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SHORT REVIEW

Emetophobia in Youth: How Comprehensive Conceptualization Guides Effective Treatment

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ABSTRACT

Emetophobia consists of an anxiety disorder characterized by the marked fear about specific objects or situations that may lead to vomiting. Epidemiological studies have reported prevalence rates ranging from 0.1% to 8%, and youth who are untreated experience a chronic and fluctuating course characterized by significant impairments in functioning, including increased family conflict, disruptions to academic participation, and interference with social interactions. Additionally, avoidance behaviors associated with emetophobia can lead to deficits in nutritional intake that may negatively affect child and adolescent physical development. It is important that clinicians are aware of the multiple factors that play a role in the development and maintenance of the problem. Incorporating developmental, motivational, and family-based theoretical frameworks into the established cognitive behavioral model for treatment of emetophobia will enhance treatment outcome.

Introduction

Emetophobia, or specific fear of vomiting, is an anxiety disorder characterized by the marked fear about specific objects or situations that may lead to vomiting as well as avoidance and/or distressing endurance of the objects and situations [1]. Epidemiological studies have reported prevalence rates ranging from 0.1% to 8% [2-4], and individuals who are untreated experience a chronic and fluctuating course characterized by significant impairments in physical, social, family, and academic functioning [5]. Because avoidance of food intake is a common symptom, individuals may experience weight loss and medical complications (e.g., metabolic concerns, vitamin deficiencies), which can be particularly problematic for youth, whose bodies are in a significant period of growth and development. Social impairment associated with emetophobia in children can be manifested in multiple ways, including through the loss of social interaction during mealtimes (e.g., avoiding school cafeteria, birthday parties, restaurants, sleepovers) and the negative social and emotional experience of getting bullied because of the fear (e.g., getting food thrown at them). Furthermore, the disorder typically results in the increased family tension associated with parent-child disagreements and frustrations about food intake.

Clinical presentation often occurs after an incident in which the individual has vomited or witnessed others vomiting. Case reports have highlighted numerous triggering situations for the disorder, including prolonged emesis, acute appendicitis, roller coasters, hospitals, dentist offices, being around intoxicated people, pregnancy, and eating in public restaurants [2,6-8]. Onset typically occurs before puberty [2]. Research has indicated that individuals with emetophobia are more likely to have other comorbid anxiety and depressive disorders, including generalized anxiety disorder, major depressive disorder, panic disorder, social anxiety disorder, and obsessive-compulsive disorder [9].

Conceptualization

The conceptualization of emetophobia involves an understanding of how the cognitive, behavioral, physiological, developmental, and family systems interact to perpetuate the fear. Oftentimes, individuals with emetophobia can trace the development of the fear back to a significant event (either experienced or observed) involving vomiting or choking [10]. Thus, classical conditioning can help to explain the development of the fear, as vomiting (a naturally distressing event) is paired with neutral stimuli (e.g., particular foods, restaurants, and eating situations). In response to the conditioned fear, the child learns to avoid stimuli associated with vomiting, and the child's behavioral response (i.e., avoidance/escape) becomes negatively reinforced through operant conditioning. Over time, the avoidance response can become generalized to many different food-related objects and situations. Commonly avoided stimuli include: (1) foods, such as meat, dairy, eggs, and seafood, (2) situations, such as restaurants, school cafeteria, and grocery stores, and (3) people, such as health care providers, young children, and food servers [2].

In addition to behavioral avoidance, youth with emetophobia also tend to engage in behaviors that are aimed at enhancing one's sense of protection from vomiting and/or checking to ensure one's health [2]. Children may feel the urge to check expiration dates on food items, may seek reassurance from parents or food providers about the safety of a food, or may investigate/smell the food to check for its freshness. Additionally, there can be hypervigilance and associated checking of bodily symptoms that may be associated with vomiting, such as taking one's temperature. Finally, the child with emetophobia can engage in health promoting behaviors in an excessive and maladaptive way. For example, individuals may engage in excessive hand washing or over-cleaning of foods. Although all of these behaviors provide an immediate sense of relief, they actually exacerbate the symptoms over time through the process of negative reinforcement. Unfortunately as a result, the more checking and excessive washing that the individual engages in, the more frequent the intrusive worry about vomiting become.

Cognitively, children develop expectations concerning feared stimuli, and they oftentimes experience anticipatory anxiety related to the thoughts or images associated with eating. As such, simply thinking about a feared stimulus can result in the experience of anxiety [11]. Additionally, cognitive distortions about feared stimuli may develop, such that foods (and other feared stimuli) are erroneously and/or exaggeratedly associated with harm [2]. For example, common cognitive distortions include: "Food has to be overcooked to be safe," "Food that looks weird or is unfamiliar is not safe," "I will only stay healthy if I avoid [feared food, situations, or people]", and "Throwing up is unbearable and to be avoided at all costs."

Physiologically, the experience of anxiety is associated with a cascade of reactions directed by the limbic system. These reactions are experienced as uncomfortable and distressing. Of note, a particularly uncomfortable symptom is nausea, as the child often interprets this physiological reaction as an indicator that he or she may vomit. The misinterpretation of these physiological symptoms facilitates an increase in anxiety and leads to an enhanced avoidance response, thereby exacerbating the cycle [8]. Other common physiological responses include sweating, trembling/shaking,

accelerated heart rate, feeling faint or lightheaded, and cramping.

There are many important developmental considerations to consider when comprehensively conceptualizing symptom exacerbation. Parental accommodation of symptoms occurs when, in order to reduce their child's distress around eating, parents tend to provide modifications that allow for short term relief but unintentionally prolong and worsen symptoms [12]. Examples of parental accommodation include refraining from going out to eat, preparing foods in ritualistic ways, or substituting soft foods for more challenging food textures [13]. Parents may comply with demands for reassurance through telling the child that food is safe or fresh. Additionally, parents may reinforce the avoidance behaviors through allowing children to miss school or other food-related events, such as birthday parties or sleepovers.

Another family-based contributing factor pertains to the concept of differential social attention. Because the distress associated with emetophobia is significant, parents and other family members may respond to the anxiety through providing attention and help. While the provision of concern and care is appropriate and understandable, it can reinforce the anxiety response when attention is disproportionately provided during circumstances involving the fear. The child learns that attention is contingent upon expressing anxiety associated with food and/or vomit-related triggers [14]. It is common for families to report that the majority of daily focus is placed on addressing the fear related symptoms, at the expense of providing attention for other issues and behaviors, including prosocial and healthy behaviors [6].

A related maintaining factor concerns the construct of expressed emotion in the household [15]. In these cases, significant negative and oftentimes critical attention is aimed at the child for the inconvenience that the disorder places on the family [16]. For example, siblings may yell or bully the child because of their resentment for not being able to go out to eat for dinner. Parents may express frustration with having to modify mealtimes or outings as a result of the symptoms. This high level of emotional expression generates added tension that is experienced by the whole family, and this increased strain can further exacerbate symptoms [17].

Another developmental issue to consider is the onset of puberty, as females in particular may experience symptoms of bloating and abdominal distress associated with menstruation [18]. Children with emetophobia may misinterpret these symptoms to be signs of the potential for vomiting, and thus may experience anxiety. As a result, they may avoid eating during this time period, which can result in low energy and fatigue, and in extreme form, weight loss and associated amenorrhea.

A final complicating developmental factor concerns motivational issues surrounding treatment, as children rarely refer themselves to treatment, often do not acknowledge the existence of problems, and may be at odds with parents regarding the goals of therapy [19]. This may be particularly true for anxiety-provoking treatments, which oftentimes require the child to face their fear directly (via exposure). Thus, it is particularly important to establish a strong therapeutic alliance with the child and to provide a convincing rationale for exposure based treatment [20]. Incorporating motivational interviewing techniques may be useful in decreasing resistance to treatment [21].

Treatment

Comprehensive treatment for emetophobia in youth incorporates a focus on the interrelated systems that serve to maintain or exacerbate the symptoms [11]. Clinicians are encouraged to share the conceptualization with the child and his or her family in order to build a strong rationale for selected intervention strategies. Psycho education regarding the development and maintenance of the phobia helps the child and family understand the importance of breaking the anxiety-response cycle. Youth and their parents can gain insight into how avoidance-based behaviors serve to exacerbate the symptoms through the process of negative reinforcement. Psycho education can also serve to decrease negative parental attributions and blame regarding the nature and manifestation of phobia-related symptoms [22].

Providing information related to how the fight or flight system operates helps the child gain insight into how to interpret bodily symptoms as well as urges to respond [23]. Clinicians can utilize cognitive training to reframe distorted thoughts associated with food and other feared stimuli. For example, providing instruction regarding how the body's immune system works and the purpose of vomiting (i.e., to rid the body of toxins) may facilitate an alternative view of the experience. Relatedly, helping the child to identify the nutritional value of food may assist in developing a healthier perspective on food intake. Identifying evidence for and against the anxiety provoking thoughts can help to elucidate the exaggerated nature of the phobic threat.

The crux of the treatment involves gradual exposure to feared stimuli while preventing avoidance and/or checking responses [10]. When developing the exposure hierarchy with youth, it is particularly important for clinicians to empower clients to be involved in the process of identifying appropriate exposures as well as in the process of deciding what pace will be effective and acceptable. A strong therapeutic alliance is essential during this process to address any motivational issues and to normalize the anxiety associated with the treatment itself [20]. The hierarchy should be comprehensive, in that it should address food, situations, people, and internal stimuli that are being avoided [24]. An example hierarchy may include the following: (1) Saying words or phrases associated with throwing up, (2) listening to gagging sounds, (3) looking at pictures or watching videos of vomit, (4) eating avoided foods, (5) shaking hands with previously avoided people, (6) eating at social events, and (7) interoceptive exposures, such as eating something quickly or purposely making the self dizzy [25]. Tailoring the hierarchy to the specific feared stimuli is key for successful and comprehensive treatment.

Through exposure and response prevention, youth learn corrective information that is incompatible with their previous learned associations between threat and outcome, and thus a new, less distorted, representation of the feared stimulus is developed [26]. Gradual exposures to anxiety-provoking stimuli allow the child to learn that they can tolerate the distress associated with eating foods or being around sick people without having to engage in avoidance or checking behaviors. Over time, the child learns that, typically, the feared response (i.e., vomiting) does not occur, and if it does, it is short-lived and survivable. As a result, the child learns that habituation, rather than engagement in avoidance or checking, results in long-term alleviation of anxiety.

Parent involvement in therapy is an important aspect of successful treatment in order to address family accommodation of child symptoms, misplaced contingencies related to parental attention, and high levels of expressed emotion [13,22]. Clinicians can directly address parental accommodation through psychoeducation and delivery of case conceptualization so that parents understand how their intentions to reduce distress inadvertently maintain or exacerbate the child's illness. Encouraging a reduction in accommodating behaviors and monitoring compliance with treatment goals related to accommodation can be related to overall treatment success [12]. Because higher levels of parental accommodation has been associated with higher levels of parental distress, decreasing accommodation may have the additional benefit of reducing unhealthy expressed emotion and family tension [27]. Another important treatment target relates to teaching parents the skill of differential social attention. Clinicians can encourage parents to pay attention to (i.e., reinforce) approach-oriented behaviors while ignoring checking or reassurance-seeking behaviors so that contingencies surrounding the anxiety response are modified [6].

Conclusions and Implications for Clinicians

Clinicians working with children diagnosed with emetophobia will benefit from incorporating developmental, motivational, and family-based theoretical frameworks into the established cognitive behavioral model for treatment of the phobia. Engaging children and parents in both the assessment and therapy phases of the treatment process will serve to empower the family unit throughout recovery. Utilizing a tailored conceptualization of the problem will guide the selection

of specific interventions strategies aimed at maintaining factors for the disorder. Assessing for comorbid clinical presentations will be key in comprehensive treatment panning. Research highlights the need for incorporating cognitive, behavioral, and family-based treatment targets for successful intervention. Clinicians are encouraged to seek ongoing feedback regarding their conceptualization in order to guide comprehensive treatment planning. Future research should evaluate the utility of interdisciplinary consultation within the treatment model.

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