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Abstract

Safety behaviors are actions employed by individuals to prevent or mitigate feared consequences. They are considered one of the key mechanisms maintaining anxiety disorders and can interfere with exposure therapy for anxiety. Safety behaviors are associated with anxiety levels and anxiety-related cognitive biases, with the misattribution hypothesis, attentional resource deviation hypothesis, and behavioral information hypothesis offering explanations for this association. Furthermore, the use of safety behaviors can attenuate the effectiveness of exposure therapy for anxiety while increasing its acceptability. Future research should provide clearer definitions and more accurate measurements of safety behaviors, further improve research designs, and draw upon theories from third-generation behavior therapies to explain the relationship between safety behaviors and anxiety. Additionally, it is necessary to examine the dual role of safety behaviors, develop treatment protocols focused on safety behaviors, and evaluate their efficacy.

Full Text

Safety Behaviors in Anxiety and Their Effects

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Abstract

Safety behaviors are actions individuals employ to prevent or minimize feared consequences. Considered a key mechanism in the maintenance of anxiety disorders, these behaviors may also interfere with exposure therapy. Safety behaviors are closely associated with anxiety levels and anxiety-related cognitive biases, with three primary hypotheses explaining this relationship: the misattribution

of safety hypothesis, the biased attentional resources hypothesis, and the behavior as information hypothesis. Additionally, while safety behavior usage can undermine the effectiveness of anxiety exposure treatment, it may paradoxically enhance treatment acceptability. Future research should provide clearer definitions and more accurate measurement of safety behaviors, improve study designs, and draw upon third-wave behavioral therapies to explain the relationship between safety behaviors and anxiety. It is also essential to examine the dual roles of safety behaviors, develop treatment protocols focused on these behaviors, and evaluate their efficacy.

Keywords: safety behaviors, anxiety disorder, exposure therapy

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Anxiety disorders represent a common category of mental disorders characterized by extreme fear and anxiety accompanied by behavioral abnormalities related to these symptoms. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) classifies them into several types: separation anxiety disorder, selective mutism, social anxiety disorder, panic disorder, agoraphobia, specific phobia, and generalized anxiety disorder (APA, 2013). These disorders exhibit high prevalence rates, with epidemiological surveys indicating that approximately 5.0% of Chinese adults aged 18 and over experience anxiety disorders within a 12-month period, and about 7.6% meet criteria at some point in their lifetime (Huang et al., 2019). Anxiety disorders significantly impair learning, social functioning, physical health, and quality of life (Creswell et al., 2020; Wang et al., 2016), prompting growing attention to their etiology, maintenance, and intervention.

Individuals with anxiety disorders encounter numerous opportunities for exposure to feared situations in daily life and during treatment. According to learning theory, habituation processes should gradually reduce anxiety symptoms following repeated exposures. Moreover, since anxiety disorders are characterized by inaccurate threat appraisals, and the feared consequences often fail to materialize during actual exposure experiences, patients should have ample opportunities to test and correct these cognitive biases, leading to improved anxiety outcomes. Paradoxically, however, some patients—particularly those with social anxiety disorder—show no significant improvement despite repeated exposure to feared situations. To explain this phenomenon, researchers have examined individuals' maladaptive responses within anxiety-provoking contexts. Salkovskis (1991) proposed that anxious individuals frequently engage in behaviors to prevent or minimize feared consequences, such as socially anxious patients avoiding eye contact or panic disorder patients preemptively taking anti-anxiety medication. He termed these actions "safety-seeking behaviors," though subsequent research more commonly uses the interchangeable term "safety behaviors."While initially intended to prevent feared outcomes and alleviate anxiety, these behaviors have emerged as primary mechanisms maintaining anxiety symptoms and may reduce treatment efficacy (Rachman et al., 2008; Taylor & Alden, 2010; Wells et al., 2016). Understanding the role of safety behaviors in anxiety and

its treatment has generated substantial research, and a systematic review of this literature is crucial for comprehending the relationship between safety behaviors and anxiety and for improving treatment outcomes.

1.1 Definition of Safety Behaviors

Panic disorder patients' feared consequences often do not occur, yet their anxiety responses persist despite repeated experiences of non-occurrence. To explain this maintenance, Salkovskis (1991) examined the relationship between cognition and behavior, emphasizing the critical role of safety behaviors and defining them as "actions used to prevent or minimize feared consequences." Deacon and Maack (2008) alternatively described them as behaviors through which people attempt to detect, avoid, or escape feared outcomes, while other researchers have defined them as overt or covert actions used to avoid or escape perceived threats or reduce their perceived severity (Helbig-Lang & Petermann, 2010). Research has extended the study of safety behaviors across various anxiety disorders, including generalized anxiety disorder, social anxiety disorder, and specific phobia (Beesdo-Baum et al., 2012; Van Uijen, van den Hout, Klein Schiphorst et al., 2017; Gray et al., 2019; Goetz & Lee, 2018). Although definitions vary, they share several core features. First, regardless of ultimate effectiveness, the initial motivation for safety behaviors is to avoid, prevent, or minimize feared consequences—to seek safety within a given situation. Second, despite being labeled "behaviors," they may be overt or covert, often representing internal psychological processes; for example, a socially anxious individual anticipating an awkward silence during an upcoming speech might mentally rehearse prepared sentences. Third, safety behaviors exhibit symptom specificity, varying according to individuals' core concerns and fears. Different anxiety disorders produce different safety behaviors based on distinct feared content—for instance, social anxiety may involve avoiding eye contact or monitoring one' s speech, while panic disorder may involve carrying medication or avoiding arousal-inducing stimuli. This specificity creates challenges for defining and studying safety behaviors.

Safety behaviors must be distinguished from related concepts before examining their relationship with anxiety symptoms. First, they differ from adaptive coping behaviors. Although both represent responses to stimuli, adaptive coping addresses realistic threats without involving imagined catastrophic consequences, whereas safety behaviors target perceived threats that may or may not objectively exist, often appearing unrealistic and irrational. Furthermore, adaptive coping does not prevent testing of irrational beliefs and has positive adaptive value, whereas safety behaviors, while providing short-term relief, may ultimately impair performance, maintain threat perception, and become maladaptive. Second, safety behaviors relate to but differ from avoidance and escape, which also maintain high anxiety and fear across mental disorders (Sege et al., 2018). Avoidance prevents an impending aversive stimulus, while escape terminates an ongoing aversive stimulus (Cook & Catania, 1964; Sheynin et al., 2019). All three are maintained through negative reinforcement, but safety be-

haviors encompass a broader range of actions, including those directed toward internal emotional experiences and reactions—such as diaphragmatic breathing, reassurance seeking, and neutralizing behaviors to reduce physiological arousal.

1.2 Classification of Safety Behaviors

Researchers initially categorized safety behaviors into three types: situational avoidance to prevent anticipated danger (e.g., socially anxious patients refusing social invitations), escape from situations when anxiety emerges (leaving a store upon panic symptom onset), and active fear-reduction behaviors within anxiety-provoking situations (holding onto someone or sitting down when feeling faint) (Salkovskis et al., 1999). Others distinguished between emotion-driven behaviors and emotional avoidance strategies, with the former describing action tendencies when experiencing anxiety (e.g., fleeing) and the latter comprising subtle behavioral avoidance, cognitive avoidance, and safety signal use for anxiety prevention (Barlow et al., 2004). This classification is based on timing: emotion-driven behaviors occur after anxiety emerges, whereas emotional avoidance strategies are preventive actions taken beforehand.

Helbig-Lang and Petermann (2010) later classified safety behaviors by function into preventive and restorative types. Preventive safety behaviors aim to forestall future distressing emotional reactions or anxiety increases, including environmental avoidance, reliance on safety signals (e.g., leaving home only when accompanied), and subtle avoidance (e.g., avoiding eye contact, over-preparation). Restorative safety behaviors block emotional experiences within feared situations, aiming to reduce anxiety-related physical symptoms (e.g., palpitations, shortness of breath) or decrease the likelihood of perceived feared consequences (e.g., death, embarrassment, self-harm). These include escaping situations, attempting to control or suppress emotional reactions, reassurance seeking, and neutralizing behaviors (e.g., washing when feeling contaminated). Beyond functional differences, these categories also differ temporally: preventive behaviors occur before or during confrontation with core threats, while restorative behaviors appear afterward. This classification aligns with Barlow et al. (2004) but emphasizes functional distinctions, advancing research on the role and effects of safety behaviors in anxiety symptoms.

1.3 Measurement of Safety Behaviors

Measurement tools for safety behaviors remain limited. Researchers developed the Subtle Avoidance Frequency Examination (SAFE) for social anxiety disorder, a 32-item self-report measure describing potential safety behaviors in social situations (e.g., "repeating sentences in one' s head") rated on a 1 (never) to 5 (always) scale (Qasmieh et al., 2018). The SAFE demonstrates good psychometric properties for adolescents but relies on retrospective self-report, potentially distorting responses. A revised version, the UUOs' SAFE, employs unfamiliar untrained observers to rate safety behaviors from archived videos of social interactions, showing good reliability and validity (Rezeppa et al., 2021). Addition-

ally, the general Safety Behavior Assessment Form (SBAF) was developed across common anxiety disorders, comprising 41 items derived from clinical experience and prior research on social anxiety, generalized anxiety, and panic disorder, rated 0 (never) to 4 (always), with demonstrated reliability and validity (Goodson et al., 2016). However, the SBAF' s validity is questionable because raters often lack insight into observed individuals' behavioral motivations, making it difficult to ensure behaviors meet the definition of safety behaviors.

2. The Relationship Between Safety Behaviors and Anxiety

Researchers have examined the direct link between safety behaviors and anxiety by treating anxiety level as a variable in correlational and experimental studies, while others have demonstrated indirect connections by focusing on anxiety-related cognitive biases that maintain anxiety disorders.

2.1 The Link Between Safety Behaviors and Anxiety Levels

Studies have investigated this relationship at both correlational and causal levels. Correlational research reveals that individuals with higher anxiety report more frequent safety behaviors. McManus et al. (2008) found that high socially anxious individuals used safety behaviors more frequently and in greater variety than low anxious individuals in anxiety-provoking social situations. Similar patterns have been observed in health anxiety and generalized anxiety disorder (Tang et al., 2007; Beesdo-Baum et al., 2012). Additionally, frequency of safety behavior use among cannabis users correlates positively with anxiety levels (Buckner et al., 2017). While correlational studies establish links, they cannot determine directionality—whether high anxiety drives safety behavior use or whether safety behaviors exacerbate anxiety. Longitudinal studies addressing this limitation show that, controlling for initial anxiety levels, safety behavior use in college students predicts subsequent anxiety symptoms (Goodson et al., 2016).

Experimental studies manipulating safety behavior use have examined causal relationships. Leigh et al. (2021) had participants converse with strangers under conditions requiring either safety behaviors with self-focus or no safety behaviors with external focus, counterbalanced for order. Results showed higher reported social anxiety in the safety behavior/self-focus condition. Although ecologically valid, this design confounds safety behavior use with self-focus, limiting internal validity. Other experiments demonstrate that contamination-fear individuals experience increased anxiety after performing cleaning safety behaviors (Deacon & Maack, 2008), and college students using safety behaviors show elevated health anxiety and contamination fear compared to controls (Olatunji et al., 2011). These studies reveal safety behaviors' impact on anxiety severity but suffer from limitations such as lack of control groups and use of non-clinical samples, necessitating improved experimental designs and sampling to enhance internal and external validity.

2.2 Safety Behaviors and Anxiety-Related Cognitive Biases

Foa and Kozak' s (1986) emotional processing theory posits that judgmental biases play a crucial role in maintaining anxiety disorders, primarily probability bias (tendency to believe negative events are highly likely) and cost bias (belief that negative event consequences are terrible and intolerable). Safety behavior use relates to probability bias: encouraging patients to reduce safety behaviors in feared situations significantly decreases beliefs about feared outcomes occurring (Wells et al., 2016), and using safety behaviors to prevent threat stimuli after fear conditioning impedes extinction, resulting in higher threat expectancy ratings than controls (van Uijen et al., 2018). Safety behaviors also increase cost bias, leading individuals to exaggerate negative consequences and overestimate their anxiety levels (Deacon & Maack, 2008; McManus et al., 2008), whereas reducing these behaviors enables more accurate and less negative judgments of social performance outcomes (Taylor & Alden, 2010).

Safety behaviors also relate to cognitive biases specific to particular anxiety disorders. Social anxiety disorder' s cognitive model identifies post-event processing (PEP)—detailed review of social events afterward—as a key maintenance factor (Rapee & Heimberg, 1997). Research shows positive correlations between safety behavior use and PEP; socially anxious individuals using safety behaviors more frequently exhibit greater PEP tendencies (Mitchell & Schmidt, 2014). This relationship may be explained in several ways. First, safety behaviors may influence PEP through dysfunctional cognitions and negative inferences. Second, PEP itself may function as a safety behavior, motivated by attempts to prevent or reduce future negative social outcomes based on the belief that without rigorous self-examination, one cannot effectively manage social interactions. However, PEP involves numerous maladaptive features, including focusing on negative aspects of past social situations, negative self-judgments, and elevated counterfactual thinking, leading to distorted perceptions of social situations and maintaining anxiety symptoms (Blackie & Kocovski, 2016). Thus, PEP aligns with safety behaviors in both motivation and consequences. Socially anxious individuals also exhibit threat-related attentional and negative interpretive biases (Rapee & Heimberg, 1997; Yeung & Sharpe, 2019), though connections between safety behaviors and these biases require further investigation.

3.1 Misattribution Hypothesis

Salkovskis (1991) originally proposed the misattribution of safety hypothesis, which suggests that anxious individuals' expectations of negative consequences are often unrealistic and irrational. These negative expectations would have many opportunities for real-world testing and correction, but when individuals use safety behaviors and the anticipated threat fails to materialize, they attribute the safe outcome to their safety behaviors rather than to the situation' s inherent lack of threat. This prevents recognition that their fear is irrational or tolerable, blocking disconfirmatory learning. Research shows that when patients attribute panic symptom improvement to benzodiazepine medi-

cation rather than their ability to manage physiological discomfort, panic recurrence risk increases (Biondi & Picardi, 2003). Powers et al. (2008) administered inactive vitamin C pills to claustrophobia patients, informing one group the pills were sedatives that would make exposure easier, another that they were stimulants making exposure harder, and a third that they were placebos. Only the "sedative" group showed fear return at follow-up, suggesting that attributing successful exposure to external factors (e.g., medication) rather than the situation' s safety impedes later fear extinction. These findings support the misattribution hypothesis, though they lack direct attribution data and cannot fully explain why safety behavior use exacerbates anxiety symptoms.

3.2 Biased Attentional Resources Hypothesis

The biased attentional resources hypothesis posits that when individuals use safety behaviors in feared situations, attentional resources become focused on executing these behaviors, diverting attention from collecting and noticing disconfirmatory information and preventing acquisition of sufficient information to test the dangerousness of feared environments (Sloan & Telch, 2002). Research shows that focusing attention on threat stimuli during exposure is more effective for anxiety reduction than focusing on irrelevant stimuli, with attentional diversion from actual threat information potentially causing fear symptom return (Dethier et al., 2015). This hypothesis shares similarities with the misattribution hypothesis, as both suggest safety behaviors interfere with reality testing of threat expectations. Additionally, safety behaviors may increase the actual likelihood of feared consequences occurring (Piccirillo et al., 2016), possibly because attentional diversion from real-world information impairs task performance, creating negative self-fulfilling prophecies that reinforce negative cognitive beliefs and affect anxiety levels. Whether safety behaviors primarily interfere with threat expectation testing, task performance, or both remains an open question for future research.

3.3 Behavior as Information Hypothesis

The behavior as information hypothesis proposes that individuals' emotional, physiological, and behavioral response information all influence stimulus evaluation, with safety behaviors providing an information source for judgment (Gangemi et al., 2012). Gangemi et al. (2012) presented participants with scripts manipulating objective danger information (dangerous vs. safe) and safety behavior information (using safety behaviors vs. not), asking them to rate perceived situational threat. Results showed that anxious patients' threat ratings were influenced by both objective danger information and safety behavior information. Individuals tend to use their own approach and safety behaviors as evidence to infer whether a situation is safe or dangerous (van Uijen, van den Hout, & Engelhard, 2017). The inference logic holds that approach behaviors signal safety, while safety behaviors signal danger. The inferential value of safety behaviors as an information source sometimes exceeds actual objective informa-

tion; for example, in objectively safe situations, anxious patients infer threat levels based on whether safety behaviors were performed (van den Hout et al., 2014). This hypothesis positions safety behaviors as threat appraisal criteria, emphasizing their impact on threat expectations and cognitive biases, aligning with cognitive dissonance theory. It explains why safety behavior use increases anxiety levels and corroborates links between safety behaviors and cognitive biases.

Safety behaviors emerged from cognitive models of anxiety disorders, and theoretical explanations center on cognitive processes. The misattribution hypothesis emphasizes erroneous attribution and interpretation of safe outcomes; the attentional resources hypothesis suggests safety behaviors block threat stimulus reappraisal; and the behavior as information hypothesis focuses on interpreting and inferring threat from the behaviors themselves. Existing explanations draw on traditional cognitive therapy perspectives, emphasizing how safety behaviors affect the formation, identification, challenging, and testing of irrational cognitions. However, whether these behaviors primarily block belief correction, directly cause or worsen anxiety, or serve both functions requires further empirical investigation.

4. The Impact of Safety Behaviors on Anxiety Disorder Treatment

Existing research and theoretical explanations suggest safety behaviors interfere with anxiety disorder treatment. Exposure therapy is considered one of the most effective cognitive-behavioral therapy (CBT) methods for reducing fear and anxiety, prompting recent investigations into how safety behavior use affects exposure treatment processes and outcomes.

4.1 Safety Behaviors and Exposure Therapy Efficacy

Early research identified safety behaviors as important factors maintaining anxiety symptoms and recommended their elimination during exposure therapy. Experimental studies indeed found that reducing safety behaviors during exposure facilitates anxiety symptom improvement. Salkovskis et al. (1999) found that agoraphobia patients who discontinued safety behaviors during exposure showed greater reductions in catastrophic beliefs and anxiety levels than those who continued using them. Similar results emerged for social anxiety patients (Taylor & Alden, 2010; Wells et al., 2016). However, inconsistent findings show no effect of safety behavior use on treatment outcomes for snake phobia or contamination fear (Milosevic & Radomsky, 2008; Van Uijen, van den Hout, Klein Schiphorst et al., 2017; Goetz & Lee, 2018). To synthesize these findings, Meulders et al. (2016) conducted a meta-analysis of 23 studies comparing fear levels when increasing versus maintaining baseline safety behavior use and when removing versus maintaining them, finding non-significant effect sizes for both comparisons. This suggests that increasing safety behaviors during exposure does not hinder treatment effects, nor does reducing them enhance outcomes.

These inconsistent results may stem from several factors. First, they relate to safety behavior definitions, which emphasize behavioral intent and specificity. A behavior functioning as a safety behavior for one patient may not serve this function for another, and it is unclear how consistently researchers apply definitions across studies, potentially contributing to divergent findings. Second, outcome measurement often occurs during or immediately after exposure, which may be unreliable. Craske et al. (2008) argued that fear levels expressed during or at the end of exposure, or the degree of fear reduction during exposure, do not reliably predict treatment outcomes. This measurement unreliability may produce unstable results. Finally, motivational contexts for safety behaviors may vary individually. Similar behaviors can serve different goals; some typical safety behaviors may benefit patients when used as means to improve task performance for monetary reward, but become burdensome and negatively impact outcomes when used to avoid feared consequences (Volders et al., 2015).

4.2 Safety Behaviors and Treatment Acceptability

CBT is an effective, cross-culturally applicable treatment for anxiety disorders (Casas et al., 2020). However, meta-analyses indicate high dropout rates of approximately 26% when CBT is used for anxiety and depression (Kayrouz et al., 2018), with fear of treatment being a major reason for CBT discontinuation (Leeuwerik et al., 2020). Researchers have suggested that allowing patients to use safety behaviors during CBT may enhance acceptability without compromising efficacy (Milosevic & Radomsky, 2013; Levy & Radomsky, 2014), as they may increase self-efficacy and perceived control (Rachman et al., 2008). According to self-efficacy theory, providing safety behaviors during challenging treatment phases until patients feel prepared to eliminate them should increase confidence and perceived control, fostering belief in successful task completion. However, some studies find no effect of safety behaviors on exposure therapy acceptability (Deacon et al., 2010; Blakey et al., 2019). Scholars suggest introducing safety behaviors during initial exposure phases until patients feel comfortable eliminating them, or implementing them when exposure feels particularly difficult, may help increase treatment acceptability (Levy & Radomsky, 2014). Overall, the role of safety behaviors in enhancing CBT acceptability for anxiety disorders remains largely theoretical, lacking empirical support. Nevertheless, these studies offer clinical insights: patients with clinical anxiety may experience greater situational fear than non-clinical populations, making exposure therapy more difficult to tolerate, potentially necessitating greater use of safety behaviors to help them complete exposure tasks.

4.3 Conditional Effects of Safety Behaviors on Anxiety Treatment

The impact of safety behaviors on exposure therapy is constrained by various factors. First, different categories of safety behaviors produce different treatment effects. Restorative safety behaviors may enhance exposure therapy efficacy, whereas preventive safety behaviors may be detrimental (Goetz & Lee, 2015;

Goetz et al., 2016). This aligns with systematic desensitization research, where patients are repeatedly exposed to anxiety-provoking situations while using relaxation training to replace anxiety-related responses or create incompatible reactions. Relaxation techniques such as progressive muscle relaxation and diaphragmatic breathing function as restorative safety behaviors whose positive effects on exposure therapy have been established (Chen et al., 2017). Second, safety behaviors' effects relate to treatment phase. Rachman et al. (2008) suggested that early-phase safety behavior use may be beneficial, helping patients accept treatment, but these behaviors should ultimately be eliminated from patients' behavioral repertoires. Additionally, allowing patients to choose when to eliminate safety behaviors during treatment produces better outcomes than therapist-directed termination (Levy & Radomsky, 2016). Finally, safety behaviors may be particularly beneficial for specific phobias—for example, showing more positive effects in spider phobia than social phobia treatment (Blakey & Abramowitz, 2016)—and may be more valuable for clinical samples with severe anxiety symptoms during initial treatment phases.

5. Summary and Future Directions

Individuals with anxiety disorders are more likely to use safety behaviors, which may intensify anxiety responses and increase anxiety-related cognitive biases. The misattribution hypothesis, distraction hypothesis, and behavior as information hypothesis offer different explanations for how safety behaviors affect anxiety, while these behaviors may produce both positive and negative consequences for exposure therapy. Existing research holds important clinical significance for understanding anxiety symptom maintenance and treatment. However, several areas require further attention.

5.1 Refining Definition and Measurement of Safety Behaviors

Researchers generally define safety behaviors as actions used to prevent or minimize feared consequences, focusing on initial behavioral motivation. However, motivations are not externally observable, and different individuals may use the same behavior for different reasons. For example, smoking in social situations could represent a safety behavior, a habit, or an addiction. Additionally, responses like breathing control and distraction can be viewed as either useful components of anxiety management or as safety behaviors interfering with exposure and cognitive testing (Thwaites & Freeston, 2005). Thus, identifying safety behaviors in research and clinical practice presents challenges. Divergent findings likely reflect definitional inconsistencies among researchers. Future studies should clarify definitions and conceptual boundaries, moving beyond simple dichotomies to recognize that behaviors may exist on a continuum from adaptive coping strategies to safety behaviors, varying by degree and context (Thwaites & Freeston, 2005). Since the concept was originally developed to explain anxiety maintenance during real-world exposure, definitions should emphasize excessive use, contextual inappropriateness, and negative long-term effects rather than

focusing solely on initial motivation.

Moreover, measuring and assessing safety behaviors can advance quantitative research and inform clinical practice by predicting anxiety levels in specific situations and treatment outcomes. However, current measurement tools are limited and lack specificity. Researchers have developed measures only for social anxiety, while general scales ignore the content specificity of safety behaviors across different disorders. Future work should focus on developing and validating measurement tools with demonstrated clinical utility, creating disorder-specific assessments that account for variations in anxiety content and safety behaviors to increase practical value.

5.2 Improving Research Designs to Examine Safety Behavior-Anxiety Links

Researchers have used correlational and experimental methods to investigate safety behavior-anxiety relationships, but designs require improvement. First, correlational studies have primarily used cross-sectional designs, limiting directional inferences. Longitudinal designs are needed, particularly multi-wave studies with more than two time points, which provide richer information about developmental patterns and progressive effects (Masten et al., 2005; Fu et al., 2020). Multi-wave longitudinal data can effectively identify different effects within relationships and yield precise information about developmental processes. Future research should employ such designs to more fully elucidate links between safety behaviors and anxiety levels.

Second, existing experimental studies suffer from sampling biases and inadequate control of extraneous variables, such as relying on healthy or clinical samples only, using single-group pretest-posttest designs, or introducing important confounding variables. Future experimental research should employ more rigorous designs to improve internal validity. Additionally, studies should examine potential moderating variables like gender, age, and cultural background, as these may influence safety behavior-anxiety relationships.

5.3 Drawing on Third-Wave Therapies to Explain Safety Behavior-Anxiety Relationships

Recent challenges to CBT' s views on change processes and mechanisms suggest that cognitive content modification and restructuring may not be necessary for producing change (David & Hofmann, 2013). Therefore, explaining safety behavior-anxiety relationships through traditional CBT has limitations. Third-wave therapies such as Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Mindfulness-Based Cognitive Therapy focus on individuals' relationships with thoughts and emotions rather than their content (Hayes & Hofmann, 2017). From an ACT perspective, safety behaviors may represent experiential avoidance responses that conflict with ACT' s principles of acceptance, cognitive defusion, and self-as-context, limiting psychological flex-

ibility and thus hindering anxiety symptom reduction. Future research should incorporate third-wave therapy perspectives, examining safety behaviors' effects from the standpoint of individuals' relationships with their experiences, expanding theoretical explanations, and providing theoretical support and practical guidance for mitigating their impact on anxiety.

5.4 Comprehensive Examination of Safety Behaviors' Dual Roles

Future research should consider both positive and negative functions of safety behaviors. Since the concept' s introduction, researchers have viewed safety behaviors as primary causes of anxiety maintenance, emphasizing their interference with treatment. However, recent studies reveal positive value under certain conditions (Goetz & Lee, 2015; Goetz et al., 2016; Blakey & Abramowitz, 2016). To increase clinical applicability, researchers should move beyond simply asking whether safety behaviors interfere with treatment and instead address the conditions under which they produce detrimental versus beneficial effects. Additionally, dosage effects in exposure therapy require attention, as existing studies vary significantly in exposure protocol duration, with some using single sessions insufficient for assessing treatment effects or acceptability changes. Further research should determine the optimal number of treatment sessions needed for safety behavior removal or addition to produce effects.

5.5 Developing and Evaluating Safety Behavior-Focused Treatment Protocols

Most researchers agree that anxiety disorder treatment should help patients eliminate or reduce safety behaviors. One transdiagnostic treatment—False Safety Behavior Elimination Therapy (F-SET)—has been developed, with safety behavior elimination as its core component (Riccardi et al., 2017). F-SET incorporates psychoeducation while focusing on identifying and eliminating false safety behaviors. After describing safety behaviors using anxiety conceptual models, therapists help participants identify and discuss their own behaviors, then gradually eliminate them according to difficulty hierarchy. Initial F-SET applications for anxiety disorders have enhanced applied value in this area, but several issues warrant attention. First, since identifying and eliminating false safety behaviors is F-SET' s core component, clinical practice must focus on how to more effectively assist patients in this process. Research shows that socially anxious individuals' positive beliefs about safety behaviors predict their use, suggesting that identifying and modifying these beliefs could reduce safety behavior usage (Meyer et al., 2019). Future studies should emphasize strategies for identifying and eliminating safety behaviors.

Second, treatment development and outcome evaluation have relied exclusively on F-SET and have only tested its efficacy across panic disorder, social anxiety disorder, and generalized anxiety disorder. Future protocols should encompass other anxiety disorders such as specific phobias and evaluate their effectiveness. Third, outcome studies have used small, non-representative samples of primar-

ily young, university-educated participants, limiting generalizability to lower-education or community populations. Future research should employ larger, more diverse samples to obtain more detailed understanding of treatment effects.

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