



Review

The effects of safety behaviors during exposure therapy for anxiety: Critical analysis from an inhibitory learning perspective



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HIGHLIGHTS

- Inhibitory learning theory of exposure therapy is promising but understudied.
- The role of safety behaviors during exposure therapy is controversial.
- Research on the effects of safety behaviors during exposure is mixed.
- Safety behaviors generally tend to interfere with inhibitory learning and exposure.
- Therapists are advised to fade safety behaviors as soon as patients are willing.

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ABSTRACT

In the context of clinical anxiety, safety behaviors are actions performed to prevent, escape, or minimize feared catastrophes and/or associated distress. Research consistently implicates safety behaviors in the development and maintenance of anxiety disorders; accordingly, safety behaviors are traditionally eliminated during exposure treatments for pathological anxiety. The notion that safety behaviors are ubiquitously deleterious in the context of exposure has recently been challenged, yet findings regarding safety behaviors' effects on exposure outcomes are limited, mixed, and controversial. Furthermore, developments in explanatory models for exposure's effectiveness (e.g., inhibitory learning theory) highlight other possible consequences of safety behaviors performed during exposure. Unfortunately, these theoretical advances are neglected in experimental research. The present review critically examines the literature addressing the role of safety behaviors in exposure therapy from an inhibitory learning perspective. Limitations, future directions, and clinical recommendations are also discussed.

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## 1. Introduction

Anxiety, broadly defined, is a natural reaction to perceived threat and is manifested cognitively (e.g., racing thoughts), physiologically (e.g., autonomic arousal), and behaviorally (e.g., escape). Although anxiety is evolutionarily adaptive, those with pathological anxiety (e.g., DSM-5 defined anxiety disorders) experience anxiety in the absence of real threat. That is, if “normal anxiety” serves as an alarm system, the 18% of adults and 25% of children in the United States with anxiety disorders experience frequent *false alarms* that cause substantial distress and functional impairment (APA, 2013; Kessler et al., 2005; Merikangas et al., 2010).

In its general form, exposure-based cognitive-behavioral therapy (CBT) for clinical anxiety entails the guided, systematic, and repeated confrontation with feared stimuli (e.g., situations, objects, thoughts). Exposure has demonstrated substantial transdiagnostic efficacy and effectiveness in previous research (Abramowitz, Deacon, & Whiteside, 2011). Accordingly, exposure is considered the first-line intervention for anxiety disorders by international health care bodies (e.g., APA, 2013; NICE, 2005).

Safety behaviors are overt or covert actions performed to prevent, escape, or minimize a feared catastrophe and/or associated distress (Telch & Lancaster, 2012). Safety behaviors are functionally related to anxious beliefs and are logical, if unnecessary. To illustrate, a man with a fear of germs might wear gloves when using public transportation (i.e., prevent contamination), exit a bus after a child sneezes (i.e., escape contamination), or look out the window and tell himself “relax” when on a crowded flight (i.e., minimize his anxiety associated with possibly becoming contaminated). Although topographically similar, safety behaviors are functionally distinct from adaptive coping (e.g., telling oneself “it’s okay if I get germs on me”) or non-pathological safety maneuvers (e.g., washing hands after handling raw meat; Thwaites & Freeston, 2005). That is, whereas attempts to remain safe when faced with actual threat ensure survival, performing such behaviors in the absence of real threat is unnecessary and even generates and maintains distress (see Helbig-Lang & Petermann, 2010). Other examples of situational safety behaviors commonly endorsed by anxious patients are presented in Table 1.

Research consistently implicates safety behaviors in the maintenance of anxiety disorders; accordingly, safety behaviors are traditionally eliminated from anxious patients' behavioral repertoire over the course of exposure therapy (e.g., Abramowitz et al., 2011; Barlow et al., 2011). Yet recent debate as to whether safety behaviors are unconditionally harmful during exposure has challenged this notion. Although substantial evidence—as well as clinical convention—advocates the elimination of safety behaviors during exposure, Rachman, Radomsky, and Shafran (2008) called for a reconsideration of this axiom. Consequently, the role of safety behaviors during exposure has garnered renewed research attention. Results from these studies,

however, are mixed and controversial. For example, in a recent meta-analysis of the effects of safety behaviors on exposure, Meulders, van Daele, Volders, and Vlaeyen (2016) concluded that the aggregate data “was inconclusive and could not provide strong evidence supporting either the removal or addition of [safety behaviors] during exposure” (p. 151).

Meta-analytic studies carry the benefit of pooling data across multiple studies to increase statistical power when testing a specific hypothesis (e.g., “do safety behaviors interfere with exposure therapy on specific outcomes?”). However, if—as in the present paper—the aim is to go beyond testing a discrete statistical hypothesis and instead conduct a rigorous conceptual examination of a specific topic, systematic qualitative reviews are important alongside meta-analyses (e.g., Albarracín, 2015; Garg, Hackam, & Tonelli, 2008). Indeed, the latter allow for more in-depth discussion of theoretical mechanisms underlying improvement (i.e., therapeutic change processes) while still adhering to rigorous review criteria and presenting opposing perspectives in a balanced manner. In light of inconsistent results in the extant literature on safety behaviors, a qualitative systematic review of the literature on the effects of safety behaviors would be helpful for clinicians and researchers working with anxious individuals.

The judicious use of safety behaviors is a controversial thesis; furthermore, clinicians are left without clear direction, given that inconsistent study findings carry contradictory clinical implications. If safety behaviors are not as detrimental as previously assumed, perhaps judiciously incorporating them into exposure therapy will improve treatment retention and outcome (e.g., Rachman et al., 2008). Alternatively, if safety behaviors are deleterious in the long-term, then encouraging anxious patients to rely on these strategies might be iatrogenic. There are also theoretical implications of a systematic review of the safety behavior research. As discussed below, prevailing models of exposure therapy have enhanced our understanding of the treatment of clinical anxiety (e.g., Craske et al., 2008), yet these approaches are limited and fail to address all aspects of long-term treatment gains or failure (i.e., relapse). Therefore, it is important to bridge the gap between advances in theoretical models of exposure therapy and the empirical literature base related to safety behavior use during exposure. In sum, given the growing popularity of newer models of exposure therapy (e.g., inhibitory learning theory) and the possibility for the judicious use of safety behaviors to either augment or diminish exposure's efficacy, a theory-based analysis of this topic is greatly needed. The current review aims to critically examine the extant literature addressing the role of safety behaviors in exposure therapy from an inhibitory learning perspective. Because the effects of distraction have been reviewed elsewhere (e.g., Parrish, Radomsky, & Dugas, 2008; Podinã, Koster, Philippot, Dethier, & David, 2013), the present paper will focus on other situational safety behaviors. First, we will explicate current evidence-based theories of the therapeutic mechanisms underlying exposure, emphasizing recent developments in inhibitory learning

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