The Assessment and Treatment of Specific Phobias: A Review

Daniel F. Grös, MA, and Martin M. Antony, PhD

Corresponding author
Martin M. Antony, PhD
Department of Psychology, Ryerson University,
350 Victoria Street, Toronto, ON M5B 2K3, Canada.
E-mail: mantony@ryerson.ca

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Specific phobia is one of the most common and easily treated mental disorders. In this review, empirically supported assessment and treatment procedures for specific phobia are discussed. Exposure-based treatments in particular are highlighted given their demonstrated effectiveness for this condition. The format and characteristics of exposure-based treatment and predictors of treatment response are outlined to provide recommendations for maximizing outcome. In addition, several other treatments for specific phobia are reviewed and critiqued, including cognitive therapy, virtual reality, eye movement desensitization and reprocessing, applied tension, and pharmacologic treatments. The review concludes with a discussion of future directions for research.

Introduction

Specific phobias are among the most frequently diagnosed problems in community samples [1,2] and also frequently occur at milder levels, not quite meeting a clinical threshold for distress or impairment [3]. Specific phobias also are the most treatable of the anxiety disorders, often responding to as little as one session of treatment [4]. However, despite the high prevalence of this disorder and the ease with which it can be treated, patients rarely present for treatment with a specific phobia as the principal diagnosis [4,5]. Together, these findings represent both a paradox and a challenge to treatment providers. This review focuses on empirically supported assessment and treatment procedures for specific phobia. In addition, the discussion critically reviews newer and alternative treatment procedures. Last, several future directions for research are discussed.

Diagnostic Features

The fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*) describes specific phobia as a "marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation" in which "exposure to the phobic stimulus almost invariably provokes an immediate anxiety response, which may take the form of a situationally bound or situationally predisposed Panic Attack" [6]. In addition, individuals must (1) recognize their fear is excessive or unreasonable; (2) avoid situations and stimuli or else endure them with intense anxiety or distress; (3) experience significant interference with their normal routine, occupational or academic functioning, or social activities or relationships; and (4) not have another *DSM-IV* disorder that better accounts for the symptoms of the specific phobia. The *DSM-IV* described four main types of specific phobia (animal type, natural environment type, blood-injection-injury type, and situation type), as well as a residual "other type."

Assessment

Assessment of specific phobias typically includes a thorough clinical interview, behavioral assessment procedures, and the use of standard self-report scales, each of which is discussed in this section [7,8]. In research studies, psychophysiologic assessment (particularly measurement of heart rate) also is often included. However, psychophysiologic assessment is rarely included in routine clinical practice and is beyond the scope of this article.

Clinical interview

A clinical interview is the most frequently used assessment method in the management of specific phobias. Interviewers should first assess the presence of fear or avoidance associated with any specific objects or situations and then probe for the level of distress or discomfort experienced when the patient is confronted by their feared stimuli or situation. Interview questions should target specific clinical features, including etiology and course of the fear, the physical reactions and symptoms experienced (eg, panic attacks, fainting), types of fearful cognitions (eg, fearful

beliefs, predictions, cognitive biases), the extent to which the individual's fear or avoidance is focused on symptoms of physical arousal (eg, fear of dizziness in high places, fear of breathlessness in claustrophobic situations), situations that are avoided by the patient, patterns of subtle avoidance (eg, distraction and safety behaviors), variables that affect the individual's fear (eg, for driving phobias—weather, amount of traffic, darkness), treatment history, family factors, and any associated medical concerns [7]. Semistructured interviews such as the Anxiety Disorders Interview Schedule for *DSM-IV* [9] and the Structured Clinical Interview for *DSM-IV* [10] may be useful for gathering some of this information in a standard way, primarily to confirm the diagnosis of specific phobia and to identify any comorbid conditions.

Behavioral assessment

In the assessment of specific phobias, the most frequently used behavioral assessment procedure is the behavioral approach test (BAT), which involves observing or measuring a patient's responses (eg, closest distance to a feared object, subjective ratings of fear) during actual exposure to his or her phobic object or situation [7,8]. Compared to an interview, behavioral assessments can potentially lead to a more accurate assessment of the patient's true phobic response because they provide an opportunity to observe the patient in a situation that is typically avoided. The information obtained is especially useful to clinicians because individuals often overreport their fear response to phobic situations [11]. Two types of BAT have been described in the literature [12]. A progressive BAT involves the patient gradually engaging the feared situation or stimulus in a step-by-step manner (eg, gradually approaching a high ledge in the case of a height phobia) while the clinician records the individual's responses at each step throughout the process. A selective BAT involves the clinician choosing one or more challenges from the patient's hierarchy and asking the patient to complete each challenge in order to provoke a phobic response. Subjective fear ratings (0-to-100–point scale), anxious cognitions, subtle avoidance behaviors, and physiologic reactivity all can be assessed during a BAT and can be used to establish a baseline level of fear and to assess treatment response [8].

Self-report scales

Standard self-report scales include both instruments to screen for various specific phobias and measures designed to assess the severity of particular phobias. The most common example of a screening measure for specific phobia is the Fear Survey Schedule (FSS-II) [13]. The FSS-II lists 51 objects and situations and instructs patients to rate each on a seven-point scale ranging from 0 (none) to 6 (terror). Although the FSS-II asks about fear of common specific phobia situations (eg, needles, heights), it also asks about fear of situations associated with social phobia (eg, speaking before a group) and agoraphobia (eg, crowded places), as well as situations that are not typically feared in any particular anxiety disorder (eg, life after death, not being a success, illness). In addition, research also has led to questions about whether scores on particular FSS items are predictive of actual fear of the situation [14]. Therefore, although the FSS-II is perhaps the best available screening measure for specific phobias, it has a number of limitations [12].

In addition to the FSS-II, there are a number of self-report scales designed to assess the severity of particular specific phobias. For some phobias (eg, spiders, blood-injection-injury, enclosed places, and dentists), there are several scales from which to choose, whereas for others (eg, driving, storms, and water), there are no published measures [7]. Self-report severity measures are ideal for assessing treatment outcome, and a review of available scales is available elsewhere [7,8].

Exposure-based Treatment

For most of the anxiety disorders, evidence-based treatments include a range of strategies in various combinations, including pharmacotherapy, exposure to feared situations, cognitive restructuring, relaxation training, and other approaches. However, in the case of specific phobias, there is general agreement that exposure-based treatments are the treatment of choice [4]. Numerous studies have shown exposure therapy to be effective for treating phobias of spiders [15–17], snakes [18], thunder and lightning [19], water [20], heights [21], flying [22,23], enclosed places [24], choking [25], dental treatments [26], and blood [27]. In fact, a single session of in vivo exposure lasting 2 to 3 hours has been shown to lead to clinically significant improvements in some phobias [15,23].

In a recent meta-analysis of the psychosocial treatments for specific phobia, Horowitz et al. [28] investigated 35 randomized clinical trials for specific phobia. Two primary conclusions were drawn from their findings. All psychosocial treatments were shown to significantly outperform wait-list control groups, and exposure-based treatments significantly outperformed all nonexposure treatments (eg, relaxation techniques, cognitive therapy, tension techniques) at both post-treatment and follow-up [28]. Together, these findings suggest that exposure-based treatments should be the treatment of choice for specific phobia; however, if a patient lacks the motivation or courage to complete exposures, other treatments may provide a suitable alternative.

Numerous studies have investigated variables thought to impact upon the effectiveness of exposure-based treatments for specific phobia, including the duration and frequency of exposure sessions, the context of exposure practices, the number of sessions, the degree of therapist involvement, the extent to which patients are distracted during exposures, as well as other variables. The remain-

der of this section reviews findings related to these and other factors that appear to affect outcome of exposure therapy for specific phobias.

Duration, frequency, format, and context of exposure
Based on findings from research on agoraphobia, longer sessions (eg, a single 2-hour practice per day) are generally more effective than several shorter practices spread out over the course of an afternoon [29]. In addition, more frequent exposure practices (eg, daily sessions) are generally more effective than less frequent practices (eg, weekly sessions) [30]. Although some research suggests that spreading out sessions toward the end of treatment may lead to better outcomes [31], other studies have failed to replicate this finding [32]. Varying the context of exposure (eg, confronting dogs in several different places), as well as varying the stimuli used during practices (eg, confronting a variety of different dogs) appears to lead to better outcomes, particularly over the long term [33,34]. Although most treatment studies have been based on individual sessions, there is evidence supporting group treatments for specific phobia as well [35].

Degree of therapist involvement
The degree of therapist involvement has been shown to significantly affect treatment outcome. Öst et al. [17] randomly assigned individuals with spider phobias to either a single session of therapist-assisted exposure therapy or a self-directed exposure via self-help manual. The results demonstrated that the therapist-directed exposure performed significantly better than the self-directed exposure at reducing fear on self-report ratings, behavioral measures, and clinician ratings [17]. In fact, when stringent criteria for clinically significant improvement were applied, 71% of the therapist-guided exposure group and only 6% in the self-directed exposure group met those criteria. A follow-up study supported the findings for the therapist-guided exposure by demonstrating that it produced superior outcomes to three types of self-help manuals at both post-treatment and follow-up [36]. However, the study also found that self-directed exposures in the clinic evidenced clinically significant improvements in 63% of patients, vastly outperforming all self-directed exposures completed at home. More recently, research on exposure-based treatments demonstrated that computer-guided self-exposure worked just as well as therapist-guided exposure [37•]. Although the study did not include an extended follow-up assessment, these findings suggest that newer technologies may be used to administer the routine aspects of exposure therapy, thus saving clinicians valuable time and resources.

Effects of distraction on treatment outcome
Theoretical models of emotional processing suggest that because distraction can prevent fear from occurring during exposure to a fear stimulus, it should interfere with emotional processing of fear and with long-term treatment gains following exposure-based treatment [38]. However, the research on distraction and exposure-based treatment has produced mixed results, with some research suggesting distraction interferes with the effects of exposure [39] and other research suggesting that distraction has no effect on treatment outcome [15]. Although the effects of distraction on exposure remain unclear, most experts still suggest that patients not distract themselves during exposure practices [4].

Other Treatments

A number of alternative treatments for specific phobias have been developed over the past several years. Most of these therapies include variations of standard exposure-based treatments with the addition of some other component, such as cognitive restructuring, the use of technology for presenting exposure stimuli (eg, virtual reality [VR]), eye movements (eg, eye movement desensitization and reprocessing [EMDR]), and muscle tension exercises (eg, applied tension for blood or injection phobia). In addition, there are a small number of studies on pharmacotherapy for specific phobias.

Cognitive therapy
Several authors have investigated the potential benefits of adding cognitive strategies to exposure-based treatments for specific phobias [4]. As is the case in treatments of other anxiety disorders and depression, cognitive therapy for specific phobia focuses on helping the individual to identify and challenge distorted beliefs or thoughts in order to reduce anxiety and facilitate exposures. In a review of the literature, Craske and Rowe [40] presented several studies that compared exposure alone and a combination of exposure-based and cognitive therapies. In general, both treatments demonstrated significant fear reduction in patients who received treatment compared with those in control groups; however, there were no differences between the treatments at post-treatment and follow-up, suggesting that cognitive therapy adds little to the effectiveness of exposure for specific phobias. These findings parallel the results of a recent meta-analysis discussed previously [28].

VR
In recent years, researchers have applied VR technology to the treatment of specific phobias. These treatments involve exposing patients to their feared stimuli using computer-generated, interactive, virtual environments that the clinician can manipulate. Early research on VR treatments, consisting of case reports and other small studies, has yielded promising results, suggesting that VR treatment can be an effective intervention for certain specific phobias [12]. More recently, several randomized controlled studies have been conducted, indicating that

VR treatments are more effective than a wait-list control condition for height fears [41] and driving fears [42]. In addition, researchers have found VR treatments to be as effective as standard exposure-based treatments at post-treatment and at 12-month follow-up [43•]. Although not all studies have strongly supported the use of VR treatments, the majority of findings suggest that VR treatments can be used effectively to treat specific phobia.

EMDR

EMDR involves repeated and lengthy imagined confrontations with phobic stimuli while an external distracting stimulus is alternated bilaterally. In most studies, the external stimulus is the therapist's finger moving back and forth across the patient's visual field while the patient tracks the movement of the finger. However, some practitioners use other visual stimuli (eg, a moving light), auditory stimuli (eg, tones presented to alternating ears), or tactile stimuli (eg, tapping using alternating hands). Although most research on EMDR has been in the area of post-traumatic stress disorder, there have been a few studies of EMDR for specific phobias. Early EMDR research on specific phobias involved mostly small sample sizes and case studies. However, more recently, there have been at least two larger group studies providing partial support for EMDR's effectiveness in treating specific phobias [44,45]. However, these positive findings were primarily limited to subjective fear ratings rather than measures of avoidance or physiologic measures. In addition, some researchers have argued that the active component of EMDR is the imaginal exposure, pointing to findings that the imaginal exposure used during EMDR tends to be equally effective regardless of whether the eye movements are included [46].

Applied tension for blood and injection phobias

Because blood and injection phobias are often associated with fainting upon exposure to the phobic stimulus, exposure-based treatments for people with these phobias have been adapted to include exercises for preventing fainting during exposure practices. Applied tension involves teaching patients to tense the muscles of the body in order to increase blood pressure and reduce the likelihood of fainting when phobic stimuli are encountered. In a comparison of applied tension and exposure therapy, Öst et al. [47] showed that applied tension was significantly more effective than exposure alone in the treatment of individuals with these phobias. Given these findings, applied tension should be considered the treatment of choice for individuals with a history of fainting in the context of a blood or injection phobia.

Pharmacotherapy

Unlike in other anxiety disorders, limited research exists on the use of medications for treating specific phobias [4]. Studies with benzodiazepines have shown that adding medication to exposure therapy had no positive or negative effects on outcome [48,49]. Additional research has demonstrated that benzodiazepines reduce self-reported anxiety during an initial exposure; however, benzodiazepine treatment was associated with higher rates of relapse, whereas exposure-based treatment was associated with continued improvements [50]. There is almost no research on the use of antidepressants for reducing fear and avoidance in specific phobias. Together, these findings provide little support for the use of medications in the treatment of this disorder.

Future Directions

Although standard treatments and assessments for specific phobia are well established, there are a number of areas in which additional work is needed. First, as mentioned earlier, standard self-report scales exist only for a small number of specific phobias. There is a need for the development of new screening measures, as well as tools for assessing the severity of phobias of storms, driving, and animals other than spiders (especially dogs, cats, and birds).

In addition, there is a need to further study and refine VR and computer-assisted treatments for specific phobias. More studies are needed comparing VR treatments with in vivo, exposure-based treatments. In addition, the majority of the VR treatments include images that are cartoon-like. With advances in computer animation, improved graphics should become available in the next few years.

Finally, most of what we know about the treatment of specific phobias is based on a relatively small number of phobias. For example, a disproportionate number of studies have been conducted with spider phobias. It is important to replicate findings with other phobia types. For example, although it is well established that spider phobias (as well as a few other types) can be treated in a single session, little is known about whether single-session treatments are effective for most other phobias.

Conclusions

To date, specific phobias have received a great deal of attention in the literature. Assessment procedures have been developed to diagnose specific phobias and to identify key cognitions and behaviors related to the disorder. Although several types of assessment tools exist, a combination of behavioral, interview, and self-report measures is recommended. With respect to treatment, exposure therapy is generally considered to be the intervention of choice for specific phobia. Research has supported the use of exposure for a wide range of phobias, and for some types of phobia, treatment can be effective in as little as one session. In addition, the literature suggests that exposures should be frequent and prolonged, should occur in a number of different contexts and with a variety of exposure stimuli, and should be completed under the direction of a therapist. Newer technologies such as VR treatments

and computer-directed exposures have shown promise, but they will require additional study prior to replacing traditional exposure practices. For phobic stimuli that are difficult to reproduce in real life (eg, flying, storms), VR treatments are likely to provide a valuable alternative to in vivo procedures.

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