Chapter 2
Evidence-Based Assessment and Treatment of Specific Phobias in Adults

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Specific phobias are among the most common psychological problems (Kessler et al. 2005); however, specific phobias are seldom the primary reason that individuals seek treatment (Brown et al. 2001b). Because specific phobias are rarely the focus of clinical attention, there is a common—though in many cases mistaken—perception that specific phobias are straightforward and uncomplicated. In addition, because the fear associated with specific phobias is typically limited to the phobic stimuli and rarely associated with pervasive anxiety outside of the phobic situation, some believe that specific phobias are necessarily less severe than other anxiety disorders.

The clinical picture of specific phobias, however, can be very different. Individuals with specific phobias can incur serious life impairment, such as failure to obtain necessary medical care, interference with social activities, and lost time and reduced productivity at work. In some cases, the impairment is comparable to that seen in other mental disorders (Wittchen et al. 1998). In addition, phobias are sometimes associated with complex symptom profiles, including physiological symptoms, extensive coping and avoidance behaviors, and unhelpful or distorted cognitions. Therefore, a thorough assessment using multiple methods is important to evaluate the idiosyncrasies of each client's presentation. The purpose of this chapter is to review the elements of a comprehensive, evidence-based assessment and treatment plan for specific phobia. It will provide an overview of diagnostic and clinical features of specific phobia, review the empirical status of commonly used assessment and treatment methods, and conclude with recommendations for assessment and intervention.

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Assessment of Specific Phobia

The primary purposes of the clinical assessment of specific phobias are to establish a diagnosis, formulate a case conceptualization and treatment plan, and evaluate treatment progress and outcome. However, the diagnosis of specific phobias can be challenging. Specific phobias are frequently comorbid with other anxiety disorders and often share many features. In one study, 27% of patients presenting with a current principal diagnosis of specific phobia also reported symptoms consistent with another anxiety disorder (Brown et al. 2001b), and diagnostic disagreement is not uncommon for disorders that share features, such as specific phobia and panic disorder with agoraphobia (Brown et al. 2001a). Therefore, a thorough understanding of diagnostic criteria and potential sources of diagnostic error are required for an accurate assessment. Although no formalized protocols have been established for an evidence-based assessment of specific phobias, Antony and Rowa (2005) suggest that the core dimensions to be assessed should include diagnostic features, fear cues and triggers, avoidance and safety behaviors, physical symptoms, distress and impairment, development and course of the problem, treatment history, environmental or family factors, medical or health issues, and other comorbid problems or disorders.

Diagnosis

According to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association 2000), specific phobias are characterized by intense fear and avoidance of a circumscribed object or situation, such as flying, driving, heights, enclosed spaces, animals, injections, or blood. The fear reaction occurs in anticipation of or immediately upon encountering the feared stimulus and may escalate into a panic attack. In adults, the individual must recognize that the fear is excessive or irrational, the phobia must cause significant impairment in everyday functioning or be associated with distress about having the fear, and cannot be better accounted for by another mental disorder.

The *DSM-IV-TR* defines four main types of specific phobias based on the focus of apprehension: (a) *animal type*—for example, dogs, snakes, spiders, mice, birds, and insects; (b) *natural environment type*—fear is triggered by cues in the natural environment such as water, storms, or heights; (c) *blood-injection-injury type* (BII)—fear is cued by seeing blood, receiving an injection, or watching or receiving invasive dental or medical procedures; and (d) *situational type*—for example, flying, driving, tunnels, bridges, elevators, or enclosed spaces. A fifth category, *other type*, was also included to describe fears that do not fit into one of the other categories, such as fears of choking, vomiting, or contracting an illness.

Differential Diagnosis

Although most anxiety disorders are characterized by fear and avoidance of certain objects or situations, there are important differences that distinguish specific phobias from other anxiety disorders. Panic disorder with agoraphobia can be particularly difficult to distinguish from specific phobias. Situational and natural environment type phobias share many features with panic disorder, such as avoidance of similar types of situations, the presence of panic attacks, and fear of physical sensations of anxiety (Antony et al. 1997). To establish an appropriate diagnosis, it is important to determine the focus of apprehension (e.g., fear of crashing on an airplane vs. fear of having a panic attack on an airplane), the types of panic attacks experienced (e.g., expected vs. unexpected), and the range of situations associated with fear and avoidance.

Other disorders can be differentiated from specific phobia primarily based on the focus of apprehension and the presence of associated symptoms. Intense fear, panic attacks, and situational avoidance are common symptoms of posttraumatic stress disorder (PTSD). In PTSD, however, fear and avoidance develop following a life-threatening traumatic stressor and are associated with re-experiencing the traumatic event, emotional avoidance or numbing, and increased arousal. Other diagnoses to be ruled out include social phobia (i.e., the focus of fear is related to concerns about humiliation or embarrassment in social situations), obsessive-compulsive disorder (e.g., fear is associated with the content of obsessions, such as fear of dirt in those with contamination obsessions), hypochondriasis (i.e., fear of having a serious disease), and eating disorders (i.e., avoidance of food and cues related to concerns about body shape or weight). Phobic disorders can be differentiated from psychotic disorders by the presence of insight into the excessive or unreasonable nature of one's fear. Although some individuals with specific phobias have relatively poor insight into the irrationality of their fears (Menzies et al. 1998), to make a diagnosis of specific phobia, the individuals must be able to recognize that their fear is out of proportion to the actual danger posed by the feared object or situation.

The most common source of diagnostic unreliability with specific phobia is in determining whether the fear exceeds the clinical threshold for diagnosis (Brown et al. 2001a). Many people report mild fear of particular objects or situations, or report intense fear of circumscribed situations that does not interfere with daily functioning. A *DSM-IV-TR* diagnosis of specific phobia is warranted only if the individual reports significant distress about having the fear or clinically significant impairment in social, occupational, or other important areas of functioning.

Assessment of Associated Features

Cognitions

Several studies have implicated cognitive variables, such as anxious beliefs, predictions, and expectations, in the maintenance of specific phobias. Individuals with specific phobias exhibit biased information processing, such as attentional and

interpretive biases for threat-relevant information. For example, compared to non-phobic controls, individuals with specific phobias tend to show enhanced attention for fear-relevant information (Mogg and Bradley 2006) and to misinterpret ambiguous stimuli as threatening (Kolassa et al. 2007). Consequently, these cognitive biases are thought to inflate expectations of the probability and consequences of harm. For example, Jones and Menzies (2000) found that spider-fearful individuals overestimated the probability and consequences of being bitten, and these anxiety-provoking thoughts predicted avoidance. Similar cognitive distortions have been found in height phobias (Marshall et al. 1992), dental phobias (de Jongh et al. 1995), claustrophobia (Shafran et al. 1993), and other phobias (Menzies et al. 1998; Rachman and Cuk 1992). Identifying and monitoring the specific beliefs that may be maintaining the phobia provides targets for intervention and an important gauge of progress in treatment.

Escape, Avoidance, and Safety Behaviors

According to cognitive-behavioral models, avoidance behavior is one of the primary factors that maintains anxiety. Avoidance behavior can be overt, such as refusing to confront the feared object or situation, or escaping from a fearful situation. However, avoidance behaviors can also be subtle, such as using safety behaviors, distraction, or other maladaptive coping behaviors when in the feared situation. Safety behaviors are coping strategies that are intended to reduce one's anxiety and prevent some feared outcome from occurring (Salkovskis 1991). Common safety behaviors include alcohol and drug use to decrease anxiety in the feared situation, wearing heavy gloves or protective clothing in the basement or garden to prevent contact with spiders, cutting food into tiny pieces to prevent choking, or driving overly slowly or only on certain roads to avoid a car accident. For many people with specific phobias, a well-intentioned spouse, partner, or friend may assume responsibility for tasks that the individual fears, inadvertently enabling the individual's avoidance. Although avoidance behaviors may help to reduce fear in the short term, they are thought to maintain the disorder in the long term. This is because individuals may come to believe that the coping behavior was responsible for preventing the feared outcome or enabled them to manage their fear in the situation (e.g., "The spider didn't bite because I was wearing protective clothing," "I avoided an accident because I was driving cautiously."). However, this does little to change one's inaccurate beliefs about the dangerousness of the situation. Therefore, it is important for the clinician to identify avoidance and coping strategies that may inadvertently maintain the disorder. These can later be incorporated into a hierarchy for exposure practices, by gradually eliminating reliance on safety strategies as the treatment progresses.

Disgust

Disgust and sensitivity to disgust play a prominent role in some specific phobias, including emetophobia (van Overveld et al. 2008), BII phobias, and certain animal

phobias, such as those of spiders and snakes (Olatunji et al. 2010). Studies indicate that disgust and fear are independent emotions (Smits et al. 2002) that are elevated to a similar degree in those with spider phobias (Huijding and de Jong 2007; van Overveld et al. 2006a). Among those with BII phobias, disgust, rather than fear, appears to be the more dominant emotional response (Sawchuk et al. 2002). Further, disgust sensitivity has been found to mediate the relationship between contamination fear and avoidance as well as between contamination beliefs and self-reported fear during a behavioral approach test (BAT; Olatunji and Deacon 2008), suggesting that avoidance is motivated by a desire to alleviate the sensation of disgust rather than to prevent harm. Importantly, although both fear and disgust decline with treatment, disgust appears to be more resistant to change and may require more extensive exposure treatment (Smits et al. 2002). Although the precise contribution of disgust to the etiology and maintenance of phobias is currently unknown, it is clear that disgust plays a central and unique role in some specific phobias.

Fear of Physical Sensations

In addition to apprehension about the feared object or situation, some specific phobias are also associated with fears of internal sensations. For example, individuals with claustrophobia report more fear of hyperventilation and other physical symptoms compared to people with animal phobias and nonphobic controls (Craske and Sipsas 1992). Lipsitz et al. (2002) found that the fears of individuals with BII phobias are primarily focused on feeling faint and other internal feelings such as disgust and revulsion. Similarly, Antony et al. (1997) found that individuals with height and BII phobias reported more fear of physical sensations during behavioral tasks compared to those with other phobias. In fact, some evidence indicates that exposure to interoceptive cues alone—in contrast to in vivo exposure in which the client is exposed to external stimuli—is effective in reducing negative cognitions and self-reported fear for some specific phobias (Shafran et al. 1993). Thus, assessing fear of internal sensations and choosing treatment strategies that incorporate interoceptive exposures may be important for clients whose phobia includes a significant degree of fear of physical symptoms.

Medical Complications

Some specific phobias may have negative health consequences that warrant medical attention. Individuals with BII or dental phobia may avoid necessary medical or dental treatments. Page (1994) described patients seeking treatment for a BII phobia that avoided seeking medical treatment for breast cancer, skin cancer, and HIV. Individuals with a fear of choking often avoid taking oral medications or eating certain foods that are perceived to be high risk, which can result in dangerous weight loss or malnutrition (McNally 1994).

There are also medical considerations in the treatment of patients with specific phobias. Some individuals with BII phobias experience a vasovagal fainting response, in which there is an initial increase in blood pressure followed by a rapid decrease in heart rate and blood pressure and, consequently, an increased likelihood of fainting (Page 1994). BII phobias are the only specific phobia type associated with a history of fainting (Antony et al. 1997), occurring in up to 75% of cases (American Psychiatric Association 2000). Assessing the patient's history of fainting is important for selecting treatment strategies, as specific techniques, such as applied tension, are unique to the treatment of BII phobias with a history of fainting. Examples of other medical conditions that may affect treatment include cardiac conditions that may make some symptom-induction exercises dangerous, medical conditions (e.g., epilepsy, neuropsychological impairment) that affect a driving phobic's ability to drive safely, or small veins that might make it difficult or painful to have blood drawn (Antony and Swinson 2000).

Skill Deficits

For some specific phobias, an assessment of skill deficits may provide useful clinical information regarding the onset or maintenance of the disorder. For example, some people with a specific phobia of driving may lack specific driving skills. Studies indicate that fearful drivers make a greater number of mistakes on standardized driving assessments compared to nonfearful controls (Taylor et al. 2007a), and elevated anxiety tends to impair driving performance in some situations (Matthews 2001). For individuals who report actual or perceived skill deficits, a driving assessment and remedial driving instruction with a professional driving instructor may facilitate treatment. Other skills deficits that may affect treatment include the inability to swim in individuals with a fear of deep water, learning how to pet a dog without scaring it for those with a fear of dogs, or general deficits in problem-focused coping skills.

Development and Course of the Disorder

Although determining the cause of the disorder is not necessary to treat a specific phobia, it can be helpful to understand the factors that precipitated the onset of the disorder. At the very least, understanding the context in which the problem began may assist with differential diagnosis. For example, fear and avoidance that begin following a traumatic or life-threatening event may be better accounted for by a diagnosis of PTSD rather than specific phobia. Similarly, if the fear developed following an unexpected panic attack, then panic disorder with agoraphobia may need to be ruled out.

The development of specific phobias is thought to result from a complex interaction of biological, psychological, and social learning factors; however, it is somewhat common for individuals to identify a traumatic or stressful encounter that precipitated the onset of their fear (for a review, see McCabe and Antony 2008).

Understanding the context in which the fear began may provide useful information about factors that trigger or increase the client's fear, as well as situations that may continue to be avoided. These variables can then be addressed in treatment, possibly by incorporating these elements into the exposure hierarchy.

Understanding the course of the disorder is useful for interpreting changes that occur in treatment. If the client's symptoms have been persistent and stable since the onset of the disorder—provided that other variables have remained constant—changes in symptoms can confidently be attributed to the treatment. On the other hand, for individuals whose symptoms tend to fluctuate over time, a more thorough assessment of factors that precipitate or interfere with symptom change, such as life stressors or comorbid physical or psychological conditions, may be helpful. Regularly tracking these variables throughout treatment is essential to demonstrate that observed changes are the result of treatment, particularly for individuals who may be discouraged by past treatment failures or have developed expectations that their symptoms will return.

Review of Assessment Strategies for Specific Phobia

To examine the diagnostic and associated features described earlier, a comprehensive assessment should include a broad range of strategies, including a clinical interview, behavioral assessment, and self-report measures. Although psychophysiological measures, such as skin conductance, heart and respiration rate, and muscle activity, are frequently used in academic and research contexts, they are rarely used in clinical practice. There are several reasons for this. First, there can be considerable cost and training investments required for physiological measuring equipment. Second, interpreting the various physiological indices can be difficult because no clinical cutoffs or guidelines exist. Also, arousal is influenced by many different variables and is not specific to the clinical situation. Finally, changes in physiological measures do not consistently correspond with changes in fear (Craske et al. 2008). However, in some cases, measuring aspects of physiological arousal (e.g., heart rate), can be clinically useful. In this section, the features and psychometric properties of key assessment measures for specific phobias are reviewed, including clinical interviews, behavioral measures, and self-report scales. A more comprehensive review of assessment strategies and instruments can be found elsewhere (e.g., Antony et al. 2001; McCabe et al. 2010).

Clinical Interviews

The clinical interview is the most commonly used method of assessment for specific phobias. In addition to establishing a diagnosis, the interview also allows for a comprehensive evaluation of the idiographic nature of the individual's experience,

including cognitive, behavioral, and other associated features. The clinical interviews are differentiated by their degree of structure, with unstructured, or traditional, interviews having the most variability in terms of the content, format, and progression of questions asked. Although unstructured interviews are often used in clinical practice, their inherent flexibility and lack of standardization compromises diagnostic reliability and validity (Miller et al. 2001). On the other hand, fully structured interviews are also not ideal for clinical research settings because they restrict the extent to which clinicians can clarify the meaning of questions and follow up on responses that are unclear. Semistructured interviews are the most commonly used interviews in clinical research settings because they ensure that symptoms are assessed in a structured, standardized way, while still allowing some flexibility. Some popular semistructured interviews for diagnosing anxiety disorders include the *Structured Clinical Interview for DSM-IV* (SCID-IV; First et al. 2007), the *Anxiety Disorders Interview Schedule for DSM-IV* (ADIS-IV; Brown et al. 1994), and the *Mini International Neuropsychiatric Interview* (MINI; Sheehan et al. 1998). Detailed descriptions of these and other measures, as well as their relative strengths and weaknesses, can be found elsewhere (Summerfeldt et al. 2010).

Self-Report Measures

Because of the heterogeneity of specific phobias, self-report measures are typically designed to assess one particular type of phobia (e.g., fear of spiders, enclosed spaces, driving), and often only one aspect of the phobia, such as behaviors or cognitions. However, there are a few self-report measures that are intended to screen for symptoms of phobic disorders. The Fear Survey Schedule (FSS-III; Wolpe and Lang 1977) asks clients to rate the intensity of their distress associated with 108 commonly feared objects or situations. Although frequently used to screen for specific phobias, the FSS is not ideal for this purpose. The list includes items related to *DSM-IV* specific phobias (e.g., heights, receiving injections, dogs), as well as questions not associated with the diagnostic criteria, such as fear of angry people, being criticized, crowds, and open spaces. Further, studies indicate that the FSS is unable to discriminate between individuals with a specific phobia and nonfearful controls on behavioral tasks (Klieger and Franklin 1993) nor does it discriminate among anxiety diagnoses, particularly for those with a specific phobia (Beck et al. 1998). A more recently developed measure, the Phobic Stimuli Response Scales (PSRS; Cutshall and Watson 2004), is a 46-item self-report questionnaire that is designed to assess the cognitive and emotional aspects of five types of fears: social, animal, physical confinement, bodily harm, and blood-injection fears. Although potentially useful to identify broad areas of concern, the PSRS has limited utility as a screening measure for specific phobias. The scales are intended to assess the underlying focus of the client's fear; thus, the content of items on each scale are heterogeneous and do not correspond to the *DSM-IV* specific phobia subtypes. For example, the bodily harm subscale contains items reflecting natural environment type phobias (e.g., "I get

nervous during thunderstorms") as well as fears of illness and death (e.g., "I fear that I will be diagnosed with cancer"). Further, although initial psychometric data with an undergraduate sample looked promising, the scale has yet to be validated with a clinical population. Thus, screening measures, such as the FSS-III and the PSRS, may be useful to orient the clinician to potential areas of concern if administered prior to the assessment; however, they are of little use in identifying or monitoring change in symptoms of specific phobias.

Self-report measures are best incorporated into an assessment protocol to direct the clinician's attention to areas that may require further evaluation in the interview, to provide additional information about the features of the client's phobia, and as indices of symptom change throughout treatment. There are several available instruments for assessing specific phobias, including phobias of spiders, heights, enclosed spaces, and BII-related stimuli, though relatively few scales are available for other types of phobias (e.g., other animals or natural environment phobias). Although space constraints do not allow for a comprehensive review of all available self-report instruments and their psychometric properties, Table 2.1 provides a summary of some of the most widely used measures. For a more thorough review and copies of many of the instruments, see Antony et al. (2001).

As part of a comprehensive assessment, self-report questionnaires can also provide valuable information about other dimensions of specific phobias. As reviewed earlier, disgust and disgust sensitivity are key features of BII and some animal phobias, in some cases, to a greater degree than fear. The *Disgust Scale* (DS; Haidt et al. 1994) is the most widely used measure of disgust sensitivity. The original DS is a 32-item scale that assesses sensitivity to seven domains of disgust-eliciting stimuli (i.e., food, animals, body products, sex, body envelope violations, death, and hygiene), though refinements to the scale have been recommended which indicate that a three factor solution (core disgust, animal reminder disgust, and contamination-based disgust) greatly improves the psychometric properties of the scale (Olatunji et al. 2007). The *Disgust Propensity and Sensitivity Scale-Revised* (DPSS-R; van Overveld et al. 2006b) is a 16-item scale that measures the separate but related constructs of disgust propensity, or how quickly one experiences disgust, and disgust sensitivity, how negatively the disgust is experienced. Unlike other measures, the DPSS-R does not assess disgust in relation to specific stimuli that may elicit disgust; thus, the scale is thought to be a context-free measure of the construct for use across disorders. As our understanding of the nature of disgust and its role in psychopathology becomes more refined, the DPSS-R may be a valuable assessment instrument in research and clinical practice; however, further psychometric evaluation of the scale with clinical samples is required. A review of self-report measures and assessment strategies for disgust sensitivity can be found in Olatunji and Cisler (2009).

Given that many specific phobias are associated with fear of physical sensations, it may be helpful to incorporate questionnaires that assess fear of anxiety-related symptoms. The most widely used of these is the *Anxiety Sensitivity Index* (ASI; Peterson and Reiss 1993). The ASI is a 16-item scale that measures anxiety sensitivity or fear of anxiety-related sensations. A revision to the ASI, the ASI-3 (Taylor et al. 2007b), is a more psychometrically sound measure of the three independent facets of anxiety sensitivity: physical, social, and cognitive concerns.

Table 2.1 Selected self-report instruments for assessing specific phobias by phobia type. (Reprinted with permission from McCabe et al. 2010)

Measure	Purpose	Number of items	Approx. completion time (minutes)	Psychometric properties
Animal type				
Fear of Spiders Questionnaire (FSQ; Szymanski and O'Donohue 1995)	Measures severity of spider phobia	18	5	Good reliability and validity; may be a more sensitive measure for assessing fear in the nonphobic range; treatment sensitivity documented
Snake Questionnaire (SNAQ; Klorman et al. 1974)	Assesses the verbal-cognitive component of snake fear	30	5	Good reliability and support for validity; however, may yield false positives; demonstrated treatment sensitivity
Spider Phobia Beliefs Questionnaire (SBQ; Arntz et al. 1993)	Assesses fearful beliefs about spiders and reactions to seeing spiders	78	10–15	Good reliability and validity; established treatment sensitivity
Spider Questionnaire (SPQ; Klorman et al. 1974)	Assesses the verbal-cognitive component of spider fear	31	5	Reliability moderate to good; established validity; demonstrated treatment sensitivity
Watts and Sharrock Spider Phobia Questionnaire (WS-SPQ; Watts and Sharrock 1984)	Assesses vigilance, preoccupation, and avoidance of spiders	43	5	Preliminary reliability and validity data promising; treatment sensitivity reported
Natural environment type				
Acrophobia Questionnaire (AQ; Cohen 1977)	Assesses the severity of anxiety and avoidance related to situations involving common heights	40	5	Adequate reliability and validity; sensitivity to treatment effects established
Blood-injection-injury type				
Dental Anxiety Inventory (DAI; Stouthard et al. 1993)	Measures the severity of dental anxiety	36	5–10	Good reliability and validity
Dental Anxiety Scale-Revised (DAS-R; Ronis 1994)	Measures the severity of trait dental anxiety	4	1–2	Good reliability and validity

Table 2.1 (Continued)

Measure	Purpose	Number of items	Approx. completion time (minutes)	Psychometric properties
Dental Cognitions Questionnaire (DCQ; de Jong et al. 1995)	Assesses negative cognitions associated with dental treatment	38	5–7	Good reliability and validity; treatment sensitivity established
Dental Fear Survey (DFS; Kleinknecht et al. 1973)	Measures fear of dental stimuli, dental avoidance, and physiological symptoms during dental treatment	20	2–5	Established reliability and validity; treatment sensitivity documented
Medical Fear Survey (MFS; Kleinknecht et al. 1996)	Assesses five dimensions of medically related fear, including injections and blood draws, sharp objects, examinations, and mutilation	50	5	Preliminary data are promising; lack of norms for clinically diagnosed individuals with BII phobias
Mutilation Questionnaire (MQ; Klorman et al. 1974)	Measures the verbal-cognitive features of mutilation and blood/injury fear	30	5	Reliability fair to good; established validity; demonstrated treatment sensitivity
Situational type				
Claustrophobia General Cognitions Questionnaire (CGCQ; Febbraro and Clum 1995)	Assesses thoughts associated with claustrophobic situations	26	5	Preliminary data promising; no data available on convergent or discriminant validity
Claustrophobia Questionnaire (CLQ; Radomsky et al. 2001)	Measures claustrophobia, including fear of suffocation and restriction	26	5	Good data supporting reliability and validity
Claustrophobia Situations Questionnaire (CSQ; Febbraro and Clum 1995)	Assesses anxiety and avoidance associated with specific claustrophobic situations	42	5–10	Preliminary data promising; no data available on convergent or discriminant validity
Claustrophobia Scale (CS; Öst 2006)	Measures anxiety and avoidance of claustrophobic situations	20	5	Good data supporting the reliability, validity, and sensitivity to treatment changes

Table 2.1 (Continued)

Measure	Purpose	Number of items	Approx. completion time (minutes)	Psychometric properties
Driving Cognitions Questionnaire (DCQ; Ehlers et al. 2007)	Assesses driving-related concerns, including panic, accident, and social concerns	20	5–10	Good data supporting the reliability and validity
Fear of Flying Scale (FFS; Haug et al. 1987)	Assesses fear associated with different aspects of flying	21	5–10	No psychometric data available; treatment sensitivity documented
Other type				
Emetophobia Questionnaire (EQ; van Overveld et al. 2008)	Measures various aspects of emetophobia	115	60	No psychometric data available
Vomit Questionnaire (VQ; Veale and Lambrou 2006)	Measures various aspects of emetophobia	24–36 depending on version	10–30	No psychometric data available

Although limited psychometric data are available for the ASI-3, preliminary reliability and validity data are promising. Anxiety sensitivity is elevated among individuals with specific phobias compared to controls, particularly for physical concerns (e.g., fear of cardiovascular or gastrointestinal symptoms) rather than the fear of cognitive dyscontrol or social embarrassment (Olatunji and Wolitzky-Taylor 2009). As such, the ASI-3 may be more suitable for assessment of specific phobia compared to its predecessor which provides only a total score.

In summary, self-report instruments should be used to direct the clinician to potential areas of concern, supplement information obtained from other modes of assessment, and monitor symptom change throughout treatment. However, the information obtained from self-report measures should be interpreted cautiously in light of some potential limitations. For example, self-report measures do not always correlate highly with behavioral performance (Cohen 1977). Although self-report scales can provide a unique and rich source of clinical information, they should be used in combination with, not as a substitute for, other assessment strategies.

Behavioral Assessment

Behavioral assessment involves direct assessment of behavior in the phobic situation. Because most clients with specific phobias have a longstanding history of avoiding

the feared object or situation, they may have difficulty recalling specific details about the factors that affect their fear or overestimate the intensity of their fear in the situation. Thus, behavioral assessments provide objective data that may be less biased than self-reports about the variables associated with one's fear.

Examples of behavioral assessment strategies include the use of self-monitoring diaries as well as the BAT. Self-monitoring involves having clients observe and record encounters with their feared stimulus or situation and note specific variables of interest (e.g., fear cues, intensity of fear, thoughts, physical sensations, and coping strategies). Self-monitoring can be done with daily thought records, journals, or hand-held computers to record details of the encounter in, or close to, the moment. However, given the avoidance that characterizes most phobias, self-monitoring may be less useful as part of the initial evaluation and more helpful to monitor progress in treatment. The BAT involves having the client enter the feared situation and measuring the client's response. BATs provide information about the details of the cues that elicit the client's fear and establish a baseline against which treatment response can be measured. Typically, the patients are asked to provide a subjective rating of the intensity of their fear at regular intervals throughout the BAT. The Subjective Units of Distress Scale (SUDS; Wolpe and Lazarus 1966) is commonly used for this purpose, to provide a quick verbal rating of subjective fear on a 100-point scale, where 100 represents the worst fear or distress that one can imagine, and 0 represents no fear at all. Other variables that can be assessed include the final proximity to the feared object, environmental and contextual variables (e.g., size, color, or movement of the stimulus, lighting or temperature in the room, access to windows or doors), physical sensations (e.g., heart pounding, sweating, shaking), thoughts (e.g., predictions, expectations, or observations), and coping strategies (e.g., escape, avoidance, safety behaviors). The clinician should be mindful of some potential limitations when using the BAT. For example, performance on behavioral tasks may be sensitive to demand characteristics, such that patients may underreport their fear or approach more closely than normal (Bernstein 1974). In addition, some BATs conducted in a clinical setting may not be representative of encounters with the feared object or situation in a naturalistic setting. To improve external validity, efforts should be made to make the approach task representative of the client's fear in everyday encounters. Ideally, this can be accomplished by working collaboratively with the client to create an individualized fear and avoidance hierarchy (see Chaps. 4 and 5). Despite these considerations, behavioral assessment is an important and valuable component of an evidence-based assessment for specific phobias.

Overview of Evidence-Based Treatment for Specific Phobia in Adults

Psychosocial interventions—and exposure-based treatments in particular—are considered the empirically-supported treatments of choice for specific phobia. The majority of individuals who receive a psychosocial treatment for their phobia show

robust improvements in their symptoms, often in as little as a single prolonged session of 2–3 hours (Choy et al. 2007; Wolitzky-Taylor et al. 2008; Zlomke and Davis 2008). In this section, treatment options for specific phobia are reviewed, including in vivo and other exposure-based treatments, cognitive therapy, and pharmacotherapy, including a brief description and evidence for treatment efficacy.

Exposure-Based Treatment

A substantial amount of evidence indicates that specific phobias are most effectively and efficiently treated with exposure-based treatments. Exposure therapy involves having the client repeatedly confront the feared object or situation in a systematic and controlled manner while preventing behavioral and cognitive avoidance. Depending on the focus of the client's fear, this can involve exposure to feared objects or situations, interoceptive cues (e.g., internal physical sensations), or a combination of both. Typically, physiological and subjective arousal decline throughout the session; however, this is not an essential component of therapy (Craske and Mystkowski 2006). Rather the goal of each session is that the patient remains in the situation for a sufficient duration to learn that the feared consequences do not occur and that they can tolerate the fear and anxiety. Compared to placebo and control conditions, without exception, in vivo exposure produce significantly greater improvements in subjective anxiety, negative cognitions, and behavioral avoidance for most types of specific phobia (see Choy et al. 2007). Further, in vivo exposure typically outperforms other active treatments including imaginal exposure, relaxation, and cognitive therapy (Wolitzky-Taylor et al. 2008).

Attention to the factors that influence treatment outcome is critical to improve the efficiency and maximize outcome of exposure therapy. For example, therapist-assisted exposure seems to be more effective than self-directed exposure for long-term symptom reduction (Hellström and Öst 1995). However, self-help and self-administered therapies can be equally effective, provided that regular exposure practices are a central part of the protocol, though some clients may benefit from the structure provided by therapist contact (Newman et al. 2003). Although the data are mixed regarding the optimal spacing of sessions, exposure seems to work best when practices are spaced close together, perhaps expanding the spacing of sessions as treatment progresses (see Craske and Mystkowski 2006). However, some people respond very well to a single prolonged exposure session. The essential component, it seems, is that the client has enough time to consolidate the extinction learning that occurs across sessions, either within a single day or distributed across several days (Moscovitch et al. 2009).

The pacing of exposure within sessions appears to be less critical to treatment outcomes. While moderate intensity fear during exposure practices is thought to be necessary for extinction learning to occur, there is no evidence that either flooding or gradual exposure is more effective (Craske et al. 2008). However, progressive exposures are generally more tolerable, and may, therefore, be useful for clients who

express reluctance to engage in exposures, are at risk of dropping out, or who report a high baseline of fear. The duration of exposure practices should also not be fixed but should last as long it takes to disconfirm the individual's fear. This may be facilitated by enhancing attention to exposure-based learning by minimizing distraction or eliminating safety behaviors. However, evidence regarding the effects of distraction and safety behaviors is mixed. Although some studies indicate that focused attention and limited use of safety behaviors improves fear reduction (e.g., Sloan and Telch 2002), other studies have found such strategies do not have a detrimental effect on treatment outcomes and may, in fact, facilitate exposure (e.g., Johnstone and Page 2004; Milosevic and Radomsky 2008). Some have suggested that the judicious use of safety behaviors may be particularly helpful in the early stages of treatment, especially for those with more severe fears, to increase the tolerability of exposure practices and reduce client dropout (Rachman et al. 2008); however, these distinctions have yet to be supported by research (Deacon et al. 2010). Again, what appears to be essential is that cognitive change occurs in the presence of the feared stimuli.

Finally, maximizing extinction learning often requires changing the variables of the exposure, such as the context and stimulus. Extinction learning is highly context-dependent; that is, new learning that occurs during exposure may fail to generalize outside the treatment context (Bouton 2002). Thus, multiple exposures should be conducted in different settings using varied stimuli (e.g., spiders of different sizes, shapes, and activity levels) to improve the durability and generalizability of treatment gains to real world encounters (Rowe and Craske 1998).

Variations of In Vivo Exposure Therapy

Virtual Reality Exposure Therapy

Virtual reality (VR) and computer-assisted exposure therapy are increasingly being used to expose patients to simulated situations that are difficult to replicate in the clinician's office. Controlled studies have found large effect sizes for VR exposure compared to waitlist control groups and, in some studies, the effect sizes for VR are equivalent to in vivo exposure for acrophobia, flying phobia, and others (see Parsons and Rizzo 2008).

Although studies of the effectiveness of VR exposure are promising, preliminary evidence suggests that the true benefit of VR may not be its superior efficacy, but rather the greater tolerability of exposure to virtual rather than actual stimuli. In one study, when given the choice, 76% of participants preferred VR over in vivo exposure and only 3% refused treatment with VR compared to a 27% refusal rate in the in vivo condition (Garcia-Palacios et al. 2007). Thus, VR may be particularly appealing for people with specific phobias as it reduces the anticipatory anxiety associated with confronting the feared stimulus. Future research needs to explore the boundaries of VR, as convincing evidence from well controlled studies exists only for the use of VR for flying and height phobias, and many of the published studies

to date suffer from methodological limitations (e.g., small sample sizes, allegiance effects, narrowly selected outcome measures). In addition, relatively little research has examined potential moderators of VR effectiveness, such as level of immersion in the virtual environment, individual differences (e.g., distractibility, hypnotizabilty), or type of VR environment that may clarify who would benefit most from VR. Please see Chap. 12 for a more detailed discussion of technological advances for the treatment of specific phobia.

Eye Movement Desensitization and Reprocessing (EMDR)

EMDR (Shapiro 1995), originally developed for the treatment of PTSD, has been adapted for the treatment of specific phobias. The aim is to process cognitions related to an anxiety-provoking or traumatic event and decondition the client's fear of the conditioned stimulus. The adapted protocol for specific phobias consists of brief imaginal exposures to the feared object or situation while the client engages in rapid eye movements guided by the clinician. There have been few methodologically rigorous studies of EMDR for the treatment of specific phobias; however, the limited number of randomized controlled trials and case studies indicates that there is some empirical support for the use of EMDR, although the EMDR seems less effective than in vivo exposure (de Jongh and ten Broeke 2009). Some have suggested that the fear reduction associated with EMDR can be attributed to the imaginal exposure alone and not to the incremental effect of adding eye movements (Davidson and Parker 2001). This argument is particularly salient in the application of EMDR for specific phobias, given the central role of imaginal exposure and the de-emphasis of other techniques in standard EMDR for PTSD. The authors de Jongh et al. (1999) have argued that EMDR may be more effective in treating phobias that developed following a traumatic experience, or in situations in which in vivo exposure may be impractical or inefficient (e.g., fear of storms, flying, or painful medical procedures). In these cases, however, alternative clinical strategies, such as VR or imaginal exposure alone would satisfy these concerns as well. Given the limited evidence for the efficacy, unique properties, or clinical utility of EMDR over in vivo exposure, EMDR cannot be considered a credible alternative to in vivo exposure at this time.

Applied Tension (AT) and Applied Relaxation (AR)

The AT and AR treatments are variations of standard in vivo exposure intended to counteract the vasovagal fainting response that is unique to BII phobias. In AT, the clients are instructed to tense all the muscles of their body while being exposed to phobic stimuli (see Chap. 4 for more information). Muscle contractions elevate blood pressure, which is thought to reduce the likelihood of fainting in response to BII stimuli. AR involves teaching the client to use progressive muscle relaxation, alternately tensing and releasing specific muscle groups, in the context of gradual exposure to the feared stimulus. The only study to compare AR to standard exposure for BII

phobia found that exposure alone was superior to AR at posttreatment but the groups were equivalent at a 6-month follow-up session (Öst et al. 1984). In contrast, several studies have demonstrated that AT is at least as effective as exposure alone for the treatment of BII phobias; indeed, across controlled studies, 60–100% of individuals who received AT reported clinically significant improvements up to 1 year following treatment (Ayala et al. 2009). In fact, Öst et al. (1991) found that tension alone, even in the absence of prolonged exposure to phobic stimuli, resulted in substantial and sustained improvements in phobic symptoms, and outperformed exposure alone on behavioral tasks. However, even though AT is intended to circumvent the fainting response in BII, the individuals with and without a history of fainting respond similarly on physiological and other indices of phobic symptoms (Ayala et al. 2009). Thus, AT is highly recommended for the treatment of BII phobias, although not specifically for those with a history of fainting.

Cognitive Therapy

Given the importance of cognitions in the maintenance of specific phobia (Thorpe and Salkovskis 1995), cognitive therapy (CT), either alone or in combination with exposure, has been considered as a potential treatment option. CT involves challenging one's beliefs, expectations, or predictions about the likelihood or consequences of harm related to encountering the feared object or situation in order to reduce anxiety and avoidance behavior. Studies regarding the efficacy of CT for specific phobias are mixed; however, in general, CT appears to be more effective than no treatment or waitlist controls in reducing self-reported fear and avoidance, but less effective than in vivo exposure (Craske and Rowe 1997). As an adjunctive treatment, cognitive strategies may enhance the effects of exposure for some individuals, particularly in the treatment of claustrophobia (Booth and Rachman 1992). However, a recent review (Choy et al. 2007) and a meta-analysis (Wolitzky-Taylor et al. 2008) both concluded that the use of cognitive strategies provides little added benefit over and above exposure alone. This may be because in vivo exposure is a particularly powerful form of learning in which maladaptive beliefs are modified without the need for additional or alternative strategies that directly target such beliefs. This would suggest that although cognitive therapy is highly effective for other anxiety disorders, it is not the treatment of choice for specific phobias.

Pharmacotherapy

Anxiolytic medications are often prescribed for the acute treatment of specific phobias; however, the few studies that have examined the efficacy of pharmacological treatments for specific phobias do not support their use. Some evidence indicates that

the use of benzodiazepines reduces subjective and physiological symptoms of anxiety during exposure compared to placebo but, in contrast to behavioral treatments, results in greater relapse at followup (Choy et al. 2007). Some have explained this effect by suggesting that the clients attribute treatment gains to the use of the medication, and therefore relapse is common upon discontinuation, whereas others propose that extinction learning while taking anxiolytics creates an internal state in the presence of the feared stimulus that does not generalize to other contexts (Moscovitch et al. 2009). The two randomized, controlled trials that have examined the use of antidepressant medication (escitalopram, paroxetine) for specific phobia both produced only modest treatment gains compared to placebo and did not include a follow-up period (Almay et al. 2008; Benjamin et al. 2000). Thus, there appears to be little benefit of pharmacological treatments, either alone or in combination with psychosocial interventions, for the treatment of specific phobias.

An exception to this appears to be the use of d-cycloserine (DCS), a partial agonist of the N-methyl-D-aspartate (NMDA) glutamatergic receptor, which has been shown in several animal and human clinical studies to accelerate fear reduction during exposure (Norberg et al. 2008). DCS has no anxiolytic properties, but rather facilitates memory consolidation that takes place in the posttreatment period. The use of DCS as an adjunct to exposure for acrophobia has been shown to produce greater improvements on cognitive, subjective, and behavioral outcome measures compared to placebo, and the effects do not appear to be dose dependent (Ressler et al. 2004). Importantly, in the Ressler and colleagues study, gains were maintained and generalized to the real world environment at 1-week and 3-month followup when tested in the absence of the drug.

While these results are encouraging, the only other study that has examined the use of DCS as an adjunctive treatment for specific phobias was conducted with a nonclinical sample (Guastella et al. 2007). Nevertheless, similarly positive results have been found when DCS was used to augment exposure treatment for several other anxiety disorders (see Norberg et al. 2008). Although much more work is needed with larger samples and for a variety of other phobias, DCS appears to be a promising pharmacological approach to facilitate the effects of behavioral treatments.

Evidence-Based Recommendations for Assessment and Intervention with Adults

The initial assessment is arguably the most critical component of an evidence-based approach to the treatment of specific phobias. Without a precise conceptualization of the idiosyncrasies of the client's fear, including the focus of the fear, triggers and cues, anticipated consequences of confronting the feared stimuli, and avoidance and safety behaviors, the treatment is unlikely to target the key elements maintaining the individual's phobia and the fear is likely to persist. A comprehensive, multimodal assessment is recommended to generate a thorough case conceptualization, identify any factors that may facilitate or complicate treatment, and to establish a baseline from

which to measure treatment effectiveness. This ideally includes a semi-structured clinical interview, self-report measures, and a behavioral assessment.

The initial assessment should also include prioritizing and selecting goals for treatment. In cases where the client reports more than one problem, typically the most distressing or impairing problem should be addressed first; however, the process of setting goals and prioritizing treatment targets should be done collaboratively with the client. This will increase rapport and compliance, and therefore possibly improve the treatment outcomes. Priority should be given to addressing problems that put the client's health at risk, such as when necessary medical or dental treatments are being avoided.

Data gathered from the assessment should be used to develop an individualized treatment plan. It is generally accepted that pharmacotherapy is not a necessary or appropriate treatment for specific phobias, but rather psychological treatments that incorporate exposure to the feared object or situation are the empirically supported treatment of choice for most specific phobias. While in vivo exposure should provide the foundation for treatment sessions, additional elements such as applied tension for BII phobias or symptom induction exercises for those whose phobia includes a fear of internal physical sensations can be added as needed. Treatment should begin with socializing the client to treatment, emphasizing that the goal of treatment is not to completely eliminate anxiety but to minimize the associated distress and avoidance through systematically confronting the feared stimuli. This will allow the therapist to identify issues of motivation or compliance that can be accounted for in the treatment plan and monitored throughout. The use of self-report measures, such as SUDS ratings and questionnaire-based measures, should be collected in the initial assessment and can be incorporated throughout treatment to track session by session change. A posttreatment assessment, including a clinical interview and BAT, can provide an objective measure of treatment outcome and provide reassurance to the client about the likelihood of continuing to make gains once therapy is over.

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