal, especially a heavy one, and eating something sweet, she should focus on situations and stimuli unrelated to food.

Due to the nature of the disorder, imaginal exposure can also be applied. For some patients, just thinking or imagining situations that provoke anxiety is associated with significant discomfort, including somatic symptoms. Starting with imaginal exposures allows the patient to habituate to interoceptive sensations. Additionally, the individual can observe the impact of their thoughts and imaginations on somatic experiences, reinforcing their reinterpretation.

Safety behaviors

In the model by Maack et al. [4], safety behaviors are responsible for sustaining the vicious cycle of emetophobia symptoms. They provide temporary relief while reinforcing the individual's maladaptive beliefs. Furthermore, they hinder the falsification of erroneous interpretations of interoceptive symptoms, thus contributing to the

consolidation of dysfunctional strategies. Work on safety behaviors began with psychoeducation regarding their role in emetophobia. Identified safety behaviors included avoiding crowded places, not eating certain products or dishes, not finishing meals, avoiding eating in social situations, carrying a bag, and fasting. The therapy process involved analyzing the patient's safety behaviors, indicating their role in maintaining dysfunction, and testing alternative behaviors. The patient monitored situations triggering safety behaviors, the stimuli that triggered them, her emotional reactions, and interpretations. The next stage of working with safety behaviors involved their reduction and extinction. Behavioral techniques, including exposures such as imaginal exposures and behavioral experiments, were applied for this purpose. Relaxation techniques were also used to reduce anxiety.

Case summary

The presented description of therapy for a patient diagnosed with emetophobia explores explanatory models for the development of symptoms and factors predisposing and perpetuating dysfunction. It includes cognitive-behavioral strategies applied during therapy with the adult patient and their discussion. The patient was a 22-year-old woman struggling with a fear of vomiting for about 4 years, without coexisting disorders. She applied for therapy with motivation and remained engaged throughout the therapy, working between sessions. After 10 psychotherapy sessions, the Emet-Q13 questionnaire score reduced from 42 points before therapy to 18 points. The therapy's outcome included a reduction in safety behaviors, overcoming avoidance, changing maladaptive thoughts, recognizing somatic symptoms and interpreting them appropriately, as well as identifying and acknowledging the impact of experienced emotions on somatic symptoms. The patient started engaging in activities she had previously avoided and considered employment. The total number of sessions, including diagnostic ones, was 13, followed by 3 maintenance and relapse prevention sessions.

Cognitive-behavioral therapy is considered the first-line treatment for anxiety disorders, including emetophobia [24]. Appropriately adapted techniques, combined with insightful conceptualization and a well-selected explanatory model, can contribute to a significant reduction in symptoms. The treatment of specific phobias requires particular attention and an individual approach. Some phobias involve a high level of cognitive and behavioral avoidance, including the fear of vomiting. Key elements in therapy proved to be psychoeducation, which the patient understood and accepted, as well as identifying and working on key areas such as anticipatory thinking, attentional selectivity and erroneous interpretations of interoceptive experiences. Adapting the pace to the patient's abilities and expectations, along with her active involvement and motivation for therapy, also proved helpful.

The above case description illustrates that cognitive-behavioral therapy is not just a set of therapeutic strategies but also involves various factors influencing the course of therapy and its final outcome.

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