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Thompson E. Davis III
Thomas H. Ollendick
Lars-Göran Öst *Editors*

Intensive One-Session Treatment of Specific Phobias

Springer

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Series Editor
Johnny L. Matson
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

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Lars-Göran Öst
Editors

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Editors
Thompson E. Davis III
Department of Psychology
Louisiana State University
Baton Rouge, LA
USA

Lars-Göran Öst
Department of Psychology
Stockholm University
Stockholm
Sweden

Thomas H. Ollendick
Virginia Tech
Child Study Center
Blacksburg, VA
USA

ISBN 978-1-4614-3252-4 ISBN 978-1-4614-3253-1 (eBook)
DOI 10.1007/978-1-4614-3253-1
Springer New York Dordrecht Heidelberg London

Library of Congress Control Number: 2012935375

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

Specific phobias are one of the most common mental health problems included in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR* 2000). Estimates suggest the lifetime prevalence of specific phobia may be as high as 12.5% (Kessler et al. 2005). While treatments for specific phobia have existed for decades, behavior and cognitive-behavioral therapies (CBT) have become the preferred treatments over the last 20 years. Of these interventions for specific phobia, one-session treatment (OST; Öst 1987, 1997) in particular has emerged as the intervention of choice when working with adults, adolescents, or children with any of a variety of specific phobias. Moreover, OST has been highly recommended as the evidence-based treatment of choice for training beginning novice therapists or training those new to CBT by a past president of the Association for Behavioral and Cognitive Therapies (ABCT; Albano 2009). The purpose of this edited volume is to summarize the current information on specific phobias and on treating these disorders with OST—an intensive, exposure-based CBT.

Organization of the Book

In editing and writing this book, we have tried to create a volume that would be useful to clinical and academic professionals alike. This book is designed to be a resource for both practitioners serving clients (as a treatment reference or manual) and for researchers and educators (as a training volume). As a result, we have chosen to divide this volume into three broad parts. Each of the chapters can be read and reviewed individually to gain or refresh information in a specific area, or the entire volume can be reviewed collectively to cover many of the topics important to providing CBT for specific phobia. Part I focuses on providing a broad background on specific phobia psychopathology and its assessment and evidence-based treatment in both adults and children. Following this review, Part II provides an in-depth instruction on preparing for, conducting, and evaluating OST. Finally, Part III covers a variety of topics that may be of interest to those conducting exposure therapy for specific phobias including a guide to training others to conduct OST, ethical issues when using exposure therapy,

providing treatment to those with intellectual and/or developmental disabilities, the current evidence for the use of OST, and current and future technological advances with exposure therapies.

The Development and History of OST

In the 1970s, behavior therapists were treating specific phobias like any other type of phobia (i.e., with 1-hour weekly sessions for the number of weeks necessary, usually 8–10 or more). After having undertaken a couple of randomized clinical trials (RCTs) on spider and snake phobia using this length of treatment, one of us (Öst) decided to try a more intensive approach. Accordingly, he asked a patient if she would like to be treated during one prolonged session, up to 3 continuous hours during a morning or an afternoon. The first patient (having spider phobia) was very positive and wanted to have the OST, and the treatment was successful, taking 2.5 hours. That experience encouraged Öst to collect a clinical series of 20 specific phobia patients, which took about 4 years, since specific phobics rarely applied for treatment those days. When these patients were followed-up 90% were much improved or completely recovered (Öst 1989). Öst then decided the time was ripe for a true clinical trial on the OST and the first study was completed in collaboration with Paul Salkovskis in Oxford on spider phobia (Öst et al. 1991). Since then Öst et al. have carried out a large number of RCTs on the treatment. However, an even larger number of RCTs have been done by researchers in Norway, England, Holland, Belgium, Germany, Austria, USA, Canada, and Australia. They have achieved treatment effects on a par with those in the earlier studies. This means that OST is a treatment method that can be disseminated to therapists in other countries and is not dependent on the originator in order to achieve good effects—a true characteristic of an evidence-based treatment.

Evidence-Base and Summary

Indeed, the evidence-base for OST is very strong. With more than 20 years of study documenting the efficacy of OST with adults and children, it comes as no surprise that the research has elevated OST to the ranks of "empirically-supported treatment." Impressively too, these treatment effects are long-lasting—with most patients maintaining improvements or continuing to show further improvement at 1-year and greater follow-ups. Moreover, the treatment's 3-hour format offers a unique and timely benefit: a cost-effective, brief approach to treating one of the most common mental health issues, specific phobia.

Thompson E. Davis III
Thomas H. Ollendick
Lars-Göran Öst

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Acknowledgements

The extensive contributions of many others to a project such as this cannot be emphasized enough. Foremost, this volume was made possible through considerable clinical research and clinical practice from many of our professional colleagues. Our utmost respect and appreciation also goes out to the many adults, adolescents, children, and parents who have generously given of their time and patience by participating in clinical case studies, randomized clinical trials, and basic research to allow us to further understand, assess, and treat specific phobias and other anxiety disorders. We would also like to extend a special thanks to all our authors for their time, expertise, and contributions to this volume. Without them, the volume would be thin indeed. Moreover, this volume would not be possible without the good assistance of Judy Jones and all of the staff at Springer—we are very grateful for their support and guidance.

Finally, we would like to extend special thanks to our families, friends, and loved ones. I (Tom Davis) would like to offer my sincerest gratitude and appreciation to my family and friends. In particular, I owe a great deal to Tom Ollendick and Lars-Göran Öst as early supervisors, mentors, colleagues and collaborators, and, now, co-editors. Special thanks also go to Johnny L. Matson for his mentorship at LSU. Finally, I would like to thank my wife and best friend, Allison. Her patience, kindness, encouragement, and love while I have worked on this project and others through the years have been instrumental in the development of my career and my person.

I (Tom Ollendick) wish to give thanks to my former student and now highly valued colleague, Tom Davis, who planted the seed for this project and to my long-time good friend and esteemed colleague, Lars-Göran Öst, for introducing me to OST and all of its intricacies. This has been a fun project and one that would not have been realized without both of them at the helm. I also wish to thank my wife, Mary, our daughters, Laurie Kristine and Kathleen Marie, and now our grandchildren, Braden Thomas, Ethan Ray, Calvin David, and Addison Haley. Without them, life would be filled with specters far too many to mention and life would be less enriched. Life is good with them, and I thank them for all of the support over the years.

I (Lars-Göran Öst) wish to thank Tom Ollendick for his early and continuing interest in OST as a treatment for specific phobics of all ages, and Tom Davis for

taking the initiative with this book. The collaboration on this project has been fun and stimulating. I also wish to thank my wife Margareta, our daughters Ulrika, Cecilia, and Magdalena, and our grandchildren Rebecca, Anton, Engla, Alvin, and Alice. Without their continuous support over the years much less would have been achieved in terms of clinical and research development.

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About the Editors

Thompson E. Davis III, Ph.D., is an Associate Professor of Clinical Psychology at Louisiana State University in Baton Rouge, LA. and is the Founder/Director of the Psychological Services for Youth Clinic (PSYC) and the Laboratory for Anxiety, Phobia, and Internalizing Disorder Studies (LAPIS). He has been researching and conducting OST for more than 10 years and is the author of more than 40 publications, with several on OST. His research and clinical interests focus on anxiety disorders, particularly the assessment and treatment of specific phobias in children and adults.

Thomas H. Ollendick, Ph.D., is University Distinguished Professor of Clinical Psychology and Director of the Child Study Center at Virginia Tech. He is the author or editor of 25 books, 75 book chapters, and 350+ research articles. He is the current editor of *Clinical Child and Family Psychology Review* and *Behavior Therapy*. His research interests focus on social learning theory and phobic and anxiety disorders in youth.

Lars-Göran Öst, Ph.D., is a Professor of Clinical Psychology at Stockholm University in Sweden. He is the author of approximately 200 articles, chapters, and books and has been researching anxiety disorders for 30 years. He originally developed OST and has carried out a series of child and adult treatment studies demonstrating the treatment's efficacy and comparability to other empirically-supported treatments. His research interests focus on anxiety and phobia in children and adults.

Contributors

Martin M. Antony Department of Psychology, Ryerson University, Toronto, Canada

Claude Bélanger Douglas Institute of Mental Health, Department of Psychology, Université du Québec à Montréal, Montreal, Canada

Stéphane Bouchard Department of Psychoeducation and Psychology, Cyberpsychology Laboratory Université du Québec en Outaouais, Gatineau, QC, Canada

Thompson E. Davis III Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

Heather K. Hood Department of Psychology, Ryerson University, Toronto, Canada

Whitney S. Jenkins Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS), Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

Harald Merckelbach Department of Clinical Psychological Science, Maastricht University, Maastricht, The Netherlands

Lynn D. Miller Department of Educational and Counseling Psychology and Special Education, University of British Columbia, Vancouver, Canada

Melissa S. Munson Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS), Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

Peter Muris Institute of Psychology, Erasmus University Rotterdam, Burgemeester Oudlaan 50, Suite T13–37, P.O. Box 1738, 3000 Rotterdam, The Netherlands

Bunmi O. Olatunji Department of Psychology, Vanderbilt University, Nashville, TN, USA

Thomas H. Ollendick Child Study Center, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA

Lars-Göran Öst Department of Psychology, Stockholm University, Stockholm, Sweden

Erin T. Reuther Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS), Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

Lena Reuterskiöld Department of Psychology, Stockholm University, Stockholm, Sweden

Brittany M. Rudy Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS), Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

Cidalia Silva Psychology Department, Cyberpsychology Laboratory, Université du Québec en Outaouais, Gatineau, Canada

V. Cristian Sirbu Charleston Area Medical Center Health Education and Research Institute, West Virginia University School of Medicine Charleston Division, Charleston, SC, USA

Terry Taucer-Samson Ecole Une Autre Langue, Cannes, France

Megan A. Viar Department of Psychology, Vanderbilt University, Nashville, TN, USA

Kate B. Wolitzky-Taylor Department of Psychology, University of California-Los Angeles, Los Angeles, CA, USA

Part I
Specific Phobia Assessment and Treatment

Chapter 1
Specific Phobia: Phenomenology, Epidemiology, and Etiology

Peter Muris and Harald Merckelbach

Tamara (aged 21 years) is in despair. She and her husband recently bought the house of their dreams: an old, refurbished farmhouse, beautifully situated in the countryside. However, she has now found that she cannot live there. The reason is there are spiders. Tamara has always disliked these creepy, dirty animals, but as long as she was living in the city, it was not causing her much problem because she hardly ever encountered them. In the new house, however, the spiders appear to be everywhere: in the garden, the kitchen, and—most annoying of all—in the bedroom under the authentic thatched roof. She no longer dares to sleep there, and now stays with her parents who have an apartment in town. Her husband is complaining about her preoccupation with spiders and starting to lose his patience. Tamara herself realizes there really is nothing to be afraid of, and that spiders are in fact harmless creatures. However, as soon as she sees one, she is completely seized by panic/terror, and the only thing she wants is to run away. Occasionally this has led to dangerous situations. For example, recently, Tamara suddenly stopped her car in the middle of the motorway, to flee in panic from the vehicle because she discovered a spider on the rearview mirror.

Introduction

Specific fears of animals, blood, heights, and closed spaces are highly prevalent in the general population, and this is true for children and adolescents (Ollendick et al. 1989), adults (Frederikson et al. 1996), as well as elderly people (Sigström et al. 2011). Most of the time, specific fears are fairly benign, but sometimes symptoms become so intense that they interfere with the person's daily functioning (see the case

P. Muris (✉)
Institute of Psychology, Erasmus University Rotterdam, Burgemeester Oudlaan 50, Suite T13–37, P.O. Box 1738, 3000 Rotterdam, The Netherlands
e-mail: peter.muris@maastrichtuniversity.nl

H. Merckelbach
Department of Clinical Psychological Science, Maastricht University, Maastricht, The Netherlands

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,* Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_1, © Springer Science+Business Media, LLC 2012

Table 1.1 DSM-IV-TR criteria for specific phobias

Marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation
Exposure to the phobic stimulus almost invariably provokes an immediate anxiety response, which can take the form of a situationally bound or situationally predisposed panic attack
The person recognizes that the fear is excessive or unreasonable
The phobic situation(s) is avoided or else is endured with intense anxiety or distress
The avoidance, anxious anticipation, or distress in the feared situation(s) interferes significantly with the person's normal routine, occupational (or academic) functioning, or social activities or relationships, or there is marked distress about having the phobia
In individuals under age 18 years, the duration is at least 6 months
The anxiety, panic attacks, or phobic avoidance associated with the specific object or situation are not better accounted for by another mental disorder, such as obsessive-compulsive disorder (e.g., fear of dirt in someone with an obsession about contamination), posttraumatic stress disorder (e.g., avoidance of stimuli associated with a severe stressor), separation anxiety disorder (e.g., avoidance of school), social phobia (i.e., avoidance of social situations because of fear of embarrassment), panic disorder with agoraphobia, agoraphobia without a history of panic disorder

Although the diagnostic criteria of specific phobia might undergo some small wording changes in the upcoming DSM-V (LeBeau et al. 2010), they will remain by and large the same

of Tamara). In such cases, a diagnosis of specific phobia seems warranted. According to the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (*DSM-IV-TR*; American Psychiatric Association (APA) 2000), the diagnosis of a specific phobia should be considered when a well-defined set of criteria is present (see Table 1.1).

Over the past decades, many laboratory as well as field studies have looked into the phenomenology, epidemiology, and etiology of specific fears and phobias. This has produced a corpus of well-established facts (for a recent review see Pull 2008). In this chapter, we will cover the key findings. Thus, in the sections that follow, we will first describe the core features of specific phobias. Next, a brief overview of epidemiological data on this anxiety disorder is provided, after which we address current notions on the etiology and maintenance of specific phobias. Most importantly, we will describe the outline of a model that summarizes the current knowledge about specific phobias. To preview our conclusion, our model holds that during the early developmental stages the specific fears are normal and transient phenomena, but as a result of the synergic influence of learning experiences and genetics, some of them may radicalize and persist into adulthood.

Phenomenology

Basically, there are three central features of specific phobias that we will discuss in more detail in the following sections: (1) fear is directed at a limited set of stimuli, (2) confrontation with these stimuli elicits an intense fear response, and (3) the fear is unreasonable and excessive to a degree that it disrupts daily life. These three features deserve further elaboration.

The Content of Specific Phobias

Survey studies have consistently found that some phobias (e.g., phobia of snakes, spiders) are far more prevalent than others (e.g., phobia of electricity, biking; Agras et al. 1969; Iancu et al. 2007). This selectivity is remarkable because prima facie one would expect phobias of cars to be more prevalent than those of spiders only because cars are associated with higher mortality levels than spiders. The fact that phobias typically pertain to a relatively narrow and circumscript set of stimuli and situations has been explained in terms of evolutionary selection (Mineka and Öhman 2002; see Merckelbach and De Jong 1996; Fox et al. 2007). With this view, the stimuli and situations feared by phobics typically echo the dangers that our prehistoric ancestors faced in their Pleistocene savannah environment. As a result of natural selection, fear of these evolutionary threats would have become genetically encoded. Consequently, modern man would still possess an innate tendency (Menzies and Clarke 1995) or preparedness (Seligman 1971) to develop phobias of snakes, spiders, height, blood, etc. Although evolutionary theories have attracted considerable attention, other explanations for the selectivity of specific phobias exist. For example, Davey (1995) has argued that the selectivity of phobias might be a consequence of the negative connotations that certain stimuli and situations have in our culture (e.g., spiders are commonly seen as creepy or dirty). Whatever is the cause, the nonrandom distribution of specific phobias is a robust phenomenon, and this is also reflected in the classification system of the *DSM-IV-TR* (APA 2000), which currently discerns four subtypes of specific phobias, namely animal type (e.g., dog phobia), blood-injection-injury type (e.g., dental phobia), natural environment type (e.g., phobia of heights), and situational type (e.g., claustrophobia). In addition, the *DSM-IV-TR* includes a miscellaneous category ("other type"), which encompasses phobias of situations that may lead to choking and vomiting, and other phobias that do not fit well into the other four categories (e.g., loud noises, clowns).

There is empirical evidence for the subtypes listed in the *DSM-IV-TR*. That is, a factor analytic study by Frederikson et al. (1996) demonstrated that specific phobia symptoms tend to cluster in the to-be-expected factors for animal phobias and blood-injection-injury phobias, and a joint factor for situational and natural environment phobias which seem to share a common theme (for similar results in children and adolescents see Muris et al. 1999; Pull 2008).

The Nature of the Fear Response

The three-systems-model as proposed by Lang (1968) provides a good framework for discussing the nature of fear responses in specific phobias. According to this model, fear is reflected in autonomic symptoms (e.g., tachycardia, increased respiration), subjective feelings of apprehension (e.g., fear of harm and injury, fear of losing control), and avoidance or escape behavior (e.g., evading, running away from, or not looking at the phobic stimulus/situation, staying near another person). Responses in

the three systems do not always co-vary (Hugdahl 1989), and so, when evaluating specific phobias, it is important to assess each of the components independently. Further, not all types of specific phobias display a comparable profile with regard to the three components. For instance, all phobias are accompanied by subjective reports of distress. In most phobias, this distress mainly takes the form of fear, yet in animal and blood-injection-injury phobia the subjective distress is also characterized by strong feelings of disgust and repulsion (Olatunji and McKay 2009). Similarly, whereas all specific phobias are characterized by cognitions related to the fear of incurring harm or injury, there are several phobias, especially situational/environmental phobias (e.g., claustrophobia), which in addition involve anxiety expectations such as fear of going crazy or fear of losing control. Thus, from a cognitive point of view, some phobias are clearly more complex than others (Craske et al. 1995). As another example, confrontation with the phobic stimulus elicits sympathetic activation (i.e., tachycardia) in animal phobia, but a biphasic response pattern (i.e., initial tachycardia followed by bradycardia; Page 1994) in blood-injection-injury phobia. That is, while exposure to the phobic stimulus produces heightened arousal in animal phobias, lowered arousal that may result in fainting is seen in blood-injection-injury phobia (Marks 1988; for a detailed analysis see Donadio et al. 2007).

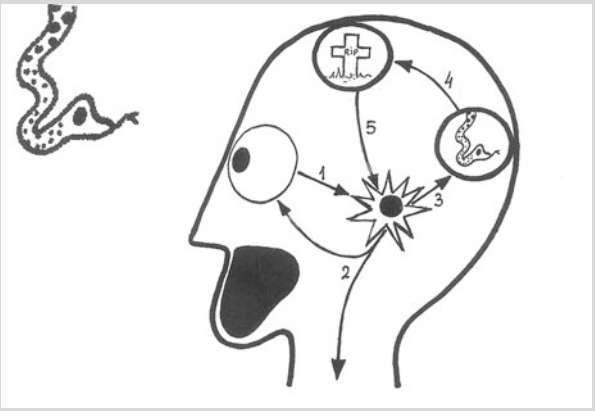
As to the nature of the fear response, it is noteworthy that children—besides the typical fear response of avoidance—may also display a number of other behaviors including crying, anger, tantrums, freezing, or clinging (Ollendick et al. 2004). In other words, children may display the full spectrum of the flight-fight-freeze response that can be observed in other species when confronted with threat or severe stressful circumstances (Marks 1987).

The Excessiveness and Irrationality of Phobic Fear

When they are not in an acute phobic situation, most patients suffering from a specific phobia readily acknowledge their fear is excessive and unreasonable in light of the actual threat imposed by the phobic object or compared with the less fearful responses of other people. In young children, this knowledge or awareness is not always evident as they may still have an unrealistic view of the world and still believe their fears are "reasonable." However, the large majority of phobic people acknowledge that the stimulus or situation that they fear is not as dangerous as their responses suggest. Yet, they will also indicate that it is impossible for them to inhibit their fear response when exposed to the phobic stimulus or situation. Some authors have argued that although patients may be convinced of the excessiveness and irrationality of their phobia when questioned in the absence of the phobic cue, the presence of this cue may activate idiosyncratic danger expectations. Evidence for this idea comes from research showing that phobic individuals are strongly inclined to believe highly unrealistic propositions (e.g., "I will be hurt," "I will go crazy") when they are exposed to the feared stimulus or situation (Arntz et al. 1993; Thorpe and Salkovskis 1995). A somewhat different stance is taken by Öhman (1993) who has argued

that phobic stimuli are analyzed in the brain by fast and subcortical information processing routines. These information processing routines would provide a crude analysis of the stimulus and then immediately initiate a fear response. Consequently, even before the person becomes fully aware of the phobic stimulus, a fear response is already on its way (Öhman and Soares 1994). Further cortical processing makes the person realize that in fact the stimulus or situation is not that dangerous, leaving the person with a discrepancy between what he or she feels and what he or she knows, which of course is at the heart of the excessiveness/irrationality issue of specific phobias. Support for this perspective comes from animal studies by Ledoux (1996), who indeed demonstrated that fear-relevant information is processed along two routes. Besides a slower, conscious route involved in the actual perception and interpretation of the sensory input, evidence was found for the existence of a fast, "unconscious" transmission route in which the thalamus carries out a "quick and dirty" analysis of the sensory input and then activates the amygdala, which in turn generates a physiological fear response (see Box 1). While intuitively plausible, it remains to be seen whether this analysis also provides an empirically sound account of irrational fears in humans (see Mayer et al. 1999; Fox et al. 2007).

Box 1 LeDoux' (1996) theory on the processing of fear-relevant information in the brain.



(1) Sensory information is transmitted to the subcortical thalamus-amygdala circuit, where it is subjected to a "quick and dirty" analysis. (2) If fear-relevant information is detected (in this case: a snake), a physiological fear response is immediately initiated that prepares the organism for action (i.e., "fight-flight") and incites the senses to scan the environment more actively. (3) These processes all occur double-quick even before conscious perception takes place in the cortical brain areas. (4) The information is further interpreted by comparing the new information with knowledge stored in memory. (5) In case anxious

interpretations are made, the subcortical areas will be further instigated to maintain the physiological fear response.

Epidemiology

As noted earlier, extreme fears are highly prevalent with surveys suggesting that the majority of the general population experiences "unreasonable fears" (Depla et al. 2008). In most cases, however, these fears are not severe enough to result in significant distress and impairment. Nonetheless, around 10% of the people will meet the *DSM-IV-TR* criteria for a specific phobia within their lifetime (Kessler et al. 1994), which suggests that severe and disruptive phobic symptoms are widespread. With a 12-month prevalence of 8.7% specific phobia continues to rank in the top 3 of most prevalent psychiatric disorders in adults (Kessler et al. 2005). Indeed, in their National Epidemiologic Survey on Alcohol and Related Conditions in the USA, Stinson et al. (2007) found 12-month and lifetime prevalences for specific phobias of 7.1 and 9.4%, respectively. Likewise, in their survey among women in Dresden, Germany, Becker et al. (2007) determined the lifetime prevalence of any specific phobia to be 12.8%, with subtypes ranging in prevalence between 0.2% (vomiting, infections) and 5.0% (animals).

Phobias of insects, snakes, birds, and other animals seem to be most prevalent (4.7%), followed by phobias of heights (e.g., tall buildings, bridges, or mountains; 4.5%), and phobias of closed spaces (e.g., a cave, tunnel, or elevator; 3.2%; see Stinson et al. 2007). In general, specific phobias are diagnosed more often in women than in men (Frederikson et al. 1996). According to *DSM-IV-TR* (APA 2000), between 75 and 90% of adults with animal, situational, or natural environment phobias are women. For blood-injection-injury phobia, the male-female distribution is somewhat more balanced: between 55 and 70% of the individuals with this type of phobia are female. Additional risk factors for specific phobias are age and low income, with specific phobias being overrepresented in young people with low income (Stinson et al. 2007).

Interestingly, specific phobias tend to start during childhood. For example, data from the National Comorbidity Survey Replication have indicated that by the age of 12 years, 75% of those who will suffer from a specific phobia during their lifetime already have developed the disorder (Kessler et al. 2005). The median age of onset for this anxiety disorder is 7–9 years (Kessler et al. 2005; Öst 1987; Stinson et al. 2007), which implies that specific phobias tend to have a chronic course. Moreover, longitudinal data indicate that very few spontaneous remissions occur (Wittchen 1988). In the large community sample of Stinson et al. (2007), only 8.0% of those with specific phobias reported specifically seeking out treatment for this condition. Thus, as individuals with a specific phobia rarely seek treatment (Chapman et al.

1993), this means that most people with this anxiety disorder will suffer from this problem for decades of their life.

Etiology

The etiology of specific phobias has intrigued psychologists, psychiatrists, and other mental health professionals for a long time. One of the first systematic attempts to account for the origins of specific phobias was made by psychoanalytic theorists who typically viewed phobias as symbolic of another, more deep-rooted problem. A case in point is Freud's (1909/1955) classical case description of Little Hans, a 5-year-old boy with a severe phobia of horses. Freud claimed that Hans suffered from a so-called Oedipus complex. That is, the boy wanted to have sex with his mother and therefore expected to be punished by his father. As a result, Hans became afraid of his father. However, this was considered as unacceptable by his ego, and therefore the fear was displaced to another object, resulting in a phobia of horses. From a scientific point of view, Freud's analysis of the case is of course dubious, as the key points on which his account rest (i.e., Oedipus complex, ego) cannot be validated empirically (Eysenck 1985).

More than a century after Freud's writings, we have a far more complete picture of the etiological mechanisms that are at work in specific phobias. The dominant view is that the acquisition of specific phobias cannot be explained by just a single process, rather there is accumulating evidence to indicate that various types of specific phobias result from different and most of the time multiple pathogenic factors (e.g., Merckelbach et al. 1996).

Genetics

Specific fears and phobias run in families. This point is nicely illustrated by Fyer et al. (1990) who found that first-degree relatives (i.e., brothers and sisters) of individuals with a specific phobia more frequently suffer from this disorder themselves (31%) than relatives of control participants (11%). In addition, 15% of the children of the specific phobia participants were diagnosed with specific phobia, as compared to 8% of the children of the control participants. On the basis of these findings, Fyer et al. (1990, p. 255) concluded that "specific phobia is a highly familial disorder that breeds through." One explanation for the familial aggregation of specific phobias is that it stems from genetic transmission. Indeed, evidence from behavioral genetic studies clearly suggests that heritability plays a modest but significant role in the etiology of specific phobias. That is, up to one third of the variance in specific phobias can be explained by genetic factors (Distel et al. 2008; Hettema et al. 2005; Kendler et al. 2003). Of course this result could be taken as support for the aforementioned evolutionary theories. However, it seems more plausible—and more satisfactory from

an empirical stance (see Muris et al. 2002)—to explain the genetic vulnerability for developing specific phobias in terms of an inborn hypersensitivity of subcortical brain structures that promote fear (Rosen and Schulkin 1998).

Environmental Influences

As heritability only accounts for a modest proportion of the variance in specific phobias, it is obvious that environmental influences play a significant role. In this context, discrete learning experiences with phobic stimuli and situations seem to be particularly important. This is illustrated by the results of behavioral genetic studies which have shown that unique environmental factors explain around 70% of the variance in common types of specific phobias (i.e., animal phobias, situational phobias; Hettema et al. 2005).

Conditioning

A considerable amount of research on the role of learning experiences in the development of specific phobias has been devoted to the conditioning processes. In their famous—but now questionable—experiment, Watson and Rayner (1920) demonstrated that a specific phobia could be acquired via classical conditioning. They introduced a white rat to an 11-month-old boy, Little Albert, who initially showed no fear and appeared to want to play with the animal. However, when Albert approached the rat, the experimenters produced a loud noise (the Unconditioned Stimulus or UCS) by hitting a steel bar behind his head, causing him great fright (the Unconditioned Response or UCR). After five such pairings, Albert became very upset (the Conditioned Response or CR) by the sight of the white rat, even without the presentation of the loud noise. Obviously, the fear originally associated with the loud noise had come to be linked to the previously neutral stimulus, the white rat (now the Conditioned Stimulus or CS).

Although some phobias can be explained in terms of "traditional" classical conditioning (e.g., dental phobia, choking phobia, accident phobia, and most dog phobias; see Davey 2008), it has also been noted that this type of account is not satisfactory as there are many phobic cases for which no clear-cut conditioning event can be identified to explain the onset of the disorder (Davey 1992; Merckelbach et al. 1996). In response to the unsatisfactory classical conditioning account, new models of fear conditioning have been formulated, which are more sophisticated as they emphasize the importance of cognitive and evaluative operations (Field 2006). Briefly, these models conceptualize fear conditioning no longer as reflex-like stimulus-response learning, but rather as a process during which individuals learn that a certain stimulus (the CS) is likely to predict the occurrence of another aversive stimulus (the UCS), which in turn under some conditions will elicit a conditioned response. We

will provide two examples of well-established learning mechanisms that illustrate this neoconditioning approach to specific phobias. The first mechanism is latent inhibition, which refers to the phenomenon that a large number of neutral experiences with the CS will hinder the subsequent formation of a strong association between the CS and the UCS (Lubow 1973). Latent inhibition has been demonstrated in the dental practice where people are less likely to develop a dental phobia following painful treatment, when they have previously experienced a larger number of neutral visits to the dentist in which pain was not experienced (De Jongh et al. 1995). The second mechanism is UCS inflation, during which the aversiveness of the UCS is enhanced by subsequent negative information about the UCS, resulting in a stronger conditioned fear response (White and Davey 1989). Davey et al. (1993, p. 496) described this learning mechanism in the case of a phobic patient:

> H. B. (female, aged 35 years) complaining of a severe spider phobia applied for therapy. Because of her father's occupation, she had lived in Rio de Janeiro in Brazil during her childhood. Once, at the age of 10 years, she woke at night when a large tropical spider walked over her face. At that time she reported not being particularly frightened. However, when she told her parents about the incident the next morning, they were extremely concerned and looked very alarmed. From that moment on, H. B. was extremely frightened of spiders and exhibited severe phobic behavior.

Both examples show that by considering cognitive and evaluative factors, contemporary conditioning theory provides a more flexible and optimal albeit more complex account for the acquisition of specific phobias (Field 2006).

Indirect Pathways: Modeling and Information

The classical conditioning pathway to phobias assumes that the person has direct experience with the CS and the UCS. This is true for straightforward conditioning in which a CS is paired with a traumatic UCS as well as for more subtle conditioning scenarios such as latent inhibition and UCS inflation. However, there are cases in which individuals develop a specific phobia, although they have no direct experience with the CS (i.e., phobic object) and/or the UCS (Rachman 1977, 1991). In these cases, indirect pathways of fear acquisition may play a pivotal role. In particular, the learning mechanisms of modeling and negative information transmission are relevant in this context.

Modeling refers to the phenomenon that fears can be learned vicariously through observing other people's responses to that stimulus or situation (for an extensive review see Askew and Field 2008). The seminal work in rhesus monkeys by Cook and Mineka (1989) has yielded clear support for the role of this mechanism in the development of fear. In their initial experiment, laboratory-raised monkeys without a fear of snakes observed their wild-reared, snake-fearful parents interact with real, toy, and model snakes. After only 8 minutes, five out of six monkeys had acquired a fear of snakes, as indicated by clear stress reactions and avoidance behavior when

confronted with snakes and snake-like stimuli. This fear was still present at a follow-up measurement, some 3 months later, and proved not to be context specific but also to occur in situations other than the one during which it had been formed. There is also solid evidence indicating that modeling experiences promote fear in humans. For instance, Gerull and Rapee (2002) investigated the effect of modeling on the acquisition of fear and avoidance toward novel, fear-relevant stimuli in a sample of 15- to 20-month-old toddlers. The toddlers were exposed to a rubber snake and spider that were alternately paired with either negative or positive facial expressions of their mothers. Both stimuli were presented after a brief delay, and fear and avoidance reactions were assessed. Results clearly indicated that children exhibited more fear and avoidance after observing negative reactions in their mothers than following positive facial feedback.

Fears can also be acquired by hearing that a stimulus or situation might be dangerous or has another negative connotation. The fear-enhancing effects of negative information have been investigated extensively after Field et al. (2001) published their "Who's afraid of the big bad wolf" study. In this study, children aged between 7 and 9 years received either negative or positive information about an unknown monster doll. The authors determined that fear of the monster doll changed significantly as a function of the verbal information that was provided to the children. More precisely, negative information increased children's fear levels as opposed to the positive information that produced a decline in fear. In follow-up studies, the monster dolls were replaced with novel real animals (Australian marsupials such as the quoll, quokka, and cuscus), again demonstrating that the provision of negative information produces pervasive and long-lasting fear (Muris and Field 2010). Interestingly, there is now evidence showing that the negative information pathway may be involved in the transfer of fear responses from parents to their offspring (Muris et al. 2010).

Maintaining Factors

The influential two-stage model of Mowrer (1960) assumes that while conditioning processes account for the acquisition of fear, avoidance behavior is responsible for its maintenance. That is, avoidance would minimize direct and prolonged contact with the phobic object and hence the phobic person would not have the opportunity to learn that the CS is in fact harmless. Further, during avoidance an operant learning mechanism would be at work: in Mowrer's (1939) words, "the reduction of anxiety may serve powerfully to reinforce behavior that brings about a state of relief or security" (p. 564). Thus, the basic idea is that the reduction of fear as a result of avoidant behavior serves as a negative reinforcer that further increases avoidance. While the role of avoidance behavior in the conservation of specific phobias seems self-evident, there are other mechanisms that are highly relevant in this context. Inspired by cognitive psychology, there is an increasing amount of research that has sought to elucidate the role of information-processing abnormalities (Harvey et al.

2004). These abnormalities are termed "cognitive biases" and the most prominent example for understanding the maintenance of specific phobias is attentional bias.

A large number of studies have documented that phobic individuals display hyperattention toward potentially threatening material (for a review see Bar-Haim et al. 2007). A frequently employed technique for demonstrating this attentional bias is the emotional Stroop task. In this task, subjects are required to name the color in which words are printed while ignoring the meaning of these words. A consistent finding in Stroop studies with, for example, spider phobics is that their color naming of threatening words (e.g., web) is slower than that of neutral words (e.g., car). This delay in responding is thought to occur because phobic persons automatically direct their attention to the content of the threatening words, which in turn interferes with their main task (i.e., color naming; Watts et al. 1986). Meanwhile, it has become clear that attentional bias towards threat is a complex, multifaced phenomenon. For instance, while some studies seem to point to fast attentional capture by threat-relevant stimuli in high fearful and phobic individuals (e.g., Mogg and Bradley 2006; Öhman et al. 2001), the other studies have shown that high fearful and phobic people have difficulties disengaging from threat (e.g., Fox et al. 2001; Koster et al. 2004). Moreover, it has been observed that fearful and phobic individuals are characterized by a vigilance–avoidance pattern of attention allocation with respect to threat-related stimuli (Mogg and Bradley 1998; Rinck and Becker 2006). These three components of attentional bias are thought to occur at different stages of processing, with early attentional capture being followed by transient difficulties to disengage attention, which is then followed by attentional avoidance of threat (Cisler and Koster 2010). Whatever the details, researchers tend to agree on the notion that attentional bias on balance leads to an increased encoding of threat-related material, thereby enhancing and preserving fear.

Multifactorial Model

Our knowledge of the factors that are involved in the etiology of specific phobias has increased considerably over the years. As noted earlier, it is unlikely that the acquisition of phobias can be explained by just one single mechanism. There is accumulating evidence that the etiology of specific phobias can best be conceptualized in terms of a multifactorial model (Craske 1997; Merckelbach et al. 1996; Muris and Merckelbach 2001). This model is based on the assumption that there exists a continuum between normal fear on the one end and a specific phobia on the other end. However, while normal fears are fairly common, there is a small group of people in whom such fears tend to radicalize. In some cases, the radicalization is carried by a genetic vulnerability for developing this type of anxiety problem, which is probably reflected in a hypersensitivity of the subcortical areas involved in the evaluation of novel and fear-relevant stimuli. Most of the time, however, the distinct learning experiences (i.e., conditioning, modeling, and negative information) seem to be responsible for the exacerbation of fear and it is clear that such a scenario

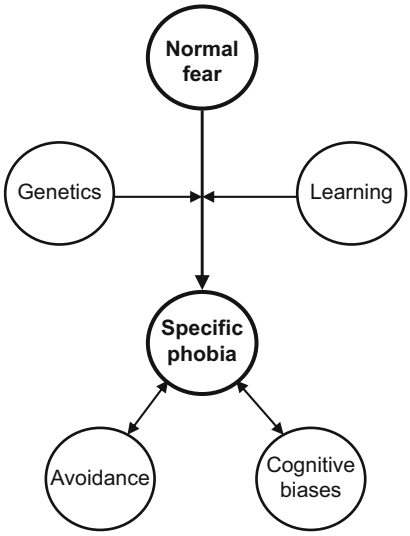


Fig. 1.1 A multifactorial model for the etiology of specific phobias. (Muris and Merckelbach 2001)

is particularly relevant for people who also possess genetic proneness for developing phobias. Once a specific phobia exists, it is accompanied by avoidance behavior and cognitive biases such as attentional bias, which are likely to maintain the anxiety pathology (see Fig. 1.1).

Conclusion

Specific phobias comprise a class of psychological problems that frequently occur in the general population. This anxiety disorder is characterized by marked fear of a specific stimulus and situation, which can be typically linked to a number of select domains (animal, blood-injection-injury, situational/natural environment). The fear manifests itself in various response systems (i.e., subjective/cognitive, physiological, behavioral), and is excessive and unreasonable, thereby hindering the person's daily functioning. If left untreated, specific phobias tend to have a chronic course, exerting a negative influence on the person's life for many years. Fortunately, we have a pretty good idea of how to treat specific phobias successfully. A key feature of such a treatment seems to be exposure (Marks 1987). Exposure to the frightening stimulus and situation activates the fear memory network, while information discordant with the fear-provoking elements in the memory network is made available and incorporated. This ultimately results in a correction of the network and a reduction of fear (Foa and Kozak 1986). The one-session therapy for specific phobias (Öst 1989), which is the main topic of this book, is an excellent example of an exposure-based intervention. However, one-session treatment also includes various other treatment components such as participant modeling, information provision, and active repair of faulty cognitions, which tackle a number of the other pathogenic processes as

described in this chapter (i.e., modeling of fear, negative information transmission, and fear-provoking, irrational thoughts). In combination with exposure, this yields an extremely powerful and effective intervention for treating specific phobias. The progress in our understanding and treatment of specific phobias is important because survey studies indicate that only a small minority (i.e., 8%) of people with the condition report to have received treatment for it (Stinson et al. 2007). Clearly, far more patients could benefit from the interventions described in this book.

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

Heather K. Hood and Martin M. Antony

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.

M. M. Antony (✉) · H. K. Hood
Department of Psychology, Ryerson University, Toronto, Canada
e-mail: mantony@psych.ryerson.ca

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_2, © Springer Science+Business Media, LLC 2012

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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Chapter 3
Evidence-Based Assessment and Treatment of Specific Phobias in Children and Adolescents

Thomas H. Ollendick and Thompson E. Davis III

Introduction

In this chapter, we review evidence-based assessment and treatment for specific phobias in children and adolescents (hereafter referred as children unless otherwise specified). For far too many years, the assessment and treatment of these disorders, and other childhood disorders, have been guided not by evidence but by particular theories, independent of the evidentiary support for them. In this chapter, we illustrate assessment and treatment practices that "work" and that have an ever-evolving evidence base for their use in clinical practice. In doing so, we hope to not only advance our understanding of specific phobias in children and their families but also to identify and promulgate effective interventions.

Evidence-Based Assessment

The assessment of specific phobias in children should be evidence-based, using measures and procedures which have solid evidentiary support for their clinical use. In general, evidence-based assessment should be multi-method (i.e., using multiple methodologies such as interviews, questionnaires, and behavioral observations) and multi-informant (i.e., seeking input from multiple sources including the child, parents, other caregivers, and teachers; Ollendick and Hersen 1984, 1993). It is also important to determine if other problem areas are present, including other anxiety

T. H. Ollendick (✉)
Child Study Center, Department of Psychology,
Virginia Polytechnic Institute and State University, Blacksburg, VA, USA
e-mail: tho@vt.edu

T. E. Davis III
Department of Psychology, Louisiana State University,
Baton Rouge, LA, USA
e-mail: ted@lsu.edu

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_3, © Springer Science+Business Media, LLC 2012

disorders, mood disorders, and disruptive behavior disorders. Finally, it is important to use a developmental perspective in order to arrive at a clinical diagnosis, examining what is appropriate for a child's developmental level and determining when aspects of development are deviant and have "gone awry" (Ollendick et al. 2001). There are many tools that can be used in an evidence-based assessment of specific phobia, including diagnostic interviews, questionnaires for parents and children, behavioral approach tasks (BATs), and measures of physiological arousal. As a result, assessment for specific phobia in a child or adolescent can be challenging given the various symptoms of fear and anxiety (i.e., physiological, behavioral, and cognitive indices) and the domains of interest (e.g., social, familial, academic). As a result, we recommend a comprehensive assessment approach which will ideally lead to an evidence-based determination of specific phobias and other diagnostic concerns. Although such an approach is time consuming, its emphasis has important consequences for evidence-based practice and the selection of the best empirically-supported treatment (cf. Davis 2009; Silverman and Ollendick 2005, 2008).

Clinical and Diagnostic Interviews As with clinical practice in general, we recommend that a brief clinical interview with the child and his or her family be undertaken prior to a more formal diagnostic interview and the administration of questionnaires, rating forms, and behavioral tests. The clinical interview is deliberately broad in scope and involves collection of developmental and familial information along with a medical history and the onset and course of the presenting phobias and related problems. Such an interview also allows the family to "tell their story" and to place the phobia into a richer familial and developmental context. The interview also allows the therapist to see whether the parent and child agree on the presenting problem, and, if they do not, to talk about the discrepancies and what they might mean. Oftentimes, this initial interview also allows the clinician to establish rapport with the family and begin to establish therapeutic working alliance with them (Ollendick and Shirk 2011). Once this brief interview is completed, more formal assessment can begin.

Diagnostic interviews help determine the presence and often the severity of the problems that have been identified in the clinical interview. The gold standard for assessment of phobic and anxiety disorders in youth is the Anxiety Disorders Interview Schedule for *DSM-IV,* Child and Parent schedules (ADIS-IV-C/P; Silverman and Albano 1996). With the ADIS-IV-C/P, the clinician can interview the child and parent(s) together or more commonly separately. We prefer to administer the interviews separately so as to obtain information independently from the child and his or her parents. Parents are also frequently more forthcoming about the child's functioning or possible contributing familial factors when the interviews are conducted separately. The interviews are divided into modules for each of the major anxiety disorders, mood disorders, and externalizing disorders (ADHD, Oppositional Defiant Disorder, Conduct Disorder), and provide additional screeners for other disorders (e.g., eating disorders, elimination disorders, and pervasive developmental disorders). The modules of the ADIS-IV-C/P can be administered as single units or in their entirety. Thus, for example, the clinician can administer the specific phobia module only or the entire ADIS-IV-C/P, depending on the purposes of assessment.

In general, we recommend administering the complete interviews to both children and parents whenever possible. The interviews are administered in a semi-structured fashion to enhance the validity and reliability of the assessment. After administration of both the child and parent interviews, the clinician can then rate the severity of the various disorders found to be present on a 9-point clinical severity scale ranging from 0 (*not present*) to 8 (*very severe*). Ratings of 4 or above are used to indicate severity at the clinical, diagnostic level. A composite of the two interviews can then be obtained (Silverman and Albano 1996), or we have adopted a clinical consensus approach in which the clinician, as expert, makes the overall diagnoses based on information from both interviews. Other interviews available to clinicians include the NIMH Diagnostic Interview Schedule for Children-Version IV (DISC-IV; Shaffer et al. 2000), the Diagnostic Interview for Children and Adolescents (DICA; Reich 2000), and the Schedule for Affective Disorders and Schizophrenia for School-Aged Children (K-SADS; Ambrosini 2000).

As noted, the gold standard diagnostic interview for the anxiety disorders is the ADIS-IV-C/P. Several studies have confirmed the reliability and validity of phobic and anxiety diagnoses using the ADIS-IV-C/P, including its inter-rater (Grills and Ollendick 2003; Rapee et al. 1994; Silverman and Nelles 1988) and test-retest reliability for specific diagnoses (Silverman and Eisen 1992) as well as symptom patterns (Silverman and Rabian 1995). Indeed, in a recent study with clinically phobic children and their parents, Reuterskiöld et al. (2008) reported near complete inter-rater agreement on principal diagnoses of specific phobia. With regard to validity, Wood et al. 2002 specifically examined the concurrent validity of ADIS-C/P anxiety diagnoses (Generalized Anxiety Disorder, Separation Anxiety Disorder, and Social Anxiety Disorder) in children and adolescents referred to an outpatient anxiety disorders clinic who were also administered the Multidimensional Anxiety Scale for Children (MASC; March et al. 1997). There was strong correspondence between the ADIS-C/P diagnoses and empirically derived MASC factor scores corresponding to these specific disorders. Similarly, for specific phobias, Reuterskiöld et al. 2008 reported high degrees of convergence of diagnoses with heightened scores on the Fear Survey Schedule for Children-Revised (Ollendick 1983).

Questionnaires Another integral part of a multi-method, multi-informant assessment is to administer questionnaires not only to the child or adolescent, but also to the parent or caregiver and the teacher. Additionally, to ensure that the assessment is comprehensive and as accurate as possible, it is important to administer questionnaires that are relevant not only to specific phobia but also to other forms of child anxiety and related psychopathologies. This can typically be accomplished by administering at least one broad measure of general psychopathology and questionnaires more specific to phobias and fears. Questionnaires that screen for broad child psychopathology include the Child Behavior Checklist (CBCL; Achenbach 2001a, b) and the Behavior Assessment System for Children (BASC; Reynolds and Kamphaus 2004). Both of these instruments have separate rating scales for parents and teachers. The CBCL is more widely used and accepted at this time, especially so for the internalizing disorders of anxiety and depression. The parent CBCL is a 113-item

paper and pencil questionnaire completed by parents who are asked to indicate how often the behavior described in each item is true of their child using a 3-point scale (often/always true, sometimes true, and not true). Achenbach (2001a) reports test-retest reliability over a 1-week interval to be 0.95 for the problem items. The validity of the CBCL/4–18 has been established through repeated factor analyses and associations with other variables of interest (see Achenbach 2001a). The CBCL results in Total, Internalizing, and Externalizing scores and eight subscale scores including scores of anxiety/depression, somatization, and social withdrawal. Similarly, the Teacher Report Form (TRF; Achenbach 2001b) is a questionnaire that includes 113 items and the teacher is asked to indicate if each behavior/characteristic is often/always true, not true, or sometimes true of the student being assessed. Test-retest reliability over a 15-day period is 0.90 for adaptive behavior scales and 0.95 for problem behavior scales (see Achenbach 2001b). As with the CBCL, Total, Internalizing, and Externalizing scores, and eight subscale scores are obtained.

Child self-report questionnaires assessing both anxiety and fear are also available. For broad anxiety, we recommend the Multidimensional Anxiety Scale for Children (MASC; March et al. 1997) and the Revised Children's Manifest Anxiety Scale-Version 2 (RCMAS-2; Reynolds and Richmond 2005). Both of these questionnaires are child self-report measures which screen for anxiety in general. Importantly, the MASC has several subscales for different types of problems children may have with anxiety (e.g., anxiety related to separation, social situations, perfectionism, and physical sensations). The RCMAS-2 has a total anxiety scale, several scales for different types of anxiety, and an impression management (i.e., "lie") scale which indexes the child's attempts to "look good" and potentially bias responses when answering questions. While the MASC has an inconsistency index, the "lie" scale of the RCMAS-2 specifically indexes impression management and can be particularly helpful with young children. In addition, the most frequently used questionnaire for measuring fear in children is the Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick 1983; Ollendick et al. 1989). This is a self-report questionnaire completed by the child or adolescent in which the youth rate their fear of 80 different objects and situations according to severity (i.e., none, some, or a lot). High scores on the FSSC-R indicate the presence of significant fear and suggest the possible presence of a specific phobia. The reliability and validity of each of these self-report questionnaires have been amply demonstrated for diagnostic and treatment purposes (see Silverman and Ollendick 2005, 2008; Weems et al. 1999).

There are also a few questionnaires that are designed to measure very specific fears and phobias (e.g., dogs, spiders, and storms; Silverman and Ollendick 2008). However, measures of most specific phobias have not yet been developed and those that have been developed are more experimental in nature and their psychometric properties have not yet been well established. Still, these questionnaires can be quite useful in determining what aspects of the phobic object the child fears (e.g., its size, its movements, etc.). Such measures can also provide valuable information about the cognitions the child harbors about the phobic object or situation. Clearly, more developments in this area are needed.

In addition to these questionnaires, we also conduct a functional assessment with the child as part of our overall assessment process. The functional assessment is presented in detail in Chap. 5, and will not be elaborated upon further here. During this assessment, however, we solicit the child's beliefs about the phobic object and how they would respond when in the presence of the phobic object. For example, a child with a phobia of dogs might indicate he believes "the dog will jump on me, knock me down, and bite me" whereas a child with a thunderstorm phobia might believe "the lightning will strike me and hurt me." Of course, we attempt to "push" the child a bit here by asking her or him to tell us what will happen next (e.g., "So, if the dog jumps on you and knocks you down or bites you, what would then happen?"). In some cases, depending on the child's response, we pursue additional questions until we believe we have obtained the child's core belief (e.g., "So then, the dog bites you and you think you will have to go to the hospital for surgery, what might happen then?"). In reference to these beliefs, children are asked three additional questions: "How likely is it that this will really happen," "If it did happen, how bad would it really be," and "If this did happen, how sure are you that you could handle it or deal with it?" The questions are rated on a 0–8 scale. These brief questions provide us rich information about the child's beliefs and his self-confidence in dealing with the phobic situation. See Chap. 5 for a copy of the scale and functional assessment protocol we have developed.

Behavioral Approach Task (BAT) Direct observation of phobic behavior and avoidance can also be an invaluable resource in the assessment of childhood phobias. Although it might be best to observe the avoidance behavior in the naturalistic environment, this is not always or even usually possible. Arguably, then, the best way to obtain a measure of avoidance is to use a BAT. It allows the clinician to observe avoidance of the feared stimulus or situation in a controlled and standard manner (Ollendick et al. 2004). In their most basic form, BATs typically involve either bringing the child closer to what he or she is afraid of or bringing what the child is afraid of closer to him or her. Although there are several variations of BATs for animals, insects, heights, and objects, they usually consist of bringing the child outside the door of a room, informing him or her that behind the door, at the other end of the room, is the feared stimulus that is caged or tethered there. The child is then asked to enter the room and interact with the stimulus. For situational or environmental type phobias, the child is typically brought to the situation (e.g., an elevator, high places) and asked to enter into that environment (e.g., push the button to access the elevator and ride it to the 10th floor). Importantly, in either instance, children are told they do not need to proceed with the task further than they wish and can stop at any point or refuse to do the task completely. The child is then observed to see how much he or she completes on his own. BATs are typically scored by breaking the tasks into steps with a percentage computed of those steps completed out of those possible.

By administering this task, the clinician is able to determine how severe the avoidance behavior is and the exact behaviors evidenced during the task. This can aid in diagnosing a phobia, and can be a crucial addition to diagnostic interviews and to parent and child self-report questionnaires. For instance, a child and his mother

may report in interviews and on questionnaires that he only has a mild fear of dogs; however, in a BAT, he refuses to proceed or he completes very few steps and has a strong phobic reaction during the task. In such situations, the clinician may want to explore the extent of the fear further and diagnose a phobia even when the other information does not support such. Administering a BAT during a pre-treatment assessment can also be helpful in planning treatment and exposures. In this regard, a BAT is a small exposure in a controlled setting similar to how a clinician would plan exposure for treatment. By observing how the child reacts, it gives the clinician a good idea of what the child can and cannot do in the presence of the feared stimulus. Further, the BAT can play a crucial role in treatment planning by giving the clinician a realistic idea of what to place at the bottom and top of the graduated exposure hierarchy for treatment (see below). Additionally, it gives the clinician a chance to observe how willing and motivated the child is to enter the phobic situation and undergo an exposure. If a child is extremely hesitant during the BAT, he or she will likely be just as hesitant in treatment. This information is helpful to have prior to treatment, and by completing a BAT the clinician is able to plan for it and handle it in an appropriate way during treatment. However, it should be noted that BATs are not always helpful as they too are susceptible to demand characteristics. Some children try to "look good" on the BAT and boldly approach the feared object even though they report very high levels of distress in doing so. As a result, we have found it helpful to provide very clear instructions to the child that he or she need not complete the BAT and they should do their best but stop the task whenever they want to do so. Such low-demand instructions are especially recommended for young children.

A number of studies have used the BAT to examine the phenomenon of concordance/discordance in the fear response. According to Lang's tripartite model (Lang et al. 1998), the emotion of fear comprises of a neural network of three loosely coupled components: physiological arousal, cognitive (subjective) distress, and behavioral avoidance. Although activity in one of these components can activate the remaining components, the extent of "diffusion" is dependent upon the strength of the initiation and the level of fear. In some instances, the three components co-vary with one another and in other instances the components do not respond in concert. Thus, although some fearful individuals experience high physiological arousal and subjective distress and avoid the phobic stimulus, others experience high physiological arousal and subjective distress but do not avoid the phobic stimulus. All combinations of the three components of the neural network are possible. Concordance is hypothesized to be high when there is strong emotional arousal (Hodgson and Rachman 1974) and in individuals with specific phobias versus other anxiety disorders since the fear would likely be more localized in this disorder. Recently, we (Ollendick et al. 2011) examined concordance/discordance in a sample of children and adolescents with a specific phobia. In this study, 73 clinic-referred children and adolescents with a specific phobia were presented a phobia-specific BAT (tailored to their individual phobias). Results revealed an overall pattern of concordance: the three response indices (physiological arousal, subjective distress, and behavioral avoidance) were significantly related to one another. However, variation was noted

such that some children were concordant across the response components while others were not. Such information might also be useful when determining response to treatment, although such has not yet been systematically examined (see Davis and Ollendick 2005, for a review).

Assessment Integration A great deal of information can be obtained about the child, his or her family, and the nature of the specific phobia from this assessment process. Unfortunately, this information is frequently characterized by discrepant findings. That is, a multi-method, multi-informant approach quite frequently leads to conflicting information and inconsistent descriptions of symptoms and psychopathology which the clinician must then sort out (Davis 2009; Ollendick and Hersen 1993). With the phobic and anxiety disorders there is frequently disagreement among children, parents, and other reporters (e.g., teachers, other family members) as to the severity of disorders and even their occurrence (Davis 2009; Grills and Ollendick 2003; Jensen 1999; Silverman and Ollendick 2005, 2008). However, the research suggests that such disagreements need not be lamentable; in fact, the disagreements may be informative and useful in treatment planning. For example, Jensen (1999) found that even though parents and children might disagree on the presence of a diagnosis, a bona fide clinical disorder—based on other information—was likely present. Just because parents report a specific phobia is present and the child does not, or the child reports one is present and parents do not, this does not mean a phobia is not present. While there may be better agreement for the presence of symptoms as opposed to specific disorders (Comer and Kendall 2004), it is important to take into account all the assessment information obtained in determining the presence and severity of a diagnosis and in planning for future treatment.

Finally, a note should be made about the desirability of determining whether other disorders, in addition to specific phobias, are present before initiating an evidence-based treatment. First off, it is certainly common for specific phobias to be co-morbid with other disorders and in particular the anxiety disorders (Ollendick et al. 2004, 2009). In many clinical trials, comorbidity is the rule rather than the exception. Ollendick et al. (2008) recently reviewed the literature on the influence of comorbidity on treatment outcomes for youth with a variety of childhood disorders including the anxiety disorders. Of the 16 RCTs using CBT for anxiety disorders that addressed the effects of comorbidity on treatment outcomes, 15 failed to find any significant differences on post-treatment outcomes due to the presence of comorbidity. For the most part, the types of comorbidity examined in these studies consisted of other phobic and anxiety disorders. Only one of the 16 RCTs reported significant differences in outcomes for participants with co-morbid disorders (Berman et al. 2000). In that study, differences in successful outcomes were found in the treatment of anxious youth who were co-morbid with mood disorders but, as with the other studies, not for youth who were co-morbid with other anxiety and phobic disorders. More recently, Ollendick et al. (2010) reported similar findings in the treatment of youth with specific phobias—the presence of co-occurring phobic and anxiety disorders did not adversely affect treatment outcomes for them either. Thus, while it may be important to determine the presence of other disorders to obtain a complete picture

of the child and his presenting complaints, it does not appear that the presence of co-occurring disorders adversely affects treatment outcomes.

Hopefully, the information obtained from such a comprehensive assessment goes beyond the diagnostic process by aiding in the planning of treatment and preparing for the child's and family's participation in treatment—which will almost always involve some form of exposure to the feared stimulus. We now turn our attention to evidence-based treatments for child and adolescent phobic disorders.

Evidence-Based Treatments

Based on the most recent reviews of the evidence-based treatment of specific phobias (Davis 2009; Davis and Ollendick 2005; Davis et al. 2011; Seligman and Ollendick 2011), there are four treatments which have empirical support for their use with fearful children: systematic desensitization, reinforced practice, participant modeling, and cognitive-behavioral therapy (in particular, One-Session Treatment (OST)). Each of these treatments will be briefly described and the componential approach to treatment evaluation (i.e., examining the evidence for the behavioral, cognitive, and physiological response components of fear; cf. Davis et al. 2011; Davis and Ollendick 2005) will be reviewed to highlight the components for which treatments have the strongest evidence for change (i.e., some produce greater change for the behavioral components than the physiological components). It is important to note here that several of these treatments have not been evaluated with children who have specific phobias; rather, they have been evaluated only with highly fearful children and oftentimes not in randomized control studies. As we will show, only the CBT interventions have been evaluated and found to be effective with carefully characterized youth with specific phobias.

Systematic Desensitization (SD) SD is one of the earliest treatments for fears in children. Wolpe (1958) developed this treatment as a way to countercondition fear through the use of an incompatible response, typically muscular relaxation. SD evolved out of classical conditioning theory in that problematic fears were thought to be the result of direct negative experiences with an unconditioned stimulus, leading the stimulus to become a conditioned stimulus, resulting in a conditioned fear response. For example, a bite by a spider might cause the physiological aspects of fear (previously an unconditioned response) to become a conditioned response upon exposure to even the sight of a spider (i.e., now a conditioned stimulus). Based on this conceptualization, it would then follow that the goal of treatment would be to extinguish the conditioned response by having the conditioned stimulus no longer predict the unconditioned stimulus, and according to Wolpe (1958), thereby use "particular responses that, through inhibiting anxiety, weaken neurotic habits" (p. 112). As a result, treatment begins with the creation of a graduated fear hierarchy—a list of increasingly fearful exposures to the conditioned stimulus. Next, a counterconditioning agent is selected and the child is taught to perform it. Typically, progressive muscle relaxation and diaphragmatic breathing are used and recommended; however, Wolpe

(1958) indicated that a variety of appetitive behaviors could also be used including food and humor. Finally, the treatment unfolds by slowly using the counterconditioning agent to induce a state hedonically incompatible with fear and then exposing the child to a step in the fear hierarchy either imaginally or in vivo. Ideally, with this procedure, the child should not become "too" afraid during the exposures as one is trying to condition a new response upon exposure to the conditioned stimulus—experiencing too much fear during the exposure would essentially strengthen the fear association. As a result, clinicians frequently assess fear levels during exposure and will often develop a signal, such as raising a hand, the child can use when the exposure becomes too intense and begins to elicit fear (Ollendick and Cerny 1981).

Systematic desensitization has been influential in the treatment of fears; however, its theory and procedures have been increasingly scrutinized. The process of "counterconditioning" is generally considered now to be a process of learning competing, context-specific information instead of overwriting the fear conditioning itself (Bouton 2004). Clinicians must also consider treatment generalization in order to combat spontaneous recovery (i.e., return of fear in situations not encountered during treatment, Davis 2009). Unexpectedly, SD has not been shown to robustly affect the physiology of fear—a finding which seems to run counter to the primary claim that a different, competing physiological response is being learned (Davis and Ollendick 2005; Wolpe 1958). Even so, both imaginal and in vivo SD have been found to be effective in the treatment of fears (Davis and Ollendick 2005; Ollendick and King 1998). Surprisingly, it has not been examined in large randomized control trials with children who present with carefully diagnosed specific phobias.

Reinforced Practice (RP) RP or "contingency management" uses operant conditioning techniques to encourage a child to approach the feared stimulus or situation. This approach conceptualizes "fear [as] not only a response of glands and smooth muscles, [but as] a reduced probability of moving toward a feared object and a heightened probability of moving away from it" (Skinner 1988, p. 172). As a result, the goal of RP is to use operant principles to increase the probability that a fearful child will approach the feared stimulus (Davis and Ollendick 2005). In order to accomplish this, a clinician must first conduct a thorough functional assessment to determine what variables are currently maintaining the avoidance behavior and to identify increasingly potent reinforcers for use with increasingly more intense exposures. RP then involves progressing through graduated hierarchical exposures using shaping, reinforcement, extinction, and verbal feedback from the clinician (Ollendick and Cerny 1981; Ollendick et al. 2004). The clinician must focus on grading the exposure, providing clear, succinct directions, and contingently providing reinforcement and verbal feedback about the child's performance. Over time and repeated practices, the schedule of reinforcement can be thinned and eventually faded out.

At present, not unlike SD, RP has not been used alone to treat specific phobia in children, though it has been used productively as part of an integrated behavioral treatment (cf. Davis 2009; Ollendick et al. 2009; Silverman et al. 1999a). In the treatment of fear, however, RP procedures have been found to be effective and have garnered considerable empirical support (Davis and Ollendick 2005). As expected,

RP has been found to be most effective in altering the avoidance component of the fear response in children and adolescents (Davis and Ollendick 2005; cf. Silverman et al. 1999b, 1999a).

Importantly, RP and SD often become confused in the literature and, at other times, are misconstrued as "distractors" or "safety behaviors," especially when techniques other than progressive muscle relaxation are used (e.g., allowing the child to have some "security" object such as a teddy bear during an exposure; Davis 2009). At the crux of the issue is precisely when a competing response (as in SD) is initiated or when a reinforcer (as in RP) is delivered. Specifically, the reinforcement in RP should be delivered as soon as possible *after* the approach behavior occurs (i.e., temporal contiguity); conversely, SD involves the initiation of a competing response *before* the fear response occurs and is used to prevent the fear response from occurring in the first place. Confusion occurs when another form of a competing response (other than relaxation) is delivered before or during an exposure, but is then incorrectly labeled by some as a "reinforcer" (see Davis 2009). Conversely, if the "reinforcer" were administered after the completion of a step in the hierarchy, then it is applied correctly and it reinforces the approach behavior. For example, the teddy bear described above could be used for both RP and SD. If the teddy bear were provided contingent upon approach behavior, then the procedure would be best viewed as RP; however, if the teddy bear were provided before the exposure and the child were allowed to hold onto it during the exposure, then it would act in competition to the fear and would best be viewed as SD.

Participant Modeling (PM) PM has also been found to be effective in the treatment of childhood fears since its inception in the mid to late 1960s (Ritter 1965, 1968). Observing another person interact skillfully with a feared stimulus and without evincing fear is thought to weaken the associations between the unconditioned and conditioned stimuli in the observer as new context-specific inhibitory learning begins to compete with fear (Bandura 1969; Bouton 2004; Myers and Davis 2002). PM takes this one step further by encouraging the observer to interact with the model and the feared stimulus. As such, PM incorporates a significant skill-building component as the model not only serves to demonstrate successful interactions with the stimulus, but also guides the observer through interactions with the stimulus. The model typically demonstrates the successful negotiation of a step in the fear hierarchy, then physically and verbally guides the child observer through the step, and finally, slowly fades the amount of physical and verbal guidance the child requires to complete the step until he or she is able to master the task without assistance.

Similar to SD and RP, PM alone has not been evaluated in an RCT with children diagnosed with specific phobia (Davis 2009; Davis et al. 2011). For example, many classic studies of PM have used children who were fearful and not necessarily phobic (e.g., Bandura et al. 1969; Murphy and Bootzin 1973). Even so, PM has been found to be effective in the treatment of fearful behavior and in the alteration of fearful cognitions. An RCT with carefully characterized youth is desperately needed here too.

Cognitive-Behavioral Therapy (CBT) CBT makes use of many of the behavioral techniques already described (e.g., SD, RP, PM) to alter dysfunctional behaviors and the physiology associated with those behaviors, but also focuses on altering the schemas, attentional biases, and cognitive distortions which have come to create an automatic and negatively biased interpretation of the world (Beck 1993; Beck and Clark 1997; Kendall 1993). CBT for specific phobia frequently involves reinforcement (RP), graduated exposure (SD), and PM, but also incorporates psychoeducation about the feared stimulus, behavioral skills with which to interact with the feared stimulus, and cognitive techniques with which to alter distortions, automatic thoughts, and catastrophic thinking. As a result, CBT requires the clinician to obtain a detailed description of the child's catastrophic thinking prior to treatment (see above). Determining these cognitions allows for the testing of catastrophic thoughts during exposure and helps the clinician prevent cognitive and behavioral avoidance during the tasks.

A particular combination of cognitive-behavioral techniques into a massed session—One-Session Treatment (OST, Öst 1987a, b, 1989)—has proven to be an effective treatment for specific phobias (Davis et al. 2009; Ollendick et al. 2009; Zlomke and Davis 2008; also see other chapters in this book). OST includes many of the standard cognitive-behavioral techniques—psychoeducation, graduated exposure, reinforcement, cognitive challenges, participant modeling—but masses the exposure into a single therapy session typically lasting up to 3 hours. This unique alteration to the typical treatment session format may contribute to the treatment's impressive results (Davis 2009). Moreover, these massed sessions are well-tolerated by children and typically progress as per their expectations (Svensson et al. 2002). This unique and massed combination of behavioral and cognitive techniques into OST has recently been shown to be a well-established treatment for phobias in children (Davis et al. 2011).

Summary

As we have noted, the assessment of specific phobias in children should be evidence-based, using measures and procedures which have solid evidentiary support for their clinical use. In general, evidence-based assessment requires a multi-method (i.e., multiple methods such as interviews, questionnaires, and behavioral observations) and multi-informant approach (i.e., seeking input from multiple sources including the child, parents, other caregivers, and teachers). It also requires use of psychometrically sound and developmentally sensitive tools. Based on an evidence-based assessment, a treatment based on this information can then be implemented. Four treatments have been shown to have considerable evidentiary support at least for childhood fears: SD, RP, PM, and CBT. Although each of these interventions has some support for their use with fears, they have not been carefully evaluated with specific phobias. In recent years, these treatments have been combined into an intensive, one session treatment—OST—the topic of this book. This intervention has led to impressive

results, with a clear majority of children and adolescents benefitting from these intensive cognitive and behavioral procedures. The conduct of OST for children and adults is presented in considerable detail in the chapters that follow.

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Part II
One-Session Treatment for Specific Phobia in Adults and Children

Chapter 4
One-Session Treatment: Principles and Procedures with Adults

Lars-Göran Öst

What are you up to Ronja?
I'm going to take care not to fall into the river.
Where are you going to do that then?
I have to do it by the river if it is going to be of any use, don't I?
From Ronja Robbersdaughter by Astrid Lindgren (1981)

Background

When I started research and clinical work with specific phobics in the mid-1970s, very little differentiation was made in the research literature between agoraphobia, social phobia, and specific phobia regarding the number of therapy sessions. Thus, I used eight 1-hour sessions in my early studies on specific phobias. After having worked with that format for about 5 years I started getting bored seeing the same patients week after week. I also began to question why behavior therapists should follow the same format as devised by psychodynamic short-term therapy (i.e. one session per week for 12–20 weeks).

One problem that often occurred in therapies over multiple sessions was that the patient got a limited anxiety reduction during the session; his or her subjective unit of distress (SUDs) rating may have gone down from 90 to 60 during the first session. However, there was some return of fear between sessions so they did not start the next session on 60, but perhaps at 75 and went down to 50, etc. I wondered what would happen if I used a session that was long enough to get rid of all the anxiety (i.e. getting the patient down to 0). Thus, I decided to ask the next specific phobia patient that was referred to me if he or she was willing to try to complete the entire treatment during a prolonged session, maximised to 3 hours during a morning or an afternoon. This patient was

L.-G. Öst (✉)
Department of Psychology, Stockholm University, Stockholm, Sweden
e-mail: ost@psychology.su.se

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_4, © Springer Science+Business Media, LLC 2012

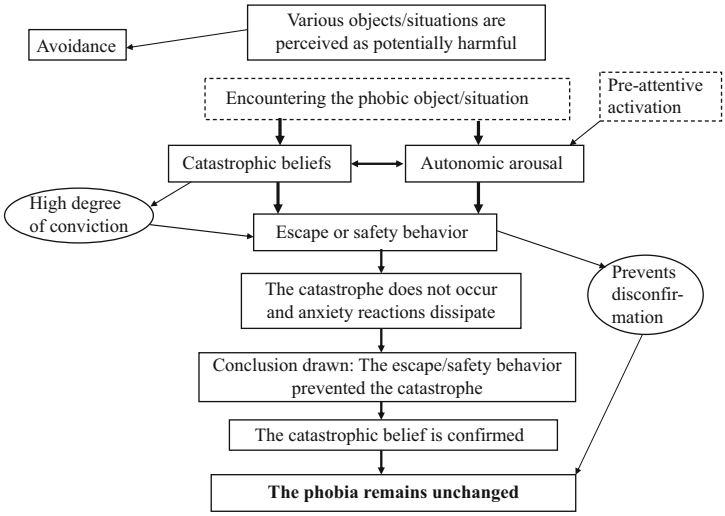

Fig. 4.1 A cognitive-behavioral model for the maintenance of specific phobias

a spider phobic and the treatment was done in 2.5 hours with a good result. Then I decided to treat 20 consecutive patients that were referred to me. It took 7.5 years since these specific phobics rarely present for treatment. I then followed all of them up for an average of 4 years posttreatment and classified their status on a four-point scale (unchanged, some improvement, much improvement, and completely recovered). It turned out that 65% were completely recovered and another 25% much improved, for a total of 90% who showed a good long-term outcome (Öst 1989a). The mean treatment time was 2.1 hours (range 1.0–3.0 hours). This gave me the answer I needed to start a series of randomized controlled studies on the one-session treatment (OST).

A Cognitive-Behavioral Model for the Maintenance of Specific Phobia

All effective cognitive-behavioral treatments are based on a model that specifies how the disorder in question is maintained once it has developed. As examples of this we have Salkovskis' (1985) model of obsessive-compulsive disorder (OCD), Clark's (1986) model of panic attacks, Clark and Wells' (1995) model of social phobia, and Ehlers and Clark's (2000) model of posttraumatic stress disorder (PTSD). Since there has not been a model of the factors involved in the maintenance of specific phobias, I have developed one (Fig. 4.1) based on my 35 years of research and clinical work in this area.

The starting point of the model is the observation that various objects/situations are perceived as potentially harmful by people with specific phobias and this leads to

avoidance of the objects or situations. When a person fails to avoid and encounters the phobic object/situation, he or she experiences catastrophic cognitions (beliefs) and autonomic arousal. The latter can be activated preattentively, without the patient being conscious of the phobic stimuli (Öhman and Mineka 2001). Recent research on cognitions in specific phobics (Öst et al. 2011) shows that all patients in a sample of injection phobics report at least one catastrophic cognition during the screening interview and they were highly convinced (mean 77 on the 0–100 scale) that the catastrophe would come true if they had an injection. As shown in the figure there can also be an interaction between catastrophic beliefs and autonomic arousal, so that they serve to increase each other. Both lead to escape from the situation, and if that is not possible, the initiation of safety behaviors in an attempt to prevent the catastrophe. The consequence is that the catastrophe does not occur and the anxiety reactions dissipate after a while. A more important and detrimental consequence is that the escape or safety behavior *prevents disconfirmation* of the catastrophic belief and the phobia remains unchanged. After escaping the situation and the dissipation of anxiety, the patient draws the conclusion that it was *only* by escaping or carrying out the safety behavior that the patient *prevented the catastrophe* from happening. This means that the original catastrophic belief is confirmed and the phobia remains unchanged. However, the patient's conclusion is incorrect since the reason that the catastrophe did not occur is that it *cannot* occur, not that the patient's safety behavior prevented it.

The model also indicates where the focus of the intervention should be—helping the patient obtain new information that can correct the false catastrophic beliefs about what an encounter with the phobic object would mean. By exposure to the phobic object/situation and remaining in the situation until the anxiety dissipates the therapist is helping the patient to change his or her conviction in the catastrophic belief. When the patient does not avoid the phobic object/situation, has no autonomic arousal and no longer believes that the catastrophe will happen, the treatment is complete.

The Pretreatment Interview

Approximately one week before the treatment session takes place, the therapist meets the patient to carry out a clinical interview. This interview has three purposes. The first is to ascertain that the patient fulfills diagnostic criteria (currently DSM-IV, APA 1994) for specific phobia. In this part the specific phobia section of the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown et al. 1994) is used and is complemented with a few other questions. The second purpose is to collect information about the patient's catastrophic beliefs concerning the encounter of the phobic object/situation. The final purpose is to briefly describe the rationale for and content of the treatment. Depending on how talkative the patient is, this interview usually takes 45–60 minutes.

Brief Cognitive-Behavior Analysis

During the pretreatment interview, it is important to ask the patient a series of questions in order to arrive at an individual functional analysis of the subject's phobic problems. The most important of these questions concerns the factor that maintains the phobic behavior. It is not very informative to reach the general conclusion that it is the avoidance and escape behaviors that maintain the disorder. We need to find out what kind of catastrophic beliefs the patient has when it comes to encounters with the phobic object or situation. This is illustrated below with patients having spider phobia, snake phobia, and claustrophobia, respectively.

Spider Phobia

Therapist: "Imagine that you walk into a room and you see a spider, about 1 inch in size, on the wall. What thoughts run through your mind then?"
Patient: "I have to run out of the room and cry for help."
T: "OK, now imagine that you cannot leave the room, for some reason."
P: "I would cry loudly so that someone could come and rescue me."
T: "Imagine that you are alone in the house, and there is nobody that can hear you."
P: "I would get strong panic reactions and then freeze and just stare at the spider."
T: "What will happen then?"
P: "I don't know. I can't think about it. I get panicky just talking about this."
T: "Please bear with me and continue to imagine that you are in this room with the spider, and you can't leave. What do you fear will happen?"
P: "I don't know because I have always been able to run or get help."
T: "I fully understand that this is unpleasant to think about, but close your eyes and imagine that you are in the same room as the spider. What is the worst that you fantasize will happen?"
P: "The spider will crawl up on my body, and I will not be able to brush it off because I am petrified by fear."
T: "What will happen then?"
P: "It will crawl underneath my clothes and that would be the end."
T: "How do you mean, the end?"
P: "I would die."
T: "How would you die?"
P: "I would get a heart attack from the strong panic and die; because the heart can't stand the very strong anxiety reactions with palpitations etc."
T: "OK, let me summarize what we have arrived at with this little thought experiment. The worst consequence that you believe may happen if you encounter a spider is that you would die because of a heart attack. Is that correct?"
P: "Yes, I suppose so, but I have never dared to think it through like this before."
T: "Now I want you to rate, on a scale from 0 to 100%, how strongly you believe that this scenario will happen, in other words if you encounter a spider in a room and can't leave the situation you would die of a heart attack."

P: "I am not sure, but I guess it is high, about 90%."
T: "And when you sit here and think rationally about it?"
P: "It is lower, say 40%".
T: "Fine, it is usual that these figures differ a lot."

Snake Phobia

T: "What is the worst thing you fear will *happen* when you encounter a snake?"
P: "I don't know. I'll scream and run away."
T: "Imagine that you cannot leave the situation."
P: "I would freeze and just stare at the snake."
T: "What do you think that the snake would do?"
P: "Sooner or later it would crawl up to me, up my legs, underneath my clothes, and bite me."
T: "What would happen with you then?"
P: "I would die."
T: "How would you die?"
P: "From the snake's venom."
T: "But if it isn't a venomous snake?"
P: "From the shock. My heart would not stand it."
T: "OK. The worst that you imagine could happen is that you will die. How convinced are you (0–100%) *in the situation*, when you are in contact with the snake that it will lead to your death?"
P: "100%."
T: "And how convinced are you *now when you are sitting here* talking rationally to me about it?"
P: "30%."

Claustrophobia

T: "What do you think will *happen* if you ride an elevator?"
P: "The elevator will get stuck between two floors."
T: "What would happen with you then?"
P: "I would get a very strong panic attack."
T: "What would happen then?"
P: "Probably nothing more would happen in my life."
T: "What do you mean?"
P: "I would be ready for the mental hospital and remain there for the rest of my life."
T: "You mean then that you would get. . . ."
P: "Crazy, nuts, insane."

T: "OK. Imagine the situation that you ride an elevator and it gets stuck. How certain (0–100%) are you *when you are in the situation* that it will lead to you being admitted to a mental hospital and remaining there for the rest of your life?"
P: "Completely certain."
T: "100%?"
P: "No, say 99% then."
T: "And now *when you are sitting here* talking to me?"
P: "95%."

Safety Behaviors

Once the patient's catastrophic belief is elicited, it is usually easy to find out if the patient is using any safety behaviors by just asking: "When you are in contact with the phobic object/situation and have the belief as you just described, do you do anything to prevent the catastrophe from happening?" Sometimes a patient cannot remember applying any safety behaviors but when the exposure is started it will usually be obvious what he or she does. When this occurs, the therapist must help the patient to let go of the safety behaviors in order to test what happens; if the catastrophe occurs or not.

Normalize the Patient's Phobic Behavior

After obtaining information about the patient's catastrophic belief, I have found it valuable to normalize his or her phobic behavior by saying something like this: Since you *believe* so strongly in the catastrophe, it is logical to avoid/escape the phobic situation. This *prevents* you from obtaining new information that can correct the false belief, and thus, the phobia *remains* unchanged!

It may even be advantageous to tell the patient that if I believed, for example that there is a 90% chance that I would get run over by a car and die when crossing a busy street at a pedestrian crossing while the WALK sign is lit, it would be rational to avoid this. Instead I would walk a long distance to find a bridge across or a tunnel underneath the street.

Rationale for the Treatment

As in all instances of working with cognitive-behavioral treatments, it is necessary to give the patient a rationale for the treatment method. In doing this, one should tailor the description of the treatment to the individual patient's problem behaviors so that he or she can understand more easily why the selected treatment method

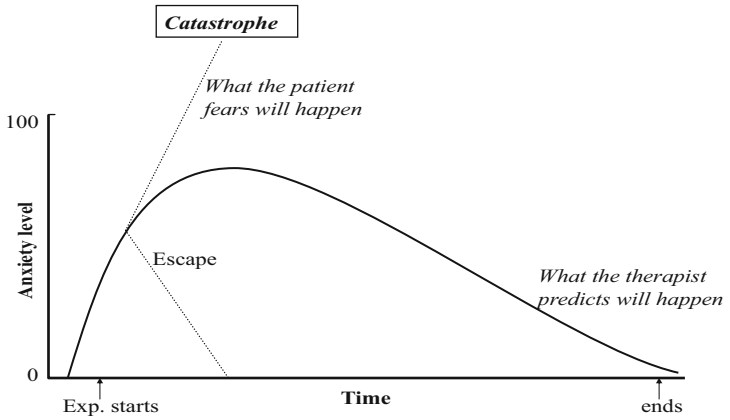

Fig. 4.2 The anxiety curve

should work in his or her case. The purpose of the OST is to expose the patient to the phobic situation in *a controlled way,* thus enabling him or her to realise that the consequences one fears would happen do not occur. Finally, the OST should be seen as a *start,* and the patient must continue exposing himself/herself to phobic situations in everyday life after the therapy. It is not to be expected that a specific phobia of 20–30 years duration should completely vanish after only one therapy session. However, the single session enables the patient to continue on his or her own with exposure in natural situations (e.g. by following a voluntary maintenance program; Öst 1989b), so that within a few months the remaining phobic behavior will disappear.

The Anxiety Curve

A schematic presentation of what happens when a phobic patient encounters the phobic object/situation is displayed in Fig. 4.2, which shows two important things. First, it shows what patients usually do when they happen to encounter the phobic stimuli; their anxiety level will increase rapidly and they escape from the situation, since they believe that the catastrophe will occur if they remain. The escape curve also illustrates the rather rapid dissipation of anxiety once the patient has escaped from the phobic encounter. Second, it shows the two predictions that can be done in this situation; the patient's prediction that the anxiety will increase out of all proportions and result in the catastrophe they believe is possible, and the therapist's prediction that the anxiety curve will reach a plateau and then gradually decrease *while the exposure continues*. When drawing this curve to show the patient it is important to be clear about what 100 on the y-axis means. It is the highest degree of anxiety that the patient has ever experienced in the phobic situation before the treatment starts, which is something that the therapist asks about during the pretreatment interview.

Differences Between the OST and Natural Encounters with the Phobic Situation

After describing this graph, the therapist should point out the important differences between natural encounters with phobic stimuli and the exposure during treatment. First, in natural situations the exposure is unplanned, ungraded, and uncontrolled, whereas in the treatment it is planned, graded, and controlled. Second, in natural situations the exposure is very brief but in treatment it is prolonged (up to 3 hours). This time difference means that there is ample time to test the two predictions and find out which one is correct. Finally, in natural situations the patient is usually alone, while in the treatment situation there is a team (patient and therapist) to deal with the phobic reactions.

Pretreatment Instructions

At the end of the pretreatment interview, the therapist gives the patient some instructions concerning what will happen during the treatment session. First of all, the patient is told that team-work is important in carrying out the treatment, and both the therapist and the patient have equal responsibility for achieving a good result. This kind of therapy is hard work and can only be successful if both the patient and the therapist fulfill their roles in the team-work.

Most patients fear that some kind of "shock treatment" may be applied. For example, they might think that the therapist will suddenly take out a spider and throw it in the patient's lap. Thus, it is important to inform the patient that the therapist will never do anything unplanned in the therapy room, but will describe to the patient what will happen, demonstrate it, and finally will get the patient's permission to do it. The therapist will suggest a number of steps in the exposure but it is always the patient who has the final word if he or she will carry it out or not.

Another fear that many patients have is that they will be subjected to such a high level of anxiety and for such a long time (3 hours) that they will not be able to cope with it, mentally or physically. They believe, for example, that they may suffer a heart attack and die from anxiety. Here it is important that the patients think back on the most anxiety-arousing situation they have ever experienced in relation to the phobic stimulus, and calling this 100 on the 0–100 Subjective Units of Disturbance (SUDs) scale. The therapist then informs the patient that even if the treatment session will mean that he or she will be exposed to much more than they ever have experienced in natural situations this will not "break their personal record" of anxiety in the phobic situation. The reason being the planned, gradual, and controlled way the exposure is carried out. This information is usually comforting since they have survived their most anxiety-arousing situation.

Finally, the patient is told that a high level of anxiety is not a goal in itself for the OST, but can be considered a side effect. If the patient can achieve the treatment goal with a maximum anxiety level of 40–50, instead of 80–90, it is quite all right as

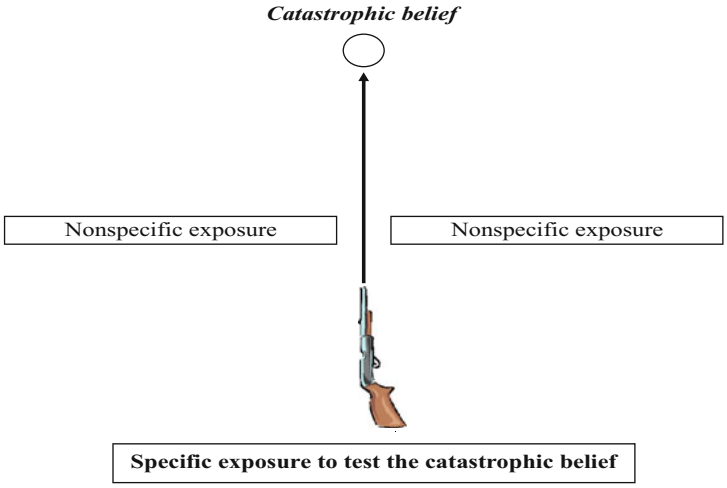

Fig. 4.3 Nonspecific vs. specific exposure of the catastrophic belief

long as no cognitive avoidance goes on, the necessary emotional processing can take place, and the patient can obtain new knowledge that can correct the false belief. Immediately before the treatment session starts the patient's understanding of the rationale and the pretreatment instructions are checked by letting him or her describe them to the therapist. Any misconceptions can easily be corrected and you have a patient better equipped to fulfill his or her role in the team-work.

The One-Session Treatment

When the treatment is applied for animal phobics it consists of a combination of exposure in vivo and participant modeling, whereas for other specific phobias the modeling component does not seem to be necessary. However, in some phobias it can be used to demonstrate the suitable behavior the patient should carry out, for example how a height phobic should approach the railing and look down from there.

Exposure In Vivo

The guiding principle for the exposure situations is the patient's catastrophic cognitions concerning the phobic object/situation derived from the cognitive-behavioral analysis above, and the exposure is set up as a series of behavioral tests, instead of a straightforward exposure focused only on what the patient avoids. Fig. 4.3 illustrates that a broad nonspecific exposure runs the risk of missing the patient's core catastrophic belief, whereas a very specific exposure (behavioral experiment) can in a much briefer period of time achieve its goal of changing the patient's catastrophic

belief. My clinical impression is that there is also a more rapid shift in avoidance behavior and subjective anxiety by doing the exposure this way. An analogy may clarify this; if you are a big game hunter you use a rifle and not a shotgun in order to bring down a moose at a 200-yard distance. Furthermore, the general principles for exposure in vivo are followed; the patient makes a commitment to remain in the exposure situation until the anxiety fades away, he or she is encouraged to approach the phobic stimulus as much as possible and remain in contact with it until the anxiety has decreased, and the therapy session is not ended until the anxiety level has been reduced by at least 50%, but preferably completely vanished.

Participant Modeling

The principles developed by Bandura and his co-workers (e.g. Bandura et al. 1974) are followed for participant modeling. This means that the therapist first demonstrates how to interact with the phobic object. At this step it is important to get the patient to continuously observe what is happening and not close the eyes or look away. After doing this for a while, the therapist helps the patient gradually to approximate physical contact with the phobic object; for example by first holding the patient's hand, then the arm, and gradually reducing the physical assistance. At this stage the therapist may have to reduce and increase the physical help a number of times before the patient is ready to proceed to the next step. This means that the patient interacts with the animal on his or her own, only with the help of the therapist's instructions.

Treatment Descriptions

Descriptions of how a number of common specific phobias can be treated is mentioned in following sections. However, these descriptions should *not* be considered as the only way of doing the treatment, but as examples of how it can be done. Individual therapists must be allowed a degree of flexibility regarding the specific content of the treatment and the descriptions that follow are my personal ways of carrying out the OST and the ways used in the randomized trials on the phobias described. It should also be noted that so far there is no research comparing different ways of doing this treatment.

Spider Phobia Treatment

Spider phobia is perhaps the most prevalent of the animal phobias, and the one having the most outcome studies (Choy et al. 2007). In order to fulfill the aims of gradation

and control, three or four spiders in increasing sizes, from 0.5 to 3 cm are used, and the spider is placed in a large plastic bowl (approximately 50 × 30 × 15 cm) during the session. The first step is to teach the patient to catch the smallest spider with a glass and a piece of paper (e.g. a postcard) and throw it out of the house, which is the goal for natural situations. The glass is put upside down over the spider in the bowl and the postcard is slid under it. The postcard functions as a "lid" and by putting one's fingers under the postcard the glass can be turned upright and the postcard removed with caution, in case the spider has spun a thread on the card. (Note: in this case the spider may very well still be attached to its webbing and come away with the card when it is removed). As a deterrent to this scenario, it works well to gently slide the card around the edge of the glass in a circular motion to disconnect any potential webbing. After modeling the procedure, the therapist helps the patient to carry out this task. Usually it is repeated three or four times and the last time the patient is instructed to hold the glass in the palm of his or her dominant hand and close to the body. At this point a brief role-play can be carried out in order to "force" the patient to look closely at the spider. The role-play consists of having the therapist play the part of a person who cannot see the spider and the patient has to describe what he or she is looking at in the glass by only using words that can convey meaning to the person who cannot see the spider. This procedure usually leads to a marked anxiety reduction.

The second step is touching the spider. Before starting this step the therapist should ask the patient what he or she believes will happen if he or she puts a hand in the bowl. Almost all of our patients say that the spider will crawl up on their hands, up the arm, and underneath the clothes. This prediction can be tested by the therapist putting his hand in the bowl, then touching the spider from behind with the dominant index finger. What happens, much to the surprise of the patient, is usually that the spider runs away. By repeating this ten times the patient will realize that the spider gets tired quickly and gradually runs shorter distances. Then the same procedure is repeated from the left side, from the right side, and from the spider's head. The conclusion is that the spider does not crawl up on the therapist's finger. This is then followed by the patient touching the spider in the same way, which usually takes physical guidance from the therapist. By letting the patient do this long enough, the assumption that the spider will react differently towards a phobic person can easily be tested and corrected.

The third step is letting the spider walk on the patient's hands. This can be done by the therapist first taking the spider on his or her hands, letting it walk from one hand to the other. Then the patient is encouraged, with the therapist's help, to put his or her index finger on the therapist's hand so that the spider can walk across the finger and back on to the therapist's hand. This is repeated a number of times, and then the spider is gradually allowed to walk on all the patient's fingers, on the whole hand, and across to the other hand. Gradually the therapist withdraws physical support, letting the patient manage on his or her own, just following the therapist's instructions. During this step the goal is to have the spider walk up to the elbow (on both arms), letting the patient realise that she can move her hands faster than the spider can run, to prevent it from crawling underneath her clothes. This is done

by placing the open hand, palm down, on the arm in front of the spider and as it climbs upon the back of the hand one removes that hand and the spider now has a new starting point from which to begin crawling.

The fourth step is having the spider walk on the patient's body. One can start by putting it on the trousers (at knee level) and "guide" it as it crawls up towards the waist. When this has been done a number of times and the patient's anxiety has been reduced, the spider can be put on the shirt at waist level and have it crawl up to the neck. Naturally, this has to be repeated until a marked anxiety reduction takes place.

These four steps are then repeated with another 2–3 spiders of gradually larger size, the largest being about 3 cm (with legs). When this is accomplished the patient is encouraged to have the two largest spiders walking on his or her hands simultaneously. This step is of course more difficult, but by being relaxed in her arms and hands she can usually control the spiders.

If there is time left in the session, the therapist may suggest the patient go through over learning or the "extra course," which probably is not necessary in order to obtain a good result. This means first having the largest spider in the patient's hair, while the therapist is standing behind the patient to observe the spider and prevent it from crawling underneath the neckband of the shirt. During this step the patient is asked to tell exactly where the spider is by pointing with an index finger. It is very common that the patients are incorrect because they cannot really feel the spider. The final step is to have the spider put on one's cheek. The patient holds one hand over the neckband to prevent the spider from falling inside the shirt while the therapist cautiously puts the spider on the patient's cheek. Then he or she has to guard it so it does not crawl on the patient's ear, eye, nose, or mouth. It is acceptable, though, that the spider walks a bit on the cheek.

Throughout the session the patient is taught that she can have indirect control over the spider by gradually being more correct in predicting what the spider is going to do. The patient will learn that the spider is not going to turn 180° and suddenly run in the opposite direction. Basically, it will crawl in the direction that its head is pointing. The principle guiding how much time is spent on each step is the patient's SUDs rating and belief in the catastrophic cognitions. The final goal is that the patient should be able to handle two spiders with low or no anxiety and no longer believe in his or her catastrophic cognitions.

I often get asked if we use large oriental spiders (e.g. bird spiders) in the treatment. The answer is "no," since the patient will not encounter these kind of spiders unless they live in a country where these spiders have their natural habitat. You should focus the treatment time on the kind of spiders that the patients will meet in natural situations in the country they live in. I was recently contacted by a woman who was successfully treated by me in Sweden 10 years earlier but was now moving to a tropical country and wanted to have a rehearsal session with the kind of spiders she might encounter. I rented a bird spider from a zoological shop and the session was done in 1 hour, ending with the patient having this large spider on her cheek.

Snake Phobia Treatment

When I started to treat snake phobics with OST I used three snakes of different sizes (e.g. a corn snake, a python, and a boa constrictor), similar to the different sizes of spiders. However, it can be difficult to obtain three different snakes for the session and currently I only use a corn snake that is about 4 ft long. It goes without saying that you can only use a nonpoisonous snake and the snake should be accustomed to being handled frequently by people. It would be very difficult to continue a treatment session if the snake bit the patient or displayed any other kind of aggressive behavior.

In treating a snake phobic patient it is an advantage to have a fairly large room so that you can seat the patient in one end and bring out the snake in the other. It is important that the patient is not confined by the therapist handling the snake; he or she should have free passage to the door of the room. Knowing that one can leave the room without having to pass by the snake will reduce the anticipatory anxiety and ideally make an escape unnecessary.

The first step of the treatment is that the therapist brings out the smallest snake and holds it in the hands or arms at a distance from the patient (as long as the room allows). The instruction to the patient is that he or she should watch the snake at all times, observing its colors, pattern of the skin, movements, tongue, etc. It is also important to get the patient's SUDs ratings at regular intervals. When there has been a reduction in anxiety, the therapist asks if it is okay to move about 3 ft closer. If the patient accepts, then the therapist moves closer, stops at a point agreed upon, and stays there until the patient's anxiety level decreases further. This approach continues until the therapist comes all the way up to the patient and sits down on a chair 2–3 ft away. After a while he or she can move the chair closer so that the patient can reach out and touch the snake. This step is attempted after the patient has adjusted to having the snake at such a short distance. Since most snake phobics fear the mouth and the tongue of the snake you start by having him or her touch the tail. Before the patient can do this you ask for a prediction of what it will feel like touching the snake. Most snake phobics have the idea that the snake is slimy and warm and they are surprised when they realise that it is dry and cool (i.e. the same temperature as the room).

This first touch is usually done by the therapist holding the snake's head away from the patient while he or she can touch its tail. Since the patient usually touches the tail very briefly you have to encourage him or her to repeat the step a number of times, and for longer periods. When this process is going well, the patient should be encouraged to touch the snake gradually closer and closer to its head. At one phase you instruct the patient to hold one hand around the snake's stomach and let it glide in the palm of the hand as it moves. Then the patient can hold the snake with both hands and get acquainted with its movements and how the muscles feel. All the time it is absolutely necessary that the therapist is in control of the snake. The patient must be certain that the therapist will intervene if the snake does anything unforeseen.

Since the patient typically avoids close contact with the snake's head, it is necessary to get to this step. First you get the patient's prediction of what will happen if he or she puts a finger in front of the snake's mouth. There is usually a strong belief that the snake will bite the finger. This is first tested by the therapist putting his or

her fingers in front of the snake's mouth and giving it ample opportunities to bite while the patient is encouraged to watch closely. After this the patient is asked for a preliminary conclusion regarding the prediction. Then you do the same thing with the patient's hand, letting the snake be so close that the patient can feel its tongue on the skin of his or her hand. When this has been done with reduced anxiety you ask for a final conclusion concerning the probability of being bitten by this snake. In this situation it may also be a good idea to discuss under what circumstances a snake of that particular species would bite: to kill its prey or if it was threatened (e.g. being treaded on by accident).

The next step is to gradually let the patient move the snake over onto his or her lap. The therapist has to assist the patient and facilitate the transition in any way possible for both the safety of the patient and the snake (e.g. preventing accidently dropping the animal and harming it). When the patient feels fairly comfortable handling the snake in the lap, it is time to let it move around more (e.g. crawling around the patient's waist, up one arm, towards the neck, etc.). The final step could be having the snake around the neck with the patient feeling its scales against his or her neck and cheek. If the patient is willing you could even suggest putting the snake under the patient's shirt or blouse trying to get it to crawl around the waist. The last two steps should, of course, be viewed as an "extra course." Before concluding the session, it is essential that the therapist makes sure that all the catastrophic beliefs that the patient has have been tested. If one, or more, remains untested there is always a chance that it may be a risk for starting to avoid snakes again.

Bird Phobia Treatment

What follows is a description for the treatment of a patient who is phobic of different types of birds, not just one species. In some cases the patient only has a phobia for pigeons and then the exposure is concentrated to situations containing a lot of pigeons (e.g. a square in the center of town). I have found it useful to start with a situation in which there is total control over the birds, and thus a zoological (pet) shop having birds in cages is ideal. Usually, these shops have a special bird room since the birds make quite a lot of noise. It is ideal, but not necessary, if the door of the room has a glass window so that the patient can look into the room from outside. When the patient is ready, you enter the room, stay in the middle, and close the door so that the patient will feel a bit more privacy. First the patient and therapist just stay in the middle of the room in order for the patient to get familiar with the situation. Then the therapist models how to touch the outside of the cages, after which the patient starts doing the same thing with physical help from the therapist. First you obtain the patient's prediction of what will happen when he or she touches the cage. Then you follow a hierarchy if the patient believes he or she will experience different levels of anxiety depending on what birds are in the different cages. After touching the cages (the sides, the top, and the front) for prolonged periods of time and without the therapist's assistance you ask the patient to draw a conclusion regarding the prediction.

Then it is time to proceed to the next step, which entails opening the door to a cage and insert a finger, and then the whole hand. As before, you get the patient to predict what will happen before you start this step. First the therapist models by opening the door and putting his or her index finger inside, and then placing his or her hand on the perch. What almost always happens is that the birds recoil to the back of the cage and do not dare to sit on the perch you are touching. Sometimes a bird flies to find a better place to sit and its wings may touch your hand. Then the therapist helps the patient to do the same things, with a lot of support and physical contact to begin with and then gradually less and less, until she can do it on her own. When the anxiety level has decreased, you ask the patient for a conclusion concerning the prediction he or she made for this step. This is usually the end of the work in the zoological shop.

The next phase can take place where there are a lot of different birds who are used to being fed by people (e.g. at a pond). At this step it is necessary to have two loaves of sliced bread so you can get the birds to come close to you. The therapist starts, however, by gradually approaching the pond and walking around it at a "safe" distance. Then the therapist starts feeding the birds by throwing pieces of bread. This will usually attract a fair number of birds close to the therapist and the patient. Immediately before this step, the therapist gets the patient to predict what will happen, especially what his or her catastrophic belief in this situation is. When the therapist has attracted the birds he or she helps the patient—with verbal instructions and physical contact—to remain in the situation and keep feeding the birds. Initially the patients throw the bread a long distance in order to keep the birds out of the immediate vicinity. Then the therapist has to expose them to have the birds closer by dropping the pieces of bread gradually closer, ending up with bread on the top of his or her shoes. At this step the therapist will have birds around his or her and the patient's feet, and he or she may feel completely "surrounded" by birds. By remaining in the situation and scrutinizing the patient's catastrophic beliefs, the therapist will help the patient to achieve an anxiety reduction.

The next step is that the therapist gradually withdraws his or her help and increases the distance to the patient so the patient will experience a sense of having accomplished the exposure on his or her own as well. Then it may be time to test out a common belief held by bird phobics (i.e. that the bird will fly so close to the patient that its wings will touch his or her body, which would be very anxiety arousing). After observing that this does not happen when just throwing bread on the ground you may want to "scare" the birds to find out if they react in an uncontrolled way then. This can be achieved if the therapist instructs the patient to continue feeding the birds while he or she takes a short walk and then approaches the birds from behind, sneaking up on them. When having come within 5 or 6 ft from the patient, the therapist may stamp on the ground and clap the hands in order to make the birds fly from the ground. If they behave uncontrollably in this situation there is a chance that one could, by mistake, touch the patient. However, this has never happened in the more than 30 bird phobia treatments that I have done. As always, you get the patient to draw a conclusion in regards to the prediction. The final step, an extra course if the patient feels like going ahead with, is to try to hand feed the birds. This can sometimes be difficult, but if the birds are sufficiently used to people this

can be accomplished. Naturally, you obtain the patient's prediction before starting to model the behavior. Then you help the patient using physical assistance, and finally verbal instructions. It is acceptable if the patient uses gloves at this step, at least to begin with, in order to find out if the bird bites or just nibbles in order to get the piece of bread. This phase ends with a conclusion and rating of the belief. The entire treatment session ends with a review of the patient's original catastrophic beliefs, obtaining current ratings of these, and a discussion of whether there are any beliefs left that have not been tested in the session. If this is the case, you continue with a suitable exposure for that belief, otherwise the session is closed.

Wasp Phobia Treatment

Most people with wasp phobia do not fear bees or bumble bees, but they react to the buzzing sound. Once they realise that it isn't a wasp they usually calm down. In some cases where the phobia also includes bees and bumble bees it may not be necessary to use more than wasps in the treatment, but in other cases you will have to use all three insects. The description below is focused on how to conduct a treatment with just wasps.

The first step is to catch wasps, and this is not difficult providing it is a fairly warm and sunny day; when it is cloudy and rainy it is much more difficult though. Assuming that you have caught a number of wasps, you keep them in individual glass jars with lids containing air holes. To start the exposure with a live wasp it is an advantage if it is calm, and does not fly away. In order to achieve this you put the jar in a refrigerator for 20–30 minutes. This will make the wasp docile and induce a state akin to hibernation. Then you take it out of the jar, and put it on the soft side of a sponge. You have prepared a metal paper clip so it fits over the waist of the wasp, and with this you keep the wasp on the sponge long enough to be able to trim its wings about 2 mm before it becomes fully alert in the room temperature. Some people may consider this an act of cruelty to the wasp, but it is necessary in order to have a certain amount of control over the wasp in the therapy room. Once the wasp gets warm (in a few minutes), it will try to fly away, making a buzzing sound which is frightening to the phobic patient, but the wings are not long enough for it to sustain flight. Then you can let the wasp crawl around on the table, and it is necessary to have a postcard or a piece of paper to prevent it from falling to the floor. At this stage you could ask the patient for a prediction of what would happen if you put your hand on the table, and then test this out. Then you let the patient do the same thing to find out what the wasp is doing. Later you can let the wasp crawl up on a pencil, which you hold between your thumb and index finger, to show the patient what the wasp does when it reaches the tip of the pencil. It crawls on the bottom side of the pencil, and then you turn the pencil so it walks on the upper side again. Then you instruct the patient to do the same thing with the wasp crawling on the pencil. You would have him or her wait until the wasp gets closer and closer before changing the grip from the right to the left hand. Before ending this phase you ask the patient for a belief rating concerning

the initial prediction. Some therapists do not like to trim the wings of the wasp and then you start with letting the wasp out of the jar near the window, and gradually approach it. By necessity, this means that you have less control over the wasp in the initial part of the treatment and it may, thus, be more difficult for the patients.

The next step is to bring out a jar containing a wasp which has not had its wings trimmed. Before unscrewing the lid you need to get the patient's prediction of what the wasp will do once the lid is off. Invariably, the wasp phobics say that the wasp will fly directly to them and sting them. When this is tested, the patients usually need a lot of physical help to remain seated when the lid is removed. Sometimes it may take a while for the wasp to fly out of the jar, but as soon as it is free the wasp flies towards the light (e.g. the window pane). After banging against the window for a while, the wasp usually makes a trip into the room. At this point, the patient also needs the therapist's help to remain in his or her seat since the wasp may fly close to the patient's head. After a brief trip, the wasp typically returns to the window and tries to get out. It usually takes a few flights into the room before the patient feels comfortable that the main interest of the wasp is to escape, and then a conclusion regarding the prediction is drawn.

Some patients may have the belief that the only reason they were not stung by the wasp is the presence of the therapist. Thus, the next step is gradually increasing the distance between patient and therapist, and eventually the patient opens the jar while being alone in the room. When this has been done long enough for the patient, to obtain corrective information, the next step is to repeat the same procedure in a small room (e.g. a bathroom or a toilet room without windows). In this situation the patient is closer to the wasp and may feel trapped in since the door has to be closed, otherwise the wasp might escape. Analogous to the previous instances the initial catastrophic belief has to be elicited, rated by the patient and then tested during the exposure. The entire session is concluded once the patient remains in the same room with the wasp flying around, without experiencing undue anxiety and without any catastrophic beliefs in mind.

Blood-Injury Phobia Treatment

In contrast to other specific phobics, who display increases heart rate, blood pressure etc., blood-injury phobics are characterised by a drop in blood pressure which eventually leads to fainting if it falls low enough. In previous research, I have developed and evaluated a specific treatment method for blood phobia called *applied tension* (Öst et al. 1991; Öst and Sterner 1987; Öst et al. 1989). This is an intensive 5-session treatment having two aims: 1) teaching the patient to recognise the first signs of a drop in blood pressure, and 2) teaching the patient to apply a rapid and effective tension technique to reverse the blood pressure drop. After practicing the tension technique at home the patient is exposed to 30 slides of wounded people, blood donation at the hospital's blood donation center, and watching a real thoracic operation (i.e. lung or open-heart surgery).

The above treatment has been reduced to a one-session format with a maximum time of 2 hours. The session starts with the rationale for applied tension—learning an effective way to counteract the drop in blood pressure which occurs in the phobic situations *prevents* fainting. The first step is to make the patient aware of the very first sign of the blood pressure dropping. These signs can be idiosyncratic, but include cold sweat, an unpleasant sensation in the stomach, tunnel vision, ringing in the ears, etc. To find out which is the most common in the individual patient, you interview him or her in detail about the last few times they had the experience of fainting or were close to fainting.

Then, the therapist follows with a description and modeling of the tension technique. The patient is taught to tense the gross body muscles (i.e., arms, chest, and legs) as much as possible and keep tensing for 15–20 seconds. This is followed by releasing the tension and returning to normal, but without relaxing. After a 30 seconds pause, the patient tenses again, and then releases the tension, etc. This practice goes on for about 30 minutes with regular assessments of blood pressure in order to show the patient that the tension technique actually leads to an increase in blood pressure and, usually, heart rate. (Note: generally one should allow 2–3 minutes of recovery between blood pressure assessments for the vascular system to recover and allow an accurate reading to be obtained). After a brief pause, the application training is started. In this phase we use ten color slides of wounded people, mainly traffic or work-related accidents. As in other phobias, you initially get the patient's prediction of what will happen when he or she is exposed to blood-injury stimuli and a rating of the strength of this belief.

Next, the first slide is projected on the screen and the patient is instructed to watch the slide without squinting one's eyes, closing the eyes, or looking away. At the same time he or she has to scan the body for the very first signs of a drop in blood pressure, and as soon as this is noticed apply the tension for 20–30 seconds. After releasing the tension the patient has to scan again to find out if the reaction remains, and if this is the case he or she starts to tense again and apply the tension for as long as necessary. The goal is to be able to watch the slide without feeling faint. When this is achieved there is a brief pause before continuing with the next slide, using the same procedure. If there is any time left in the session after the ten slides have been worked through, the patient can be exposed to other stimuli (e.g. pricking of a finger, watching fake blood in a test tube, and fake blood stained bandages, while applying the tension technique). The reason why 2 hours is used—instead of 3 hours as in other specific phobias—is that the patients would get very sore muscles after practicing tension for such a long period.

Injection Phobia Treatment

The OST for this phobia consists of intense prolonged exposure to three procedures that most injection phobic patients find anxiety-arousing: pricking of fingers, subcutaneous injections, and venipunctures. The goal is to prick ten fingers, to give

10–12 subcutaneous injections, and 2–4 venipunctures. During the pretreatment interview(s) it is important to get a detailed description of the patient's behavior in the phobic situations, as well as his or her catastrophic cognitions when exposed to the phobic stimuli. Research (Öst 1992) shows that about 50% of the injection phobic patients have a history of fainting in these situations, and this is what they fear will happen. It is necessary to teach this subgroup the tension technique described for blood phobia so they are prepared to act should the blood pressure drop occur. In other injection phobics it is primarily the pain they fear, and their cognitions center on how unbearable the pain of the injections will be. However, other patients describe a strong feeling of disgust when a needle, or any sharp object, penetrates the skin. Then there are various idiosyncratic beliefs (e.g. that a blood vessel that has been penetrated with a needle will not stop bleeding and the person will die due to the blood loss, or that the needle that has been inserted will break, wander in the body, and when it reaches the heart the patient will die). All of these beliefs have to be taken seriously, and it is the therapist's responsibility to be creative enough to set up behavioral experiments to test these cognitions in reality.

As in all OSTs the team-work between therapist and patient is of crucial importance and the therapist should arrange a therapy situation that is as different as possible from the ordinary hospital or outpatient settings in which the patients have had their negative experiences. If you work in a medical setting there may be a certain smell that the injection phobics associate with anxiety, failure, and perhaps fainting. Thus, I recommend that you bring the necessary utensils to an ordinary therapy room in which the patient can feel comfortable. Apart from this, please note that for some treatment facilities—universities, research centers, etc.—special permission, training, or personnel may be needed or required for the actual invasive aspects of these exposures (e.g., a phlebotomist may be required). Regardless of this, in all instances appropriate biohazard precautions should be observed (including the safe preparation, use, and disposal of contaminated materials in accordance with local laws and health regulations).

The general principle to follow when treating an injection phobic is, first, to describe and demonstrate each small step in the procedures and, then, to get the patient's permission to perform the particular step. It is extremely important that the patient can trust the therapist not to do anything without his or her explicit permission. This means that you have to work with the patient to motivate him or her and reduce the resistance in order to get the permission. When the therapist has the impression that the patient is "ready" he or she asks, "Can I prick now?" If the patient says "Yes," the therapist performs the procedure. If the response is a "No," the therapist has to continue the work of motivating the patient. At a certain stage you may find that the patient does not say "No," but at the same time cannot say "Yes" since this is opposed to their own self-image as an injection phobic. However, the patient may tell you "Yes" in a nonverbal way, and this gives you the permission to go ahead. Usually, the difficulty of giving a verbal answer dissipates rather quickly, and for the major part of the session you can rely on the patient saying "yes" when he or she is ready.

Generally, the patients rank venipunctures as the most difficult procedure, followed by subcutaneous injections, and the pricking of fingers. Thus, the first phase means that the patient will have his or her fingers pricked. You start with obtaining the patient's prediction (and belief rating) of what will happen if you prick his or her finger. Then you demonstrate the lancet and how it works, the grip you want to take of the patient's fingertip, etc. In some patients this phase is fairly simple, and you soon get the permission to prick. In others you may have to devise a number of intermediate steps in order to get the patient to agree to the procedure. One step may be to remove the needle part and just put the lancet tube on the patient's fingertip. In cases that are very fearful of the pain, you might put a band-aid on the fingertip before pricking it, which the patient may perceive as less painful. When you prick the first fingertip, you suggest the patient rate the degree of anxiety and pain perceived, and compare this to the expected values. After a brief pause, continue with the next finger, and so on. (Note: make sure to use a new lancet for each finger). This phase is concluded once you prick all ten fingers or after two consecutive trials in which the experienced fear is 30 or less on a scale of 0–100. Before proceeding to the next phase, get the patient's current rating of the catastrophic belief.

The second phase consists of subcutaneous injections in the back of the upper arms. As always, before starting the procedure—after explaining what you want to do—ask for the patient's prediction and belief rating. In this phase, you usually have to teach the patient what a subcutaneous injection is, how far the needle is inserted in the fat tissue, etc. You also bring up the possibility that the needle prick may not be perceived at all (i.e. if the needle does not hit a pain cell or a pressure cell there is no signal going to the central nervous system). By doing this you want the patient to at least entertain the possibility that it is only a matter of chance if the prick will lead to pain or not.

This phase is divided into two parts: the first entailing just insertion of the needle and immediately taking it out, and the second in which 0.5 ml of saline is injected. You usually carry out 4–6 trials of each. As with the previous phase you have to prepare the patient mentally before you can insert the needle. If the patient experiences too much anxiety at the prospect of getting pricked by the needle, you have to make smaller steps. One step would be to let the patient handle the syringe with the needle and "play" with it for a while. Another step is to tape a needle on the inner side of the lower arms so that the tip of the needle is close to the skin. Sometimes a piece of overhead film can be put between the needle and the skin to make it easier initially. This is then withdrawn gradually. Once the patient agrees to your suggestion, you insert the needle, take it out, and ask for the anxiety and pain ratings. If the patient did not feel any pain or pressure you say that he or she was lucky the first time, and if there was a pain sensation you can predict that in 25–30% of the pricks the patient will not experience anything at all. Usually, it is the first trial that is the most difficult for the patient, and it gets easier the further you proceed in this phase. Conclude the phase after 4–6 needle insertions and the same number of actual injections (half of them in each arm), or if the patient's anxiety level has been very much reduced beforehand (Note: make sure to use a new needle for each trial). As in the previous phase, the last step is to obtain the patient's current belief ratings.

The last phase is drawing blood from a vein in the bend of the arm (venipuncture). Similar to the previous procedures, before starting the procedure—after explaining what you want to do—ask for the patient's prediction and belief rating. Initially, explain how the vacutainer works (e.g. showing the two sharp ends of the needle and letting the patient listen to the sound when the vacuum is broken, and the reason a tourniquet is used). Then start to prepare the patient mentally in order to draw the blood. Sometimes it is difficult to obtain blood, especially if the vein is small and deeply embedded, but this is not really necessary. The important thing is that you get the permission to insert the needle. Usually, you want to do one venipuncture in each arm, but depending on the patient's anxiety reactions it may be two. The phase ends with the patient's giving a current rating of the catastrophic belief and a discussion of any remaining beliefs that have not been dealt with. If there is any time left in the session one should continue to work with this, or it can be discussed during the posttreatment session.

Claustrophobia Treatment

The OST of claustrophobia consists of intensive exposure to the 2–3 most anxiety-arousing situations for the individual patient. Examples of situations covered are staying in small windowless rooms with the door locked, riding elevators, traveling by bus or underground train, etc. As in all OSTs it is important to carry out a proper behavioral analysis, specifically focused on the patient's catastrophic beliefs. If these beliefs are not directly tested in the treatment there is a risk that only a partial improvement will be achieved. Examples of beliefs that claustrophobic patients may hold are that if they get stuck in an elevator they would die due to suffocation, or if the lock to a toilet door is jammed the panic reaction would cause them to lose control or to go crazy. In this respect there is quite a large similarity to the catastrophic beliefs reported by panic disorder patients.

To begin treatment, it is important to emphasise the team-work relationship and involve the patient in decisions concerning the kind of exposure to be used. The patient should have a feeling that he or she can influence the exposure session by submitting suggestions concerning the content of the session. The communication between patient and therapist must be completely honest and an attitude of "let us test and see what happens to me when I am exposed to the worst phobic situations" should be conveyed to the patient. Since the patient usually has high anticipatory anxiety when coming to the treatment session, it is very important to help the patient focus on the task at hand instead of ruminating about the last step.

The example of being in a small windowless closet or lavatory can be used. Before the beginning of the exposure it is important to ask the patient to make a prediction and belief rating so that it is clear what the exposure focuses on. Initially, the patient is instructed to open the door just to take a look, but not to enter. Usually, he or she would check the lock to be sure as to how it is opened from the inside. Then the patient is encouraged to enter the room and close the door. If the patient wishes, he or

she can exit without locking the door. The next step is to lock the door and stay there for a while. While the patient is inside, the therapist prompts him or her to constantly talk aloud and verbalize what they do, how they feel, and give SUDs ratings. In this way the tendencies to cognitively avoid the exposure are greatly reduced. After a while the patient may want to exit and speak face-to-face with the therapist about the experience. As soon as possible, however, he or she is instructed to enter the closet again and lock the door with the goal to stay longer than the first attempt. The final goal is that the patient should be able to stay inside the locked room for 5 minutes with a maximum SUDs rating of 20 (out of 100). If the patient finds that the therapist's presence outside the room has a calming effect he or she should walk away some distance from the room. When the exposure is over, the patient makes a new rating of the catastrophic belief. Even if the worst did not happen (i.e. the lock did not jam), there usually is a substantial shift in the belief rating (e.g. from 90 to 40%). However, in claustrophobic patients it may be difficult to get down to zero since the situation they fear (e.g. the elevator getting stuck between floors) cannot be tested directly in a behavioral experiment. The patients just have to continue exposing themselves in natural situations and if it occurs sometime in the future they will learn how they react with anxiety, but that the catastrophe does not occur. Sometimes a patient says that riding an elevator together with other people is more anxiety arousing since the space will be smaller and the air used up faster. In these cases the therapist needs to engage 3–4 people to ride the elevator together with the patient during one part of the OST.

Flying Phobia Treatment

The OST of flying phobia is based on the same exposure in vivo principle as in the other specific phobias. However, it is of course not possible to arrange "behavioral experiments" during a flight, at least not with a regular airline. Instead, the testing of the patient's catastrophic cognitions must be done indirectly. It goes without saying that if the patients use alcohol or anxiolytic drugs before and/or during a flight any such safety behaviors need to be discontinued in order for them to obtain new knowledge from the OST.

The description below is based on the procedure used in an outcome study on flying phobia (Öst et al. 1997), which was sponsored by the Scandinavian Airlines System in such a way that the project received free tickets for domestic flights (with empty seats), leaving from Stockholm airport. The session starts at the bus terminal in the city where the therapist and patient meet to take the bus to the airport. This bus trip, which takes 30–40 minutes, is used to elicit the patient's catastrophic cognitions concerning traveling by air and tying these to the different phases of a flight. These can cover a number of steps from going to the airport to sitting in the plane during turbulence. The important factor is helping the patients speak openly about what they fear and when during the flight these fears are elicited. When they reach the airport the therapist and patient go to the ticket office to collect their tickets and then they

walk to the gate to check in. After a brief waiting period they board the plane and fly for 45–60 minutes. After disembarking they immediately check in again and take the same plane back to Stockholm. Then they take the bus back to the city.

From arriving at the airport to the second landing (coming back to Stockholm) there are a number of idiosyncratic situations that the individual patient will have pin-pointed as being connected to certain catastrophic thoughts. The therapist's role is to predict these circumstances before they occur and remind the patient about his or her thoughts concerning that situation. When the situation gets over, the therapist asks the patient to verbalize and draw conclusions about what really happened and contrast that to his or her belief. The session continues in this way and during the bus trip back to the city the patient is encouraged to summarize what he or she has learned during the session and how these experiences can be built on to continue flying without the therapist's presence.

However, the treatment can also be carried out in a small sport plane with four seats. The patient sits in the front seat next to the pilot, and the therapist sits in the back seat. The pilot is familiar with flying phobia and instructed how to answer the patient's questions. He should only give technical information and must not say, for example "This is not dangerous," since that kind of reassurance only prevents the patients from getting information that can correct their misconceptions. The therapist leads the team and works with the patient's cognitions and behaviors during the session. Examples of exposure situations are going through the check-list, taxiing, taking-off and landing immediately, flying one circle around the airport, flying a longer distance, etc.

Phobia for Loud Noises

The patients having a phobia for loud noises may fear a lot of different stimuli, including fireworks, thunder, the sound of firearms, sirens, and the popping of balloons. If a patient fears more than one stimulus I have found that a treatment focus on the most anxiety-arousing stimulus often generalizes to stimuli lower in the hierarchy. To illustrate the treatment of this kind of phobia I chose balloons since this is fairly common. First of all the therapist must prepare for the session by purchasing a large number of balloons (at least 100) of different sizes and a few needles. Renting a professional balloon pump is also recommended since it is very hard to inflate a lot of balloons by mouth. I graduate the exposure by increasing the loudness of the pops and the unpredictability of popping. Thus, we start with the smallest balloon and just inflate it to 50 or 75% capacity. Then, the patient also decides when the therapist should pop the balloon, since it usually is easier if one is prepared for the sound to come. The treatment then continues with increasing the balloon to full capacity, letting the patient pop the balloon, and having the therapist do it without the patient knowing exactly when it is going to happen. The same steps are then repeated with increasingly larger balloons which will make louder sounds. Towards the end of the session it can be a good idea to have many inflated balloons in the room at the same

time and throw them back and forth between therapist and patient. Sometimes the therapist will pop the balloon instead of returning it, as a way of exposing the patient to the unpredictability of the loud sounds. Similar to the previous examples, the goal of the OST is to reduce the patient's conviction rating about the catastrophic belief down to zero, and the therapist has to be creative and has to come up with various ways of testing the patient's belief.

Other Specific Phobias

The OST has also been used clinically for phobias of mice and rats, dogs, cats, horses, cows, frogs, worms, hedgehogs, ants, and various insects. Besides these animal phobias, there are examples of its use for phobias of heights, choking, vomiting, thunder and lightning, and deep water. The principles for using the OST are the same irrespective of the content of the specific phobia and the above descriptions should be enough for an experienced cognitive-behavioral therapist to "translate" and adjust them to any specific phobia not detailed above.

Testing of Specific Beliefs

Towards the end of the session, when the patient already has been exposed to a lot of different situations and has experienced the anxiety reduction time and time again, the therapist should aim for a direct test of the core catastrophic belief of the patient. Table 4.1 describes a few of the most common beliefs held by patients with different specific phobias and suggests ways to test them in behavioral experiments. As in any CBT, it is necessary to prepare the behavioral experiment carefully.

Let us take the snake phobia treatment as an example. Here the therapist should first describe and get the patient to consent that there are a series of steps, like links in a chain, which has to happen before the final catastrophe has a possibility to happen. The starting point is when the snake is on the floor; (1) the snake crawls up to the patient's feet, (2) the snake crawls up her legs, (3) the snake crawls underneath her clothes, (4) the snake bites her, (5) the patient believes she will die. If the snake does not crawl up to the patient's feet then the rest of the steps cannot happen. If the snake does crawl up to her feet but not up her legs then steps 3–5 cannot happen, etc. The reason why the division into steps is important is that phobics usually jump from the starting point directly to the catastrophe (i.e., being in the same room with an unrestrained snake on the floor will mean dying).

After explaining the experiment the patient is asked to predict what the snake will do. The experiment starts by putting the snake on the floor 2–3 m in front of the patient, directing the snake's head directly towards the patient. Then the therapist walks over to the patient and helps her to remain on the spot in order to observe if the snake crawls up to her or somewhere else in the room. Usually, the snake explores the

Table 4.1 Examples of catastrophic beliefs and behavioral experiments in specific phobias

Phobia	Catastrophic belief	Behavioral experiment
Snake	The snake will crawl up to me, up my legs, underneath my clothes and bite me. I will die	Let a nonvenomous snake loose on the floor 2–3 m in front of the patient and observe where it crawls
Spider	The spider will crawl underneath my clothes and I will get a strong panic attack and die of heart failure	Let the spider walk on the patient's hands and arms and observe where it is going
Bird	The pigeons will fly on to me and through the contact spread a deadly disease	Let the patient stand feeding the pigeons around her. The therapist scares the pigeons by stomping on the ground and clapping hands. Observe if any pigeons fly onto the patient
Wasp	If I am in the same room as a wasp it will fly on to me, sting me, and I will die from the shock	Be in a room with the door and windows closed. Have the wasp in a glass jar with a lid. Remove the lid and get the patient to observe what the wasp does
Elevator	The elevator will get stuck between two floors, no one will hear the alarm signal, the air will run out, and I will die from suffocation	Let the patient enter the elevator and press the button that closes the doors, but no floor button. The therapist who stands outside the elevator sprays some deodorant towards the crack where the doors meet. The patient says aloud when the smell is perceived inside the elevator
Heights	If I am on a bridge I will get vertigo, be drawn to the railing, fall down, and die	Let the patient walk across the bridge; first with the therapist and then alone. Rate degree of vertigo and observe what is happening
Injection	The pain from the prick is so strong that it will not pass for several days	Prick one of the patient's fingers and get a pain rating (0–100) directly afterwards and then 1, 5, and 10 minutes later
Injection	The needle will break when it has been inserted in my skin. Then it will wander in my body and when it reaches my heart I will die	Take a subcutaneous needle (30 mm long) in a grip between the thumb and index finger. Bend it 90 and 180° to the right and then 90, 180, and 270° to the left, etc. until it breaks
Vomiting	If I throw up I will lose control, go crazy, and be incarcerated at a psychiatric hospital for the rest of my life	Define clearly what losing control is for the patient. Let her elicit vomiting somehow and observe what is happening

surrounding area and just might, during its exploration, crawl up to the patient. It is common that this experiment is repeated 5–10 times before the patient can conclude that the snake has no interest whatsoever in crawling up her legs.

Let us take the wasp phobia as another example. Here it is very common that the patient says that the wasp will fly onto her when it is flying around trying to find an escape route. The patient has to agree with the therapist that in order for the wasp to be on the patient it actually has to land on her body. It is only then there is a risk that the wasp can sting her. Contrary to common beliefs held by wasp phobics, a wasp

cannot fly towards a person and then turn 180° in the air and hit with its sting (which is in the wasp's rear part).

The general purpose of the behavioral experiments is to provide the patient with further information that will correct the false belief. The aim is that after the experiment has been done—and perhaps repeated a number of times—the patient's conviction rating of his or her catastrophic belief should be down to zero.

Ending the Session

When the session is concluded but before the patient leaves there are a couple of instructions that are valuable. First, the patient must not avoid/escape from contact with the previously phobic object/situation. Whenever he or she encounters it in a natural situation it should be welcomed as a good opportunity to test the skills learned during the OST. Second, the patients who have had a history of nightmares about the phobic object/situation may experience an increased frequency during the first week, due to the prolonged and intensive exposure, but this will dissipate rather quickly.

Goals for the OST

There are two types of goals in connection with OST. The first is what the patient should be able to manage in natural situations after completing the treatment. Examples of this goal are that a spider phobic should be able to catch a spider with a glass and a postcard and throw it out of the house, or an injection phobic should be able to have an injection or give a blood sample with no more discomfort than people in general. The second goal is what the therapist wants the patient to achieve during the therapy session. For the spider phobic, the therapist wants the patient to be able to have two spiders walking on his or her hands at the same time. Concerning the injection phobic, the therapist wants him or her to have their fingers pricked several times (10), subcutaneous injections (5–10), and a few venipunctures (2–4). However, the therapist does not inform the patient about this goal because this knowledge will be detrimental when it comes to the patient's performance during the session.

First of all, a large majority (about 90% of my patients) would never have presented for treatment had I told them about this goal during the screening interview. Furthermore, knowing what the therapist has planned as the final step will lead to the patient ruminating about this in a negative way which will prevent him or her from focusing on the task at hand, carrying out the step they are at. It may be considered questionable ethics not to inform the patients about the second goal before starting the therapy, but so far, after 13 outcome studies and hundreds of clinical patients, not a single patient has complained about this. On the contrary, they are grateful that the therapist helped them to realize that they could achieve much more than they had ever imagined. Since withholding the second goal actually helps the patient, I do

not consider it unethical not to inform the patient about if beforehand. In addition, that final step may also not be reached, in which case such a hypothetical disclosure would only cause undue distress in the patient.

However, it should also be pointed out that the treatment outcome can be very good even if the therapist's goal for the client has not been reached during the session. Since the patients' expectations usually are much lower than the therapist's goal, they will be very satisfied with less achievement. What is very important in this respect is to conclude the session on a positive note; you should not push the patient to attempt things that he or she may fail to accomplish and thus run the risk of experiencing a failure at the last step.

The Therapist–Patient Relationship

In order to achieve as much as is usually accomplished in an OST format it is necessary to have a very good and trustful relationship. With this "the sky is the limit" regarding what the patient can accomplish during an OST. The prime responsibility for creating this working relationship lies with the therapist, and it starts during the pretreatment interview. It is absolutely necessary that the therapist takes the patient's phobic problems seriously, and conveys the attitude that even a specific and circumscribed phobia can be very impairing to the patient suffering from it. It is also helpful to be able to describe how prevalent these types of phobias are, what the common etiology is, average age of onset, etc. This kind of information will show the patient that the therapist has the kind of knowledge about specific phobias that they have asked about but have not been able to obtain. Then it is easy for the patient to generalize and believe that the therapist also knows how to do the treatment effectively.

When describing the treatment that the patient is going to receive, it is important to have a sensitive ear to any unexpressed questions or doubts that the patient may have. Giving a CBT-rationale is often a straightforward task and most patients do not have more than a few questions. Still, it is important not to rush the patient, but give him or her the time necessary to think about the treatment description. Usually, the treatment session takes place about a week after the interview, and the patient is encouraged to think about the description and write down any questions they may have during the interval so that these can be answered before the beginning of the treatment. In doing this the therapist should emphasize that the treatment is done as a team work.

The Teamwork Principle

The OST is conceptualized as a teamwork effort in which two experts are "joining forces to combat" the patient's phobia. The patient is an expert on his or her phobia, the cognitive, behavioral, and physiological reactions, and the therapist is an expert

on the treatment method to be used. Since the therapist has the treatment expertise, it is natural that he or she will be captain of the team. However, both members have to work equally hard in order to achieve the goal. This means that the patient cannot come to the treatment session with the expectation that the therapist will "take care of" the patient's phobia without his or her whole-hearted participation. Going through an OST is the opposite of taking your dirty coat to the dry cleaners and picking it up next week nice and clean. It is a lot of "dirty" work and the patient has to be committed.

The team-work principle also means that both the patient and the therapist must answer questions during the session in an open and sincere way. It is especially important that the patient gives honest SUDs ratings and descriptions of cognitions when asked by the therapist. It is equally important that the therapist answers the patient's questions in a sincere way. There is one exception to this, however, and that is when the patient wants to know what the last step of the treatment will be. In this case it is recommended not to answer directly, but to say that "we do not have to decide that, but to focus on the step we are working on at this moment." My clinical experience is that disclosing the goal that the therapist has for the last step will only lead to a patient ruminating about how anxiety arousing and impossible this will be, and thus prevent him or her from carrying out the current step in the treatment.

Thus, the therapist starts building a good relationship with the patient during the pretreatment interview itself, and this is then continued throughout the entire treatment session. This is done in various ways, for example by suggesting exposure tasks that always are as close as possible to the patient's current limit. After the task has been described, modeled, and the patient has been helped to carry it out there is a great boost in his or her confidence. Throughout this process the therapist should be generous with praise as the patient tries, and gradually approximates the behavior modeled by the therapist. Another way of improving the relationship is never to betray the patient's trust in the therapist. One example is during the modeling procedure, as the patient is carrying out a task with the gradually reduced physical help of the therapist, many want the therapist to hold their hand or at least be close and alert if the animal should do something unforeseen. Such a request should naturally be met, and the patients will realize that the therapist can be trusted if they feel too uncomfortable at a certain step. Still, the therapist has to withdraw the physical help as soon as the patient feels comfortable with this.

The Use of Humor

In order to alleviate the tension during the session, the therapist can use humor if he or she feels comfortable doing so. When using humor it is very important not to say something that might embarrass or ridicule the patient. One should laugh with the patient, not at him or her. The use of humor can often have an anxiety-reducing effect by putting the patient's phobic reactions into perspective.

The Use of Physical Contact

During the second part of participant modeling the therapist uses physical contact to help the patient gradually interact more and more with the phobic object. Once the patient gets more experience and learns how to do it, the therapist can gradually withdraw his or her help and just instruct the patient how to carry out the interaction. However, physical contact is not restricted to the treatment of animal phobias. I have found that patients can often experience a high anxiety level and weep during the initial part of the session. In these instances it is important to be empathic and acknowledge that the situation is very anxiety arousing. Furthermore, I tell the patient that it is quite natural to weep and give him or her some tissues to dry the tears. In these instances it feels natural to console the patient by putting one's hand on or around his or her shoulder(s), stroking the cheek, etc. It is also important to ask what went through the patient's mind when he or she starts to weep since very useful cognitive material can be elicited this way. Naturally, one must be very sensitive to the patient's reactions and withdraw the physical contact if he or she seems to be uncomfortable with it. If this is not the case, this type of physical contact can greatly reduce the time that the patient is weeping and rather quickly get him or her down to a manageable anxiety level. This means that the exposure can continue after just a brief pause. When using physical contact in this way to help the patients reduce his or her anxiety level it is important that the therapist withdraws the contact as soon as the patient obtains a reduction and can continue. However, as is the case with humor, some therapists do not consider it necessary using physical contact and instead they use verbal means to help the patients reduce their anxiety.

If Something Unplanned Happens

Now and then something unplanned happens during the OST (e.g. a spider walking on the patient's hands falls into her lap or the elevator moves without the patient pressing a floor button but because someone else needed to use the elevator). This kind of situation always leads to an immediate increase in the patient's anxiety level. When these instances happen, the patient and therapist must first agree that it is not the therapist doing something against the general rule of OST (that the patient always decides what to do in terms of exposure); it just happened by chance. Secondly, the team should focus on how the patient handled this unplanned situation—invariably much better than he or she had expected.

The Therapist Should Do Multitasking

A therapist doing an OST can be compared to a computer doing multitasking. The main focus is of course on each small step in the exposure and helping the patient to carry them out. However, at the back of your mind you are running a program that

is creative and comes up with ideas of what to do when the patient–therapist team runs into problems. The most common type of problem is that the patient refuses to do the exposure suggested by the therapist at a certain step, but it can also be that the patient does the exposure but the anxiety level does not go down as expected.

When the first type of problem occurs, I usually call upon the patient to suggest a step in the exposure that is easier than the one she refused to do but more difficult than the one that had just been accomplished. The reason for doing this is that if the therapist comes up with another suggestion, the patient may refuse just out of habit, but it is much more difficult to refuse a step that he or she suggested. In this situation the therapist functions as a moderator who makes sure that the step suggested is really more difficult (even if just marginally) than the previous one completed. It is only if the patient fails to come up with a suggestion that the therapist suggests another step.

If the second problem occurs the therapist should attempt to modify the current step in different ways so that it can give the patient new information and chip away some piece of the catastrophic belief. It is rarely, if ever, a good idea trying to convince a patient to attempt a step she refused to attempt due to high anticipatory anxiety. It is like building a stone wall consisting of lack of motivation and high anxiety that you as a therapist butt your forehead bloody against. It is much more effective to find a way to circumvent the wall instead by doing something else. In this situation the therapist has to be creative and not be inhibited by the question if this or that particular step of exposure is evidence based or not.

There is an important clinical reason why I emphasize that the therapist should always be prepared to come up with new suggestions for exposure if the team runs out of ideas instead of trying to convince the patient to attempt the step that was refused. If the patient gets the impression that the therapist has nothing more to suggest he or she may rapidly lose motivation, give in to the anticipatory anxiety, and think that there is no use trying anymore. Additionally, further ways to address more intractable, refractory phobias are contained in Chap. 7.

Acceptability of OST

One way of evaluating the acceptability of OST is to look at the randomized controlled trials that we have carried out in this method. Table 4.2 summarises how many patients declined participation when they learned that they had been randomized to OST and the dropout rate from the OST conditions for the different specific phobias treated in these studies. In a total of almost 500 patients only 4 (0.8%) declined the OST and not a single patient dropped out during the treatment.

In a clinical situation there is even an advantage compared to the research setting in that the patient can “eat his or her cake and have it.” If the therapist-patient dyad decides to do an OST and it turns out that they do not reach the goal during the 3-hour session they can just add another session the following week and continue the treatment then. Usually it only takes 1 hour during the second session to reach the treatment goal.

Table 4.2 Acceptability of OST

Type of phobia	*n*	Declining	Dropping out
Spider: individual	27	0	0
Spider: group	58	1	0
Blood-injury	20	0	0
Injection	48	1	0
Flying	15	1	0
Claustro	15	0	0
Snake	50	1	0
Dental	20	0	0
Various (children)	240	0	0
Total	493	4(0.8%)	0

Which Types of Specific Phobias are Suitable for OST?

Animal Phobias

We have done randomized trials on spider and snake phobia with good results. Clinically we have worked with numerous patients having phobias of dogs, birds, rats, cats, wasps, frogs, snails, worms, ants, insects, hedgehogs, lizards, etc.

Other Specific Phobias

Trials have been done on blood-injury, injection (skin and intraoral), flying, claustrophobia, and dental phobia. Clinically we have also worked with height, vomiting, deep water, and thunder storm phobia, etc. One might ask if there is any specific phobia that is unsuitable for OST. According to my long experience the answer would be "No." The most difficult one is probably thunderstorm phobia where we use video tapes, audio tapes, and slides in the exposure. However, some patients do not experience anxiety during this type of exposure since they know that it is not for real. In those cases I have been "on call" during the summer vacation and when the weather forecast warns about a thunderstorm in the patient's area I have gone to the patient's home and done the OST there.

Which Specific Phobics Are Suitable for OST?

The patient should have a phobia that is *circumscribed*—one that only concerns one object or situation. Sometimes you see patients with agoraphobia who report a series of specific phobias but they are all maintained by the fear of having a panic attack in the situation and not being able to get home to safety. Furthermore, the phobia should *not* entail any *positive consequences* (so called illness gain). This is probably very rare and I have not come across a patient with this problem in my 35 years

of experience in treating specific phobias. Finally, the patient must be *motivated* enough to tolerate a relatively high level of anxiety during the treatment, and for a prolonged period of time. If the motivation is insufficient, which mainly happens in some children or adolescents (see, e.g., Öst et al. 2001), one should postpone the treatment to a later point in time when the patient is more motivated.

The Posttreatment Session

One week after the OST the patient returns to the therapist for a posttreatment session. First one should review what has happened during the treatment, starting by describing what the patient's problems looked like when he or she came for treatment. Then the patient should repeat the rationale for the treatment, and how that tied in with his or her phobic problems. Next, a brief repetition of the different steps included in the treatment should follow and a thorough description of how the patient's phobic problems, including the conviction of the catastrophe, changed during the treatment.

The Maintenance Program

Maintaining the Skill

If the treatment has been conceptualised as a method for acquiring skills with which the patient can handle phobic reactions, then the importance of maintaining that skill follows naturally. I often use the analogy of a person learning to drive a car. After obtaining the driver's license one is still not a very skilled driver. It is necessary to continue driving a car to experience different traffic conditions and to learn to handle these effectively, progressively refining one's skill. This reasoning is usually very easy for the patient to understand, and it then follows naturally that the same principles apply to the skills acquired through treatment.

Anxiety Is a Normal Reaction

Before starting to describe the actual maintenance program it is worth re-emphasizing to the patient that anxiety, in its many forms, is a natural part of human life. Reference can be made to studies of the prevalence of anxiety problems in the general population (e.g. Myers et al. 1984; Norton et al. 1986). The patients often find these figures quite astonishing. Thus, there is a high probability that the patient will experience some anxiety in the future and because of this he or she needs to practice the skills acquired during treatment, in order to be better able to use the skills should it be necessary

to do so. It is, however, not necessary to practice as much as during the treatment session per se, just to follow the program agreed upon with the therapist.

Setback Versus Relapse

Many anxiety patients have a marked tendency of thinking in all-or-nothing terms. This is manifested in them not being able to differentiate between a setback and a relapse, or in believing that having gotten rid of the anxiety reactions they will never experience anxiety again. If this is the case one should emphasise that there is no treatment available today, and there probably will not be one in the future, that can vaccinate a person against anxiety.

It is of utmost importance to describe to the patient—and make sure that he or she understands—the difference between a setback and a relapse. A *setback* is a temporary failure to manage a situation in which one has experienced anxiety before the treatment but which one has managed after treatment for quite a while. A *relapse*, on the other hand, means that the patient is back to square one (i.e., experiences as much anxiety and in as many situations as before the start of treatment). Thus, there is a huge difference between a setback and a relapse, and it is up to the patient to prevent the setback from developing into a relapse or to deal with it in an efficient way. I have often found it useful to set it up as a choice that the patient now has, which he or she did not have before treatment, between continuing on the "right road" (i.e., coping with anxiety when it occurs), or giving in and going back to the former state when the anxiety reactions were directing the patient's life. In this way it is fairly easy to get the patient committed to the necessity of maintaining the anxiety management skill.

What to Do in Case of a Setback

Before describing what to do in case of a setback it is often helpful to review with the individual patient what the high-risk situations for a setback are. Examples of such situations might be holidays, illnesses, conflicts at work or with spouse, etc. Alerting the patient to the possibility of setbacks in such situations may make him or her better prepared to deal with them effectively. It is useful to give the patient a list of instructions (see Table 4.3) to follow in case of a setback. For example, a claustrophobic patient who after treatment has been able to ride elevators without problems for a number of months. One day he or she suddenly gets a strong anxiety reaction in the elevator, gets off prematurely, and after a long rest takes the stairs to the ground floor. For this patient, the instructions should be first to repeat practicing the skill learned during therapy in the safety of his or her home and then to try the same situation again as soon as possible, while being prepared to apply the skills if necessary.

If this does not work, either because the patient has another anxiety reaction or cannot bring himself or herself to try it, a different strategy is in order. The patient

Table 4.3 Instructions on what to do when a setback occurs

1	Tell yourself that this is *what the therapist said would occur* sooner or later, and it is not a catastrophe. It is not a relapse, but a temporary failure to manage a situation that you have managed before
2	*Restrict the setback*, i.e. do not let it spread to similar situations
3	*Rehearse the coping-skill* you acquired during therapy in a non stressful situation
4	*Enter the setback situation* as soon as possible, and focus your attention on the very first signs of anxiety coming on
5	*Apply your coping-skill* as soon as you feel the first anxiety signals. Keep applying it and stay in the situation until the anxiety reactions dissipate
6	*Leave the situation* when the anxiety is reduced, and when you have finished your business there
7	If this does not work, plan to try a somewhat *easier situation* by thinking back on what happened during the treatment
8	If it works *go back to the setback situation* and repeat steps 4–6
9	If this still does not work, *call the therapist* as soon as possible to discuss the problem or to arrange for an extra therapy session

should try to remember, or otherwise figure out, what could be a somewhat easier situation to enter in order to prevent generalization and demonstrate to oneself that the anxiety is restricted to the first situation. If even this presents problems, the patient is instructed to call the therapist as soon as possible and not run the risk of allowing difficulties to generalize to a wider range of situations. Often the problems can be sorted out on the phone and the patient can be provided with additional hints for coping with the problematic situations. The therapist can question the patients in such a way as to help them generate their own solutions from their existing repertoire. If this is not effective, a booster session should be given as soon as possible, followed by telephone contacts for a few weeks.

Forms for Maintenance Practice

At the last session the patient is provided with a set of forms (see Table 4.4) for recording the continued maintenance practice for a 6-month period. These forms are filled out and mailed to the therapist every 4 weeks for 24 weeks. Upon receiving a form from the patient the therapist calls him or her up and talks about what has happened in terms of anxiety reactions and applying the learned skills. This usually takes 10–15 minutes. Sometimes the therapist writes a letter with his or her comments.

In the top of the form the therapist fills out (for the first 4-week period) what maintenance practice the patient is supposed to engage in and how often (left part), and what consequences this will have for the patient's daily life (right part). The subsequent forms are filled out by the patient in connection with the telephone calls so that further improvement after the end of treatment can be incorporated in the maintenance program. Otherwise some patients might not consider the possibility of gradually confronting more difficult situations.

Table 4.4 A maintenance form used in the phobia project

Form: 1
Week: 1-4

NAME:_____

IF YOU CONTINUE TO DO THE FOLLOWING EACH WEEK	THEN IN THE FUTURE YOU WILL BE ABLE TO:
1:_____	_____
2:_____	_____
3:_____	_____
4:_____	_____

Record the respective number in the columns below each time you have performed the practice task. Make any comments that you may have on the reverse side of the form. Do not skip the practice any week but keep practicing regularly. This is particularly important during the first 6 months after the treatment. Then send me the form in the way that we have agreed upon.

My *catastrophic belief* before treatment was: _____
_____

After treatment I believed: _____
_____

	Week 1		**Week 2**		**Week 3**		**Week 4**	
Day	Date	Activity	Date	Activity	Date	Activity	Date	Activity
Monday	____	____	____	____	____	____	____	____
Tuesday	____	____	____	____	____	____	____	____
Wednesday	____	____	____	____	____	____	____	____
Thursday	____	____	____	____	____	____	____	____
Friday	____	____	____	____	____	____	____	____
Saturday	____	____	____	____	____	____	____	____
Sunday	____	____	____	____	____	____	____	____

Send this form to: _____

Address:

Phone number: Fax number:

In the middle part of the form, the therapist and patient together write down what catastrophic belief the patient had before the beginning of treatment and the conviction rating of it. This is followed by a sentence saying what he or she thought about that particular belief after the OST and the conviction rating at the end of treatment. In the bottom part of the form the patient every day records which of the tasks have been performed. This allows the therapist to see if the patient avoids any of the tasks, if one task is done on certain days only, etc., and to calculate the percentage of agreed upon tasks that actually has been performed. Previous research has found a significant correlation between percent tasks performed and outcome at follow-up (Öst 1996).

Hypothesis About the Mechanism of Change for OST

As illustrated in Fig. 4.1 the patients with specific phobias have various *catastrophic beliefs* of what encountering the phobic object/situation would lead to. They are usually highly convinced that the catastrophe will happen and the *strong belief* in the probability of the catastrophe maintains the avoidance/escape behaviors. This prevents the patient from obtaining new information that can correct the false belief. It has been proposed that OST works by testing the catastrophic beliefs, and thus giving the patient new information (Davis et al. 2007; Davis et al. 2009). With this new, and correct, information they no longer hold on to their catastrophic beliefs (the conviction rating is zero) and there is no need to avoid or escape from objects/situations that previously elicited anxiety reactions.

Summary and Conclusions

This chapter has given a detailed description of OST from its background to carrying out of the actual treatment with adult patients. In addition it discusses such important issues as how to test specific catastrophic beliefs, the therapist-patient relationship, which specific phobias and phobic patients are suitable for OST, and the voluntary maintenance program. The chapter ends with a hypothesis regarding the mechanism of change for OST, which is speculative, awaiting the necessary research. There are few, if any, cognitive-behavioral treatments that are as acceptable to patients as OST. Out of nearly 500 patients with various specific phobias who have participated in our randomized controlled trials, only 0.8% have declined the offer of this treatment and none has dropped out.

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Chapter 5
One-Session Treatment: Principles and Procedures with Children and Adolescents

Thompson E. Davis III, Thomas H. Ollendick, Erin T. Reuther, and Melissa S. Munson

Introduction

One-Session Treatment (OST) is a massed, cognitive-behavioral exposure therapy that progresses over the course of a single, 3-hour session and was developed by Öst (1987, 1989, 1997). Though originally developed as an intervention with adults, the adaptation and use of OST with children and adolescents have progressed substantially in the last decade or so. To date, six studies have examined the use of OST with children (Muris et al. 1997; Muris et al. 1998; Öst et al. 2001; Davis et al. 2007; Ollendick et al. 2009; Flatt and King 2010). In particular, the two larger randomized controlled trials of OST with children by Öst et al. (2001) and Ollendick et al. (2009) led to the developmentally informed format that is currently practiced (Öst and Ollendick 2001). Though this intensive 3-hour format may seem too brief or insufficient to address long-standing specific phobias, the research conducted to date has indicated strong support for its being an empirically supported treatment for both adults (Zlomke and Davis 2008) and children and adolescents (Davis et al. 2011a; see Chap. 11 for a review of the evidence for both). Although OST with children and adolescents is firmly grounded in the work preceding it with adults, it is a developmentally sensitive adaptation of its adult counterpart and has many unique features that make it more suitable for youth and their families. Over the past few years, we and our students have been refining the procedures with children and adolescents and have several studies underway to examine critical elements of it. This chapter will focus on the clinical application of OST with children and adolescents with an

T. E. Davis III (✉)
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA
e-mail: ted@lsu.edu

E. T. Reuther · M. S. Munson
Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS),
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

T. H. Ollendick
Child Study Center, Department of Psychology,
Virginia Polytechnic Institute and State University, Blacksburg, VA, USA

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_5, © Springer Science+Business Media, LLC 2012

emphasis on the principles and procedures commonly used with this age range. This chapter will cover a variety of applied issues: a) conducting the functional assessment with children, b) providing a developmentally appropriate rationale for treatment, c) preparing for and conducting the massed session, and d) addressing posttreatment issues including followup and client setbacks.

Conducting the Functional Assessment with Children

Conducting a successful OST with children depends on the clinician's ability to adequately plan for the massed session and secure the stimuli needed for each step of the graduated hierarchy of exposure therapy. It is necessary for the clinician to be able to judge and anticipate the intensity of exposure for the client throughout a session—a sort of Goldilocks approach of not making exposure steps too easy or too difficult, but rather getting the exposure just right (i.e., challenging but negotiable). As a result, a functional assessment is a crucial initial step in preparing for the massed OST (Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). It is during this 45- to 60-minute session that a clinician fleshes out information obtained during the initial diagnostic intake sessions (see Chaps. 2 and 3 for details), elicits the child's catastrophic cognitions, creates a detailed fear hierarchy to be used in treatment, and, to the extent possible, determines the maintaining variables and functions of the phobic response (Öst and Ollendick 2001).

Clinicians have typically used open-ended or loosely semistructured clinical interviews to determine the functions of anxious behaviors (see Ollendick et al. 2004). Along with this, behaviorally and cognitive-behaviorally oriented practitioners have a longstanding history of integrating less formal clinical observations into determinations of functional behavior. It is this type of functional assessment that is used prior to OST: a loosely semistructured interview that "detail[s] the origins of the phobia, cognitions about the phobia, and the behaviors that come about in response to the phobic stimulus" (Ollendick et al. 2004, p. 284) and that also attempts to discern the maintaining factors of the fear.

It is generally advisable to schedule this session approximately one week before the OST session, if at all possible (Davis et al. 2009). This is to ensure there is adequate time between the two appointments for the clinician to plan treatment and obtain the necessary exposure materials or make arrangements for travel to specific exposure sites (see Chap. 6 for additional suggestions and details). Even so, we have occasionally done both the functional assessment and OST within a one-day or two-day period for individuals traveling from far away (Note: This usually involved some screening and preparation to allow us to generally have the exposure stimuli and materials we would need in advance). Overall, the functional assessment session serves to transition from the assessment phase to the treatment phase, allows the clinician to prepare for the OST session, and gives the clinician an opportunity to describe and discuss the rationale for OST and answer questions the family might have about the treatment (Davis et al. 2009; Öst and Ollendick 2001). As part of this transition from assessment to treatment, the functional assessment session provides

an ideal opportunity to provide assessment feedback and diagnostic conclusions to the family. This feedback serves two purposes: (1) it summarizes the results of the assessment and informs the child and family of the concerns identified by the clinician, and (2) it provides a fluid and easy transition into the functional assessment proper by priming the family to discuss even more details about the child's specific phobia.

The functional assessment itself should largely follow a style somewhere between an open-ended clinical interview and a semistructured interview. In other words, the clinician's goal is to have a detailed conversation with the child about his or her fear that will inform treatment and cover certain predetermined topics (but also be sensitive to the possibility that discussing the phobic stimulus itself may be evocative and even constitute exposure). As a result, the clinician should generally maintain a supportive, caring style while he or she attempts to seamlessly discuss all the various topics which must be addressed during the functional assessment.

The goal during this session is to evoke the catastrophic cognitions and expectations about the feared stimulus, create a graduated fear hierarchy, and cover several other tasks necessary to plan for OST (e.g., determine maintaining factors, the child's previous experiences and exposures, important qualities of the stimuli that impact the severity of the fear) all at a developmentally appropriate level without unnecessarily straining the conversation or being too structured in its approach (Öst and Ollendick 2001). Given all that a clinician needs to discern and record during this session, we have included our overall guide for the clinician in conducting the functional assessment: the *Functional Assessment Worksheet for OST* (Davis 2006). This worksheet assists in focusing the functional assessment and offers a variety of prompts to help ensure the clinician covers all of the necessary topics to plan an OST individually tailored to the child's fear. The worksheet was developed by the first author following his work with Ollendick and Öst on the largest major treatment outcome study conducted to date. Descriptions of these topics are given below.

Though some clinicians may view working with children as more difficult than working with adults given their cognitive and developmental limitations associated with their young age, the child clinician actually has several advantages (and, unfortunately, disadvantages) over the clinician interviewing an adult. Most importantly, the child clinician has the luxury of multiinformant input (e.g., parents, caregivers). When conducting a functional assessment with a child, it is best to begin and end with the parent in the session (Davis et al. 2009; Öst and Ollendick 2001). At least initially, having the parent in the functional assessment session can help the clinician build rapport with the family and, hopefully, put the child more at ease. If feedback from the assessment session has not already been given to the parent, this is also a good opportunity to do that as well. After an initial orientation to the functional assessment session, however, it is generally recommended that the clinician work with the child alone if the child is old and mature enough to do so (Davis et al. 2009; Öst and Ollendick 2001). Finally, at the end of the functional assessment and with the child's assent, the parent or caregiver can be brought back into the session and the details of the functional assessment can be reviewed with input from the adult.

Of necessity, however, working with children requires some alteration to the methodology of the traditional functional assessment (see Chap. 4 and Öst 1997 for more on traditional OST functional assessments with adults). Creating a fear hierarchy with children may be impacted by their developmental level, and this may prevent them from thinking in abstract ways necessary to differentiate how they would feel in different situations (Holmbeck et al. 2004). One way to combat cognitive limitations in younger children is to make the development of the fear hierarchy as concrete as possible (Davis et al. 2009). For example, it is often useful with younger children to use flashcards to list the different situations involving the feared stimulus (Chorpita 2007). Once all of the situations are listed on separate cards, the child can order the situations from the easiest to the hardest to handle. This method allows the child to compare each situation to another, one at a time, rather than trying to make more abstract evaluations. Once the situations are rank-ordered, the child can then assign fear ratings to each situation and the clinician can use that information to create a more traditional fear hierarchy.

Evoking catastrophic cognitions in young children can be even more difficult than developing the fear hierarchy, as the development of metacognition does not fully occur until early adolescence (Holmbeck et al. 2004). Because of this, it is important to ask the child about concrete examples of situations in which he or she encountered the phobic object and then ask what thoughts he or she had at that time. It is often helpful to ask the child to discuss the first encounter he or she had with the phobic object, the most recent encounter, and the worst encounter (Öst and Ollendick 2001). For each of these, the child can be probed as to what thoughts he or she was having at the time of the encounter using specific and directed questions (e.g., What were you afraid might happen? What were you thinking about at that time?), which can help the clinician get an idea of the catastrophic cognitions. Another helpful experience for the child is to have the child complete a behavioral approach test (BAT) during the initial assessment (which is highly recommended if possible). The BAT offers a specific and recent exposure to the phobic object that the child can easily call to mind and that the clinician can corroborate. At other times, it can be helpful to ask the child to imagine being in the presence of the phobic object, to recreate the sights, sounds, and smells and then to elicit the cognitions (e.g. Tell me then what you would be thinking).

Overall, it is important to remember that children's development ranges from concrete thought to increasingly complex levels of abstract thinking as they age and negotiate developmental milestones (Davis 2009). As a result, it is important to be patient with children and appreciate they are working within the capacities of their own development. For example, when asked about cognitions or abstract concepts, many children will relay concrete stories about interactions they had with the feared stimulus (Davis et al. 2009). This should not be viewed as evasiveness by the child, but rather cooperation from a child who is hampered by limited cognitive resources at these early stages of development.

Evoking Catastrophic Cognitions

One-Session Treatment is set up to allow exposure to be conducted in a way that facilitates the challenging of a client's catastrophic cognitions (Öst 1997; Öst and Ollendick 2001). In order to do this, it is important to be sure the clinician has a clear understanding of what the child's catastrophic cognitions are. This is partly premised on the idea that it is an individual's catastrophic cognitions and preconceived expectancies that maintain the avoidance behavior (Davis et al. 2009; Öst 1997; Öst and Ollendick 2001; Zlomke and Davis 2008). As a result, evoking catastrophic cognitions is one of the major tasks of the functional assessment session. It is also helpful to view the entire functional assessment as flowing between the topics to be covered, rather than fixating on the separate components individually and then moving to the next one and so forth (Davis et al. 2009). By doing this, the clinician can feel free to try and evoke catastrophic cognitions while building the fear hierarchy (described in the next section) and then allow catastrophic thoughts to inform steps on the hierarchy and vice versa. For example, if the child indicates that overly active, fast dogs are more problematic than calm dogs, the clinician can use that information to probe about why that is so. Perhaps the child has cognitions that relate to being knocked over, jumped on, or scratched whereas calm dogs are viewed as less of a threat. As a result, the clinician can use behavior to inform cognition and cognition to inform other probes about behavior and so forth. This is often helpful as children frequently have difficulty expressing exactly what they fear will happen without drawing upon previous experiences. In addition, it is advisable to inquire about several aspects of each catastrophic cognition. In particular, a clinician should note the strength of the child's belief that the catastrophe will occur, how well the child believes he or she is able to cope should it occur, and how bad she or he believes it would be if it occurred (Öst and Ollendick 2001; see Ollendick et al. 2009). A rating scale is provided on the *Functional Assessment Worksheet* (Davis 2006) to facilitate the collection of these beliefs based on Ollendick et al. (2009). This information will help the clinician judge how to handle particular challenges during the OST and also assist in letting the clinician know how far he or she can "push" or motivate the child to do more during a particular step.

Building a Fear Hierarchy

Building a fear hierarchy is an important component of the functional assessment session. This component involves having the child (possibly with the parent's help if need be) identify different aspects of the feared stimulus and different situations involving the stimulus that evoke fear, and then rank them from the easiest to the most difficult (Öst and Ollendick 2001). Many cognitive-behavioral treatments (CBT) for adult and childhood anxiety involve building a fear hierarchy as part of treatment

(e.g., see Chaps. 2 and 3). While the construction of the fear hierarchy in OST is similar to these other approaches, considerations for specific phobias are addressed below. Please refer to the *Functional Assessment Worksheet* (Davis 2006) for a graduated fear hierarchy that we have found to be particularly helpful.

The main purpose of the fear hierarchy is to guide exposure and allow the clinician to be sure that he or she has the appropriate stimuli to generate and gradate the feared response (Öst and Ollendick 2001). The first thing that the clinician must be certain to get information on is the specific aspects of the stimuli that evoke the fear response. Two separate individuals can have a phobia of the same stimulus, but very different and unique aspects of the stimulus may trigger their respective fears. In the instance of dog phobia, for example, the clinician would need to get specific information about the characteristics of dogs that are associated with the fear. Is it harder for the client to be around big dogs or little dogs? Are dogs that bark harder than overly active dogs that move around a lot? Are dogs that jump a problem, or are dogs that lick worse? Does the color of the dog's coat make a difference? What about if the dog's teeth are showing or if it is wagging its tail? Answers to these questions will help the clinician be sure that he or she has an appropriate variety of stimuli to address the child's specific concerns.

Another area that should be explored when developing the fear hierarchy is the various types of situations that the child may be in involving the phobic stimulus and how much fear each situation would evoke. Looking again at a phobia of dogs, it would be important to have the child rate the fear he or she believes would be felt across a variety of situations. For example, how much fear would pictures of a dog evoke? Would movies involving dogs cause anxiety? How about seeing a dog through a window, watching someone else interact with a dog, having a dog in the room in a cage, or on a leash, or roaming free? All of these situations may evoke different levels of fear and should be explored to determine the easiest and most difficult situations.

Using the *Functional Assessment Worksheet* (Davis 2006), we have found it works well to ask children what is the easiest thing they can do involving their feared stimuli (e.g., using the ADIS-C/P fear thermometer, what would be a 1?) and what is the hardest or scariest thing they can think of involving their feared stimuli (e.g., what would be an 8?). Following the establishment of opposing poles within which to work from, it is then easy to ask what would be something half-way in between a one and an eight and so forth. Prompting the child with possible situations may be helpful if he or she struggles to identify different scenarios; however, it is advisable to be open-ended in questioning if at all possible to ensure the responses are truly the child's (Davis et al. 2009; Öst and Ollendick 2001). The fear hierarchy on the worksheet is laid out with space to write details about each step to be placed on the hierarchy on the left; however, it is quite common that in the process of discussing other cognitions or steps, the clients will identify other steps to be included. As a result, there are spaces on the right of the hierarchy to include additional steps occurring between previously indentified steps. It is advisable to distinguish roughly eight to ten steps in the hierarchy. Finally, while the clinician's job is to develop the hierarchy to the extent possible, inevitably some steps need to be rearranged and new

steps may need to be included during the actual OST session. The clinician should also keep in mind that steps in the hierarchy that were rated low by the child may actually end up being more difficult than the child expected and vice versa (i.e., hard steps may be easy). This is likely due to the accommodation and avoidance of the feared stimulus interfering with the child's ability to accurately judge just how he or she would respond, particularly in more longstanding and severe instances. As a result, it is important for the clinician to gather as much ancillary information about the phobia as possible during the functional assessment session.

Additional Information to Gather During the Functional Assessment

Though mentioned briefly throughout the preceding sections, there are also several other categories of information which should be covered during the functional assessment. For ease, these will be briefly reviewed in the order in which they appear on the *Functional Assessment Worksheet* (Davis 2006): etiology/maintaining variables, previous exposures and experience, the client's typical response when afraid, and important stimulus characteristics. Though possible, it is unlikely that a single causal experience will lead to a specific phobia (for reviews see Chap. 1 and Nebel-Schwalm and Davis in press) or that a client can even accurately tie his or her fear back to a particular etiological event. More likely, a specific phobia results from a combination of experiences accruing over time (Davis 2009; Nebel-Schwalm and Davis in press; Ollendick et al. 2004). For example, a phobia may result from the interaction of several mild to moderate, directly conditioned negative experiences with a parent that modeled fear to particular stimuli with a child's own overall tendency toward behavioral inhibition and internalization. If applicable, however, the clinician should have the goal of collecting as much of this information as possible to be able to anticipate steps in the OST that might be particularly evocative based on a past, etiological flash-bulb event (e.g., a dog attack). Even so, determining a particular etiological event or path from a child's history is not as important as having a clear understanding of the variables that are currently maintaining the phobia (Davis et al. 2009; Öst and Ollendick 2001), including who is accommodating and how they are accommodating a child's fears. Even though it is ideal that such information be obtained from children, it is not always possible. Still, when it can be obtained it is helpful in planning treatment.

Along these lines, a clinician should discuss the child's previous exposures and experiences with his or her feared stimulus. It is advisable to inquire about the client's "worst" experience with the stimulus and the client's "most recent" experiences. No client comes to treatment without his or her own history of "exposure." Whether it was a well-intentioned parent trying to help a child "just get over it because there's nothing to be afraid of" or possibly an older sibling who thought it was (and maybe thinks it still is) "funny" or "cool" to surprise a child with a feared stimulus, children will present for treatment with their own unique exposure histories. Additionally, children

inevitably have "accidental" exposures, in which they unexpectedly encounter the stimulus during their daily activities. These experiences are important for the clinician to note for later to address the child's concerns that that kind of harsh experience will be exactly what OST will be like, and to *gradually* test those experiences through supportive exposure and cognitive challenges during the actual OST. This is also a good time to obtain information about the measures taken to avoid the feared stimulus. Understanding how the child and his or her family have altered his or her life because of anxiety can add to the information used to challenge negative thoughts during the treatment session.

During the functional assessment, the clinician should also determine what a client's "typical" fear response is or looks like. Lang (1977, 1979) described fear as a response that encompasses physiology, behavior, and cognition. Given this conceptualization, it behooves the clinician to have the client describe his or her "typical" experience of fear. It can also be helpful to have clients describe their responses to "accidental" exposures or conditioning events. Care should be taken to have the client detail avoidance behaviors (e.g., running away or possibly even aggression), describe physiological symptoms throughout the body (e.g., sweating, racing heart, maybe even full panic attacks), and catalog cognitions (as described in preceding sections). This information is especially helpful in allowing the clinician to prepare for the extent of the child's avoidance, but also for the clinician to better identify and gauge how scared a client may be during a particular part of the actual exposure session based on the descriptions obtained beforehand. Finally, an important part of the functional assessment is clearly differentiating the qualities and characteristics of feared stimuli that make the fear more or less intense. During OST, these details help to create minor augmentations of steps for new tasks that can be attempted.

The Rationale for One-Session Treatment

Providing a rationale for treatment is customary with cognitive-behavioral practice and OST is no exception (Öst and Ollendick 2001). At the conclusion of the functional assessment, the clinician should provide a rationale for choosing OST for this particular child and family. We have included a "Rationale for One-Session Treatment for Specific Phobia" that we have found particularly helpful for clients. The rationale is adapted from several sources on OST. This handout is typically given to the clients to review while the treatment is being described and they are allowed to take it home with them. It also has the benefit of having a place for appointment information for the OST. Much of the information from the rationale handout is straightforward; however, a few noteworthy points will be reviewed below.

The presentation of the rationale for OST provides an important opportunity for the clinician to describe what supportive, controlled exposure will be like and to assuage any fears or correct any misconceptions about what OST will be like (Davis et al. 2009; Öst and Ollendick 2001). When presenting the rationale for OST, the

clinician should use frequent examples from the child's own history to describe what the treatment will be like, but as importantly what it will not be like (i.e., OST will not be like their worst experiences and the fear will not be like the uncontrolled, traumatizing experiences they may have had in the past). Additionally, it is important to emphasize three additional points in conducting OST. First, it is important to emphasize that the child and clinician will be working together as a team to treat the child's fear. In this way, exposure will occur in a supportive, controlled environment and the child will not have to face his or her fears alone. This idea can be instantiated in the functional assessment, with the child as the expert on his or her fear and the clinician as the expert on how to help alleviate it. It may be helpful to describe their roles together as a team—the clinician as someone to encourage and prompt the child to push himself or herself, but not force him into something he is not prepared to do, and the child as the one who tries to do his very best. Also, clinicians should be honest in describing that the child will have to experience some fear to improve—the difference is that a moderate level of fear is usually the goal and that the clinician is not somehow attempting to traumatize or flood the child or repeat or beat his or her worst personal experience (Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). Moreover, the levels of fear the child experiences will eventually decrease if the child remains in the step. Second, the clinician should emphasize that a 3-step process will be used for exposures. The clinician will discuss a possible step or behavioral experiment with the child to test a particular cognition or expectancy, then the clinician will demonstrate or model the step, and, lastly, the child will be encouraged to do the step. Third, and finally, it is important for the clinician to emphasize that a great deal of improvement usually occurs with OST during the actual session, but that OST should be seen as the *start* of treatment (Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). Several months of self-exposures and practices by the client may be necessary to solidify treatment gains.

During and following the presentation of the rationale for OST, it is also an excellent opportunity for the clinician to attempt to gauge the child's motivation for treatment. Treatment motivation in OST is important as it requires a child with at least some motivation to work toward getting better. Basically in the case of OST, enough motivation is needed to deal with his or her fear and to confront increasingly higher steps on his or her fear hierarchy. The child needs to be motivated enough to eventually stand fairly high levels of anxiety during a prolonged session. This is particularly an issue with child and adolescent therapy in general as it is usually the parents or caregivers who bring a child in for treatment and not necessarily at the urging of the child himself or herself. Finally, it is important to use the remaining moments of the session to discuss possible concerns and questions families may have and remove any impediments to their attendance at the next session. It is helpful to plan for how the child and family should handle anxiety about the appointment or catastrophic cognitions about the OST session itself. It can also be helpful to normalize anticipatory anxiety the children may feel prior to the OST session, and to encourage them to motivate themselves to come using examples from information gained in the interview.

Set-Up and Preparation

The process of planning exposures should begin when building the hierarchy in the functional assessment. As the child relays what features make a certain stimulus more or less anxiety-provoking, the clinician can be thinking of how that might be incorporated into the session. For instance, if a child describes that large or hairy spiders are more difficult to encounter, then those types of spiders will need to be located. While it is not necessary to have every characteristic of the stimuli mentioned in the functional assessment present at treatment, it is important to be able to both address the highest levels of the fear ladder as well as having a starting place for exposure. Stimuli for certain types of phobia, such as dogs, or many situational phobia types, such as enclosed spaces, will need to be planned more carefully. To conduct OST for a specific phobia of dogs, the clinician will need to plan on having multiple dogs available and kept in an accessible area. The care of animals also needs to be considered, such as having someone available to watch the dogs, get them water, and take them on walks. Additionally, the clinician should be familiar with any animals used in therapy and should be prepared for any unexpected circumstances (e.g., a dog being sick or scared or a bug getting lose). If a clinician has not worked with a particular type of animal, such as a snake, he or she should practice handling the animal first to become familiar with how to anticipate the animal's motions to keep the exposure session in control. For a situational phobia, such as enclosed spaces or elevators, the clinician will need to carefully plan where appropriate places will be and need to ensure that they will be available on the day of treatment. Finally, time of year may need to be taken into account when planning treatment. If the stimuli associated with a phobia are only available during a certain time of day or time of year, it may require careful planning of when the treatment takes place. For example, if a child has a phobia of bees or caterpillars, the treatment may need to occur in the summertime or springtime or special arrangements to obtain the stimuli via internet or a pet store may need to be made. The clinician will also need to plan how to access bees in order to bring them into the therapy session, and the clinician should consider the opportunities available for practice after the session (e.g., if insects are ordered from the internet during the winter, will there be opportunities to practice outside of the session?).

Additionally, the clinician is responsible for a fair amount of psychoeducation about the stimulus during the therapy session. While it is not necessary to educate the client on the intricate details of the stimulus or situation, the clinician should be able to provide basic information about the stimulus being treated. This may include the basic anatomy, life cycle, and typical behavior of an animal. It may also include information about how elevators, escalators, or airplanes "work." In any case, the clinician will likely have to plan on preparing for the session by using reliable and child-friendly resources. It may also be helpful to bring diagrams or pictures from textbooks or the internet to aid in explanations. This is an important part of the preparation process and some time should be devoted toward it. Adequately answering the child's questions about the feared stimulus not only informs the child but also gives the clinician added credibility. The preparation for the session may

require additional planning and arrangements on the part of the clinician to ensure that the stimuli necessary for a successful and effective exposure are available and accessible during the treatment session. For a full review and discussion of this topic, see Chap. 6.

Using the Functional Assessment to Inform Case Conceptualization

The functional assessment can be used to synthesize information and refine the case conceptualization. "A basic conceptualization that fear maintains the avoidance is of little therapeutic use (Öst and Ollendick 2001); instead, to the extent possible understanding the specific functions of the behavior will better support a formulation for the phobia and inform treatment (e.g., attention, tangible objects, escape, etc.)" (Davis et al. 2009, p. 297). Information obtained, such as catastrophic cognitions, characteristics that make stimuli more difficult or anxiety-provoking, and current avoidance can help to identify factors that maintain the phobia. Avoidance of activities, people, or places related to the phobia can especially serve as a specific guide to what is maintaining the phobia and where it will be important to target exposure in treatment. All of this information can also be used to inform treatment planning for the exposure session as well as to identify potential practice exercises the child may benefit from completing.

Information obtained while making the hierarchy and probing for catastrophic cognitions can prove to be valuable in determining maintaining factors of a specific phobia (Öst and Ollendick 2001). Avoidance of situations that involve the phobic stimulus is one of the key factors that maintain the specific phobias in children. While constructing the hierarchy, the clinician should keep in mind and probe about current situations the child and family are avoiding. Any situations the child is currently avoiding are likely serving to maintain the phobia, and realistic ways of recreating those situations in session should be considered during the construction of the hierarchy. Likewise, catastrophic cognitions typically serve to maintain phobias (Öst 1997). Overestimations of danger or negative consequences such as believing one will have a panic attack in a public place and not be able to deal with the consequences of the attack are some examples of cognitions that will drive avoidance of situations. Also, information obtained in a parent or caregiver interview can yield particularly relevant information when working with children. Mostly, children will not be able to provide detailed information about their maintaining factors. Caregivers, however, can give information about accommodation at home, at school, and in other environments. They can also give information about situations the child avoids, which children often have a difficult time describing or recalling. Additionally, it is important to ask parents about other possible maintaining factors, particularly modeling of fearful or avoidant behavior by a sibling or parent or other family member such as a grandparent or cousin. If modeling is a significant issue, this will need to be addressed

as it could limit the feasibility of practicing approach behavior following treatment (e.g., if a parent is uncomfortable or unwilling to be around the phobic stimulus).

Learning about and conceptualizing the maintaining factors will help to inform and plan for treatment. In the treatment session, the hierarchy will serve as a guide for gradually exposing the client to situations which involve varying degrees and variations of the phobic stimulus. It is also important for these situations to mimic situations the child is currently avoiding to increase the likelihood for generalization after the treatment session. It is beneficial to practice skills in session that the child can begin to use in everyday settings, such as catching and releasing insects or petting dogs and feeding them treats. Catastrophic cognitions will also need to be carefully challenged in session, which can be done through the aid of setting up situations (i.e., behavioral experiments) in which they can be tested (Davis et al. 2009; Öst and Ollendick 2001). For example, if a child has an unrealistic expectation that a spider will run up his arm if his hand is within a few inches, then that cognition can be challenged by putting the clinician's and child's hands near the spider and observing its behavior. By observing the spider withdraw rather than approach, this can likely be disproved. By setting up similar situations, overestimations of negative consequences can be tested in session based on what was garnered from the elicited cognitions and beliefs. While parents are typically not included in the treatment session itself, information obtained from parents can be used to inform treatment for youths regarding appropriate stimuli and setting up situations to test cognitions. Just as parents often provide information about avoidance and environmental factors that maintain the phobia, taking their information into account when planning treatment can lead to a more effective treatment. This will likely include reconfiguring the hierarchy based on this information to make it more inclusive of situations currently avoided in the child's everyday life. Finally, because family accommodation and modeling of fearful behavior is common in the maintenance of specific phobia, this will need to be addressed with the children (and their parents).

Conducting One-Session Treatment with Children and Adolescents

Overview

As noted, OST is conducted over a massed session that is maximized to 3-hour in duration. Typically, it is conducted about one week following the functional assessment. During the session, the clinician combines several empirically supported treatment methods together into the unique OST format including exposure, cognitive challenges, participant modeling, and reinforcement, as well as the provision of psychoeducation and skills acquisition (Davis and Ollendick 2005; Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). Quite frequently, the combination of these methods can even be used with children in a fun turn-taking approach—as both clinician and child take turns suggesting behavioral experiment ideas once the

overall treatment format and pace are established (Davis et al. 2009). In the following sections, we will review the various components of OST separately and then cover their integration into the massed session. In general, the session begins with a review of the rationale for treatment and a description of the process to be used for conducting behavioral experiments with children. Pretreatment instructions should also be given and the clinician should emphasize that nothing will be done to surprise or shock the child, rather the clinician explains that the session will be completed with the child and clinician working as a team with the goal of overcoming the child's phobia.

Exposure

The most noticeable method in OST is gradual exposure to the feared stimulus or situation over the course of up to 3-hour (Öst and Ollendick 2001). Exposure is thought to serve three main purposes in OST (Davis et al. 2009; Zlomke and Davis 2008). First, it provides a framework in which to allow fear to habituate and avoidance to extinguish. Second, the direct, prolonged in vivo exposure prevents cognitive and behavioral avoidance in a controlled and safe environment; the clinician should actively work to avoid discussions, unnecessary breaks, etc. that would distract from the exposure and allow avoidance. Finally, and potentially most importantly, the exposure adds a mechanism by which fear can be elicited to activate and address faulty or problematic catastrophic cognitions and expectancies (Öst 1997; Öst and Ollendick 2001). As a result, OST has been discussed in terms of addressing all three components of the fear response: psychophysiology, avoidance behavior, and catastrophic cognition (Davis and Ollendick 2005). Beyond this, the massed exposure itself is also thought to facilitate the treatment gains brought about by OST (Zlomke & Davis). Recent research has even begun to investigate the claim that massed OST is superior to spaced 1-hour weekly sessions for three weeks (Davis et al. 2011b).

The actual exposure during OST takes the form of behavioral experiments that are intended to test the child's catastrophic thoughts and expectations regarding interaction with the feared stimulus or situation (Öst and Ollendick 2001). The overall act of designing a behavioral experiment in-session utilizes a 4-step process: proposing and discussing a possible step, having the clinician model that step if necessary, encouraging the child to perform the modeled behavior, and reinforcing the child for the attempted or successful approach (Note: Additional cognitive steps are discussed in the following section). For example, a clinician may create a behavioral experiment for a dog using the following steps: Discussing and describing the situation to be tested (e.g., petting a leashed dog), obtaining the child's prediction of what will happen (e.g., the dog will bite me), formulating the child's catastrophic belief (e.g., I will get hurt badly or even die), having the child participate in the behavioral experiment (i.e., petting the dog with the help of modeling from the clinician), and having the child say out loud what the dog actually did (e.g., the dog waved its tail and seemed to enjoy it) and how convinced he or she is of the catastrophic belief

(e.g., does not believe it at all). Of course, the clinician should also reinforce the child with praise for completion of the behavioral experiment.

The clinician makes the child aware of the first three steps as part of the overall process or scheme they will use as a team to treat the child's fear. As a result of this teamwork, negotiation is usually a very important part of setting up behavioral experiments (Davis et al. 2009). The child agrees to remain in the situation and experience the fear until his or her subjective units of distress (SUDs) rating has reduced by approximately 50% or more, or the clinician has determined the fear has sufficiently subsided to proceed (Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). Negotiating which tasks the team may try next can be difficult as initially the steps proposed are usually too low on the fear hierarchy to impart much benefit. Even so, we have found these initial "easy" behavioral experiments to be positive in helping the child learn the overall format for OST and gain initial confidence and self-efficacy. In particular, Davis et al. (2009) have described the use of "foot in the door" and "door in the face" techniques to move the session along and gain the child's willingness to continually try increasingly difficult steps. Initially, the clinician suggests and negotiates very simple, easy interactions ("foot in the door") to build rapport, trust, and behavioral momentum. As the session progresses, however, it can be useful to use "door in the face" techniques at points where the treatment seems to stonewall. The clinician will suggest a step far beyond what the child might be ready to complete with the expectation that the subsequent negotiation will lead to an intermediate step that is still a progression up the hierarchy. For example, a child and clinician may be several feet away from a leashed dog and the clinician may suggest going over and either petting or unleashing the dog as the next step. If the child agrees to proceed, then there is progress; however, if the child disagrees, then he or she will likely agree to the suggestion of only moving several feet closer—still notable treatment progress. While we have found this adaptation to be useful with children, it may not be necessary for adults. We suggest using it with children, however, as it addresses important developmental limitations.

Finally, overlearning is also a component of exposure when doing OST, both in the traditional sense of repetitive interactions with the stimulus at a given step in order to achieve mastery, but also in the sense of completing steps which usually exceed what a child would experience in the "real world" (Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). For example, behavioral experiments of this nature may work up to involving the placement of a spider in a child's hair, having the child put his hand in a dog's mouth (Note: only with a dog that has been trained to safely do so), or safely looking over the highest point in a stadium. The expected result is that mastery of these more intense situations will make more normative interactions outside of therapy easier and less evocative by comparison (Davis et al. 2009).

Cognitive Challenges

Actual cognitive restructuring in the traditional, Socratic cognitive-behavioral sense as recommended by Beck and others is not routinely done during OST. Instead,

clinicians present behavioral challenges to the child that cause the child to rethink expectancies and outcomes (e.g., instead of coming up with alternate cognitions or countering automatic thoughts; Öst and Ollendick 2001). Behavioral experiments, then, serve in part as opportunities to safely test out catastrophic cognitions and expectations about interactions with the feared stimuli or situations. Having gained an idea of the child's catastrophic thoughts from the functional assessment, the clinician will ask the child to make a prediction about performing a proposed behavioral experiment. Once the step is completed, the clinician will then revisit the catastrophic thought and remind the child of his or her expectation about what would happen during the step compared to what actually did happen during the behavioral experiment. This allows the clinician to challenge the child's maladaptive or distorted cognitions and expectations and allows the child to correct these preconceptions by drawing their own conclusions based on their experiences in session (Davis et al. 2009; Öst and Ollendick 2001). As a result, Socratic cognitive restructuring is not used, but cognitive structures and processes are thought to change based on the confirmation or disconfirmation of the child's expectations during the session. In addition, the frequent discussion of the child's predictions, catastrophic cognitions, and fearful memories serves to prevent cognitive avoidance during the session.

Participant Modeling

Participant modeling is a technique whereby the model demonstrates a behavior and then incorporates the observer into the modeled action (Ollendick et al 2004). This method is also integrated into the OST procedure. During OST, participant modeling is used to further break down complex or difficult steps where the child may otherwise begin to lose momentum or progress (Zlomke and Davis 2008). Essentially, more difficult steps like actually touching a dog or actually looking over a railing can be graded even further by implementing participant modeling. In these examples, the clinician or model, can demonstrate the behavioral experiment to be completed and then assist the child in completing the step (Öst and Ollendick 2001). With the dog, the clinician may demonstrate petting the dog (while testing out the child's expectations about what might happen), and then use participant modeling by having the child place his hand on the back of the clinician's hand while they pet the dog in tandem. Eventually, clinician contact can be faded out as the hands are reversed (i.e., child's hand on bottom petting the dog with the clinician's on top), the child pets the dog with the clinician only offering a supportive hand on his shoulder, and so forth. Participant modeling is also potentially important for other types of phobias (i.e., not just animal type phobias). With the example of heights, a clinician may demonstrate holding on to a railing and safely looking over a balcony, have the child then do the same with the clinician offering a hand on his shoulder, and so on. In this case, there may be more of a skill-building component to the modeling; however, with other phobias, modeling may be a way to further treat the fear through observational learning (i.e., social learning and Bandura; see Davis and Ollendick

2005 for a review). For example, a child with an injection phobia may benefit by seeing the clinician receive an injection even there is no "skill" to be learned per se. As a result, participant modeling can be used for a variety of phobias and work both with deficient skills and the actual fear. Either way, however, the goal is to eventually fade out the model until only verbal instructions and support are offered by the clinician (Davis et al. 2009).

Reinforcement

Reinforcement in the form of attention, praise, and social support are always a part of OST and an important component at the end of behavioral experiments (Davis et al. 2009; Öst and Ollendick 2001; Zlomke and Davis 2008). While tangible reinforcers are not typically used (e.g., stickers, food items, toys; see Chap. 9 for a modified OST using reinforcement and other techniques), the provision of social reinforcers are key to encouraging approach behavior. Moreover, the selective use of attention during the session might serve to positively reinforce approach behavior or, in a way, punish avoidance behavior (e.g., addressing a child's avoidance behaviors directly and decreasing the amount of attention provided to the child until approach is again reinitiated). Although firm support for this selective attention is currently lacking, it is recommended that the clinician use attention selectively as a reinforcer contingent on the child's approach behavior (Davis et al. 2007). Most importantly, however, the clinician should be careful not to reinforce avoidance behavior by allowing escape from the situation, providing praise for a failed attempt, or unnecessarily attempting to reassure or console a fearful child beyond what is absolutely necessary (though obviously the goal is not to present a harsh or uncaring persona).

Psychoeducation and Skills Training

Psychoeducation and skills training are the remaining components added to OST and are common among other cognitive-behavioral interventions as well. In OST, however, these tools serve dual roles both as methods which add to the OST and as opportunities to keep the exposures fresh, interesting, and informative (Davis and Ollendick 2005; Davis et al. 2009; Zlomke and Davis 2008). Psychoeducation serves to keep the lulls between exposures or during exposures focused on the actual exposure and assists with "correcting myths, false assumptions, and catastrophic expectancies as well as address[ing] the lack of a needed skill set (e.g., how to pet a dog without scaring it)" (Davis et al. 2009, p. 6). The psychoeducation and skills training provided during OST also helps to encourage the safe interaction with stimuli and situations during and after the OST. For example, topics covered include how to safely interact with a new dog or, more importantly *if* one should approach an unfamiliar dog; also, for example, children are informed about how to handle unexpected encounters with "wild" snakes and the differences between snakes

Table 5.1 Parting thoughts and reminders for conducting OST. (Reproduced with permission from Davis et al. 2009)

- Expose and prepare yourself in advance—be sure you are comfortable with the stimulus yourself. You need to be able to model approach behaviors calmly and effectively
- Know your stimuli—be familiar with the animals, insects, elevator, setting, etc. you are using and any quirks inherent to them. For example, does that dog have a tender spot or ailment; will that type of lizard drop its tail if distressed?
- Plan where you can safely and ethically house stimuli until they are needed (e.g., who will walk the dog? Does it have water?, etc.)
- Consider the time of year and/or where to get stimuli before agreeing to treatment. For example, where do you get bees/wasps in the winter; do you know anyone with a pet snake?
- As best as possible, prepare what to say to an inquisitive stranger (or a familiar face) if you conduct exposure in a public place
- Know what is safe for the people involved and the stimuli—do you know if the spider you are planning to use is poisonous? Better yet, does your patient have an allergy that you need to know about (e.g., to even nonpoisonous spider venom, bee stings, animal dander, etc.)? Is the dog you are using on a special diet and cannot be fed regular dog biscuits during a behavioral experiment (this actually occurred during a session—he vomited—but it was actually useful to the exposure and the dog was unharmed. i.e., "See, dogs get sick too.")?
- Do not be afraid to get supervision or to consult. What is the best recipe for fake vomit? How do you work with bees/wasps and not get stung? How do you adapt a session to a child's developmental level? For most clinicians inexperienced with children, anxiety, or exposure therapy, OST involves more than reading the manual (Öst & Ollendick, 2001) or watching a demonstration video
- Be prepared if the unexpected should happen, and if possible use it to your advantage in treatment. For example, as best you can, prepare yourself mentally for what you will do if the snake/dog/etc. bites you during the exposure.[a]

[a]After you are collected, usually it is something like, "So, was that as bad as you thought it would be?" "Did [insert catastrophic cognition] happen?"

kept as pets and those they may encounter accidently. Safety overall is important in OST and similar information should also be shared with the parents or caregivers (Öst and Ollendick 2001). Taken as a whole then, the clinician is responsible for learning a great deal about each feared stimulus or situation prior to the session so that he or she can answer questions, provide corrective information and dissuade misconceptions, and educate the child about the actual properties, behavior, nature, etc. of the feared stimulus. The knowledge to be learned should include everything from the simple names of body parts to explanations for certain behaviors to be able to offer information and answer a variety of questions (e.g., Is the snake cold and slimy? Why do dogs pant? Why do roaches run away when the lights are turned on? What does this button do on the elevator?).

Implementation

The implementation of OST involves the combined use of the previously discussed methods (Öst 1987, 1989, 1997; Öst and Ollendick 2001). Preparation for the session will be important and particular points to consider are included in Table 5.1. Based on

our experience, progress is typically uneven through the 3-hour session and children typically advance in one of three ways: 1) a child proceeds quickly through behavioral experiments throughout the session, 2) a child proceeds slowly initially and then progresses more rapidly as the session continues, and 3) a child proceeds well only to become "stuck" at a particular point in the session (Davis et al. 2009). The first two instances rely on the preparation and patience of the clinician to successfully guide the child through the intervention. The third case, however, highlights the fact that children (and their parents) who avoid approaching and thinking about a feared stimulus may not fully appreciate what aspects of an exposure may prove evocative. Clinicians should be prepared for unexpected problems or fears during the session as it is common that many of these characteristics will not come out until the OST and the child has an opportunity to actually come into prolonged contact with the feared stimulus or situation. As a result, the fear hierarchy and the functional assessment should serve as a rough guide for the session, but the clinician should also be prepared for behavioral experiments that were not necessarily based on the information obtained prior to treatment, but were made possible through the child's verbalization of catastrophic beliefs during the session. Progress may also vary from child to child with the same phobic stimulus or between children the same age. This is, in fact, a strength of OST—the implementation of OST is flexible enough to accommodate the various differences and nuances between children and their fears during the session (Öst and Ollendick 2001). While a specific guide for each possible stimulus may seem applicable, it is actually limiting in the sense that each treatment to varying extents is planned around a particular child with a particular fear (Davis et al. 2009). Even so, a rough example of a portion of an OST for dog phobia is presented in Table 5.2. The primary guide for conducting a successful OST is patience: when conducting OST the child's fear will subside as long as the child remains in the situation and avoidance is prevented (Davis et al. 2009).

After the One-Session Treatment

Toward the end of the massed session and immediately after it finishes, there are several steps we recommend. As with the functional assessment, it can be beneficial to bring the parent or caregiver in and have the child quickly demonstrate his or her new-found skills and abilities (Davis et al. 2009; Öst and Ollendick 2001). This gives the child a chance to proudly exhibit his or her newly acquired skills and abilities, and it is also an opportunity to show the parents how behavioral experiments are carried out and to provide instructions for future self-exposures on their own. Generally, several months of continued practice are recommended to cement gains (Davis et al. 2009; Öst and Ollendick 2001). Parents are briefly instructed in how to safely carry out exposure with their children and encouraged to schedule numerous opportunities for their children to practice their new-found skills (e.g., trips to local dog parks for

Table 5.2 Hypothetical example of the progression of treatment for a child with a dog phobia. (Reproduced with permission from Davis et al 2009)

A. First Dog (approximately 1–1.5 hours of the massed session)

1. Talk about dogs; introduce idea of bringing a dog into the room; negotiate details of first exposure and assess the child's predictions of what will happen
2. A small dog is brought into the room (e.g., a West Highland Terrier) leashed by an assistant who holds the leash close and tight at the opposite end of the room from the child and clinician. The clinician praises progress and encourages the child to watch the dog. They discuss how the dog's behavior is similar or dissimilar to expectations and cognitions discussed earlier
3. The clinician suggests moving closer. The child declines and details are discussed. The interim is used to discuss educational elements regarding dogs (e.g., Do you know how to tell a mean dog from a nice dog? How can we tell if that is a mean or nice dog?). The clinician again suggests moving closer. The child and clinician move 3 feet closer to the dog and discuss/challenge cognitions and predictions
4. The clinician again suggests moving closer; however, before details can be negotiated the child simply begins moving forward and the therapist replies, "I'll just stop when you do then; you're doing great!" The child and clinician move four more feet closer to the dog and discuss/challenge cognitions and predictions
5. The child agrees to allow the dog two more feet of freedom on its retractable leash
6. The child agrees to allow the clinician to touch the dog. Predictions of what will happen are assessed before and discussed following
7. The clinician uses participant modeling to have the child in closer proximity while the clinician pets the dog
8. The clinician shapes the response with praise and participant modeling until the child is independently petting the leashed dog
9. The child realizes how close she is to the dog's teeth and recoils slightly
10. The clinician assesses the catastrophic thought (i.e., "it will bite me"), asks the child for a prediction of what will happen if she pets the dog's head, and with permission demonstrates how the dog dislikes having the clinician's hand in its mouth. The child is then encouraged to do the same and performance is discussed
11. Etc

B. Similar procedures would occur with the second and third dogs (a medium and large dog respectively) taking up the remaining 1.5 hours or until sufficient behavioral experiments have been conducted and over learned until the child exhibits little or no fear

Treatment occurs at an uneven pace and differs considerably from child to child, even for the same phobic stimulus. This example was constructed with the catastrophic fear being associated with the size of the dog and it knocking the child over and biting him or her.

dog phobia or arranging to meet a neighbor's well-trained dog). Additional follow-up appointments should be scheduled if necessary and a quick, tentative plan for additional booster sessions can be discussed (Davis et al. 2009; Öst and Ollendick 2001)—this may involve scheduling an additional session for a refractory case (see Chap. 7), but more than likely only involves putting a brief plan in place for how to deal with possible set-backs and ways to contact the therapist should it be necessary.

At this stage the clinician should also explain the difference between a set-back and a possible treatment failure or relapse (Öst and Ollendick, 2001). A set-back is not uncommon and usually involves a child briefly experiencing a return of fear in

Table 5.3 Instructions on what to do when a setback occurs. (Reproduced with permission from Öst and Ollendick 2001)

1. Tell yourself that this is what the therapist said would occur sooner or later, and it is not a catastrophe. It is not a relapse, but a temporary failure to manage a situation that you have managed before
2. Restrict the setback (i.e., do not let it spread to similar situations)
3. Rehearse the coping-skill you acquired during therapy in a non-stressful situation
4. Enter the setback situation as soon as possible, and focus your attention on the very first signs of anxiety coming on
5. Apply your coping-skill as soon as you feel the first anxiety signals. Keep applying it and stay in the situation until the anxiety reactions dissipate
6. Leave the situation when the anxiety is reduced, and when you have finished your business there
7. If this does not work, plan to try a somewhat easier situation by thinking back on what happened during the treatment
8. If it works, go back to the setback situation and repeat steps 4–6
9. If this still does not work, call the therapist as soon as possible to discuss the problem or to arrange for an extra therapy session

a certain situation. Usually, a set-back occurs when the child fails to implement the techniques learned during OST (i.e., to remain in the situation until the fear subsides and then, possibly, even test out the catastrophic thought or conviction that triggered the fear; Öst and Ollendick 2001). A number of options for addressing treatment set-backs are described in Chaps. 4 and 7; however, a few issues that particularly pertain to children and adolescents will be reviewed here and are included in Table 5.3 which is reproduced from the unpublished child OST manual (Öst and Ollendick 2001). In our clinical experiences, four of the more common sources of set-backs are 1) the child encountering the feared stimuli in an unexpected situation that he or she was not prepared for, 2) the child and parents not conducting self-exposure practices, 3) the parents or caregivers continuing to reinforce and accommodate avoidance behaviors, and 4) a primary parent or caregiver having a similar phobia himself or herself and continuing to model phobic behavior and provide negative information about the child interacting with the feared stimulus. The way these various set-backs may be handled varies by the client's unique circumstances. For example, in the first instance the child may simply return to the problematic situation (or a similar safe situation) with the parents and conduct a self-exposure; while in the second and third situations, the clinician may simply be able to emphasize the need for the family to practice the skills learned during the OST or, possibly, try a brief parent-training intervention. We have encountered the fourth situation less frequently than the other three; however, having a parent or other family member with the same phobia has been one of the more difficult circumstances to correct. In our experience, a phobic parent usually presents two issues—continued modeling of the phobia to the child and frequent discouragement of self-exposures (as they might be "dangerous" but would also involve the parent having to expose himself or herself as well). Ideally, this type of set-back can be addressed by having the parent see the initial success by the child and opt for scheduling his or her own OST as well.

Overall, the clinician should emphasize that a set-back is not unexpected and not an overall failure on either the child or the parent's part (Öst and Ollendick 2001). Less than ideal outcomes and repeated problems with the fear returning or perhaps never having been alleviated may be indicators of a poorer outcome, however. The reader is referred to Chap. 7 for additional details and plans for handling such cases.

Summary and Conclusions

OST with children is a well-established empirically-supported treatment for childhood-specific phobias (Davis et al. 2011a). The treatment is the result of careful assessment, interview, and planning. To begin, a clinician should conduct a functional assessment approximately 1 hour in length to learn more about a particular child's fear. In particular, the child's catastrophic cognitions should be obtained and explored and a fear hierarchy should be constructed. Remember too that even the functional assessment and simply discussing the client's fear may be evocative, and so this session gives the clinician an opportunity to build rapport by being supportive, probing, and empathetic. Next, the clinician integrates all of this information into a cohesive rationale as to why OST will be a good treatment choice for a particular child. Approximately one week later, the actual OST session occurs during which the clinician uses several evidence-based treatment methods to work with the child as a team to confront the child's feared stimuli. Overall, support for the use of OST with children is quite strong and most children have found the process goes per their expectations (Svensson et al. 2002).

FUNCTIONAL ASSESSMENT WORKSHEET FOR ONE-SESSION TREATMENT

Thompson E. Davis III, Ph.D.

CLIENT'S NAME: _____ TODAY'S DATE: _____/_____/_____

THERAPIST'S NAME: _____ DATE FOR OST:_____/_____/_____

INTERVIEW STIMULUS (E.G., DOGS): _____ PARTICIPANT/CLIENT #: _____

OVERALL DIRECTIONS: The following worksheet is designed to assist in obtaining and recording information in preparation for the massed, exposure therapy session. Sections are included for eliciting and rating catastrophic cognitions, creating a fear hierarchy, recording important causal and maintaining variables, recording a client's previous exposures and the client's reactions to exposure, and recording various stimulus characteristics important for planning the exposure session. Specific goals and instructions follow in each individual section; however, ideally the overall session should flow similar to an interview or conversation (i.e., not necessarily going from section to section in order).

CATASTROPHIC COGNITIONS (adapted from cognitive scales used in Ollendick et al., 2009)**:**
Directions—Elicit at least 2 catastrophic cognitions from the client. Concrete and specific cognitions are preferred to broad thoughts or worries (e.g., "the dog will bite me and I'll bleed" vs. "I will get hurt"). Subsequently, help the client rate each cognition for certainty, coping, and catastrophic outcome.

1) _____

How certain are you that _____ will happen? 0 1 2 3 4 5 6 7 8 (Not at all — Very Certain)

How certain are you that you could handle _____? 0 1 2 3 4 5 6 7 8 (Not at all — Very Certain)

How bad would it be if _____? 0 1 2 3 4 5 6 7 8 (Not at all — Very Bad)

2) _____

How certain are you that _____ will happen? 0 1 2 3 4 5 6 7 8 (Not at all — Very Certain)

How certain are you that you could handle _____? 0 1 2 3 4 5 6 7 8 (Not at all — Very Certain)

How bad would it be if _____? 0 1 2 3 4 5 6 7 8 (Not at all — Very Bad)

3) _____

How certain are you that _____ will happen? 0 1 2 3 4 5 6 7 8 (Not at all — Very Certain)

How certain are you that you could handle _____? 0 1 2 3 4 5 6 7 8 (Not at all — Very Certain)

How bad would it be if _____? 0 1 2 3 4 5 6 7 8 (Not at all — Very Bad)

FEAR HIERARCHY:

Directions—The following page is designed to assist in the creation of the fear hierarchy. The goal is to generate approximately 8-10 steps of gradually increasing difficulty. In the left column, 8 spaces are allotted (based on the recommended use of and familiarity with the ADIS interviews); similarly, in the right column 9 spaces are provided for any intermediate steps uncovered (e.g., a step between steps 2 and 3, or a step determined to be easier than 1). It is frequently easiest to establish the poles first (e.g., What is easiest? What is hardest?) and then continue by splitting the differences (e.g., What would be something in the middle between 1 and 8? …between 5 and 8?).

EASIEST

1.) _____

2.) _____

3.) _____

4.) _____

5.) _____

6.) _____

7.) _____

8.) _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

HARDEST

ETIOLOGY / MAINTAINING VARIABLES:
Directions—Attempt to determine the variables that are maintaining the fear or at least contributing to it (e.g., family factors, the fear and avoidance allow escape from demands made on the client). Obtaining a specific etiological event or history is desirable, but rare and not necessary.

CLIENT'S PREVIOUS EXPOSURES (e.g., most recent encounter, worst encounter):
Directions—Attempt to determine how the client reacts when exposed to the feared stimulus. If a behavioral avoidance task (BAT) was conducted during assessment, also inquire about that experience.

CLIENT'S RESPONSE WHEN EXPOSED (e.g., physiological, cognitive, behavior):
Directions—Attempt to determine how the client will react when exposed (e.g., Panic attacks? Aggression? Elopement? Freezing? Crying or clinging?).

IMPORTANT STIMULUS CHARACTERISTICS (e.g., size, color, setting, environment):
Directions—Attempt to determine various stimulus characteristics that will be important for planning and gradating the exposure (e.g., is a smaller dog easier or harder, do certain breeds make a difference).

- End -

Rationale for One-Session Treatment (OST) for Specific Phobia[1]

Your clinician has determined that you have a specific phobia. A specific phobia is a strong, persistent fear of a particular thing, place, or situation that causes problems or distress for you. Also, for many people, the fear from their phobia makes them avoid places, people, or situations that they would either like to go to or need to go to. The good news is that there are many excellent and effective therapies to treat specific phobia. One of the most effective treatments for specific phobia is called OST. This is the treatment that your clinician is recommending for you. OST has been in use for more than 30 years, since a Swedish psychologist and anxiety expert named Lars-Göran Öst, Ph.D. developed it. OST is described as a brief, cognitive-behavioral, exposure therapy. This means that our treatment will work both with your scary thoughts (cognitions) and avoidance behaviors. Also, a big part of what we believe makes phobias worse for people is avoidance. When you avoid what it is you're afraid of, then you're keeping yourself from having positive experiences which might change your behavior and thoughts for the better. Over time, we have learned that many people with phobias become more and more avoidant—a process we call generalization. For example, you may have initially only been afraid of a certain animal or place in particular, but over time, many people with phobias find that their fear has grown to include most or all animals of a certain type or most situations that are similar.

One concern many people have with OST and other exposure therapies involves what they should expect. In our experience, when many people see "exposure," they think of reality TV game shows or bad experiences they may have had before. *This is not the type of "exposure" done during OST. Our goal is to create a safe, controlled setting in which you can learn to overcome your fear at your own pace*.

During treatment, you and your clinician will work as a team. Your clinician will use a 3-step process to help you overcome your fear. *First*, you and your clinician will discuss a "behavioral experiment" or exposure step you might try. *Second*, after you and your clinician have agreed on a step, the clinician will do the step first to show you how it is done and what you can expect. *Third*, your clinician will encourage you to do the step yourself. Also, an important rule to remember is that your clinician will NEVER try to surprise you, shock you, or expose you to more than you are able to handle. Experiences like that are not helpful and are just another bad experience with your fear. Our goal is not to scare you, but you will need to experience some fear in order to get better. The job of the clinician is to make sure the steps you discuss and try are only in your "middle range" of fear or less. The goal is NOT to have you experience the most fear you've ever felt or beat or recreate your worst experience. At other times, some people are afraid their fear will just go up and up and won't stop. This doesn't happen; actually if you work with your clinician and stay in

Fig. 5.1 Many people think that their fear will just keep going up and up. . . . Actually, that does not happen

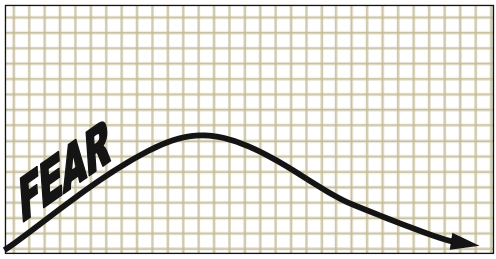

Fig. 5.2 The exposures we do help you experience some fear and learn that you can overcome it

the step, your fear will eventually go back down. At the same time, you'll be teaching your body how to handle that type of fear in the future! For example, think back to something scary you may have done in the past, like riding a bike. The first time you tried to ride it, you may have been scared.

However, after keeping at it and practicing you eventually learned how to ride it and are not scared of it anymore. This overall process is very similar to what you will be doing in your OST session with your clinician—just at a structured and safe pace (Figs. 5.1 and 5.2).

During the OST session, the clinician's job will be to motivate you to do your best and to gauge each step to make sure it is not more than you can handle. Your job will be to work with the clinician to come up with steps you might try, to stay in the situation/step until the fear has gone down, and do your best. Again, you will experience some fear during OST—this is necessary to teach you and your body that the scary things you are expecting either don't occur or, if they do, they are not as bad as you might have thought. It is important to remember, though, that the clinician will use all the information you have provided to make sure each step only causes a "medium" level of fear—the goal is not to have you be at your most fearful or highest fear level.

Also, please remember that your 3-hour session is only the beginning. While we can do a great deal to help you with your phobia in a short period of time using OST, a large part of your success will be up to you and your practicing what you learned. Your clinician will go over some practices you should try. Generally, it is thought that about 6 months of practice should be enough to see if your improvement during treatment will last (or even continue to get better!).

[1]Rationale adapted from those used in or described by Öst (1997), Öst and Ollendick (2001), Ollendick et al. (2009), Zlomke and Davis (2008), and Davis et al. (2009).

Your Clinician for OST is_____.

Your Appointment for OST is at___:___ on __/__/__.

Sometimes illness, emergencies, or other events beyond your control may mean you need to reschedule your appointment. If you need to cancel and reschedule your appointment, please call us at (_____)____ -_____. Other times, it is common for people to become anxious before their appointment and have thoughts about cancelling to avoid their fears. Remember that avoiding positive experiences only prolongs the fear and can make it worse over time. If you are nervous about the upcoming session and thinking about cancelling or have questions about OST, please do call your clinician at (_____)____ -_____ to discuss your concerns about the session. Our goal is to make the treatment as painless and easy as possible, and the available research tells us that most people find the session goes just as we have described it here and that they felt they were in control during the treatment.

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Chapter 6
Real World Applications of One-Session Treatment

Lena Reuterskiöld and Lars-Göran Öst

Introduction

Randomized Clinical Trials (RCTs) using cognitive-behavioral therapy (CBT) and specifically one-session treatment (OST) for the treatment of a broad spectrum of specific phobias have been conducted in both adult and child samples, and across countries. Furthermore, in clinical practice, OST has been extended to include even more unusual phobias such as fish, mushrooms, knees, and ET (the Extra-Terrestrial movie character) with equally good treatment effects overall. Despite these positive outcomes the dissemination of OST *in the real world* has not been as evident. There are several explanations for why clinicians might not choose OST for patients presenting with various specific phobias. They may experience problems regarding:

1. Finding appropriate materials and a variety of stimuli for exposure and behavioral tests (e.g., dogs, snakes, bees, spiders, snails, elevators, enclosed places, costumed characters).
2. How to store animals and insects appropriately to keep them healthy and fresh for exposure work.
3. Assisted exposure (e.g., finding and engaging dog handlers, snake owners, etc.), cost, and time.
4. Exposure outside of the clinic: ethical issues and insurance coverage.
5. Reimbursement for the OST format (up to 3 hours instead of the 1 hour/week format).

In working with exposure, and particularly with OST and phobias, clinicians will need to be creative in shaping an exposure environment that will help patients in making predictions and testing their catastrophic beliefs. To this end the overall aim of this chapter is to share our experience in practically preparing for and setting up a prolonged treatment session.

L.-G. Öst (✉) · L. Reuterskiöld
Department of Psychology, Stockholm University, Stockholm, Sweden
e-mail: ost@psychology.su.se

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_6, © Springer Science+Business Media, LLC 2012

Table 6.1 A summary of specific phobias in RCTs using one-session treatment

Animal	Dogs, snakes, spiders, cats, ants, birds, worms, bees and wasps, nonstinging winged insects, snails, sloe bugs, maggots, silverfish, and other crawling insects
Natural environmental	Heights, storms, thunder and lightning, loud noises (balloons, cap pistols, fireworks) deep water, rain, and darkness
Situational	Enclosed places, elevators, flying, trains, and metro/subways
Blood-injection-injury	Blood, injections, and medical procedures
Other	Vomiting, ET, costumed characters, taxidermy, mummies, yogurt, mushrooms, buttons, bikes, and germs

Different Types of Phobias and One-Session Treatment

In adults and children the following types of specific phobias, listed per *DSM-IV* (American Psychiatric Association [APA] 1994) phobia subtype, have been treated with OST in RCTs (see Table 6.1).

In addition to the above phobia types, a number of children and adults have received treatment with OST in clinical offices over the years. These sessions have also included treatment for other types of phobias, some of which are more unusual: fish, cockroaches, toads and frogs, mice and rodents, hedgehogs, butterflies, driving, tilt and leans (e.g., walking down-hill), falling, knees, and clowns.

Finding a Variety of Appropriate Stimuli for Exposure

In the following section, we provide a detailed description on finding a variety of stimuli, by phobia type, and some guidance on how to store these stimuli appropriately. First, the focus will be on bringing a variety of stimuli into the treatment room, and second, on going outside of the treatment room. Although most treatments are conducted in the treatment room, at times exposures (and behavioral tests) have to be done outside of the treatment room for practical reasons. It might, for example, be difficult to set a time that fits the patient, dog handler, and the therapist. Some patients may also need a booster session for further improvement, or for help with maintaining previous treatment gains if they have experienced a setback for some reason. In these cases, it can be useful, after a careful functional analysis, to have an exposure session outside of the treatment room. On a general note it is a good investment of time to visit the place where the exposure is to take place beforehand. Overall, it is harder to have control over these types of exposures. On the other hand with careful planning of which sites to visit, based on the patient's fear hierarchy, these exposures are tremendously powerful at aiding patients in the transition between therapist–patient collaboration to the patient's own future work. Below follows some guidelines for how to find appropriate stimuli when working in or outside of the treatment room.

Table 6.2 Examples of links for information, contacts, and resources on a variety of stimuli

Animals	American Kennel Club (http://www.akc.org/) Aquaria water museum (http://www.aquaria.se/eng/start.html) Birds and animals (http://www.peteducation.com/) Frogs (http://www.savethefrogs.com/random/links.html) New Zealand Herpetology (http://www.landcareresearch.co.nz/research/wildlifeecol/herpetology/) Stockholm's Herpetological Society (http://www.sthlm-herp.net/) The British Herpetological Society (http://www.thebhs.org/) Therapy Dogs International (http://www.tdi-dog.org/) The Swedish Society for working dogs (http://www.brukshundklubben.se/)
Vomit	Vomit recipe (http://lifestyle.iloveindia.com/lounge/how-to-make-a-fake-puke-4508.html) or at (http://www.xomba.com/fake_vomit_recipe_easiest_homemade_puke_ever)
Car accidents	http://www.caraccidents.com/ http://www.wreckedexotics.com/

Animal Phobias

We have found it useful to gather information about the animals used for exposure. There are several reasons for this. First, it is important to learn as much as one can about the functions of the animal behaviors (e.g., some animals play dead upon confrontation for survival purposes, wasps often seek-out windows and the light for escape). Second, information such as this can be used in the psychoeducation phase of the treatment with the patient. Third, this information is useful in planning and setting up the exposure in a controlled fashion in the treatment room. Typically, information gathering might involve reading and learning about the animal from a reliable internet site or book chapter, and may involve contacting an animal society, owner, or handler where appropriate. For instance, one teenager was extremely fearful of sloe bugs and an expert on these and all their variants. At the time of treatment these were hard to come-by (it was off-season) and the therapists had very little experience with these insects. In this particular case a contact was made with a Zoological department at a local University. This department was generous in loaning some different sorts of sloe bugs for the treatment itself, instructions on how to keep them, and useful in-depth information. In other instances when therapists have had very limited experience with the animal, insect, or spider at hand, it has been useful to spend some time getting acquainted with it prior to treatment. Some examples of links for obtaining this information are provided in Table 6.2.

Following an initial period of educating oneself about the animal or insect stimuli to be used, and growing accustomed to interacting with it, it next becomes the job of the clinician to acquire specimens. Finding appropriate animal stimuli and bringing them into the treatment situation can sometimes be difficult, but a sound investment for treatment purposes. Below follows some guidelines broken down by stimuli for how to do it.

Dogs In working with dog exposures, we have found it useful to generally engage two or three medium- to large-size dogs and their handlers, depending upon the

patients' phobic fears and their personal fear hierarchy (see Chaps. 4 and 5 for a detailed description of how to conduct the Functional Assessment and create the fear hierarchy). Noteworthy, however, in the United States, owners and handlers are infrequently included in the actual session due to privacy and confidentiality concerns; instead, a trained individual employed by the research study or practice is typically used. In either instance, dogs and their handlers have often been contacted through kennel clubs and societies for working dogs, in their respective countries (see Table 6.2 for some contacts). In the United States for example, the American Kennel Club (AKC; www.akc.org) has a list of both obedience and training clubs with contact information, for all states. Specifically, some clubs even train therapy dogs that can be enlisted (e.g., Albany, NY; Charlotte, NC; Orlando, FL; Montgomery, AL; Pittsburgh, PA; and Las Cruces, NM.). Another useful contact is Therapy Dogs International (see link in Table 6.2). These dogs are trained to be in different therapeutic settings and are able to follow commands and remain calm even if they are presented with startling situations. It is useful to meet the dog and its handler in the office prior to the exposure for acquaintance purposes and to give the handler some information about the graduated exposure procedure. Often the arrangement is such that the therapist is the expert on the exposure treatment and the patient's phobic fears, and the handler on the dog's behavior. Familiarity with the dog is important, however, as some animals unexpectedly do not like certain individuals or situations (e.g., some dogs do not like men or children). Over time, the interaction between the handler, dog, and the therapist usually develops into an effective and fun working alliance across different patients. Most of the handlers we have contacted via the kennel club and the Therapy Dogs International will work voluntarily; they frequently see the exposure work as furthering their training and do not expect reimbursement for their time or travel expenses. Many of our dog handlers have, in addition, expressed a deep concern for people who fear dogs and appreciate the opportunity to be a part of the patient–therapist relationship increasing knowledge about dogs and their behavior.

In addition, various supplies and equipment will be needed for the session. For dogs, this includes water and food in dishes and some treats to keep the dogs motivated during the prolonged exposure. During intermittent waiting periods dogs can be given some chewing bones and be placed to rest in their cages (if a handler is not present) or be safely placed in a room nearby until it is time for therapy work. A retractable leash is a useful item during part of the exposure as the leash can be set in a graduated manner by the handler or assistant to a distance agreed upon with the patient.

When exposure is conducted outside of the treatment room, therapists have frequently used nearby parks for exposure where dogs and owners take walks. Other useful places have been day-care centers for dogs and obedience and training clubs (see links in Table 6.2 for contacts). In these exposures, it is useful to have some different dog treats on hand. Upon approaching a dog and its owner the therapist can first model and ask the owner if the dog likes to be petted and if it likes a treat, what sort it prefers, and then offer it (e.g., liver biscuit). Over time, the patient and therapist will have met a variety of dogs and their owners and will have had ample opportunity to test catastrophic cognitions across these situations (e.g., that dogs will come running toward them, jump up, and bite them in the face and neck). Working

outside of the clinic in this way also prepares the patient for being able to master similar fears and situations on his/her own.

Snakes In working with snake exposure, therapists have found it useful to contact a Herpetological Society or related University department. In Sweden, the members of this society have loaned us a variety of snakes (e.g., different types, sizes, and colors depending upon the patient's fear hierarchy). The snake(s) is usually picked-up on the day of the exposure in a portable box and transported back later the same day. The societies often have good internet sites for psychoeducation purposes (e.g., what snakes feed on, how often they shed their skin, mating, taking care of the offspring, etc.). Some links are provided in Table 6.2. Most of the members of this society have not required reimbursement for the day loan but as a gesture patients have at times bought some animal food for the snakes. In the United States, many times students and colleagues have snakes as pets; as well, local pet stores and veterinarians have been helpful in acquiring snakes for exposures. We do not, however, recommend the use of "wild" snakes or those that have not grown accustomed to human contact. When caring for snakes, it is usually helpful to have a terrarium with appropriate heating and humidity set up in the office. The clear container can also help by providing another step in the exposure if necessary (e.g., looking at the snake while it is behind glass).

Birds In working with bird exposure, it is well known that birds generally gather in flocks. Typically small birds will congregate around cafés, pigeons in outdoor market places, larger birds (e.g., ducks and wild ducks) around ponds and lakes, and more exotic birds (e.g., peacocks, flamingos, pelicans) can be found in zoos or pet stores. Often, scattering small pieces of bread will attract more birds which can be useful at some time during the exposure as many patients fear the fluttering and beating of the birds' wings. One patient, for example, expressed being very fearful that the birds would come very close and peck at her feet until she would end up with just stumps to walk on. This catastrophic cognition was then tested during the prolonged exposure session with different bird situations until both the cognition and the fear subsided. (Some information and articles on birds and their behavioral function can be found in the external link). A clinician may also decide to hang a medium to large bird feeder near the office or outside of a window, if possible in a place that would not be immediately threatening to someone with a bird phobia gaining access to the building.

Spiders In working with spider exposure, it is important to consider aspects of the stimulus size and shape, tailored to the patient's fear hierarchy (see Chaps. 4 and 5 for additional details). Many fears often stem from cognitions about what the spider will do when the patient comes in contact with it. For example, many patients believe that it will quickly crawl up on the patient, bite, or maybe even lay eggs in the patient's ear (the latter fear is more common in children). In order to grade the exposure adequately, we have stored spiders of different sizes at the clinic (see below under section of storage). The spiders have been categorized in four different sizes for exposure purposes, starting with a size 1 spider of about 0.5 cm to a size 4

spider of 3 cm. The spiders are often collected from places such as attics, cellars, and garages from villas, usually with the aid of patients' relatives, friends, or students at the university clinic. As with all animal phobias, it is important to gather information before the exposure about the spiders to be used in treatment and to check that they are nonpoisonous (Note: keep in mind too that even bites from some "non-poisonous" spiders, like black and yellow garden spiders in the United States, may cause serious allergic reactions in some patients). It is also necessary to check that the selected spider(s) is not of a type that can jump out of a plastic box, nor is a type of spider that is overly aggressive by nature (e.g., "Wolf" spiders in the United States), and thus cause increased anxiety in patients. Therapists also do not use extremely large spiders (e.g., bird spiders as patients do not meet these in naturally occurring situations). Some patients also see these extremely large spiders more as animals rather than spiders. It is also useful to have several spiders (if possible) of the same size as they on occasion die, although if stored properly can live up to a few months.

One way to store spiders is in glass jars with perforated holes in the lid. They can be kept in a fridge, with a piece of cotton wool kept saturated with water. As mentioned, spiders can live for several weeks this way, although it is more ethical to set them free and collect new ones on a continuous basis. It is convenient for exposure purposes to store spiders of different sizes and place only one spider per jar to keep them safe (i.e., to prevent larger spiders from feasting on smaller ones). Proper storage and tending to the spiders is convenient for times when they are hard to come by. Also, when removing the spiders from their containers either before or during treatment, remember that spiders frequently attach unseen webbing to objects, including jar or container lids. This webbing can lead to their unexpected and rapid ascent out of the jar via webbing attached to the lid when it is removed. To counter this effect, it is generally recommended that one slide the edge of the lid over the top of the jar when removing it to break lose any attached webbing.

Bees and Wasps Some exposures, bees and wasps in particular, are a little more challenging to do as these insects are harder to find, the season for them is short, and it is harder to keep them alive and active for exposure. One suggestion is to have contact with a nearby bee-keeper and if possible to pick up the insects on the same day as the exposure or, at the earliest, the day before. Bees and wasps can be transported in a large glass jar with several breathing holes made in the lid. Often patients are afraid of not only the sounds made by the insect, but also the insect itself and being stung by it. It is not unusual that patients also have thoughts that the bees and/or wasps are specifically attracted to them, more so than to other people around them.

At times, it is useful to have part of the extended exposure, or a booster session, outside of the treatment room. In this case the patient and the therapist can visit places nearby where wasps and bees naturally occur. This might, for example, involve sitting at a café, queuing to buy ice-cream in the summertime, visiting a flower garden, finding a lush covering of grass with clover, or visiting a bee-keeper. Often the patient will come up with good suggestions for outdoor exposures, keeping in mind that they are often the experts on the whereabouts of these insects.

Bees and wasps are stored in a similar way to spiders, although they need a larger (glass) jar to roam in and cannot be stored for prolonged periods of time. These insects can also be stored in a fridge. This cool storage makes them a little drowsy which facilitates the exposure to begin with. Some therapists also trim the wings of the insect as a way to have more control over the exposure initially and later on in treatment use complete insects. Bees are provided with some honey and wasps with, for example, some pâté during storage. Finally, the clinician should also carefully determine the safety of in vivo bee and wasp exposure given any allergies the clinician and/or patient may have.

Other Insects, Mollusks, and Invertebrates Regarding other species such as snails, sloe bugs, maggots, worms, and other crawling insects, these have been collected with the aid of owners of allotment-garden cottages, gardeners (and of course friends and colleagues), and off-season with the aid of the university departments of zoology or entomology. The departments in Stockholm, Sweden, and Blacksburg, Virginia, for example, host a number of different species and can supply sound information on even more unusual insects. These insects have then been transported to the treatment setting in a small portable plastic insect box. In the United States, local extension agencies or pet stores may also be helpful in acquiring more unusual stimuli. These stimuli can be kept in a portable plastic insect box. The plastic box can be furnished with grass and greens similar to what these insects, mollusks, and invertebrates have access to in nature. Stored in this way, they can be kept active and fresh for some weeks depending on the species.

Natural Environment Phobias

Loud Noises Some exposure work for loud noises can be done in the office. This might typically involve bringing in balloons in various sizes to inflate and pop, fire alarms and sirens, and cap pistols, etc. At times the fear also involves firework sounds. With this latter type of fear, it has sometimes been sufficient to prepare a CD recording of various escalating firework sounds, or to load some sounds to an MP3-player for the patient to listen to and then take home. With other patients real fireworks have been used outdoors for exposure, following the instructed safety precautions. Apart from the sound in itself being difficult, most patients also dislike the suddenness and unpredictability of the bangs.

Thunderstorms Storm phobia can be treated in session with audio recordings and videos. For some patients this works well, when the recordings function as stimuli that elicit anxiety and the therapist grades the exposure well. For other patients recordings and videos will not work as they experience these as predictable and in a safe environment. These phobias are very difficult to work with in vivo, (e.g., rain and thunderstorms) because these types of stimuli cannot be guaranteed on the day of the exposure. Having said this, we have found some sites which have provided a good exposure opportunity. For patients with rain or thunder and storm phobia the

Aquaria water museum in Stockholm, Sweden has been a great place for exposure (see external links in Table 6.2). The museum hosts a small rain forest and a tropical sea aquarium. Prerecorded thunderstorms with real-life tropical rain are presented about every 10 minutes and last for about 2 minutes at a time. This makes for a well-controlled exposure. One child presenting with rain phobia for example, feared that once it started raining, the rain would continue to pour, leading to flooding and emergency evacuation which was very distressing. The above exposure place in the Aquaria water museum was sufficient to test these catastrophic cognitions. Similarly, others might try contacting local universities or science museums to see if similar simulations exist nearby.

Heights Several situations can be helpful in working with patients who have height fears. At times the fear is mostly associated with not being able to stand on the highest step on ladders, on stairwells, or looking down from a balcony at high levels. At other times the therapist and patient will need to work with heights from towers, looking over high bridges, Ferris wheels, or high-rise office spaces. In addition, stadiums and coliseums offer unique exposure possibilities as they literally provide graded, "stair-step" exposures out into open spaces which can be particularly salient for some. The exposures need to be tailored to the patient's personal height fear hierarchy and usually several situations need to be approached during the prolonged treatment. On a practical note, this means setting the exposure up so that there is time for transition, and possibly transportation, between the different locations.

Darkness Exposure to the dark can also be done at the clinic. Typically, this involves finding an available small room that can be made very dark and, then, extending the time the patient can remain alone in it. For some patients, however the fear is more related to the darkness outside. In this latter case, the patient and the therapist will need to do the exposure outside of the clinic. In either case, it may be helpful to have an array of flashlights, lamps, or nightlights at hand to grade exposures in other ways, or, for those conducting many of these treatments, dimmer switches can be installed. It might also be important to schedule such individuals at dusk or night-time for treatment. It is not unusual for us to schedule such sessions in the evening following the dinner hour.

Situational Phobias

Although exposure to most fears under the category "situational" have to be done outside of the clinic, fears of some enclosed places (claustrophobia) can be done in the clinic. Other fears and phobias under this category are often associated with using elevators, traveling by air, car, train, and the metro. Patients often describe a fear of being trapped and being unable to escape the situation, especially in the event of the elevator being stuck, being belted and stuck in the back-seat of a car, the trains and metro coming to a halt or a standstill in a tunnel, and fears of a plane

crash. We discuss some of the more common situational phobias we have treated in the following sections:

Claustrophobia We have used small closets and toilets without a window (preferably ones where the door closes completely without an opening airspace at the top or bottom) that give the impression of being a really tight, small room. Patients in these situations often need to test their fear of not being able to open the door, being stuck in there for a long time, running out of air, and thus suffocating to death. If possible it is useful to have a variety of small toilets or closets during the exposure treatment.

Elevators To help patients overcome fears of using elevators, therapists have found it useful to visit different sites, graded according to the patient's personal fear hierarchy. Some good places are various shopping malls, hotels, hospitals, and towers. Some patients find it easier to use elevators which are partially open and those in low-rise buildings. As well, some patients variously find glass/clear elevators or metal/wood elevators more or less evocative depending on the sense of being boxed in or being able to see how high up one is, the exposure can also be graded as necessary by starting with riding just one floor and then adding more floors as the exposure progresses. We usually ask the hotel staff for permission prior to using the hotel elevators during an extended exposure session.

Metro If the fear mainly stems from being stuck in the Metro and not being able to escape it quickly enough, patients may find that certain lines, mainly ones out of tunnels and off high bridges are a little easier to start off with. In line with this, many patients find it easier to start with a trip that has short stops in between stations and mainly travels above ground and then to precede to increasingly more difficult lines. Even so, a clinician should become rather familiar with possible routes they may take during an exposure and, if possible, be prepared to grade the exposure with short, medium, and long rides, more or less people riding at the same time, and being above or below ground.

Traveling by Air In contrast to many other exposure treatments, traveling by air is more difficult to grade. One aspect that becomes important in treating this type of phobia is psychoeducation. This can involve information about airplanes and security in general as well as information about the patient's physical reaction to the fear itself, the latter being very distressing to many patients. Psychoeducation and normalizing physical reactions can be very informative. Also, an in-depth rationale for the treatment and its set-up is key based on a functional analysis for each individual patient where avoidance and fear maintenance factors are highlighted (see Chaps. 4 and 5 for details).

The exposure treatment itself typically starts while traveling together to the airport. During this ride, cognitive, exposure-oriented, and, motivational work will be initiated by the therapist. Many patients report that they are flying but despite this are still extremely fearful. A careful functional analysis may reveal that patients have been using several safety behaviors (e.g., distraction, alcohol, self-medication) while flying which in effect are hindering them from being mindful and present in

the exposure, inhibiting new learning and habituation. Thus, a rationale that builds on the functional analysis to increase the collaboration and the willingness to test what might happen when safety behaviors are dropped is one important therapeutic skill to bring into the exposure. Therapists working with these types of exposures, often use low-fare domestic flights that can take a round-trip within the OST format. Many patients with flight phobia also express a fear of flights that cross the water. In these cases this should be incorporated in the flight route if possible to maximize the exposure and it should be taken into account in the analysis and rationale.

Blood-Injury Phobias

These types of phobias are cued by seeing blood, injuries, or perhaps even hearing or reading about anatomical parts of the body and their functions. They can be very challenging to work with, as many patients also report a history of fainting in these situations. Thus, before any exposure is begun patients who react in this way will need to practice and learn *applied tension* (see Chap. 4 for a description). It is our experience that learning and doing applied tension is actually an exposure in itself as one is talking about and focusing on blood pressure and pulse and asking the patient to actively increase these parameters. Also, the assessment of blood pressure and pulse before and after the applied tension activity is similarly an exposure in itself but, interestingly, in this context, more often experienced as a check that the method works for the patient. Once the technique is mastered, the patient and therapist can go on with exposure work in a graded fashion. Depending on the patient's fear hierarchy, a good starting point could be to show pictures of wounded people, car accidents, and surgical procedures (see links in Table 6.2 for some sites). At times therapists have used fake blood (for theatre, movie, and TV), specifically the dark shade is very realistic and dries up like real blood. Alternatively, we have the patient look at fake blood from test tubes and "play" with these seeing how the blood flows in the tubes. At times it has also been useful to visit an emergency room at a hospital on a busy afternoon or to spend some time at a blood donor center. For patients whose fear is cued by seeing their own blood, therapists have exposed them to a prick in their finger and asked them to squeeze some blood from this (with appropriate permissions and biohazard precautions in place).

Injection Phobias

With injection or needle phobias the fear is cued by receiving an injection or other invasive medical procedures (e.g., blood draws). As with blood-injury phobias some patients report a history of fainting. In these cases, the patient will need to learn applied tension. Over the years, therapists have found that some medical procedures are a little easier for the patients, adults and children, to try out. Often a small blood

sample from a prick in the finger is a little less scary than having a subcutaneous injection or having a blood sample drawn from a vein. The exposure is typically set up in the treatment room which is a different setting from a hospital environment. Some utensils that are necessary to bring in for this type of exposure are injection swabs for skin cleansing of the site, a lancet and a plaster for a prick in the finger. For the subcutaneous injections you also need needles and syringes and saline solution for injection. For the venipuncture exposures a blood pressure cuff or tourniquet is used, various vacutainers, small sterile gauze dressings, and micropore tape to be applied with pressure at the puncture sites. The vacutainer system consists of a needle part, which comes in different sizes, that is inserted in the vein and a blood-test tube that collects the blood. For very thin patients, therapists have used the smaller needles and generally used a variety of blood-test tubes across all patients (as these tubes come in different colors depending on the blood analysis). This latter strategy also helps patients to habituate to the use of different utensils.

For children, most of the utensils come in smaller sizes (e.g., the needles and blood pressure cuffs) and fun band-aids to apply on puncture sites. Children are often proud to wear these after the session. Also for children, further contact with a school nurse can be extremely important as part of the maintenance program. It is useful to draw up a maintenance form, specifying what the child needs to practice every week over the next two months, and sending this over to the school nurse. Older children keep their own copy and keep track of their progress week by week. In cases where psychologists or therapists are not specially trained to perform subcutaneous injections and blood draws themselves, the treatment can be coordinated with a hospital or primary care centre. The set up is then that the therapist is the expert of the exposure itself, the nurse of the medical procedure, and the patients of their state and reports of it. As in all cases where several professionals are needed in the work around a patient, it is important to assure the patient that confidentiality is maintained within the group. That is, what comes up in therapy is contained in the room. This can be communicated by word to the patient but also be written down as part of an overall treatment information handout. However, that being said, the progress and the outcome of the treatment needs to be systematically documented according to laws relating to case-books, progress notes, and possibly other medical records if a medical professional participates.

Other Phobias

Under this category many childhood fears are found (e.g., costumed characters, ET beings, taxidermy), as well as some more unusual (e.g., mushrooms, yogurt) and usual fears (e.g., vomiting). Some of the above stimuli are not so difficult to collect and prepare for exposure. For example, a vast number of recipes can be found on the internet for fake vomit that are very similar, both visually and by the smell, to the real substance if vomit is the trigger for anxiety (see links in Table 6.2). One recipe for example, consists of a couple of cans of veggie soup, a couple of cans

of cream of mushroom soup, stinky cheese, and sprite at the end to add some foam on the top. These ingredients are mixed in a glass jar, sealed with a lid, and placed in the sun for several days prior to use. Various seasonal foods can be chopped and added as well for realism. One patient reported an extreme fear of seeing a bag man vomit and being sick. In this case, a student volunteered to play the role of a bag man vomiting and groaning outdoors which was very helpful for this patient. For fears of costumed characters we have rented specific costumes and used student volunteers or colleagues in these during the exposure treatment. Film clips of and visits to places where some costumed characters are working (e.g., circuses) can also be useful.

Exposure Outside of the Clinic

Ethical Considerations: What to Say to People Around Exposures

Doing exposure outside of the clinic means interacting with other people. For example, during an exposure for riding elevators, other people are likely to drop in and ask what is going on. Similar questions can arise during a bird exposure as patients at times display a fair amount of fear and upset or during elevator rides when others get on or off. Usually in these situations it is sufficient to explain the situation in just brief terms and then to carry on with the exposure and have the focus on the patient. For a full review of the ethical concerns related to conducting exposure therapy, see Chap. 10.

Safety Aspects

Two specific situations are considered and insurance coverage is addressed in the next section. First, can the treatment in itself harm the patient? And second, if the patient has an external misfortune or an accident which is not due to the treatment itself (e.g., gets in a car accident in the transition from one exposure situation to another) who is responsible? With the first issue, a patient with injection phobia, for example, can experience severe pain as a consequence of receiving an incorrect treatment. The exposure treatments themselves however, whether they are conducted inside of or outside of the treatment room, have not been found to be harmful. In the second issue, just being outside the treatment room means a heightened risk of external accidents or mishaps occurring (e.g., general problems that can arise while traveling by train, air, metro, etc.). This includes inconvenience related to delayed departures or alternative traveling routes which might add to the patients fear and put some pressure on the time schedule for exposure. Even if mishaps are inconvenient they tend to give the exposure a “real life” quality that patients need to experience and master. Again, in the previously communicated rationale for treatment, it becomes

important for therapists to clearly convey that in a *real world* exposure anything can, and probably will, happen but that this will be faced with the patient and therapist together. In sum, across all the phobias we are asking patients to expose themselves not only to what they fear but also to give up some sense of control during the exposure, which paradoxically usually means that patients at the end of treatment experience a sense of being in more control.

A therapist has to have knowledge of and be in control of exposure principles and, in collaboration with the patient, the patient's well-being. However, accidents do happen even if these are extremely unusual (e.g., getting stuck in a roller coaster, the patient running out in the street and getting hit by a car or a bike). In this case, the therapist has to handle this in as professional a way as possible, putting the safety and comfort of the patient up front. This may mean, for example, stepping out of the exposure treatment and calling for medical assistance as necessary. If the trauma is more widespread (e.g., terrorist attempt of some sort) the therapist has to consider seeking out help for their own part. In any case, preparation for possible unexpected scenarios may need to include consultation with other experienced mental health practitioners, one's own liability insurance provider, and, possibly, an attorney to be sure of all applicable responsibilities and laws in such instances.

Insurance Coverage for Therapist and Patient

For the therapist, when treatment is planned appropriately it is very unlikely that the exposure treatment itself will cause harm; therefore, no increased risk of complaints or insurance claims would be anticipated, even if patients experience anxiety as part of the exposure treatment. In cases where the patient has a mishap or accident, then their own insurance should cover this (though this should be worked out in advance during the initiation of services for the patient). For therapists, many will have insurance coverage as employees (e.g., within psychiatric care) which also covers travel to and from the work-place. This insurance can be supplemented as necessary for work outside the clinic. Therapists in private practice are advised to take out patient insurance as well as an insurance for themselves and their practice. In some countries, these types of insurance policies can be taken out with the psychological association and networks created within those associations (e.g., business psychologists). As with all issues of responsibility and liability, clinicians are encouraged to contact their employers, local psychological boards, associations, insurers, and attorneys to be sure that they are adequately covered.

Reimbursement for the OST Format

One problem that sometimes occurs in publicly-funded psychiatric care is that the administrative system only allows one session per patient and day (or maybe even

per week), and that session cannot be longer than 1 hour. Since OST is an evidence-based treatment that is as effective as multiple sessions (≥ 5) third-party payers will actually save money allowing the format of OST (up to 3 hours during the same session; Davis et al. 2009; Zlomke and Davis 2008). Thus, administrators without the insight into the effects of psychological treatments should not prohibit the use of an effective treatment just because it does not correspond with the format they are used to. We are confident that once they learn that the overall costs of an OST will likely be lower than the costs of multiple exposure treatment sessions they will change the system. In Sweden, we are now seeing some advances for patients treated within primary care centres for psychiatric problems. Some care centres have come to an agreement with private practices and authorize patients for up to six sessions of CBT. How these hours are used is up to the therapist and the patient. Thus, for patients with a specific phobia a set up might be: A first pretreatment session, followed by an OST, followed by a posttreatment session, and then a booster session further on to maintain treatment gains. If the patients are paying for the treatment themselves then the reimbursement for the OST format is not a problem. Therapists running small private practices with outpatient facilities and no hospital affiliation will depend on health insurance benefits, which may usually mean coverage of only one session a day.

Another argument for OST is that it is very practical for patients living in areas where trained CBT therapists are few and far between. We have treated patients living far away from Stockholm or in other European countries. They fly in one day, have the pretreatment interview that day, stay overnight at a hotel, have the treatment next morning and fly back home in the afternoon. Such patients could not afford traveling long distances for five weeks (or more) in a row. Thus, OST means increased availability of an effective treatment that in the ordinary multiple session format would be too impractical and expensive. Similar one- or two-day set ups have been used with success in the United States (e.g., at both Blacksburg, Virginia and Baton Rouge, Louisiana).

Summary and Conclusions

The OST has been put to the test in numerous randomized controlled trials and in clinical practice for a wide range of specific phobias in both adults and children across different countries. Despite this massive research and portability to different countries, therapists, and patients, the dissemination of the OST has not been as evident. This chapter has highlighted some of the challenges therapists can be confronted with when using OST and suggestions on how to tackle these. Most important, however, has been to motivate therapists to offer this very brief and cost-effective intervention to patients who are suffering from various fears and specific phobias. From a therapist's point of view, the treatment is extremely rewarding and reinforcing to use. From an insurance and psychiatric care perspective, OST should be an easy, initial choice. Our challenge now lies in a joint effort to demand that the treatment be available to all patients, whether in psychiatric services or private care.

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Chapter 7
Handling Difficult-to-Treat Cases of Specific Phobias in Childhood and Adolescence

Thomas H. Ollendick and V. Cristian Sirbu

Although cognitive-behavioral treatment (CBT) interventions have enjoyed considerable success in the treatment of specific phobias and other anxiety disorders, a significant minority of youth do not respond favorably to these treatments (Davis and Ollendick 2005; Ollendick and King 1998; Zlomke and Davis 2008). In this chapter we will briefly examine studies that examine predictors of response to treatment outcome, present an algorithm for dealing with youth and their families who show a suboptimal response to treatment, and illustrate our approach to handling these cases via a case study of a child with a severe phobia of thunderstorms.

Unfortunately, and somewhat surprisingly, only three relatively large randomized control trials have examined predictors of treatment outcome with carefully diagnosed children with specific phobias and are able to inform us about factors associated with poor treatment response. In the first randomized control trial in the treatment of children with a specific phobia, Silverman et al. (1999) evaluated the relative efficacy of two exposure-based treatments (Contingency Management and Self-Control CBT) to an education support control condition. Eighty-one children and adolescents from the United States between 6 and 16 years of age and their parents participated in the trial; 72% of the sample had at least one comorbid diagnosis, including additional specific phobias, separation anxiety disorder, overanxious disorder, and attention-deficit/hyperactivity disorder (ADHD). Treatments were manualized and consisted of a 10-week program in which children and their parents were seen in separate treatment sessions with the same therapist, followed by a brief conjoint meeting (90 minutes altogether per session). Although results were somewhat mixed on self-report and parent-report measures, Silverman et al. (1999) reported significant differences among treatment conditions on "clinically

T. H. Ollendick (✉)
Child Study Center, Department of Psychology,
Virginia Polytechnic Institute and State University, Blacksburg, VA, USA
e-mail: tho@vt.edu

V. C. Sirbu
Charleston Area Medical Center Health Education and Research Institute,
West Virginia University School of Medicine Charleston Division, Charleston, SC, USA

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_7, © Springer Science+Business Media, LLC 2012

significant" measures of change. Composite diagnoses from the structured diagnostic interview (Anxiety Disorders Interview Schedule for DSM—IV Child/Parent version (ADIS-IV-C/P); Silverman and Albano 1996) at posttreatment revealed that 88% of the children in the exposure-based, self-control CBT condition were recovered compared to 55% in the exposure-based contingency management condition and 56% in the education support condition (a difference that was statistically significant favoring the exposure-based CBT condition over the other two conditions). In addition, a criterion-referenced measure of outcome, a Fear Thermometer, showed clinically significant improvement (defined as a change that eliminated or substantially reduced children's reported level of distress and behavioral avoidance) for both the Self-Control CBT and Contingency Management groups (80% each), but not the education support group (25%). Subsequently, Berman et al. (2000) examined variables potentially associated with successful outcomes in the two exposure-based CBT treatment groups: child sociodemographics, severity of the disorder, comorbidity, and parental psychopathology. Treatment success was defined as no longer meeting diagnostic criteria for specific phobia at posttreatment. For these analyses the two exposure-based treatment groups were combined since both were superior to the education support condition and not significantly different from one another on most of the measures (the education support group participants were not included in these analyses). There were no significant differences between the treatment success and treatment failure groups in terms of age, gender, ethnicity, or family income. Moreover, there were no significant differences between the treatment success and failure groups in terms of total number of diagnoses, comorbidity of diagnoses, severity of the specific phobia diagnosis, or the subtype of specific phobia. However, as hypothesized, children's report of their depression was higher in the treatment failure group, as was parents' ratings of their own depression. Thus, depression as reported by both the children and their parents (on themselves) signaled a poor treatment response.

In the second randomized control trial, Öst et al. (2001) compared the relative efficacy of a one-session CBT treatment (i.e., One-Session Treatment; OST) to a wait-list control condition. Sixty Swedish children and adolescents between 7 and 17 years of age and their parents participated in the trial; 42% of the children had at least one comorbid diagnosis, including additional specific phobias, separation anxiety disorder, generalized anxiety disorder, social phobia, and major depressive disorder. Treatment was manualized and consisted of one intensive 3-hour session (i.e., OST) as described in the earlier chapters of this book. Two variants of the OST were used: one with the parent present during treatment and the other with the parent not present (i.e., the child completed the treatment alone with the therapist). Treatment outcomes indicated that 78% of the treated youth across the two conditions (no differences were found between the two variants of OST) were free of diagnosis at posttreatment compared to 0% in the wait-list condition. In addition, children in the two treatment conditions completed a higher percentage of steps on a behavioral approach task (BAT) and reported less subjective anxiety while completing this task than did those in the wait-list control condition. As with Silverman et al. (1999), a host of measures were examined as potential predictors of successful outcome in the OST conditions. Like Silverman et al., age, number of diagnoses, comorbidity of diagnoses, or severity

of diagnosis of the Specific Phobia did not predict treatment outcome. However, contrary to what Silverman et al. found, self-report of depression in the treated youth did not predict poor treatment response whereas gender and type of phobia did predict differential outcomes: girls responded better than boys and youth with animal phobias responded better than youth with other phobias including situational, environmental, and blood-injection-injury phobias. Unfortunately, parental reports of depression were not obtained in this study.

In the third and largest randomized control trial, Ollendick et al. (2009b) compared the relative efficacy of OST to an education support condition, similar to the condition used by Silverman et al. (1999), and to a wait-list control condition. One hundred and ninety six youth, ages 7–16 years, and their parents participated in the trial; 62% of the children had at least one comorbid diagnosis, including additional specific phobias, separation anxiety disorder, generalized anxiety disorder, social phobia, major depressive disorder, and ADHD. The study was conducted in Sweden and the United States. Treatment was manualized and consisted of one intensive 3-hour session as used in Öst et al. (2001) and described in the earlier chapters of this book. Treatment outcomes indicated that 55% of the OST treated youth were free of diagnosis at posttreatment compared to 23% in the education support condition and 2% in the wait-list condition. In addition, children in the treatment condition completed a higher percentage of steps on a BAT and reported less subjective anxiety while completing this task than did those in the education support and wait-list control conditions, although these differences were not significant. Treatment satisfaction, as assessed by the ratings of the children and parents, was also higher for the OST intervention than the education support condition. As with Silverman et al. (1999) and Öst et al. (2001), several measures were examined as potential predictors of treatment outcome in the OST condition. Like Silverman et al. and Öst et al., age, number of diagnoses, comorbid diagnoses, or severity of diagnosis of the specific phobia did not predict treatment outcome. However, contrary to what Silverman et al. found but similar to what Öst et al. (2001) reported, self-report of depression in the treated youth did not predict poor treatment response. Like Öst et al., gender did predict differential outcomes: girls responded better than boys. Finally, unlike Öst et al. youth with animal phobias subtypes did not respond better than youth with other phobia subtypes including situational and environmental types. Blood-injection-injury phobia subtype was not examined in this study. Unfortunately, parental reports of depression were not examined in this study.

Thus, conclusions about factors related to poor treatment response are difficult to draw from these three studies. Age, number of diagnoses, comorbidity of diagnoses, and severity of the specific phobia did not differentially predict poor outcome in any of the three studies. However, the findings were mixed for gender and presence of self-reported depression in the youth and their parents. Moreover, although Silverman et al. found parental report of depression to be related to poor outcome in their study, this variable was not reported by Öst et al. or Ollendick et al. The exact mechanism by which self-reported depression in the children and their parents affected treatment outcome in the Silverman et al. (1999) study is unknown. An important difference in the Silverman et al. trial was the duration of therapy: 10 ongoing

weekly exposure-based sessions compared to one-session of CBT in Ollendick et al. (2009b) and Öst et al. (2001). A potential explanation might be that self-reported depression in the child or the parent affected treatment adherence over the duration of the longer treatment. To our knowledge, this possibility was not examined in that study.

Although findings are inconclusive, it seems prudent to continue to explore all of these variables in subsequent clinical trials to more firmly rule upon them and their potential role in treatment response. At this time, for specific phobias, it appears that youth who report heightened levels of depression *may* be less responsive to treatment as *might* children from families in which their parents also report elevated levels of depression. Boys *might* also be less responsive to these efficacious treatments than girls. And, the treatment *might* be more effective for animal phobias than situational or environmental ones. Thus, any of these variables might be of significance in predicting which children and adolescents might be more difficult to treat and for whom the treatments work best.

In these three well-controlled treatment outcome studies, as well as others in the broader anxiety disorders area, it is evident that only the selection and evaluation of initial treatments have been examined (Ollendick and March 2004). That is, in the published clinical trials, an initial treatment has been implemented and response to the treatment has been determined—no attempt has been made in these studies to address those who do not respond fully to the initial intervention. Ollendick and March (2004) and Ollendick et al. (2009a) differentiate between *partial responders* and those who are *refractory* to treatment. They suggest that *partial responders* are those who improve on a number of variables but still retain their pretreatment diagnoses. For example, clinician severity ratings (CSR) on the ADIS-IV C/P (Silverman and Albano 1996) might be reduced significantly as a result of treatment (e.g., CSR is reduced from 7 to 5), but the individual still meets the criteria for diagnosis (CSR = 4 or above) and shows avoidance on a BAT and high scores on relevant self-report measures. In the Silverman et al. (1999), Öst et al. (2001), and Ollendick et al. (2009b) studies, most of the poor responders fit into this category; that is, they showed partial response to some outcome measures but not to all. In many respects, partial responders may be similar to what Lang et al. referred to as desynchronous responders (Lang and Cuthbert 1984; Rachman and Hodgson 1974; see also Davis and Ollendick 2005). As suggested by Ollendick and March (2004) and Ollendick et al. (2009a), these individuals might respond to a greater dose of treatment (i.e., more sessions), a modification in the delivery of the intervention (i.e., inclusion of parents, use of virtual reality or other computer-assisted technologies to implement treatment, spaced or massed sessions), or simply a "fine-tuning" of the intervention itself (i.e., reexamination of the fear hierarchy, reassessment of the dysfunctional cognitions, use of a more appropriate phobic stimulus). In these latter instances, adjustments in the exposure activities themselves or how they are delivered might be sufficient to produce a more positive response (see Bouchard et al. 2004). For example, it might be the case that the need for exposure was not sufficiently explained to the child or the child simply did not understand fully the explanation provided by the therapist. It might also be the case that the fear hierarchy was not sufficiently graduated to address

the fears expressed by the child and a new fear hierarchy needs to be developed. Finally, it might be the case that the therapist did not adequately or fully address the faulty cognitions associated with the phobic object. For exposure to work effectively, corrective information that is incompatible with the dysfunctional associations stored in memory must be provided and new and more functional associations need to be made (Bouton 2004; Davis and Ollendick 2005; Lang 1977, 1979; Myers and Davis 2002; Rachman 1977, 2002). In other cases, a sufficiently strong therapeutic alliance may not have been developed with the child and his or her family and the family may not have been engaged fully in therapy activities (see Chu et al. 2004; Ollendick and Shirk 2011). Still in other situations, it might be the case that comorbidity or some other factor is interfering with treatment progress (Ginsburg and Walkup 2004; Ollendick et al. 2004). In any event, the primary assumption with the partial responders is that the "problem" does not reside in the child or his or her family; rather, the problem resides in the selection and implementation of the intervention itself (Ollendick et al. 2009a; Ollendick and March 2004). Unfortunately, the extant studies do not report additional treatment for these partial responders and so we do not know whether they would have responded or not.

In contrast to the partial responder, for those individuals refractory to treatment, the assumption is that the treatment itself simply does not work with these children and their families (Ollendick et al. 2009a; Ollendick and March 2004). In these cases, the child and his or her family show minimal to no change following what is thought to be an effective dose of an evidence-based treatment. Ollendick et al. suggest that a child should not be viewed as refractory to treatment until any one treatment of adequate dose and duration has been attempted for at least two trials, but no more than three trials. If the child shows an inadequate response after two to three trials, then alternate treatments including other psychosocial or pharmacological treatments should be attempted. Figure 7.1 describes a flow chart of a treatment algorithm for specific phobia in children with emphasis on the distinction between partial responders and refractory cases.

In our experience, most individuals who do not respond fully to treatment are "partial responders" and respond more fully to variations in the delivery, dose, or structure of the implemented treatment. In those cases in which the individual is truly refractory to change, the identified treatment might need to be abandoned and alternate treatments considered. In the following section, we present a case of a partial responder to OST and speculate on what we would try if the child was truly refractory to change. Although untested, we propose a similar algorithm to address adults who do not respond fully to treatment as well.

Case Example

Anthony (not his real name), an 8-year-old African-American boy, lived with his parents and 5-year-old sister. His mother (age 34) was an executive secretary and his father (age 36) was a highway patrolman. Anthony was referred to our clinic for a phobia of thunderstorms. Although he appeared physically normal and healthy for

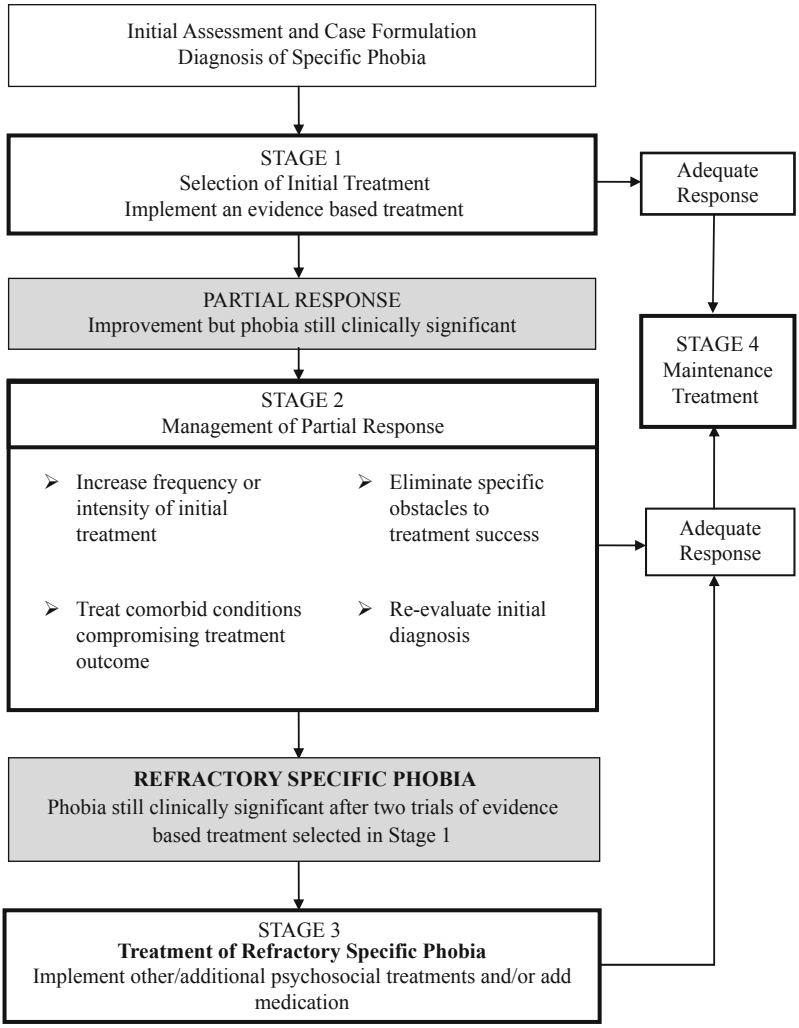

Fig. 7.1 Treatment algorithm for children with specific phobia. (Adapted from Ollendick et al. 2009a)

his age, he was inattentive and somewhat hyperactive during the assessment session (see Chaps. 2, 3, and 5 of this book for more information on the assessment of specific phobia). Based on his parents' report, Anthony's fear of thunderstorms interfered significantly with his own and their lives. His parents reported that whenever it was getting cloudy outside or starting to rain, but especially when it was "stormy-looking," Anthony would become upset, cling to them, and refuse to leave the home. At those times, he reportedly had panic-like reactions and would cling desperately to his mother or father; however, he did not exhibit these "clinging" behaviors at other

times. In fact, he loved to play outdoors with his friends and to go to their homes to play if it was not stormy outside. Even if forced to get into the car when cloudy or rainy outside to go to school or to church, for example, he would refuse to get into the car on his own and then refuse to get out of the car, crying frantically and stating that he might "be killed by lightning." His fear had become worse in recent months over the summer, resulting in his appointment, after significant rains had fallen and some minor flooding and tree damage in a neighbor's yard had occurred due to a lightning strike. Anthony's parents indicated they tried to listen to their son's complaints and concerns but they had become increasingly frustrated with him. They also indicated they tried to make him "happy" by avoiding excursions when it was stormy outside, if at all possible. Obviously, they could not always accommodate him and had to deal with his panic-like reactions and his associated oppositional and negativistic behaviors.

Anthony's parents reported they had taken him to see their minister when he was between 5 and 6 years of age because of his fear of thunderstorms and because he was reluctant to go to preschool even at that early age. Anthony reportedly liked "visiting" his minister and enjoyed going to see him; however, his parents reported he did not "really change very much." He continued to have his fear of thunderstorms and to be reluctant to leave the home when it was stormy outside. Additionally, his preoccupation with storms and the weather had grown since that time to include somewhat obsessional viewing of weather forecasts on the television.

Assessment

A comprehensive assessment was conducted (Silverman and Ollendick 2005; see also Chap. 3 of this book for children; see Chap. 2 for information on assessing adults). Two separate clinicians interviewed Anthony and his parents simultaneously using the ADIS-IV-C/P(Silverman and Albano 1996). His parents indicated that his fear started when he was about 4 years of age when the family moved to their current residence and there were more thunderstorms than where they used to live. However, they could not recall any incident in which Anthony or anyone he knew was hurt in a thunderstorm. They did report, however, that Anthony's father watched the weather channel frequently (due to his patrolman job and the need to travel on the roadways) and that, after a while, Anthony seemed to become obsessed with watching the weather channel as well. In fact, after school hours and upon returning to the home, Anthony would frequently run into the home and turn the television on to "check" the weather. Based on the diagnostic interview with his parents, Anthony was diagnosed with a specific phobia of thunderstorms with a clinician severity rating (CSR) of 7 (scores can range from 0 to 8). In addition, he was diagnosed with ADHD-Combined Type (ADHD-C) with a CSR of 4. Also, Anthony himself endorsed a high level of fear toward thunderstorms in the child interview and the clinician assigned a CSR of 6. Anthony also reported some symptoms of inattention and hyperactivity, but the clinician judged them to be subclinical (CSR = 3; a CSR of 4 or above indicates a

clinically significant diagnosis). Based on Anthony's report and that of his parents, Anthony's fear of thunderstorms was viewed as the primary diagnosis. He had not been previously diagnosed with a specific phobia or ADHD-C and was not receiving medication or treatment at the time of referral.

A separate evaluation of Anthony's mother and father using the ADIS-IV-Client version (Brown et al. 1994)—(the adult version of the interview) indicated that his mother endorsed symptoms of clinical depression (CSR = 4). She mentioned feeling overwhelmed by trying to help Anthony and also by caring for her daughter, as well as responsibilities associated with her full-time job. She wished her husband would be more available to help her deal with Anthony and his problems. His father, on the other hand, endorsed symptoms consistent with a subclinical diagnosis of alcohol dependence (CSR = 3). He reported his symptoms were long-standing, though not interfering with his job. He acknowledged his low level of involvement with his son, but indicated he too was extremely busy at work (he worked shift hours that periodically changed and reported being moderately stressed by the danger and nature of his job) and he spent his "free time" maintaining their suburban home. He further indicated that Anthony was a major source of disappointment for him, that he was not the son he thought he would be, and that he thought he just needed "to grow up and get over it."

A BAT was administered in which Anthony was asked to enter a room by himself and watch a 5-minute video clip of thunderstorms in the dark. He refused to enter the room and reported his subjective anxiety to be a 7 (on a scale ranging from 0 to 8). His heart rate was monitored prior to this task and while he was asked to enter the room. Although his heart rate had been relatively stable for a 5-minute period prior to this task (beats per minute; BPM = 72), it rose dramatically to 108 BPM while standing outside the door of the room where the video clip was to be watched. While standing in front of the closed door, he became extremely agitated, pleading "I don't want to go into the room . . . what if it is too scary . . . the thunder might be too loud and the lightning might hurt someone."

A cognitive-behavioral functional assessment was conducted to establish (1) the antecedents and consequences of Anthony's avoidant behavior, (2) his faulty cognitions about thunderstorms, and (3) an avoidance hierarchy of his fear (a rating from 0 to 8 for different situations that might trigger his fear; see Chap. 5 of this book for more details regarding the functional assessment). He indicated he got upset when it gets cloudy outside and the clouds are moving fast across the sky. He also noted that he gets even more scared when the clouds get darker and it starts to rain. If he then hears thunder and sees lightning strike, he becomes "really, really scared," and seeks out his parents or some other adult. He also indicated that he checks the weather channel frequently at home whenever he can to make sure there is no storm coming to his neighborhood. When asked if the fear of thunderstorms prevented him from doing things he wanted to do, he indicated he was okay as long as his parents did not make him go outside to play or go places when it was stormy. He had a good awareness of his fears and their impact upon him. Anthony's cognitions associated with thunderstorms and his ratings for danger, outcome, and self-efficacy in dealing with his fears were also elicited. His danger expectancies were very high when it

was storming (7, very dangerous, on a 0–8 scale), he was very sure bad things would happen to him if he was in a thunderstorm (8, very sure, on a 0–8 scale), and he was quite sure he could not cope with fears if they did occur (1, not able to cope, on a 0–8 scale).

At the conclusion of the cognitive-behavioral functional assessment, the treatment rationale for OST was offered to Anthony and his parents. The therapist indicated that the key to the OST is gradual but intensive exposure to the phobic object or situation rather than avoidance of it and the active testing of his cognitions associated with storms. The exposure activities were explained as behavioral experiments that were set up to test and challenge his thoughts and beliefs. Anthony's parents were asked to help out with treatment by arranging situations that would help their son be exposed to thunderstorms following the treatment. His parents appeared to understand the treatment and the need for in vivo exposure to help Anthony overcome his fears though they expressed some skepticism as to how well such a brief treatment would work and whether they would have the time to arrange the exposures on a regular basis or even find ways to expose him to storms.

Case Conceptualization

Anthony's phobia of thunderstorms was severe. The origin of his fear could not be clearly identified, but was seemingly related to experiences that occurred since he moved to his new residence where thunderstorms were more frequent and also by his father's need to monitor the weather and watch the weather channel. We hypothesized that he learned over time that clouds and rain might signal actual thunderstorms and, in turn, that thunderstorms were dangerous and might cause harm to him; moreover, his avoidance appeared to be reinforced and maintained by his mother's overprotective parenting style and his father's reluctance to become involved in more effective parenting with him. Behaviorally, he appeared to be a somewhat overly active child. Also, his mother was clinically depressed and his father drank alcohol to excess at times, though it did not reportedly interfere with his job. They both were extremely busy parents. Anthony's motivation for treatment appeared reduced, likely because of the family's accommodation of his avoidance behavior, his parents' skepticism, and because his fear had become entrenched. His parents, however, expressed interest in helping him, and Anthony was willing to come in for the treatment because of the disruption his fear was causing him and his family. Even though his parents expressed interest in helping their son, they did not seem to know how to do so.

Based upon what we know about treating phobias in young children, OST was chosen based on a tentative consideration of three primary factors: (1) the brief, single session of treatment was preferred as it was thought multiple sessions over an extended period of time might create attendance issues given the father's poor understanding of the disorder and the mother's distress over her son's symptoms, as well as their busy schedules; (2) given the high level of behavioral avoidance

and OST's successful outcomes with the behavioral component of the fear response (see Davis et al. 2011), it was thought this rapid treatment might impart the quickest change in the most severe aspects of Anthony's symptoms; and (3) research findings that suggested the presence of ADHD-C would not compromise treatment outcome. On the negative side, his mother's level of depression might have argued against this approach. Nonetheless, on balance, OST was deemed appropriate.

Treatment

The single session followed the format of OST (3 hours of gradual exposure, modeling, reinforcement of approach behavior, and testing of faulty cognitions; see Chap. 5 of this book). Anthony was seen alone and his parents were not directly involved in treatment. Initially, Anthony was very reluctant to even talk about thunderstorms or to even look at pictures of thunderstorms in a coloring book about the weather. After repeated encouragement, however, he agreed to talk and to look at the pictures. The therapist provided information about thunderstorms (e.g., how they are formed, how they oftentimes are important for bringing the necessary rain to nourish grass, plants and trees, and how they very rarely result in harm or danger to homes and people). Next, Anthony was asked to read a brief pamphlet about thunderstorms and to watch a very brief 1-minute videotape depicting some of the information provided by the therapist. While watching the videotape, Anthony initially indicated that his fear level (i.e., subjective units of distress; SUDS) was a 7 (on a 0–8 scale with 8 being the most or highest level of fear). His cognitions about the possibility of having a panic attack while watching the videotape were tested and disconfirmed. He learned that he could be exposed to a thunderstorm on the video without developing a panic attack. This exercise, as with other exercises, was repeated at least three times. Following the third viewing, his fear level had dropped to a 2. After talking more about thunderstorms, he agreed to look at a videotape of 2-minute duration. Again, after the third trial, his fear had dropped from an 8 to a 3. Gradually, over the course of 3 hours, he was asked to do the following activities: watch a videotape for 3, 4, and 5 minutes, each for 3 trials. Following the videotapes, he was escorted outside to look at clouds in the sky (it was a partly cloudy day with clearly formed billowy clouds) and to describe them and tell the therapist about the clouds, how they were formed, and what would happen if it started to rain and thunderstorm. Throughout the treatment, his faulty cognitions were tested and disconfirmed and he restated his new knowledge about thunderstorms and how to deal with them. The therapist engaged in extensive dialogue about thunderstorms and provided profuse praise (for handling his fears). A playful, supportive, and trusting relationship was developed. Although considerable progress was made during the session, Anthony still displayed a modest amount of fear and reticence about thunderstorms. He and his parents were reassured that this was "only the beginning" of treatment and if the treatment were to work fully it would be important for them to continue exposure activities outside of the therapy for several months.

Upon posttesting 1 week later, Anthony's fear was reduced considerably from his pretreatment levels but his phobia of thunderstorms was still clinically significant, as evident in a CSR rating of 4 on the ADIS-IV-C/P and his inability to watch the videotape of thunderstorms for the full 5 minutes (a BAT identical to that used at pretreatment). However, he was able to enter the room and watch the tape for about 3.5 minutes. Although his cognitions (danger and outcome expectancies) had been reduced to a level of 3 (from a 7 and 6 at pretreatment, respectively), his heart rate remained high during the behavioral task (BPM = 112). Moreover, the clinical severity of his ADHD-C diagnosis remained (CSR = 4). Thus, although there was evidence of change in his catastrophic cognitions and behavioral avoidance, they both remained moderately high. Although still symptomatic, it was determined to wait for an additional month to see if other changes might occur with the requested exposures outside of the treatment, per the OST protocol.

One month later, Anthony and his parents were reevaluated. Unfortunately, not much progress had been made, even though his parents and Anthony had arranged several opportunities to work on his fears (e.g., watching storms out the window of their home, renting movies with rain scenes in them). At that time, the CSR for his phobia of thunderstorms was a 5. It had increased some since posttreatment assessment but had not fully returned to its pretreatment level. Consistent with our view (Ollendick et al. 2009a; Ollendick and March 2004) on the distinction between partial responders and those refractory to change, we viewed him as a partial responder and decided to provide him a second intensive OST rather than attempt some other psychosocial or pharmacological intervention. This time, however, we decided to "tweak" our OST by adding a parental involvement component and by attempting to expose him to more realistic "in vivo" storm situations in anticipation of greater generalization of treatment gains.

A 3-hour retreatment session was scheduled 1 week later. An attempt was made to have the appointment coincide with a forecasted rainy day, but unfortunately, it was a beautiful sunny day and there was not a single cloud in the sky. The appointment was rescheduled with the provision that it should be a cloudy and hopefully rainy day and late in the afternoon to maximize the chance of a thunderstorm "rolling in." Fortunately, the weather cooperated. We began this session where we left off with the initial treatment, with the primary exception that we arranged to have his parents observe the session and then become part of the therapy process during the last hour to assist with the therapy and learn skills to work with their son directly. The following in-session activities were arranged in three different physical settings (in the therapy room, walking outside the clinic but under a roof cover, and going to a local horticulture garden to walk in the rain and experience the rain first hand). During the last hour, his parents accompanied the therapist to the horticulture garden to assist with training and to foster a transfer of control from therapist to parents (see Silverman et al. 1999). Treatment seemed to go well and Anthony seemed to have fun especially with his parents. He beamed with excitement initially when his parents approached him after the second hour and praised him profusely for what he had accomplished (e.g., "Look at you . . . you are so brave and courageous . . . think of what grandpa will say . . . we are very proud of you"). As before, they were

encouraged to practice what they had learned in therapy and asked to return for a posttreatment assessment in 1 week and then again in 1 month.

Upon posttesting 1 week later, his CSR ratings on the ADIS-IV-C/P were a 1 and in the BAT he opened the door, looked inside the room, walked into it and sat down to watch the videotape for the full 5 minutes. Moreover, his cognitions (danger and outcome expectancies) were very low (ratings of 2 and 1, respectively), with a statement of "I am no longer afraid of those things"), and his heart rate was 84 BPM. In addition, a CSR of 4 (still clinical) on the ADIS-IV-C/P ADHD module was obtained. One-month later his ADIS-IV-C/P CSR rating for a specific phobia of thunderstorms was a 0, and for ADHD-C a 4. During the BAT, he readily watched the videotape. His formerly faulty cognitions were now at a 0 and his heart rate during the exposure task was 86 BPM. At this time, we requested the parents and Anthony to return 6 months later for an extended follow-up session to let us know how they were doing. They did so and by all indications Anthony continued to have little or no fear about thunderstorms and to be more manageable in going to school and other outings when it was rainy or stormy outside. His mother said he seemed "like a different boy" and his father reported how much he enjoyed outdoor activities with him. Moreover, his mother reported that she felt more in control of her own emotions and that she was less depressed herself (although a formal ADIS-IV: Client was not administered) and his father reported that he was much more engaged with the family. He still reported occasional drinking but with less frequency. Although Anthony was a partial responder initially, he was a full responder following the second intensive treatment session that was modified to address issues of parental involvement and generalization of treatment gains (see Fig. 7.1).

What to Do Following Nonresponse to Treatment?

What would we have done had Anthony not been responsive to our second attempt at single session treatment? Although we have no firm empirical findings to support our clinical decisions, we likely would have fine tuned our approach even further and proceeded in the following manner (see Fig. 7.1). Consistent with the strategies recommended in Stage 2 of our model for partial responders, we likely would have continued our CBT approach with additional sessions but for an extended period of time and delivered on a weekly basis (spaced weekly over a 2–3 month period). This approach too has received strong empirical support (Ollendick et al. 2004). In addition, assuming his ADHD-C symptoms persisted and interfered with his progress we would have considered referral for these problems. However, it should be noted that we detected no interfering effects of ADHD-C on our treatment protocol. Finally, we might have considered evidence-based treatments for his mother's depression and his father's subclinical alcohol dependence, in as much as parents' own psychopathology can serve as barriers to treatment response (Berman et al. 2000). However, again, we did not perceive these problems as significant barriers in our treatment with Anthony and these problems too seemed to improve somewhat throughout the treatment. As is

evident, this third attempt at psychosocial treatment would have been an "all out" attempt to address not only his specific phobia but also his ADHD-C and the psychiatric complications in his parents. Rarely, however, have we had to take such extensive actions in working with phobic children and adolescents. The clear majority respond with one or two trials of the evidence-based interventions.

If, however, these treatments did not work and his storm phobia remained, we likely would have viewed Anthony as a "refractory" case and consulted with our child psychiatric consultant and possibly initiated a trial of selective serotonin reuptake inhibitors as recommended by Ginsburg and Walkup (2004). However, we likely would not have selected some other psychosocial treatment such as play therapy or family therapy because there is little to no evidence for the efficacy of such approaches in the treatment of specific phobias in children (Davis et al. 2011; Ollendick and Davis 2004; Ollendick et al. 2004). Importantly, from our standpoint, we would not have considered Anthony and his family "resistant" to change in the traditional sense, even at this latter stage; rather, we would view their inadequate response to treatment as our "failure" to conduct an adequate cognitive behavioral functional assessment and to provide them evidence-based treatments based on that assessment and case conceptualization.

Summary

The use of behavioral and cognitive-behavioral techniques for treating specific phobias in children has led to impressive results, with a clear majority of children and adolescents benefitting from these efficacious procedures. Even so, these evidence-based treatments do not help a significant minority of children with phobic disorders (e.g., ranging from 20 to 45%). In these cases, most of the youth are partial responders and a few are refractory to change. As we have noted, there may be a host of factors that predict poor treatment response, including the subtype of phobia, the child's gender, and the presence of depression in the child who is phobic and his or her parents. There may be other factors as well but, if so, they are poorly understood at this time. Still, as we illustrated in our case study, we have many evidence-based tools to use with such youth and their families. In our opinion, we must move away from the notion that those who do not respond are "resistant" or "unwilling" to change. Still, a great deal of more research and refinement of our evidence-based practices need to be realized before we can conclude that we have an "evidence-informed" strategy to help those children who are difficult to treat and seemingly unresponsive to our initial efforts. We must move beyond acute care of these youth and their families and extend our reach to those who are partial responders and seemingly refractory to change.

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Part III
Special Topics on the Intensive Treatment of Specific Phobias

Chapter 8
Training Therapists in One-Session Treatment and Assessing Their Competence

Lars-Göran Öst

Introduction

There is no formalized training for therapists to do one-session treatment (OST), at least not any which has been empirically evaluated. However, a description follows of the way the training for people aspiring to become a protocol therapist in a randomized controlled trial (RCT), or just wanting to work clinically with OST, has been arranged. The major part of this chapter consists of a detailed description of the different items included in the competence rating scale, and explanations of why the respective competencies are important for carrying out OST successfully. This means that the training should focus on providing therapists with adequate skills in the areas covered by the rating scale.

Training Therapists

Workshop

The initial step in training therapists to do the OST is to arrange a 2-day workshop for the trainees based on the OST manual (Chaps. 4–7). During the first day there is a general description of OST, followed by illustrations of the method via two videotaped treatments, and finished with a review of the research done on OST. The second day continues with more videos of different specific phobias complemented with brief role plays in which the trainees are divided into pairs and switch between playing the therapist and the patient. During these role plays, the trainer moves around to the different pairs, observing them and giving feedback. After this workshop the trainees should have acquired a good grasp of OST; how to carry it out and what its evidence-base looks like.

L.-G. Öst (✉)
Department of Psychology, Stockholm University, Stockholm, Sweden
e-mail: ost@psychology.su.se

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_8, © Springer Science+Business Media, LLC 2012

Pilot Cases

The next phase of the training is having the trainees treat real patients. If they train to become protocol therapists in a clinical trial the pilot cases should, of course, have the same specific phobia as the one focused on in the trial. If they do not aspire to become a protocol therapist various types of specific phobias should be chosen. It is probably favorable to start with a straightforward animal phobia (e.g., a spider or a snake phobia) and then continue with other phobia types (e.g., a claustrophobia or a height phobia). It is also recommended that therapists get some experience doing OST with adult patients before starting to work with children.

Supervision

All pilot and project cases are videotaped and the supervisor views these before each respective supervision session and rates the trainees' competence according to the *Rating scale for therapist competence in OST*. Prior to the supervision session the supervisor picks out specific positive and less positive video segments to show the trainees and explain why a certain rating was given. Thus, the trainees should not treat a second case before they have gotten feedback on the first, and so on, in order to reduce the risk of repeating mistakes across more pilot cases.

The supervision is usually done in small groups of four trainees, once a week for 2 hours. This is in most instances enough for each trainee to get the supervision needed. Of course, the supervision can be done individually, but then the educational advantage of observing at least parts of the other trainees' treatments and the supervisor's feedback on them is lost. My experience after many years of training is that trainees also prefer group supervision. If trainees and the supervisor live far apart, maybe even on different continents, tele-supervision is a possible alternative. In order for that to be optimal, the video-conference system should be flexible enough so that both the trainee(s) and the supervisor can watch the same video at the same time and that the supervisor can start, stop, rewind, and fast forward the video remotely.

Common Problems of Novice Therapists and Suggestions for Solutions

Perhaps the most serious problem of novice therapists is that they do not work with the patients' catastrophic beliefs in an efficient way (see item 10 of the rating scale which follows). They may not elicit the belief during the pretreatment interview by stopping their questioning too early. This can be helped by watching videos of expert therapists. Also, during the session they may fail to recognize when the patient verbalizes a catastrophic belief, probably because they are too focused on what to do in the session. This usually just takes more experience so that the therapist feels comfortable

in carrying out an OST. An additional aspect of this problem is if the therapist fails to help the patient challenge his or her catastrophic belief (as it was described in the pretreatment interview, see Chaps. 4 and 5). Here the supervisor should help the therapist to plan one or more suitable behavioral experiments, including how and when to carry it out. The therapist needs to elicit the patient's conviction rating prior to and immediately after the experiment. This is crucial, since the goal is to carry on with the session until the rating is down to zero. The novice therapist runs the risk of ending the session too early and, thus, the patient leaves the OST still convinced of the catastrophic belief to a certain extent. Remaining conviction has been shown to predict relapse in panic disorder (Clark et al. 1994) and probably so in specific phobia as well.

A very common problem, displayed by novice therapists, is being frightened by the patient's anxiety reactions and cutting the exposure short. This leads to the exposure not being continuous during the session (see item 6) and the patient will experience anxiety reduction as a consequence of the exposure being terminated instead of the physiological habituation that takes place while being exposed to the phobic object or situation. The supervisor needs to help the therapist to accept that anxiety reactions are not dangerous just uncomfortable, but self-terminating. By cutting the exposure short the therapist does a disservice to the patient and the phobia is reinforced (i.e., the opposite of what the agreed upon goal for the OST was). This problem could also be taken care of by letting the therapist watch numerous videos with patients having strong anxiety reactions initially but habituating as the exposure continued.

Related to the previous problem is that the therapist does not use the time allotted for the OST efficiently (see item 11). Usually, this is manifested in waiting to introduce a new step in the exposure until the SUDs rating at the current step has gone down to a very low level. The consequence is, of course, that only a part of the hierarchy is completed during the session, which makes it necessary to schedule one or more extra sessions. The supervisor should tell the therapist that there is no research showing that this procedure is necessary. On the contrary, many years of clinical experience show that it is enough to achieve a limited anxiety reduction (25–30 points on the SUDs scale) before continuing to the next step. Another common problem related to exposure is that the novice therapist does not give the patient a preexposure instruction (see item 3) that is detailed enough and fails to check that the patient has understood the instruction. This problem can be dealt with via watching videos and doing role plays.

Often novice therapists also are restricted in providing the patient with factual information about the phobic object or situation (see item 4). This is often due to a fear of not being a complete expert on the stimulus (e.g., spiders or snakes). In this instance, the supervisor can tell the therapists that it is very common that phobic patients fear reading about their phobic object and, thus, have almost no factual knowledge whatsoever about it. The therapist should be encouraged to use the week between the pretreatment interview and the treatment session to read up on the patient's phobic object or situation (e.g., using the Internet). Whatever restricted knowledge he or she can obtain is almost certainly more than what the patient has.

A final problem often seen in novice therapists is in their handling of difficulties in the exposure procedure (item 13). When the patient "gets stuck" at a certain step the therapist needs to be flexible and suggest another way to get around the problem instead of "hitting ones head against a brick wall." This is usually something that takes experience and a therapist who is comfortable enough in carrying out the basic exposure treatment to enable him or her to be "multitasking" and come up with alternative ways in one's mind.

A separate issue in some novice therapists is an initial hesitancy to work with particular stimuli (e.g., snakes or spiders). This is most probably due to a nonclinical apprehension of that object in the therapist. When this happens the easiest solution is that the supervisor offers to instruct the therapist in how to work with the stimulus in an OST. In that way he or she will also get firsthand knowledge of the actual treatment later to be carried out with real patients. However, this training should be carried out at least 2–4 weeks before the therapist is supposed to do a treatment with the same stimuli, in order for the effects to be manifested in natural situations.

Requirements for Being a Protocol Therapist

In order for a trainee to be accepted as a protocol therapist in a clinical trial, he/she must pass the criterion on two out of three pilot cases. The criterion used in research is that the trainee must have a score of at least 4 (on the 0–6 scale) on all 13 items of the scale, and with no compensation allowed. Thus, an item with a 3 or a 2 cannot be compensated by another item with a 5 or a 6, making the mean score a 4 or above. If a trainee passes this criterion on only one of the three pilot cases, he/she will get the opportunity to treat another two pilot cases, and need to pass on three out of the five cases in total. If this is not the case the trainee is probably not a suitable therapist for OST and is not hired as a protocol therapist.

A therapist not aiming to become a protocol therapist may of course get more chances to treat pilot cases. Before that happens he or she should be given the opportunity to watch videos of various OSTs and perhaps also function as a cotherapist together with an experienced OST therapist. During this phase the trainee should focus specifically on the variables on which he or she failed in treating the initial pilot cases. In this way, he or she should be better prepared to succeed when getting the next three pilot cases to treat. Supervision is usually individual at this stage and should focus on the trainee's weak points in order to raise the skills in those areas.

Therapist Drift

One issue recently highlighted by Waller (2009) is therapist drift, which means that therapists who once got certified for a specific therapy, a number of years later do not do the treatment the way it had been evaluated in RCTs and the way they were

trained. This means that they no longer carry out an evidence-based treatment but a watered down version of it for which there is no evidence whatsoever. An example of this is sitting in the clinician's office talking to the patient about exposure instead of doing exposure in vivo in the natural situations where they encounter the phobic object or situation. One way to counteract this tendency is to limit the certification time and have the therapist coming back to the training facility for a recertification procedure every 2–3 years. This is, of course, expensive, and it is difficult to know how realistic a procedure it is. The continuing education (CE) system that many certifying organizations have (e.g., participating in a number of workshops per year) is probably not very effective since there is no control of the participants' actual skills after the workshop.

The Rating Scale for Therapist Competence in OST

With the Cognitive Therapy Scale (Young and Beck 1980) as a model I have developed a 13-item scale—*The Rating scale for therapist competence in OST* (Öst 2001)—which is rated on a 7 point scale (0–6) with the following general format (0 = poor, 1 = barely adequate, 2 = mediocre, 3 = satisfactory, 4 = good, 5 = very good, 6 = excellent). In order to make the rating procedure easier and increase inter rater reliability each item has unique one sentence descriptions of the even scale points (see Appendix).

Items Included in the Scale

1. Creating a Good and Trustful Therapeutic Relationship with the Client

As described in Chaps. 4 and 5 the therapeutic relationship is very important in OST since the goal of treatment is that the patients should expose themselves to their most anxiety-arousing situations, something they believe very strongly will lead to a catastrophe. If the patient does not feel that he or she can trust the therapist *not to do* anything that the patient has not agreed to the treatment will be much more difficult to carry out, perhaps even impossible. In most of the traditional therapy, the therapeutic alliance (Horvath and Symonds 1991) is considered more important than the treatment method and by some even to be the mechanism of change. In contrast to this view, I consider a good therapeutic relationship as a necessary, but not sufficient, component of therapy. The relationship is the foundation on which you build with effective (evidence based) treatment methods, and if the therapist ignores creating a good relationship the treatment runs the risk of falling down like a house of cards.

2. General Instructions Before the Start of the Exposure

In order for the patient to fulfill his or her role in the teamwork described in Chaps. 4 and 5, it is necessary that the therapist gives a complete general description of the treatment during the pretreatment interview. However, this description does not go into details about, for example, the final step of the exposure since this would only lead to ruminations and the risk that the patient will not show up for treatment. In addition to giving a general description the therapist should make sure that the patient really understands what it means. A brief role play in which the therapist plays a good friend of the patient's and the patient is herself can be used to check if she understands the instructions. In such a role play the therapist can pose very naïve questions that will reveal to what extent the patient has grasped the instructions.

3. Specific Instructions During the Session

Before a new step in the exposure is started it is important that the therapist gives specific instructions on what the patient is expected to do. If the instructions are vague there is a high risk that the patient will misunderstand and believe that the step is a more difficult one than what the therapist has in mind. Even if it takes somewhat longer to give these instructions, and make sure that the patient understands them, the treatment will progress compared to a situation with vague instructions that may lead to the patient refusing to attempt the step.

4. Factual Information About the Phobic Object/Situation

It is very common, practically universal, that phobic patients generalize their fear reactions from the real object/situation to films, pictures, and even printed text (e.g., Marks 1969). This means that reading about, for example, spiders will trigger anxiety reactions which are uncomfortable, even if they are not associated with catastrophic beliefs. In my long experience (more than 35 years) of treating specific phobics, I have never seen a patient who has an adequate factual knowledge about the phobic object/situation. Thus, providing the patient with such information as part of the conversation during natural pauses in the exposure is always valuable. For example, when treating a snake phobic patient the therapist can describe some facts about snakes. They are cold-blooded (have the same temperature as the surrounding area), cannot hear because they have no auditory organ, have poor eye sight, and primarily orient by smell (the tongue picks up pheromones in the air) and temperature sensors on each side of the head.

5. Dealing with Questions

Another component that relates to the teamwork principle is that the therapist has to be able to answer any questions that the patient might have concerning the treatment

or the phobic object/situation. This gives the impression that the therapist is a well-qualified practitioner who really knows what he or she is doing and, thus, it is easy to trust him or her to be the captain of the team. Sometimes, however, a patient may have a very specific question about the phobic object/situation that the therapist cannot answer. If such a question comes up I acknowledge that I do not know the answer but I will try to find out by the posttreatment interview. This is, in my experience, always acceptable to the patient. As described in Chap. 4 the only question that the therapist should not answer is when the patient wants to know what the final step of the exposure is.

6. Continued Exposure During the Session

Since the OST is only a maximum of 3 hours in length it is very important that the exposure continues throughout the session (i.e., there are no pauses without exposure during the session). If there are pauses now and then the patient will experience a reduction of anxiety because the exposure stopped, at least temporarily, which is rather similar to what patients do prior to treatment when they escape from the phobic situation (see Fig. 4.2 of Chap. 4). Thus, if the exposure is continuous the patient will experience an anxiety reduction *while* being exposed to the phobic stimuli, which will provide him/her with important new information. An exception to the recommendation above is, of course, if the patient really has to go to the lavatory in the middle of the session (e.g., then there is no requirement to bring the snake, etc. along with her).

7. Guiding the Client in the Exposure Procedure

This item concerns what the therapist does once the patient has started a certain step in the exposure. By continuously being alert and trying to anticipate what is going to happen the therapist can use specific instructions which will guide the patient (e.g., in interacting with the animal in question). Naturally, it is important to obtain feedback from the patients to make sure that they understand what they are going to do at a specific step.

8. Adequate Use of Modeling During the Session

Almost all animal phobics have had their phobia since childhood (Öst 1987), or for as long as they can remember. This means that the anxiety reactions, especially the catastrophic beliefs have prevented them from learning how to interact with the animal in question. Thus, in OST with animal phobics it is very important that the therapist function as a model for the patient and help him or her to master the behaviors necessary to interact with the animal in a successful way. The goal is that by using the three phases of participant modeling (demonstration, physical guidance, and instruction) the patient's own mastery of the situation will gradually increase.

9. Adequate Use of Verbal Reinforcement

Already from a very early age the baby learns from the verbal reinforcement (praise) and other positive consequences which follow his or her behavior in different situations (Bijou and Baer 1961). This learning is probably continuous throughout the lives of human beings (Skinner 1953). In an OST, it is very important that praise is *not* used in an indiscriminate way. Therapists should not use words like "good, great, fantastic" irrespective of whether the patient does something positive and approaches the phobic object or something negative and retracts from it. This can be very confusing and not help the patient at all. It is much better to be restrictive in praising and only use it when the patient does something positive like approaching the phobic object more than he or she managed earlier. Moreover, the selective use of praise and attention has been suggested to be a potent reinforcer and particularly useful when conducting OST with individuals who have attention-maintained behavior (Davis et al. 2007).

10. Working with the Client's Catastrophic Belief

According to the CBT-model for the maintenance of specific phobias (see Fig. 4.1 of Chap. 4), the patient's strong conviction in the catastrophic belief is the prime maintaining factor of the phobia. Of course, the goal of the OST is to change the patient's conviction, preferably down to zero on the 0–100% conviction scale. Thus, an important part of OST is to work with the patient's catastrophic belief, both that which was uncovered during the pretreatment session or any other belief that might come up during the treatment session. To some therapists, especially those with limited experience, the patient may verbalize his or her catastrophic belief without any noticeable reaction from the therapist. Such therapists are probably so very anxious not to mess up the exposure that they cannot perceive this kind of information that falls "outside of the frame." There is an apparent risk that this kind of therapist will carry out the OST without changing the patient's catastrophic belief to any large extent and the phobia will remain unchanged. A very good therapist, on the other hand, will bring out the belief, ask the patient to make a prediction, set up the exposure as a behavioral test, and ask the patient to draw a conclusion afterwards.

11. Pacing and Efficient Use of Time

In order for the patient to learn as much as possible during OST it is important that the therapist, as the captain of the team, suggests new steps of exposure on a continuous basis. The subjective unit of distress (SUDs) rating does not have to go down to a very low level before a new step is suggested. I usually proceed when the SUDs level has decreased by 25–30 points on the 0–100 scale. Since a trainee therapist may be uncomfortable with seeing the patient experience a high anxiety level, he or she will stay longer at the same step and witness the SUDs level going down to a lower

level. However, my long clinical experience shows that this "slow" strategy does not mean that the next step is easier once the patient comes to it. In the end, this strategy is unproductive and the session has to be ended without the therapist having had a chance to expose the patient to every crucial aspect of the phobic object/situation. This also means that the patient's conviction rating of his/her catastrophic belief has not come down to zero. Thus, in general the therapist should be encouraged to proceed at a more rapid pace.

12. Description of How to Continue with Self-Exposure After the Session

As described in Chaps. 4 and 5, it is generally a good idea for the patient to continue with self-exposure after the OST in order to ascertain that the effects obtained during the treatment also generalize to natural situations. Another aim of the maintenance program is to increase the possibility that the effects are maintained, or furthered, on a long-term basis. Thus, the therapist should describe the advantages of continued self-exposure and engage the patient in generating ideas about how best to carry this out.

13. Handling Difficulties in the Exposure Procedure

In an OST, it is rare not to run in to any problem whatsoever. When problems occur the therapist should *not* blame the patient but point out that it is the team that has run into difficulties and it is the team that has to deal with them. As the captain of the team the therapist should point out what the patient can do and what he or she has already accomplished. Then the previous successfully accomplished step should be repeated, followed by suggesting a next step of lower difficulty than the one originally suggested. The therapist should also ask the patient for feedback to assess his or her understanding of the step suggested. Another good strategy is to ask the patient to compare the problematic situation with what happened earlier in the session in terms of initial reluctance and refusal and his or her later overcoming the anticipatory anxiety and accomplishing the steps. An excellent therapist uses all possible ways of overcoming the difficulty within the framework of the teamwork relationship in which the patient's own suggestions are prioritized, whereas a poor one completely ignores the difficulties and just pushes on with the exposure.

Examples of Studies Using the Scale

The rating scale has been used in a number of studies since 2001 and here a couple of examples are given. Vika et al. (2009) published a study on intraoral injection phobia in adult patients for which three dentists served as therapists and OST was compared with five sessions of CBT. The dentists had been working with multiple

Table 8.1 Competence scores for 3 therapists during the pilot and project phase of an OST study on intraoral injection phobia. (Vika et al. 2009)

Therapist	Pilot case	Mean score	Item score < 4	Project case	Mean score	Item score < 4
1 Male	1	3.92	1	1	4.92	0
1	2	4.38	0	2	5.17	0
1	3	4.67	0	3	4.62	0
	M	*4.32*			*4.90*	
2 Female	1	3.55	4	1	5.17	0
2	2	4.45	0	2	4.69	0
2	3	4.92	0	3	5.25	0
	M	*4.31*			*5.04*	
3 Female	1	4.00	3	1	4.15	3
3	2	4.20	0	2	5.23	0
3	3	4.33	0	3	4.54	0
	M	*4.18*			*4.64*	
Total mean		*4.27*			*4.86*	

session exposure for dental phobia before participating in the present study. After initial workshops they each treated three pilot cases and their mean competence score for these patients are shown in Table 8.1, left part. As is evident from this table all three therapists improved across their three pilot cases and none had an item score below 4 on their second and third pilot case. The right part of Table 8.1 shows the therapists' competence score during the actual RCT for three randomly selected cases each. The therapists did not know beforehand which session would be selected and rated by the supervisor. As can be seen the mean scores are higher for all therapists during the project phase and only one of them got item scores below 4 for one of the cases. The total mean across the three therapists also increased.

Ollendick et al. (2009) did a two-site study (Blacksburg, Virginia and Stockholm, Sweden) comparing OST, Education-Supportive Therapy (a placebo condition), and a wait-list group for children and adolescents with various specific phobias. In Blacksburg, six therapists (three females and three males, with a master's degree or above) and in Stockholm, four therapists (all females, with a master's degree or above) with 1–4 years of clinical experience beyond their basic CBT training served as therapists. The mean score (0–6 scale) for the Blacksburg therapists was 4.96 ($SD = 0.41$, range: 4.25–5.90) and for the Stockholm therapists it was 5.10 ($SD = 0.43$, range: 4.35–5.73), a nonsignificant difference.

Conclusions

This chapter described a way of training therapists in the OST that the developer of the treatment has used during the last 20 years. As is the case with most training programs in CBT, this model has not been empirically validated but a great deal of clinical experience shows that it works for most trainees. Furthermore, the 13-item

OST competence rating scale was described in detail to indicate less than ideal and excellent therapist behaviors in carrying out OST.

Appendix

Rating Scale for Therapist Competency in OST

General scale:

0	1	2	3	4	5	6
Poor	Barely adequate	Mediocre	Satisfactory	Good	Very good	Excellent

1. *Creating a good and trustful therapeutic relationship with the client*.
   - 0 Therapist ignores relationship-building issues completely.
   - 2 Therapist notes that the relationship is not good but cannot improve it.
   - 4 Therapist attempts to create a good relationship and is fairly successful.
   - 6 Therapist creates a good relationship and is sensitive too, and immediately repairs, any break in it.
2. *General instructions before the start of the exposure.*
   - 0 Therapist does not give any pretreatment instructions.
   - 2 Therapist gives most of the pretreatment instructions.
   - 4 Therapist gives full pretreatment instructions and asks for the client's feedback.
   - 6 Therapist gives full pretreatment instructions and makes sure that the client understands what they mean for carrying out the treatment procedure.
3. *Specific instructions during the session.*
   - 0 Therapist does not give any specific instructions.
   - 2 Therapist often gives specific instructions.
   - 4 Therapist almost always gives specific instructions and asks for the client's feedback.
   - 6 Therapist always gives specific instructions and makes sure that the client understands what they mean for carrying out the treatment step at hand.
4. *Factual information about the phobic object/situation.*
   - 0 Therapist does not give any factual information.
   - 2 Therapist gives some factual information.
   - 4 Therapists gives almost all factual information and asks for the client's feedback.
   - 6 Therapist gives full factual information and makes sure that the client understands what this means for the client's phobia.
5. *Dealing with questions.*
   - 0 Therapist did not appear to understand or deal with questions clearly and/or appropriately.
   - 2 Therapist showed some evidence of sensitivity to and understanding of the client's questions, but did not deal with them clearly and/or appropriately.

4 Therapist was sensitive to and understood the client's questions and had some success in dealing with them appropriately.
6 Therapist understood, was fully sensitive to the client's questions, and dealt with them clearly and/or appropriately.

6. *Continued exposure during the session.*
0 Therapist always retracts the exposure when client experiences high anxiety.
2 Therapist often retracts the exposure and sometimes helps reducing the anxiety level.
4 Therapist rarely retracts the exposure and often helps reducing the anxiety level.
6 Therapist always continues the exposure and helps the client to reduce the anxiety level in any way necessary.

7. *Guiding the client in the exposure procedure.*
0 Therapist never guides the client and gives vague instructions for the exposure.
2 Therapist sometimes guides the client and gives some instructions for the exposure.
4 Therapist mostly guides the client and gives clear instructions for the exposure.
6 Therapist always guides the client through the procedure and makes sure that he/she understands every instruction for the exposure.

8. *Adequate use of modeling during the session.*
0 Therapist never uses modeling even when it is clearly indicated.
2 Therapist sometimes uses modeling but ignores the mastery aspect.
4 Therapist mostly uses modeling and pays attention to the mastery aspect.
6 Therapist always uses modeling and makes sure that the client's own mastery is enhanced by the procedure (demonstration, physical guidance, instruction).

9. *Adequate use of verbal reinforcement.*
0 Therapist never praises the client during the treatment session.
2 Therapist often praises the client but uses reinforcement indiscriminately (i.e., both approach and escape behaviors are reinforced).
4 Therapist always praises the client but uses reinforcement indiscriminately.
6 Therapist always praises the client for small progressions during the session and uses reinforcement adequately (approach behavior is reinforced and escape is ignored).

10. *Working with the client's catastrophic belief (either that which was uncovered during the pretreatment session or any that might come up during the treatment session).*
0 Therapist ignores the client's catastrophic belief.
2 Therapist brings out the belief but only talks about it without a direct test.
4 Therapist brings out the belief and tests it in a less than optimal way.
6 Therapist brings out the belief, asks the client to make a prediction, set up the exposure as a behavioral test, and asks the client to draw a conclusion afterward.

11. *Pacing and efficient use of time.*
    0 Therapist made no attempt to structure therapy time. Session seemed aimless.
    2 Session had some direction, but the therapist had significant problems with structuring or pacing (e.g., too little or too much structure, too slowly or too rapidly paced).
    4 Therapist was reasonably successful at using time efficiently. Therapist maintained appropriate control over flow of exposure and pacing.
    6 Therapist used time very efficiently by tactfully limiting unproductive exposure and by pacing the session as rapidly as was appropriate for the client.

12. *Description of how to continue with self-exposure after the session.*
    0 Therapist does not describe how the client should continue with self-exposure.
    2 Therapist mentions that continued self-exposure is a good idea but not why this is.
    4 Therapist describes why continued self-exposure is good for the long-term outcome and tells the client how to carry this out.
    6 Therapist describes fully the advantages of continued self-exposure and engages the client in generating ideas how best to carry this out.

13. *Handling difficulties in the exposure procedure.*

    The following is a partial list of ways to handle difficulties:
    - Pointing out that it is the therapist-client team that has run into difficulties and these have to be dealt with as a team.
    - Pointing out what the client can do; what he/she has already accomplished.
    - Repeating the previous successfully accomplished step.
    - Suggesting a next step of lower difficulty than originally suggested.
    - Asking the client to compare with what happened earlier in the session in terms of initial reluctance/refusal and later overcoming the anxiety.
    - Asking the client for feedback to assess his/her understanding of the step suggested.

      0 Therapist ignores the team's difficulties and pushes on with the exposure.
      2 Therapist uses some of the above ways but puts most of the responsibility for the difficulties on the client.
      4 Therapist uses most of the above ways but mostly presents suggestions his/herself.
      6 Therapist uses all possible ways of overcoming the difficulty within the framework of the teamwork relationship in which the client's own suggestions are prioritized.

Rating scale for therapist competency in OST: Record form

Therapist:_____ Patient:_____ Date:_____

General scale:

0	1	2	3	4	5	6
Poor	Barely adequate	Mediocre	Satisfactory	Good	Very good	Excellent

1. Creating a good and trustful therapeutic relationship with the client..... ____
2. General instructions before the start of the exposure..... ____
3. Specific instructions during the session..... ____
4. Factual information about the phobic object/situation..... ____
5. Dealing with questions..... ____
6. Continued exposure during the session..... ____
7. Guiding the client in the exposure procedure..... ____
8. Adequate use of modeling during the session..... ____
9. Adequate use of verbal reinforcement..... ____
10. Working with the client's catastrophic beliefs..... ____
11. Pacing and efficient use of time..... ____
12. Description of how to continue with self-exposure after the session..... ____
13. Handling difficulties in the exposure procedure..... ____

Comments:_____

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Chapter 9
Interventions for Specific Phobia in Special Populations

Brittany M. Rudy and Thompson E. Davis III

Introduction

Although implementation of standard evidence-based protocols for the treatment of specific phobias in typical populations is vital, such protocols may not work in the same way with atypical populations. It is often the case that modifications need to be made to adapt these evidence-based treatment protocols to address differences in individuals with special needs. For example, symptoms of anxiety have been associated with deficits in intellectual functioning in both typically and atypically developing children (Davis et al. 2008, 2011a). This chapter is devoted to the assessment and treatment of specific phobias in a particularly neglected group—those having co-occurring intellectual disability (ID) and/or developmental disabilities (DD) such as autism spectrum disorders (ASD).

There is little literature concerning ID and anxiety prevalence; however, because those with DD are noted to have elevated levels of anxiety, and ID is often comorbid with DD (e.g., 50–70% of those with ASD exhibit ID; Fombonne 1999), it is an important topic to discuss, and we will, *very hesitantly and tentatively*, extend findings to both groups. Anxiety, for instance, occurs in those with ASD at a higher prevalence rate than in those who are typically developing. White et al. (2009) noted that prevalence rates for anxiety disorders in those with ASD range from 11 to 84%, averaging around 41 to 55%. De Bruin et al. (2007) established that anxiety disorders are the second most common comorbid disorders next one to disruptive behavior disorders in children and adolescents with ASD. Increased risk for development of anxiety disorders leads to the obvious conclusion that there is a great need for treatments designed to target anxiety symptoms within these populations.

T. E. Davis III (✉)
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA
e-mail: ted@lsu.edu

B. M. Rudy
Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS),
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_9, © Springer Science+Business Media, LLC 2012

When addressing the presence of specific phobias specifically, less is known about prevalence rates within the ID and DD populations. Although studies are scarce, it is speculated that prevalence rates of specific phobias for those with ID and/or DD may be higher than that for general community samples. Dekker and Koot (2003), for instance, found a 1-year prevalence of 17.5% for specific phobias in their community sample of individuals (ages 7–20 years) with ID as compared with Kessler et al.'s (2005) estimation of a 1-year prevalence of 8.7% for specific phobias within the typical population. Ornitz (1989) noted that individuals with ASD often exhibit odd sensory reactions and uncommon fears (e.g., vacuum cleaners, parts of clothing, elevators, toileting, and unusual fears involving water). He theorized that the increased presence of atypical fears is related to these abnormal sensory experiences in those with ASD. Beyond this speculation and a few limited studies, research concerning the presence and severity of specific phobias in the ID and DD populations is lacking. However, despite this gap in the literature, the occurrence of phobias within special populations is a problem of increasing interest that deserves attention to proper evidence-based assessment and treatment.

Presently, few anxiety assessment measures are specifically normed for the ID and DD populations, and no standard treatment protocols exist for specific phobias or anxiety disorders in general when considering these populations (Hagopian and Jennett 2008; White et al. 2009). Recently Moree and Davis (2010) provided an updated and in-depth analysis of current modification trends for the treatment of anxiety disorders in children with ASD. However, beyond these modifications, there is little direction in the literature as to which treatment procedures are more or less appropriate or efficacious. In other words, some studies have examined different treatment approaches for specific phobia with ID and DD populations, but little literature to date suggests specific modification trends or protocol recommendations. Therefore, the purpose of this chapter is to provide a brief and limited overview of current assessment techniques and to review the literature on treating fear and phobias within the ID and/or DD populations. Furthermore, we aim to provide recommendations for specific phobia treatment based on the current literature and cognitive-behavioral treatment (CBT) modifications available, in particular possible alterations to One-Session Treatment (OST) for specific phobia (Davis et al. 2009; Öst 1997; Zlomke and Davis 2008; see also Chaps. 4 and 5).

Assessment

In their review of the assessment and treatment of anxiety disorders in the ID and DD populations, Hagopian and Jennett (2008) pointed out that there were few to no normed measures for anxiety in general, much less measures for particular disorders such as specific phobia for these populations. Measures such as the Assessment for Dual Diagnosis (ADD; Matson and Bamburg 1998), Emotional Disorder Rating Scale for Developmental Disabilities (EDRS-DD; Feinstein et al. 1988), Psychiatric Assessment Schedule for Adults with Developmental Disabilities Checklist (PAS-ADD; Moss et al. 1998), and the Aberrant Behavior Checklist (ABC; Aman et al. 1985) are scales designed to assess broad psychopathology in adults with

mild to moderate ID. However, these scales do not provide information concerning specific diagnoses or symptomatology. The Diagnostic Assessment for the Severely Handicapped-II (DASH-II; Matson et al. 1997) similarly assesses broad psychopathology for adults with severe-to-profound ID; however, it suffers from the same problem of generality as those measures mentioned earlier. The Anxiety, Depression, and Mood scale (ADAMS; Esbensen et al. 2003) is an informant-based rating scale designed to assess anxiety, depression, and mania somewhat more specifically in individuals with mild to profound ID. Similarly, the Glasgow Anxiety Scale (Mindham and Espie 2003) is a self-rating scale for individuals with mild to moderate ID that measures anxiety symptoms (cognitive, behavioral, and somatic) alone. However, neither of these measures provides information related to specific anxiety or other diagnoses and instead only rates anxiety symptoms along a continuum offering little information for the treatment of particular disorders such as specific phobia. The Fear Survey for Adults with Mental Retardation (FSAMR; Ramirez and Luckenbill 2007) is a more specific measure designed to address fears in adults with mild to moderate ID; however, the measure is not confined to specific phobia alone. No known diagnosis-specific scales are available for adults with ID to date. Furthermore, when considering children and adolescents with ID, no scales specifically normed for that population are available to assess anxiety psychopathology.

A similar paucity of measures is available for individuals with DD, including those with ASD. The Behavioral Assessment System for Children, Second Edition (BASC-2; Reynolds and Kamphaus 2004), which serves as a broad psychopathology screener for individuals aged 2–21 years, included children with ASD in 1% of the norming sample (to correspond with the rates of ASD in the target population), and is therefore often used with the ASD population. Similarly, the ASD-Comorbidity for Children (ASD-CC; Matson and Wilkins 2008) assesses broad psychopathology, including anxiety/depression and withdrawal, specifically in children with ASD. Unfortunately, these measures do not assess specific anxiety psychopathology or provide specific information about fears or phobias. The Autism Co-Morbidity Interview–Present and Lifetime version (ACI-PL; Leyfer et al. 2006) is an informant-based (i.e., parent/caregiver) interview developed to specifically assess DSM-IV axis I comorbid psychopathology in children with ASD. This measure was modified from the Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS; Puig-Antich and Chambers 1978) and does provide psychiatric diagnoses; however, it does not primarily focus on anxiety symptomatology, which remains a weakness for diagnosing specific phobia. Collectively, the literature indicates that few evidence-based resources are available to aid in the diagnosis of specific phobia in children with DD such as ASD, and no known measures of anxiety pathology have been normed specifically for adults with DD or ASD.

Due to the scarceness of normed anxiety and specific phobia measures, specifically for the ID and DD populations, measures that are normed for typical populations are often substituted for diagnostic purposes. While it is acknowledged that this may not be best practice as generalizability and other assumptions are affected, in reality, this is often one of the better solutions, if not the only solution, available at this time for researchers and clinicians. Moreover, while multimethod, multiinformant based assessment is always recommended with typical and atypical populations

(Silverman and Ollendick 2005), informant-based measures are crucial when working with the ID and DD populations, especially children. For instance, self- and/or informant-based interviews using the specific phobia modules from the Anxiety Disorders Interview Schedule for DSM-IV, Client version (ADIS-IV; Brown et al. 1994) or the Anxiety Disorders Interview Schedule for DSM-IV, Child and Parent versions (ADIS-C/P; Silverman and Albano 1996) can provide insight and additional details about the fear and the amount of interference that the fear causes, especially when parents or primary caregivers are involved. Measures such as the Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick 1983) are often utilized to examine fear and anxiety presentation and can be completed by the parent/caregiver if necessary. Observations (structured and unstructured) are also commonly recommended to examine the presence and severity of a fear as long as they can be completed safely. For instance, structured observations such as Behavioral Avoidance Tasks (BATs; see Ollendick et al. 2004 for a more complete description) may provide information for the clinician when insight is low and caregiver information is minimal or conflicting across respondents or environments.

Functional assessment is also an important component to add to the traditional anxiety assessment. While a detailed description of functional assessment is included in Chap. 5, it may be helpful to consider using the Functional Assessment Worksheet for OST (see Chap. 5) with this population as well. Also, other forms of quick functional assessment may be useful with those who are exhibiting anxiety/phobia and comorbid ID/DD. For example, the Questions About Behavioral Function (QABF; Matson et al. 1999) is one type of informant-based functional assessment tool that can provide insight into the functions (e.g., tangible reinforcement, escape from demands, attention) maintaining the anxious behavior. Similarly, another instrument being developed is the Motivation for Fear (MOTIF; Nebel-Schwalm and Davis 2011), an adaptation of the QABF. While it is intended primarily for use with typically developing individuals, it focuses specifically on behaviors thought to be associated with anxiety and phobia.

Overall, it is important to continually strive to use the most appropriate measures and techniques for assessment, and future research should focus on the development of new measures specifically for these populations. For now, however, the best approach to the assessment of specific phobias with ID and DD populations appears to be a combination of broad psychopathology screeners (with specific ID and DD norms), self- and informant-based interviews and rating scales developed for typical populations that assess phobias more specifically, and direct clinician observations (such as a BAT) when diagnosing and monitoring treatment progress with specific phobias in the ID and DD populations.

Treatment

As outlined by Ollendick et al. (2004) and Ollendick et al. (2009), historically, four primary treatment methods have been utilized for specific phobia with typical populations: Systematic Desensitization (SD), Participant Modeling (PM), Reinforced Practice (RP), and Cognitive-Behavioral Therapy (CBT). These four methods have

all been shown to be efficacious to varying degrees in treating specific phobia in both adults and children within typical populations (Davis et al. 2011c; Davis and Ollendick 2005; Zlomke and Davis 2008; see Chaps. 2 and 3). Therefore, these interventions are briefly described here, and a sampling of the available evidence supporting their use with those having ID/DD is briefly presented.

Systematic Desensitization (SD)

Historically, SD has been described as a way of counterconditioning fear through the use of an incompatible response (Ollendick et al. 2004); however, more recent iterations have described this less as a counterconditioned effect and more as specific, context-specific learning which then competes with previous learned responses (Bouton 2004; Davis 2009). Specifically, the use of relaxation and/or other responses incompatible with fear are paired with exposure to the feared stimulus with the premise that the anxiety will be subverted by an incompatible response (Davis and Ollendick 2005; Ollendick et al. 2004). In other words, during this type of treatment the client should not become afraid during exposures as an incompatible emotional state is induced (e.g., by way of relaxation, unrestricted access to a toy, or an edible) in the client during gradual exposure to the feared stimulus or situation and, ideally, new learning takes place which competes with the previously learned avoidance or fear response. This type of treatment has been used to treat fears and phobias in those with ID/DD in several case studies and uncontrolled studies (e.g., Peck 1977; Riccardi et al. 2006) for a variety of fears including those of rats, heights, and animatronic toys. Of note, SD is frequently misconstrued in the literature with ID/DD individuals (Davis 2009) and described incorrectly as reinforcement (see the reinforced practice section for a description).

Participant Modeling (PM)

Participant modeling is another behaviorally based technique that utilizes the observation of another person (i.e., model) who interacts skillfully with the feared stimulus without showing fear (Davis and Ollendick 2005; Ollendick et al. 2004). The observer is encouraged to interact with the model and the feared stimulus during treatment and is often guided through steps at his or her own pace. The model can also offer gentle verbal and physical guidance or supportive touch (e.g., a hand on the shoulder, hand-over-hand guidance) during exposures. The model is eventually faded so that the client interacts with the stimulus alone. This type of treatment has been used with success with ID/DD populations with a variety of fears and phobias including those of escalators, dogs, shopping, rats, and heights (e.g., Lindsay et al. 1988; Matson 1981; Peck 1977; Runyan et al. 1985). Again, however, most of these studies consisted of uncontrolled case studies or uncontrolled open clinical trials.

Reinforced Practice (RP)

The use of reinforcers to modify behavior is a long-standing practice in behavioral psychology. Along these lines, RP is a treatment that utilizes operant conditioning techniques such as shaping, reinforcement, and verbal feedback during gradual exposures (Davis and Ollendick 2005; Ollendick et al. 2004). This behaviorally based technique is also known as contingency management; as such, reinforcers are used to complete each step in the fear hierarchy while extinction procedures are put into place for any rewarding of avoidance behaviors (Ollendick et al. 2004). The core difference between SD and RP is the time of delivery of the reinforcer/competing response, with the counterconditioning agent being administered throughout step completion for SD so that it competes with the fear response and after step completion for RP so that it reinforces approach (Davis 2009). Reinforcement is especially useful for those with low motivation, which is a common problem in those with ID/DD, as insight is particularly poor (Koegel et al. 2010). RP has also been used in several uncontrolled case studies and open clinical trials by several researchers (e.g., Chok et al. 2010; Luiselli 1977; Obler and Terwilliger 1970; Shabani and Fisher 2006) to treat a variety of fears including those of dogs, blood-injection-injury, toileting, and buses.

Combinations of Behavioral Techniques

More often, the lack of a standard protocol for treating phobia in those with comorbid ID/DD has resulted in a combination of approaches being applied. Furthermore, these treatments have variously been supplemented with other techniques like restraint, forced exposure, and blocking. For example, Love et al. (1990) used PM and RP to treat fears of being alone and of running water. Burgio et al. (1986) similarly, used PM and RP to treat a fear of stairs. Other researchers have used combinations of SD and RP to treat fears of dogs and water (e.g., Erfanian and Miltenberger 1990; Rapp et al. 2005). Finally, several researchers have found success using various combinations of RP, SD, and PM (i.e., all three treatments) to treat fears of dental procedures and blood-injection-injury phobia (e.g., Altabet 2002; Hagopian et al. 2001; Luscre and Center 1996).

Cognitive-Behavioral Techniques (CBT)

Cognitive-Behavioral Techniques utilize the behavioral techniques previously described (i.e., PM, RP, gradual exposure) to alter dysfunctional behavior and physiology, a psychoeducational component of therapy to alter schemas and attentional biases, and a cognitive component to challenge cognitive distortions associated with the fear (Davis and Ollendick 2005; Ollendick et al. 2004). Although this

treatment for phobia is rarer with ID/DD individuals, some efficacy has been demonstrated, especially with those who are functioning at a higher level. For example, Hurley (2004) conducted a case study utilizing cognitive and behavioral interventions for multiple height related phobias with a 34-year-old male diagnosed with Down's Syndrome and mild ID. His phobias were reportedly significantly reduced and his quality of life was improved; however, treatment was terminated when the participant chose to no longer ascend the fear hierarchy to encounter his more intense fears (high atriums and air travel).

OST is a variant of CBT explicitly designed to treat specific phobias by combining RP, PM, and CBT into a single massed exposure session (Davis et al. 2009; Ollendick et al. 2009; Öst 1997; Zlomke and Davis 2008). Davis et al. (2007) conducted OST for a specific phobia of water and for a specific phobia of heights with a 7-year-old boy who was also diagnosed with a pervasive developmental disorder and severe challenging behaviors. Gradual in vivo exposure with PM, verbal reinforcement, psychoeducation, and basic cognitive challenges were utilized in one 3-hour session to reduce the child's fears. Two months after treatment of the first phobia (water), the child no longer met criteria for a phobia of water but still met criteria for a phobia of heights, which was subsequently treated (a controlled multiple baseline design was used). Two months following treatment for his phobia of heights (4 months post-treatment for his phobia of water), the child no longer met criteria for a diagnosis of specific phobia of either type. Future research should therefore examine the efficacy of CBT, and in particular, OST in a larger randomized control trial with these special populations.

Treatment Recommendations for Those with ID/DD

When deciding how to treat specific phobias in those with ID/DD, there are many factors to consider. New research is beginning to shape the ways to adapt treatments that are efficacious for typically developing individuals for those with ID/DD (Moree and Davis 2010). As a result, the following recommendations are tentatively provided with the disclaimer that new research and innovation are constantly changing the adaptation and improvement of treatments in this area. For example, recent research has indicated that communication deficits are key elements to consider in the presentation of children and infants with ASD and anxiety (Davis et al. 2012, 2011d). The unique developmental trajectories of those with ASD should be considered as well given that anxiety symptoms have been found to wax and wane from infancy to later adulthood (Davis et al. 2011b), and anxiety symptoms have been found to differ among the spectrum of autistic disorders and to differentiate among them (Davis et al. 2010). Moreover, the incorporation of functional assessment methodology has, at least in one instance, led to a better matching of CBT treatment to a child's attention function. Davis et al. (2007) chose OST to treat specific phobias in a young boy who had severe behavior maintained by attention—it was thought the additional verbal praise and attention provided during the OST session for appropriate behavior would further reinforce his approach behaviors. As a result, the treatment plan

for an individual with ID/DD and anxiety may differ based on a number of factors, informed by the burgeoning research in this area. Given the focus of this volume and a successful controlled case study, however, the recommendations which follow will be for adapting OST for use with ID/DD individuals. Clinicians may wish to consider this massed exposure treatment over other treatment options for a variety of reasons including the potential advantages of quicker improvement in a single massed session, equivocal evidence across phobia treatments at this time, the possibility of incorporating parents or other caregivers using an established methodology (Öst et al. 2001), and the opportunity for using an exposure treatment that does not incorporate restraint or forced exposure (Davis et al. 2007). This being stated, OST may or may not be the treatment of choice for an individual with ID/DD and a specific phobia; we recommend taking a client's entire presentation into consideration (e.g., including important aspects like mobility and communication skills) before deciding upon a specific means of intervention.

Understanding a Client's Level of Functioning

As previously mentioned, no standard protocol exists for treating specific phobia in ID/DD populations. Therefore, it is important to understand the individual's level of functioning when determining the type of treatment to implement. Those who are functioning at a lower level (e.g., moderate to profound ID, reduced communication skills, poor social skills) are likely to exhibit more challenging behaviors (e.g., Baghdadli et al. 2003; Matson et al. 2009), lower motivation for treatment (Koegel et al. 2010), and less insight into and understanding of the treatment process (e.g., Begeer et al. 2008). Several different strategies in the literature have demonstrated efficacy with those who are lower functioning; however, some of these strategies are more practical or effective than others. From the current evidence, as well as theoretical knowledge concerning poor motivation and a need for concrete, visual tactics, the most highly recommended treatments for lower functioning individuals are in vivo, behavioral treatments that incorporate operant and modeling procedures. PM and RP alone or in combination with one another are theoretically likely to produce the most successful outcomes for specific phobia with lower functioning ID/DD individuals.

Specifically, in vivo exposure and modeling as well as verbal and physical guidance through steps can foster better understanding of what is required of the individual at each step and how appropriate stimulus interactions should occur throughout the treatment process. Breaking down steps in this way promotes step mastery in a more controlled setting, which in turn is thought to foster independence in later sessions. Reinforcement delivered after the completion of each step can provide increased motivation for step completion and increased compliance during each step and throughout the overall treatment process. The clinician should realize, however, that the verbal and physical guidance described here is not the traditional 3-step prompting with which many clinicians who work with those having ID/DD may be

familiar. The traditional 3-step prompting (i.e., "say/tell," "show," "do") is used, for example to gain compliance during a task or to prevent the client escaping a demand. In this type of prompting, a clinician will state what the client needs to do during a task and then wait a predetermined period of time (usually several seconds) to see if the client begins the task (i.e., "say"). For example, "John, put the block in the bucket." If the client does not heed the clinician's direction, the clinician will repeat the direction while modeling the behavior to be completed and then ask the client to do the same task (i.e., "show"). For example, "John, put the block in the bucket like this" (clinician places the block in the bucket and then puts it back in front of John). If, however, the client still does not comply, the direction is repeated and the client is forcefully, physically guided to complete the task (i.e., "do"). In this case, "John, put the block in the bucket" (clinician places the block in John's hand and while holding it there physically moves John's arm over the bucket where the clinician drops the block from John's hand in the bucket). The traditional 3-step prompting done in this way is, by design, strict, forceful, and usually aversive for the client (though nothing is done to harm the client). This type of physical and verbal guidance is not what is intended in treating phobias (at least as described in this chapter). The physical and verbal guidance used when treating phobias should be voluntary, and instead of forcing exposure, it should be gentle, controlled, and as pleasant an experience as possible. Typically, physical guidance is used in this way as a form of support or as a way to break down a step into a smaller, more manageable step (e.g., a clinician pets a dog while the client's hand is resting on top of the clinician's hand so the act is mimicked but the client does not actually touch the dog). With that stated, clinicians working with those having ID/DD should attempt to explain or demonstrate the differences between the two and consider a client's previous history with 3-step prompting if PM or a similar treatment is to be administered.

With individuals who are functioning at a higher level (e.g., mild to moderate ID, greater communication abilities, more social skills, more insight), behavioral treatments are likely to be equally useful; however, the addition of psychoeducation and cognitive components *may* add to overall treatment efficacy and generalization. Those who are functioning at a higher level are likely to have a greater understanding of their fears as well as the interference that those fears have on their daily lives. Previous literature has demonstrated that CBT can be successful for treatment of various anxiety disorders including specific phobia; however, modifications are generally needed (Chalfant et al. 2007; Lehmkuhl et al. 2008; Reaven et al. 2009; Reaven and Hepburn 2003; Sofronoff et al. 2005; Sze and Wood 2007, 2008; Wood et al. 2009).

Moree and Davis (2010) discussed four specific modification trends for treating anxiety disorders in children with ASD, though these also readily lend themselves to individuals of any age. These trends are based on techniques taken from broad theory and practice with a subtype of special populations, and so they may be useful for both adults and children within the ID and DD populations. First, they suggest the use of disorder-specific hierarchies for treatment. Because the individual's overarching diagnosis is pervasive, it is important to consider all aspects of the disability (e.g., challenging behaviors, impaired communication, physical limitations, and medical

complications) instead of focusing solely on the specific phobia. Second, the authors propose using more concrete, visual techniques. Implementing these tactics often makes treatment more developmentally appropriate, aiding in better understanding of the treatment process and individual cognitive and behavioral components. The third suggested modification is the use of specific interests to engage the individual in treatment. Involving the interests of the individual in the treatment process can build rapport, increase motivation during treatment, and aid in the maintenance of gains post-treatment. This technique may be especially useful with children and lower functioning adults within these populations. Highly preferential reinforcers may also be included as part of interest incorporation, especially if motivation for treatment is particularly low. Parental/caregiver involvement is the final modification proposed by Moree and Davis (2010). The authors note the importance of caregiver involvement for generalization, especially since parents and caregivers traditionally play a large role in the daily routines of individuals within these populations.

With these modifications, it is likely that CBT could be a viable treatment option for specific phobia, especially for individuals functioning at a higher level within the ID/DD populations. An example incorporating these modifications into OST is subsequently described. The use of OST for the treatment of specific phobia with ID/DD populations when appropriate holds particular appeal due to its abbreviated nature and ability to be inserted into ongoing treatment plans and/or utilized in various settings. Again, it is emphasized that functioning and other extraneous variables that may influence treatment must also be evaluated through initial assessment to determine if OST or other CBT variants are appropriate for treatment within these populations; however, we have successfully treated approximately a dozen individuals with ID/DD using OST with varying modifications.

Utilizing One-Session Treatment: A Plan and Protocol Alterations for ID/DD Individuals

OST may be a viable treatment option for specific phobias in higher functioning individuals within the ID/DD populations. Davis et al. (2007) utilized OST without modifications to treat phobias of water and heights in a child with an ASD and challenging behaviors. While Davis et al. (2007) administered OST *without adaptation*, the following example is of an *adapted* OST treatment protocol for individuals with more severe interference from ID/DD symptoms which closely follows the protocol outlined by Davis et al. (2009).

Initial Assessment

As noted above, assessment for specific phobia should be multi-method and multi-informant whenever possible (Davis et al. 2009). An interview with a parent or

caregiver (e.g., ADIS-C/P) should be a primary component of the assessment. Phobia specific measures and, particularly, behavioral observations such as a BAT are also strongly suggested (Davis et al. 2009). Incorporation of ID/DD specific measures (e.g., DASH-II, FSAMR, ACI-PL) are advisable when relevant, and the clinician should assess intellectual and adaptive functioning (particularly communication skills) to allow the developmental tailoring of treatment. In addition, traditional methods of functional assessment may be beneficial as well. Also, a preference assessment (i.e., a protocol designed to determine a hierarchy of preferred reinforcers) may be necessary to determine items which might be used as reinforcers during the massed session. Examination of results from each of these components is important to make an informed diagnosis and case conceptualization before treatment initiation. Any mobility or dexterity issues should also be incorporated into the plan for providing treatment. Finally, if any comorbid medical conditions, severe behavior, or problematic symptoms associated with the ID/DD are present, the clinician should seriously consider these issues in the overall treatment plan and determine the degree to which they might interact with the phobia prior to administering OST; for example, in Davis et al. (2007) the child's severe aggression and self-injury were treated prior to the phobias he had as these problems were more immediate and severe, associated with increased risk to the client's and the family's safety, and exposure to his feared stimuli only served to increase his rates of aggression, tantruming, and head-banging.

Functional Assessment

After the initial diagnosis of specific phobia is made, a functional assessment should be conducted to better understand the characteristics of the fear for treatment (Note: this is the functional assessment described in Chap. 5 and other OST sources and not the functional assessment of severe behavior more commonly conducted with those having ID/DD). The purpose of the functional assessment session is to prepare for treatment by creating a relevant fear hierarchy, identify the primary catastrophic cognitions and physiological reactions (Davis et al. 2009), and create a case conceptualization based on the identified maintaining factors (Öst 1987). Unlike the traditional OST protocol (see Chaps. 4 and 5), the parent or caregiver may be more directly included in this session to obtain more detailed information that may not be provided by the individual alone. Identification of individual specific interests and potential reinforcers should also occur during this session or be reviewed from a previously conducted preference assessment. In addition, the clinician should consider any preexisting severe behavior and at least plan for the possibility of severe behavior reemerging or emerging for the first time during treatment. In other words, it is not expected that OST would elicit previously treated or unexpected severe behavior, but the clinician should have a plan in place to safely address this possibility. Finally, similar to the steps in Chap. 5, a developmentally appropriate rationale for treatment should be provided, and it should be emphasized to both the client and caregiver that the goal is to have the client be able to behave normally when in the presence of the

stimulus or at least tolerate the presence of the stimulus without excessive fear or avoidance.

Conducting One-Session Treatment with Those Having ID/DD

The 3-hour massed treatment session should include all traditional elements (see Chaps. 4 and 5; i.e., developmentally appropriate psychoeducation, PM techniques, and cognitive challenges in the context of gradual, in vivo exposure). Additionally, with ID/DD populations, the parents and/or caregivers may participate in the entire session or portions of the session to increase parental understanding and generalization after treatment. The incorporation of parents and caregivers into treatment, at least with typically developing children, has not been shown to negatively impact results of OST (Öst et al. 2001). Any challenging behaviors that present during treatment should be appropriately handled based on the results of the functional assessment session and previous behavior plans; however, the clinician may need to make a decision to discontinue the OST if significant safety concerns emerge. For instance, if tantruming behavior is determined to be maintained by attention, the clinician should attempt to minimize attention for the negative behavior while maintaining the situation (i.e., the step in the hierarchy being completed) and keep the individual focused on the task at hand with short and direct prompts. In this instance, it may be therapeutic to provide attention to appropriate approach responses and, in so doing, selectively reinforce approach while ignoring or remaining neutral toward avoidance and inappropriate behavior (as long as it is safe to do so; Davis et al. 2007).

The overall process for conducting behavioral experiments in OST should generally be maintained, with possibly some modifications and enhancements: Step 1—propose a possible behavioral experiment to try, Step 2—model the proposed step, Step 3—encourage the client to perform the step, and Step 4—reinforce the client for completing the step. One of the key modifications employed should be more elaborate descriptions of steps, or at least making sure the client understands the proposed step. As a result, the pace of OST in those with ID/DD may be slower than that with typically developing individuals so as to prevent exposure to a step prematurely. The assistance with steps using PM techniques should be supportive, not forced as in typical 3-step compliance procedures. A client's sensitivity to, and possible negative reaction to, being touched should also be considered. The clinician should feel comfortable allowing the exposure to work and be patient while various responses habituate and extinguish (Davis et al. 2009). More breaks may also be utilized if necessary but only at the end of a step's completion once the fear level has decreased; the clinician should be careful not to fall victim to an escape function and reinforce avoidance behavior. We would also suggest using as few breaks as possible so behavioral momentum is not disrupted.

The use of specific interests may be incorporated as part of the psychoeducation or cognitive challenges. While individuals with more severe impairments may have difficulty articulating detailed catastrophic cognitions in the traditional CBT sense,

the clinician should be observant for any verbalizations made by the client and use those in place of more elaborate cognitions (e.g., "It bite, it bite" with a dog or "I fall" with heights). Preferred reinforcers should also be incorporated at significant step completions or multi-step completions (e.g., stickers used to keep track of step completion and bigger rewards given potentially at breaks if compliance until the break was maintained) or at the end of the session. Examples of rewards include but are not limited to praise, edibles, and an activity or treat after the session. When addressing cognitions, language should be developmentally appropriate and as concrete as possible. Visual tactics such as picture step completion boards or thought bubbles may also be utilized throughout treatment, though these probably should not illustrate all the steps to be completed or the anticipated ultimate goal. A picture board could be constructed/completed as progress is made during the session rather than have the client fixate on advanced exposures with feared stimuli (similar to directives in traditional OST not to discuss the ultimate goals of treatment and the exposure hierarchy; see Chaps. 4 and 5). At the end of treatment, parents or caregivers should be taught the techniques used in session (an advantage for having parents/caregivers participate throughout the session) in order to practice appropriately at home. In addition, the clinician may wish to develop a behavior plan for the parents specifying activities for self-exposure/practice homework and reinforcers to be used. Finally, given the complexity of cases involving clients with comorbid ID/DD, we expect an increased possibility of less than optimal outcomes using any phobia treatment or problems with treatment generalization to novel situations; as a result, we recommend examining and adapting the recommendations in Chap. 7.

Conclusions

Treating fears and phobias in individuals with ID/DD can present unique challenges. Current "best practices" involve a detailed assessment and subsequent implementation of a behavioral treatment or CBT. Frequently, treatments should be altered to the developmental level of the client, proffered in as concrete a fashion as possible and as is appropriate, be made as interesting for the client as possible, and involve parents or caregivers to assist in the generalization of treatment gains. In particular, clinicians may wish to consider OST given the available research suggesting its efficacy with typically developing individuals (see Chap. 11). This massed treatment may offer the benefit of established instructions for incorporating parents and caregivers, the alleviation of fear in a single session, the incorporation of a number of behavioral techniques proven to work with those having ID/DD, and a limited demonstration of efficacy in a child with an ASD in a controlled case study. Obviously, much more research remains to be done to establish the efficacy of this intensive treatment or any CBT treatment with these special populations.

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Chapter 10
Ethical Issues When Considering Exposure

Kate B. Wolitzky-Taylor, Megan A. Viar-Paxton, and Bunmi O. Olatunji

Exposure-based treatments are arguably among the most successful, efficacious psychological treatments for the anxiety disorders (Deacon and Abramowitz 2004). Unfortunately, despite decades of empirical support from clinical trials, the administration of these treatments in real-world clinical practice continues to lag considerably. Although there are a number of reasons for this gap between research and practice (e.g., lack of competently trained therapists, restrictions and insufficient resources in community clinics), misinformation about exposure-based treatments has emerged as a clear barrier and has led to a "public relations problem" for this effective treatment (Richard and Gloster 2007). The public relations problem is based on the erroneous beliefs that exposure treatment is cruel and unethical because it causes undue harm. The present chapter aims to address the ethical issues involved in considering and implementing exposure, including addressing whether exposure therapy causes harm, clinician competency, supervision and training, ethical issues surrounding public exposures, safety issues, disclosure during treatment planning, and the use of exposure therapy with children.

Is Exposure Therapy Harmful to Patients?

Despite the efficacy of exposure-based therapy, many practitioners of psychotherapy view exposure negatively (see Prochaska and Norcross 1999, for a discussion), presumably because exposing patients to feared stimuli evokes acute distress rather than mitigates it. However, it should be noted that mitigating anxiety is usually the end-result, both within sessions and across sessions. Beliefs about exposure among

B. O. Olatunji (✉) · M. A. Viar
Department of Psychology, Vanderbilt University, Nashville, TN, USA
e-mail: olubunmi.o.olatunji@vanderbilt.edu

K. B. Wolitzky-Taylor
Department of Psychology, University of California-Los Angeles,
Los Angeles, CA, USA

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_10, © Springer Science+Business Media, LLC 2012

practitioners in the community include that it is insensitive to the needs of the patient; that its ends do not justify its means; that it does not work for complicated cases; that it does not work in real-world clinical settings; that it exacerbates symptoms; that it is done "to" a patient, rather than "with" them; and that patients may be better off continuing to experience clinically significant anxiety symptoms than undergoing exposure therapy (Feeny et al. 2003; Prochaska and Norcross 1999). Clearly, empirical evidence as well as clinical experience of trained and competent exposure therapists can refute many of these claims (Deacon and Abramowitz 2004). Still, these misperceptions persist.

The American Psychological Association's (APA) Ethics Code explicitly states that psychologists should "take care to do no harm" and "safeguard the welfare and rights" of their patients. Given that objections to exposure therapy are predicated on the ethical concerns about the safety, tolerability, and humaneness of the treatment, it is important to objectively consider whether exposure therapy does in fact cause harm. The safety and tolerability of exposure therapy may be determined by evaluating outcomes associated with this treatment including (a) attrition rates; (b) symptom exacerbation; (c) patient satisfaction and preferences; and (d) ethical complaints and litigation directed toward exposure therapists. A brief review of each of these domains follows.

With regard to attrition, despite popular belief, empirical evidence does not support the idea that exposure-based treatments experience higher dropout rates than in other forms of psychotherapy. In fact, a meta-analysis comparing cognitive-behavioral therapy (CBT), which involves exposure, to placebo treatments found no differences between groups in attrition (Hofmann and Smits 2008). Further, outcomes from 25 clinical trials of prolonged exposure for posttraumatic stress disorder (PTSD), which included imagined exposure to the traumatic event, yielded no differences in attrition across prolonged exposure, exposure with cognitive therapy or anxiety management, or Eye Movement Desensitization and Reprocessing (Hembree et al. 2003). In terms of symptom exacerbation, exposure does require initial increases in fear (presumably needed for fear extinction according to Foa and Kozak's (1986) emotional processing theory). However, this fear increase is temporary. Furthermore, research investigating the belief that exposure produces lasting exacerbation of symptoms found that symptom exacerbation for prolonged exposure treatment for PTSD was uncommon, temporary, and not prognostic (Foa et al. 2002).

Patient preference is an important indicator of tolerability of a treatment. Despite the reservations of some practitioners, patients generally view exposure treatment favorably, with anxiety patients viewing CBT as more acceptable and more likely to demonstrate long-term effectiveness compared to pharmacotherapy (Deacon and Abramowitz 2005; Norton et al. 1983). In addition, parents of anxious children also view exposure therapy favorably for their children. For example, Brown et al. 2007 found that parents seeking treatment for their child's anxiety rated CBT as more acceptable, believable, and effective in the short- and long-term relative to pharmacotherapy. Importantly, patients undergoing CBT for panic disorder perceived in vivo and interoceptive exposure as highly useful and "necessary" despite lower ratings for likeability (Cox et al. 1994), suggesting that patients are willing to tolerate

discomfort knowing that the treatment will be useful in helping them manage their anxiety. Finally, researchers attempting to shed light on whether therapists administering exposure have been accused of or convicted of causing harm to their patients as a result of exposure were unable to identify a single court case involving exposure therapy (Richard and Gloster 2007). However, legal risk may be posed when untrained or incompetent therapists attempt to conduct exposure therapy. Practitioners should be aware that, as with any treatment, their ethical obligation includes receiving appropriate training, supervision, and experience (APA 2002, 2.01). Thus, assuming therapists who deliver exposure treatment are competent to do so, there is no indication that this treatment poses ethical violations and/or legal risk.

Clinician Competency and Supervision/Training and Awareness of Behavioral Strategies to Augment Exposure Therapy

Despite claims by some practitioners that exposure is easy to deliver; *beneficial* exposure therapy that minimizes harm and is likely to yield the greatest effectiveness requires specialized training, expert supervision or consultation, and practice by competent therapists. Nuances within exposure therapy can make a significant difference with regard to patient experience and treatment efficacy. Experimental psychopathology research clearly demonstrates that there are certain mechanisms that underlie successful exposure therapy (see Bouton 2002). This body of research has identified parameters of exposure therapy that mitigate or augment the efficacy of exposure therapy. For example, training in multiple contexts (Mineka et al. 1999) and the fading of safety behaviors (Sloan and Telch 2002; Powers et al. 2004) augment the efficacy of exposure therapy. Safety behaviors are behaviors used to mitigate anxiety in the short-term, but actually serve to maintain anxiety, presumably by preventing threat disconfirmation. Safety behaviors for someone with a fear of heights, for example, may include avoiding the edge, holding tightly onto the railing, or looking straight ahead instead of looking down. An untrained clinician who is not accustomed to the challenging experience of evoking anxiety in a patient during a session may quickly suggest that the patient engage in safety behaviors in order to mitigate acute anxiety. However, a trained clinician would know that while the judicious use of safety behaviors early in exposure may make exposure more tolerable for some, treatment will be most successful if these behaviors are faded during treatment so that patients can learn that their safety does not depend on the use of the safety aide (Salkovskis et al. 1999). Further, recent evidence suggests that having clients engage in actions that directly oppose their natural threat tendencies (e.g., having a client with a fear of heights jog toward the edge of a balcony with a railing) enhances exposure therapy (Wolitzky and Telch 2009).

In addition, there is mounting evidence that traditional exposure therapy does not always generalize to untrained contexts and that training in multiple contexts is needed to prevent a return of fear (Craske et al. 2006). Thus, a competent exposure therapist may need to move sessions to different locations or use different stimuli

to enhance learning. For example, a patient with a spider phobia may need to be presented with different kinds of spiders, both indoors and outdoors. Further, tying exposure exercises directly to a client's perceived threats and appraisals of harm in a way that allows patients to test and disconfirm beliefs (i.e., cognitive augmentation strategies such as guided threat reappraisal) has been shown to increase the efficacy of exposure therapy (Kamphuis and Telch 2000). For example, a patient with PTSD who believes that imagining the traumatic event will lead to intolerable distress that will not subside and will impair all functioning for the rest of the day, may be encouraged to pay particular attention to whether that prediction comes true, both during and after the exposure. In this case, the patient may be asked to perform specific tasks such as going grocery shopping immediately after the exposure session to gather information that disconfirms beliefs that he or she is unable to function after thinking about the event.

Other Important Competencies

The aforementioned strategies highlight only a few ways in which a competent and knowledgeable therapist might conduct exposure therapy. These issues illustrate the complexities of designing appropriate exposures that serve to enhance threat disconfirmation and inhibitory learning. Therapist competence also includes a solid understanding of the philosophy and approach to exposure therapy itself, which should be conveyed throughout therapy. Presenting the treatment as a collaborative effort increases perceived control in the client, while also increasing the likelihood that this "team" effort will lead to more individualized treatment planning and fostering a therapeutic alliance. In addition, a competent therapist should be able to adequately and confidently present the rationale for treatment, which differs in many ways from what clients typically think of when they imagine what therapy will entail. This includes psychoeducation about anxiety and other emotional processes, training in self-monitoring (Cash and Hrabosky 2003), and an explanation in lay-terms about the basic process of exposure therapy and how repeated exposure to feared stimuli might work to decrease anxiety (e.g., Foa and Kozak's 1986 emotional processing theory; also see Craske et al. 2008 for perspective on inhibitory learning).

Therapists who fail to provide an empirically informed rationale may not necessarily increase risk from an ethical perspective, but certainly may have difficulty engaging the patient in confronting uncomfortable situations if the patient does not understand why he or she is being asked to do so. Further, a competent therapist should provide encouragement and support to patients in order to increase self-efficacy while they undergo exposure therapy, rather than being apologetic for "making them feel anxious" or showing significant concern about their anxiety. In other words, a competent exposure therapist acknowledges the courage it takes to undergo treatment while sending the message that gradual exposure to these feared stimuli is not harmful or dangerous. Finally, competent exposure therapists (and competent therapists in general) are sensitive to cultural issues that may result in

differing presentations and/or emotional responses during the exposure to the feared stimuli.

Supervision and Training

Ideally, a therapist conducting exposure therapy has received substantial supervised training, at either the predoctoral or postdoctoral level, by an expert in exposure therapy. This should include training in conducting appropriate behavioral, self-report, and diagnostic assessments, delivering psychoeducation, training clients to self-monitor their symptoms, creating a graduated fear hierarchy, implementing repeated exposure exercises both in and out of the office to a number of different stimuli and across a variety of clients with different clinical presentations, learning and implementing appropriate exposure augmentation strategies (e.g., cognitive strategies, fading safety behaviors), assigning appropriate home practice, identifying difficulties and challenges (e.g., homework noncompliance, inability to activate fear, mental distraction during exposure) and learning to address these, and importantly, learning to modify, adapt, and individualize exposure therapy to meet the needs of each client. Training may include watching live or video demonstrations by the supervisor or other experts in exposure therapy, as well as participating in role-plays. Supervisors may watch and critique live or video-taped exposure therapy sessions conducted by the trainee.

Failure to watch and critique exposure therapy sessions may have clear ethical implications for the supervisor. More specifically, supervisors may be liable for the harm done to patients by their supervisees. Thus, supervisors need to play a direct role in watching their novice therapists treat patients in order to provide corrective feedback. Failure to *be* observed by a supervisor when a therapist is learning to conduct exposure therapy may also result in poor training. This inadequate training experience could eventually lead to incompetent delivery of services when the therapist is treating patients with exposure-based strategies independently, posing an ethical risk for the new therapist as well.

Despite the overwhelming evidence for the efficacy of exposure therapy for the treatment of anxiety disorders, many graduate programs do not espouse evidence-based clinical training programs. Thus, many clinicians may finish their graduate work without this education and thus may need to seek it once they are professionals in the community. At the very least, in order to comply with APA code requiring that clinicians working outside of their area of competence seek consultation and training (APA 2002, 2.01), clinicians hoping to gain training in exposure therapy should identify a licensed professional with expertise in exposure treatment for anxiety disorders and should consult closely with this expert before and during exposure therapy until competence has been demonstrated. In addition, these clinicians should read the literature regarding exposure therapy efficacy and augmentation strategies, and gain didactic training through continuing education courses, conference workshops, and with their consultant if possible.

Safety Issues and Disclosure About Treatment Planning During Treatment

Exposure therapy is regarded as both a safe and tolerable treatment (Olatunji et al. 2009; Richard and Gloster 2007). However, exposure occasionally may place someone at minimally greater risk for distress and discomfort than sitting in a traditional therapy room (e.g., handling snakes, touching "contaminated" objects such as dirty sinks, leaning over the railing on a parking garage, vigorous hyperventilation). It is important to note that, when conducted properly, these exercises pose acceptably low levels of risk. For example, repeatedly inducing bodily sensations associated with fear (e.g., dizziness, heart racing) as seen in interoceptive exposure for panic disorder is not harmful, as these sensations are the same as those experienced during a "true alarm" when danger is present (Stewart and Watt 2008). Still, exposure therapists should be aware of ways in which to decrease the probability of harm. This can be accomplished through informed consent, naturalistic comparisons, and managing unexpected outcomes. For example, a patient with blood-injection-injury phobia undergoing exposure to needles may indeed faint. In this case, the therapist should calmly assess the patient's condition (e.g., take pulse, check orientation when the patient awakens) and provide support (e.g., validate feelings, give the client a glass of water or juice, have the patient lie down until ready to sit and then stand). While doing so, the therapist should normalize the experience and refrain from showing signs of anxiety or excessive concern, as this may send the wrong message to the patient that these situations are in fact dangerous, when they are not. Instead, the therapist should work toward building self-efficacy and encouraging the client to continue with the exposure. In fact, this experience could be reframed as a positive experience for the patient to evaluate the overestimation of the cost or severity of the outcome. Perhaps this patient thought fainting would be a horrible experience, and instead found out he or she could handle it and that it was not as bad as expected.

Informed Consent and Treatment Planning Disclosure

Informed consent is mandated by APA ethical code (APA 2002, 10.01) and is especially important when conducting exposure therapy. The process of informed consent during a course of exposure treatment is ongoing, and therapists should be constantly vigilant toward a patient's willingness and consent to undergo exposure treatment. Patients should always be informed of the nature and process of exposure therapy and should be highly involved in all aspects of decision-making about its use. Because of the collaborative nature of these decisions, such as deciding the order of exposure exercises on a fear hierarchy and choosing specific activities that will take place both in the session and as homework, the use of exposure demands ongoing consent. Each new exposure practice should be described and agreed upon in advance (e.g., Abramowitz 2006), with no "surprises" when a patient shows up to a session. Patients

may, and often do, negotiate or revoke consent, or change aspects of an exposure exercise immediately before or during the session. To increase the likelihood of patient adherence to anxiety-provoking procedures, therapists will often reiterate the treatment rationale, use Socratic questioning or other cognitive strategies to allow patients to come to their own realization that undergoing the planned exposure will ultimately reduce their fear in the long term, and provide encouragement and support in order to increase self-efficacy and willingness to comply without being coercive. For example, therapists might ask a reluctant patient "what do you think you could learn by going through with this exposure?" and "what do you think you would still need to know if you didn't do it?" As a result, exposure therapy engages a client in the process of informed consent more directly than traditional psychotherapy.

Naturalistic Comparisons and Exercising Caution

In most cases, a decision about whether an exposure will pose more than an acceptable level of risk can be made by asking oneself whether some people ordinarily confront the situation in the course of everyday life without adverse consequence. With regard to specific phobia, gardeners, hikers, and outdoors enthusiasts often encounter snakes, spiders, and other insects without harm; joggers often see dogs running around without leashes on; most people have been outside during a thunderstorm at some point; and many people even pay money to go to the top of a skyscraper to see the view from an observation point. Exposures for other anxiety disorders also have patients engage in activities that others typically do without harm (e.g., increasing physiological arousal is often observed at the gym or in sports; many people occasionally refrain from hand washing after touching the ground or using the bathroom, etc.). Thus, an exposure task should be considered to pose an acceptable level of risk if the patient is not at significantly greater risk of experiencing harm than other individuals who engage in similar activities in everyday life. Extending this approach to exposure therapy for PTSD is not without complications given that people ordinarily do not confront war-related trauma or sexual abuse/assault in the course of everyday life. Determination of an acceptable level of risk during exposure therapy for PTSD may require special consideration. For example, if a client is sexually assaulted in an alley at night in an unsafe neighborhood, it may not be appropriate to include an exposure where she returns to the same location. In this situation, an exposure in an alley at night in a safe neighborhood may be indicated.

In situations where an exposure may appear to pose somewhat of a greater than acceptable level of risk, a therapist should consider whether the exposure fits well with the overall case-conceptualization and treatment plan, and evaluate whether the benefits of the exposure (i.e., presumable fear reduction) will outweigh potential costs. For example, patients with emetophobia (i.e., fear of vomiting) may need to include induction of vomiting as a final step in an exposure hierarchy. Although this may appear to involve more than minimal risk, if a patient has an intense fear of vomiting and perhaps believes that something catastrophic will occur should he

or she vomit, it is possible that the case conceptualization warrants this in some instances and that a vomit induction exposure may be necessary to resolve symptoms, particularly in severe cases. Further, occasional vomiting (i.e., not repetitive as seen in some eating disorders), does not in fact entail added risk, as this often occurs naturally when someone has a stomach flu or eats something distasteful to them.

In contrast, special caution is warranted when there is a medical problem that may preclude the patient from safely engaging in an exposure exercise. For example, patients who are highly allergic to animal dander should not repeatedly pet animals; breathing through a straw to induce feelings of breathlessness is likely to be contraindicated for an individual with severe asthma; someone with a compromised immune system ought not to touch dirty toilets or garbage; and individuals severely allergic to bees and wasps should not be subjected to in vivo exposure given the risk. As most exposure therapists are not trained physicians, any patients with medical conditions that may put them at risk should be first assessed by a physician; the physician should be provided with a behavioral description of the activities that would ordinarily be implemented; and the physician should give medical clearance before beginning exposure therapy. However, it is important to balance the need for this medical clearance with the message to patients that, generally speaking, both the exercises and the anxiety they may induce are in and of themselves, harmless. If medical clearance is not granted, exposure therapy should not be conducted for clients with contraindications. Further, even when medical clearance is granted, the therapist should exercise judgment with regard to the nature and intensity of the exposures and make certain that only those exposure exercises most essential to the treatment of the individual's presenting problem are conducted; and only those for which clearance has been given. Conducting a thorough and careful intake assessment is important for gathering these types of information that will help to determine when medical clearance may be needed or what activities should not be performed.

Managing Unexpected Outcomes

Occasionally patients may have experiences during exposure that do not go according to plan. For example, a patient with a fear of public speaking may in fact lose train of his thoughts, stumble over his words, and have an audience member chuckle at his delivery; a patient with a fear of dogs may work her way up toward petting a large dog at an off-leash park to find that the dog jumps on her and knocks her over; and a patient may experience high levels of anxiety that are sustained throughout the entire exposure session. The way that a therapist frames these experiences can have a tremendous impact on the patient's beliefs and on treatment effectiveness. Although traditional exposure focuses on repeated exposure to the feared stimulus with the goal of within and between-session habituation (e.g., Foa and Kozak 1986), there are other ways to make successful use of exposure therapy, and research suggests that habituation may be sufficient but not necessary for reduction of anxiety (see Craske et al. 2008, for a review). Indeed, a review of the literature suggests that

neither the degree by which fear reduces nor the ending fear level reliably predict treatment outcome. More successful use of exposure therapy may require shifting the focus of treatment from immediate fear reduction toward fear toleration as a primary goal. This view would be consistent with the conceptualization of exposure therapy as the development of competing nonthreatening associations and enhancing the accessibility and retrievability of those associations in different contexts (Bouton 2002).

Setting up exposures as behavioral experiments designed to test a prediction (e.g., the likelihood that something will occur and/or the cost/severity of the outcome if it did occur) allows patients to focus on gathering threat disconfirming evidence. For example, the patient who stumbled over his words and heard a chuckle from the audience might learn that the cost of this experience was not nearly as bad as he expected, and that he was able to move on despite hearing someone laugh; the patient knocked over by the dog may learn that, even though she was knocked over, she did not sustain any injuries and was able to get back up and pet another dog right away. Designing exposures can focus directly on addressing the overestimation of likelihood (e.g., "The spider will bite me if I hold it"). In the highly unlikely event that the spider does bite the patient, this experience can be reframed by the therapist in order to allow the patient to see for his or herself that the experience of the bite was not as horrible as expected.

Explicitly designing exposures to test the cost of an outcome (i.e., addressing catastrophizing) occurring may have a particularly powerful effect and are likely to buffer any unexpected outcomes from other exposure exercises, as patients will likely engage in the spirit of these exposures throughout treatment. For example, giving niacin (following medical clearance) to a socially phobic patient with blushing concerns will produce a high likelihood that others will see the patient's face turn bright red. The test in this case will be for the patient to see whether the outcome is catastrophic. In addition, patients who become frustrated that their fear is not habituating during exposure sessions (another occasional unexpected challenge during exposure treatment) may still benefit from these sessions if it is relevant for them to learn that they could withstand anxiety without any harm, or that they could remain in a situation while anxious without any negative outcomes. Subsequent sessions in these cases may be extended for longer durations, depending on the need of the patient.

Ethical Issues During Public Exposures

Unique ethical issues arise in the context of exposure therapy compared to traditional forms of psychotherapy. Exposure therapy often includes "field trips" out of the office in order to set up exposure contexts to be as similar to real-life feared and/or avoided situations. For example, social phobia exposures may include going to high-traffic areas like the mall in order to do repeated exposures of approaching strangers or asking "stupid" questions to store employees; going up to the top of skyscrapers and on bridges in the cases of fear of heights; and in panic disorder, going into

crowds, on buses, or driving (when a panic disorder patient is afraid of driving for fear of having a panic attack). When relevant and appropriate, these excursions are an important part of a good course of exposure treatment for anxiety disorders, and are often done in-session as therapist-directed exposures and as self-directed homework. Experimental research has demonstrated that exposure in multiple contexts prevents a return of fear at follow-up (Craske et al. 2006; Mineka et al. 1999). To illustrate, a patient with a fear of dogs is likely to show the greatest generalization of treatment effects when exposure takes place in a variety of real-world contexts such as at dog parks or jogging trails, as opposed to only encountering dogs in the controlled setting of a therapy office.

Taking therapy outside of the office is a unique aspect of exposure therapy that may raise concerns about boundary issues for the novice exposure therapist, particularly one who has been trained in more traditional forms of psychotherapy. Boundary crossings are deviations from traditional forms of therapy (Zur 2005). Although many boundaries have the potential to be crossed in any form of therapy (e.g., self-disclosure, touch, money, gifts), the boundary of "place" (i.e., where therapy is conducted) is most relevant for exposure therapists. Interactions with patients outside of the office have typically been viewed as grounds for dual-relationships given that these relationships run the risk of developing into overly personal and even sexual relationships (Barnett et al. 2007). In other words, avoiding contact with patients outside of the office is viewed as a risk-management strategy in order to avoid a "slippery slope" leading to inappropriate contact (Gabbard 1994). However, it is important to make the distinction between boundary *crossings*, which may deviate from traditional forms of therapy but are not unethical (Pope and Keith-Spiegel 2008) and harmful boundary *violations* which consist of unethical acts such as creating exploitative dual relationships with patients.

Exposure therapy may present temporary boundary crossings, and it is widely accepted that boundaries may be crossed without doing harm (e.g., Lazarus 1998). Certainly the conduct of exposure therapy outside of the therapy office could increase the probability that patients and therapists will engage in informal interactions or chatting about topics that are not relevant to therapy (such as on the way to a site for exposure or during breaks between trials). In addition, driving in the car with a patient who has a fear of driving, going into stores and restaurants with patients while doing exposures to approaching strangers, conducting a home-based exposure session with someone afraid of touching anything in the bathroom or kitchen, flying in a plane with someone who has a fear of flying, or visiting the site of a traumatic event with a PTSD patient all present boundary crossings. However, it is important to note that boundary crossings do not necessarily lead to boundary violations (e.g., Zur 2001). Rather, these excursions outside of the office not only are often the most powerful sessions in producing change in symptoms, but may increase rapport and the therapeutic alliance. Further, research showing that therapist-directed exposure results in more improvement than self-directed exposure (Abramowitz 1996; Öst et al. 1998) suggests that despite the importance of self-directed homework between sessions, in-session, therapist-directed exposure will yield the greatest improvement in anxiety symptoms.

Exposure therapists should be particularly sensitive to the issue of confidentiality in conducting exposures. Maintaining confidentiality is a core ethical responsibility outlined in the APA ethical code. When conducting exposure sessions outside of the private office walls, the potential for others to become aware of the patient–therapist relationship increases. This concern is especially true in small communities (Harris 2002). Concerns about confidentiality should be discussed before beginning any public exposures. If patients are concerned about maintaining confidentiality, therapists can take steps to de-identify themselves as health professionals. In addition, depending on the nature of the exposure, therapists can keep a close distance from the patient. For example, a patient who is afraid of riding public transportation may sit in a different row on the bus than the therapist, and the patient and therapist can predetermine the stop in which they will get off the bus and discuss the next step. Clinicians should also refrain from actions in public that draw attention to the nature of the relationship (e.g., discussing therapy issues loudly or recording subjective units of distress scale [SUDS] in public). Further, the patient and the therapist may choose to plan how they each will respond in the event that either of them runs into an acquaintance during the exposure session in order to maintain confidentiality. This may be particularly relevant on college campuses or in rural or suburban communities.

Despite the advantages of conducting exposure sessions in naturalistic settings, it is important to use this deviation from traditional, in-office therapy only when needed. For example, treatment planning sessions or sessions focusing exclusively on cognitive restructuring should remain in the office. Importantly, as discussed above, ongoing consent is essential and it is important to get the patient's approval to do out-of-the-office exposures. Practitioners should ensure that (a) the decision to leave the office is appropriate and consensual; (b) the context for the exposure is relevant to the fear; and that (c) the benefits of entering the situation (e.g., maximizing treatment outcome) outweigh any potential costs. This cost-benefit analysis has been proposed as a strategy for considering boundary crossings in therapy (Pope and Keith-Spiegel 2008). Finally, therapists should exercise judgment with regard to casual interactions. Outside of the office it is important to maintain the same level of professionalism. However, rigidly adhering to strict boundaries in real-world contexts with patients may actually have negative consequences (Lazarus 1994, 2007). Thus, relaxing these boundaries may have a positive impact on rapport, trust, and the collaborative relationship.

Conducting Exposure Therapy with Children

Many of the same ethical issues described above remain relevant, if not more so, when conducting exposure therapy with children. However, additional issues may arise that should also be addressed. First, as with any therapy, parents must consent to their child's treatment, and should be made aware of the specific treatment strategies that will be employed, including the potential for in-session and out of session exposures.

Parental consent should be an ongoing process, and parents should always be part of the decision-making process. Asking parents to transport their children to the sites of these out of office exposures is an important risk mitigating strategy. Second, children should provide assent for exposure treatment and should be educated in developmentally appropriate ways about exposure therapy. As with adults, children should work collaboratively with their therapists to develop a fear hierarchy and should always be informed about (and agree with) what they will be doing in the next session. Third, particularly when working with adolescents, a discussion of what kind of information will be shared with parents should occur, ideally in the first session. Fourth, when conducting exposures, particularly those out of the office, clinicians are encouraged to use their judgment regarding the presence of parents. Just like adults, children can safely engage in exposure treatment without their parents even when exposure is not conducted in the office, and this usually is in the best interests of the children and the family. Education about safety aids and about the potential for parents to interfere with the exposure protocol, as well as validating parents' concerns about leaving their child anxious with someone else may provide parents with the information they need to feel comfortable letting their children engage in exposure without their presence.

Conclusions

This chapter has attempted to shed light on the ethical issues that surround exposure-based treatments. Although empirical evidence demonstrates clear benefits of exposure therapy, misconceptions and misinformation has led to public and professional concerns that this treatment is harmful to patients. However, the information that this chapter has presented provides considerable evidence that exposure therapy is effective, safe, tolerable, and bears minimal risk of harm to patients. In addition, although some practitioners believe that the risk of temporary emotional discomfort often present in exposure therapy places patients at greater risk than other psychological treatments, simply taking the issues of danger and risk into consideration when conducting exposure can significantly decrease this probability of harm.

Although exposure-based treatments are among the most efficacious psychological treatments for anxiety disorders (Deacon and Abramowitz 2004), success is only possible with experienced, trained, and competent therapists. Competent practitioners with the appropriate training are able to maintain the proper boundaries while also presenting real-world opportunities to confront patients' fears. Exposure to stimuli in a real-world contexts has been shown to be highly effective for a wide range of psychiatric disorders, anxiety disorders included (Richard and Gloster 2007). However, legal risks may be increased when untrained or incompetent therapists attempt to conduct exposure therapy by increasing the probability of inappropriate, unethical, and potentially harmful boundary violations. Thus, while exposure treatments can be extremely successful and should be implemented whenever possible, practitioners

should be conscious of their ethical (and legal) obligations to receive appropriate training, supervision, and experience before administering treatment.

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Chapter 11
Empirical Status of One-Session Treatment

Thompson E. Davis III, Whitney S. Jenkins, and Brittany M. Rudy

Introduction

One-session treatment (OST) is a massed, intensive exposure treatment that is maximized to a single 3-hour session. OST uniquely incorporates a variety of efficacious methods such as participant modeling, reinforcement, psychoeducation, and cognitive challenges during graduated exposure (Davis and Ollendick 2005; Davis et al. 2009; Öst 1997; Zlomke and Davis 2008). To address these points, various other chapters have covered the implementation of OST (see Chaps. 4–7 and 9) using the extant literature to describe the principles and administration of OST with a variety of different individuals. This chapter, however, will examine the literature to determine the evidence base behind the use of OST, and its current evidentiary standing will be evaluated and updated (see Davis et al. 2011; Davis and Ollendick 2005; and Zlomke and Davis 2008 for previous reviews). The most detailed review of OST to date, by Zlomke and Davis (2008), summarized the literature and concluded that approximately 85–90% of individuals receiving OST benefited significantly from the treatment and that it met empirically supported treatment criteria for a probably efficacious intervention at that time. In the years since Zlomke and Davis, however, a number of other studies have added to the evidence base for OST making a new, updated review timely.

Evidence-Based Practice and Empirically Supported Treatment

The current trend toward evidence-based practice (EBP) in applied psychology has its roots in the early to mid-1990s with the Task Force on Promotion and Dissemi-

T. E. Davis III (✉)
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA
e-mail: ted@lsu.edu

W. S. Jenkins · B. M. Rudy
Laboratory for Anxiety, Phobia, & Internalizing Disorder Studies (LAPIS),
Department of Psychology, Louisiana State University, Baton Rouge, LA, USA

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_11, © Springer Science+Business Media, LLC 2012

nation of Psychological Procedures (1995; henceforth, Task Force). This Task Force had the mandate of determining the evidence for the use of certain psychological therapies. The result of their report and subsequent updates was a three-tier system of categorization based on the quantity and quality of evidence for a particular intervention. In decreasing evidentiary level, these categories and their criteria are as follows (adapted from Chambless et al. 1996):

Well-established treatments

I. At least two good experiments using between-group designs which show
   (a) A treatment's statistical superiority to a pill, psychological placebo, or another treatment.
   (b) A treatment's equivalence to another well-established treatment using an adequately powered experiment (i.e., at least 30 individuals per group per Kazdin and Bass 1989).

or

II. A sufficient number of single-case design studies (more than nine) that have
   (a) Used accepted and appropriate controlled single-subject designs and
   (b) Included comparisons to treatments similar to criterion I-a.

Further criteria for I and II:

III. The descriptions of the treatment process must be reasonably described or a treatment manual must be used.
IV. Detailed descriptions of participant characteristics must be specified.
V. The treatment's effects must be demonstrated by at least two different researchers or research teams.

Probably efficacious treatments

I. At least two good experiments which show a treatment's statistical superiority to a wait-list control group.

or

II. One or more experiments that meet the criteria for a well-established treatment (I-a or I-b, III, and IV), except there has as yet been no replication by another researcher or research team.

or

III. Three or more single-case design studies which otherwise meet the well-established criteria.

Experimental treatments

I. Those treatments which have not yet been studied or researched in sufficient depth to meet the consideration for probably efficacious or well-established status.

or

II. Those treatments whose research base has not demonstrated improvement to meet the probably efficacious or well-established status.

These strict guidelines came to be known as the criteria for empirically supported treatments (EST). Notably, these EST guidelines differ from EBP, the latter being a broader concept that encompasses the former. In short, a clinician with an evidence-based approach to practice seeks to use the available research and evidence on a particular disorder or problem in planning and conducting appropriate treatment. This plan may or may not include finding an EST for a particular disorder or evidence for a treatment from a randomized clinical trial, but it does emphasize integrating the evidence that is available (e.g., controlled case studies) into an informed approach to treatment (Davis 2009; Ollendick and Davis 2004).

Briefly, in considering EBPs and ESTs it should be noted that the mythology surrounding the use of manuals and EBPs and possible negative outcomes due to manuals have been misleading. A number of criticisms of EBP and EST have not been supported in the literature. For example, manuals for the treatment of anxiety have not been found to impair clinician–patient treatment alliance (e.g., even in children, Langer et al. 2011); to the contrary, using manuals for anxiety and depression have been found to lead to better alliance early in treatment and equivalent alliance outcomes to community treatment as usual over time (Langer et al. 2011). For OST specifically, even children have found manualized OST to be positive: "Results indicated that the treatment was experienced as something positive, and the large majority of children appreciated the pace and degree of control they had during the treatment as well as the therapist and the treatment outcome" (Svensson et al. 2002, p. 80). As a result, this review will provide an EBP review of the literature on OST (i.e., summarizing the evidence that is present) while also updating the more stringent EST status of OST.

Method

A review of all the studies that utilized OST as the primary treatment method for specific phobia, as outlined by Öst (1989), was conducted to examine the empirical status of OST.These articles were identified through literature searches in PsycInfo, Science Direct, and PubMed using the search terms "one session treatment," "OST," "massed exposure," "brief treatment," and "rapid treatment," in combination with "specific phobia." A citation search was also conducted to identify articles that referenced Öst (1987, 1989, 1997) as potential candidates for inclusion. Studies that did not specifically outline the treatment approach in conjunction with Öst's (1989) OST protocol (e.g., instead made vague references to massed exposure, shortened treatment) were excluded from determination of empirical status per EST guidelines (see the preceding list; Chambless et al. 1996).

As a result, several dozen studies and case studies that outlined specific OST procedures were identified and considered for inclusion in this review. Using the Task Force guidelines for ESTs as well as those described in Chambless et al. (1996), an arguably strict approach (Davis 2009; Davis and Ollendick 2005) was taken to

determine the empirical status of OST in adults as well as in children and adolescents. Detailed criteria for well-established, probably efficacious, and experimental treatments are listed earlier. For ease of analysis and better understanding, the studies described in the following sections were separated by phobic stimulus (e.g., spider, dog), session format (i.e., group or individual), and population (i.e., adult or child). In addition, treatment efficacy was evaluated as a whole. Furthermore, clinically significant change, defined as statistically reliable change from pretreatment to posttreatment with posttreatment functioning falling within normal limits (Jacobson and Truax 1991), was assessed in most studies often through the use of clinician severity ratings (CSRs). Studies deemed inappropriate for inclusion in the determination of the empirical status for OST are discussed in a subsequent section. These studies failed to meet the EST guidelines for inclusion (see the preceding list; Chambless et al. 1996) for various reasons including small sample sizes, inadequate power, and inadequate comparison groups. However, their findings are relevant in the growing literature concerning OST and EBP and, therefore, a brief discussion is provided.

OST with Adults

OST has been utilized in a number of controlled studies with adults. These studies have been selected for review for having used rigorous methodologies (e.g., random assignment, diagnosed samples, etc.). OST has been examined in both individual and group treatment formats with various phobic stimuli (e.g., spider, injection, claustrophobia, flying, and small animals). Moreover, all these studies specifically mention the use of an OST protocol in their controlled studies (e.g., Öst 1987, 1989). Findings from these studies are summarized in Tables 11.1 and 11.2.

Spider Phobia

Öst et al. (1991) compared OST with manual-based self-exposure treatment (based on the procedures for traditional OST) in individuals with spider phobia. Results showed that participants in the OST condition made significantly more treatment gains at both posttreatment and 1-year follow-up. These improvements were evident on self-report and behavioral measures as well as on clinician ratings. No differences were observed on physiological measures.

OST was compared with four different types of manual-based therapies for the treatment of spider phobia by Hellström and Öst (1995). These manual-based therapies included specific manual-based treatment in the home, specific manual-based treatment in the clinic, general manual-based treatment in the home, and general manual-based treatment in the clinic. The specific manualized treatments were based on the description of OST given by Öst (1989) while the general manual treatments were based on a manual by Marks (1978) and were not specific to spider phobia.

Table 11.1 Individually administered OST with adults

References	Phobic stimulus	Condition	N	Session length (minutes)
Öst et al. (1991)	Spider	OST, therapist directed	17	126.2
		Self-directed exposure	17	282.8
Hellström and Öst (1995)	Spider	OST therapist directed	10	Not reported
		Specific manual (home)	10	
		Specific manual (clinic)	11	
		General manual (home)	11	
		General manual (clinic)	10	
Thorpe and Salkovskis (1997)	Spider	OST	13	Not reported
		Wait-list control	12	
Andersson et al. (2009)	Spider	OST	14	180
		Internet-based self-help	13	720
Koch et al. (2004)	Small animals	Behavioral treatment	10	99.85 (across all treatments)
		Behavioral treatment + generalization	10	
		CBT (OST)	10	
		CBT (OST) + generalization	10	
Haukebø et al. (2008)	Dental procedures	OST	10	Presumed to be up to 180
		5 sessions of treatment	10	Not reported
		Wait-list control	20	
Öst et al. (1992)	Injection	OST	20	120
		5 sessions of exposure	20	212
Vika et al. (2009)	Injections	OST	23	167
		5 sessions of exposure	26	264
Öst et al. (2001a)	Claustrophobia	OST	10	180
		5 sessions of exposure	11	300
		5 sessions of cognitive therapy	11	300
		Wait-list control	18	
Öst et al. (1997a)	Flying	OST	14	180
		5 sessions of exposure	14	360

CBT cognitive behavioral therapy, *OST* one-session treatment

OST was found to be significantly more effective than both general manual therapies as well as the specific manualized treatment in the home. Notably, the specific manual-based treatment in the clinic group improved more than the other manualized treatment at follow-up assessment only. The OST group was significantly better than the manual conditions on subjective distress during a behavioral avoidance test (BAT), self-report measures, and clinician ratings. Differences were not found on physiological measures though all participants improved on these measures at posttreatment assessment.

Thorpe and Salkovskis (1997) examined the effect of OST on avoidance and phobic beliefs in individuals with spider phobia. Participants, randomized into an OST

Table 11.2 Group-administered OST with adults

References	Phobic stimulus	Condition	N	Session length (minutes)
Öst et al. (1997b)	Spider	Direct group OST	16	Approx. 207
		Direct group observation	16	Approx. 128
		Indirect (video) group observation	16	Approx. 128
Götestam (2002)	Spider	Direct group OST	14	120
		Direct group observation	13	120
		Indirect (video) group observation	11	120
Schienle et al. (2007)	Spider	Small-group OST	14	Up to 240
		Wait-list control group	12	
Leutgeb et al. (2009)	Spider	Small-group OST	22	Up to 240
		Wait-list control group	23	

OST one-session treatment

group or wait-list control group, completed a BAT and self-report measures of cognition and subjective fear prior to and after treatment/wait-list period. Results showed significant differences between the treated and untreated phobic participants on the BAT and on self-reported fear, avoidance, and interference measures. Overall findings indicated that OST, as compared with a wait-list control, significantly improved participants' negative beliefs regarding spiders in addition to their phobic responses.

Andersson et al. (2009) compared OST with guided Internet-delivered self-help for adults diagnosed with spider phobia. The Internet self-help group consisted of five weekly text modules plus a video of exposure instruction. Participants in that group were also assigned a therapist who tracked their homework assignments and their treatment progression. Postassessments showed that these two groups only differed on the BAT as the OST group evidenced a significantly higher proportion of individuals with clinically significant improvement at post; however, the two treatments were equally efficacious at 1-year follow-up. Differences were not observed on any of the self-report measures (e.g., Fear Survey Schedule-III and Spider Phobia Questionnaire).

In addition to individual treatment, OST has also been used with adults in a group-administered format. For instance, Öst et al. (1997b) examined three variations of group-administered OST in individuals with spider phobia at pretreatment, post, and follow-up: direct treatment (traditional OST), direct observation (participant viewed treatment 4–6 ft away), and indirect observation (participant viewed treatment via videotape). The main difference between these treatment groups was that the two observation groups (direct and indirect) did not interact with the phobic stimulus

while the direct treatment group did. Results indicated expected group by time interactions on subjective ratings (i.e., SUDs), self-efficacy ratings, and clinician ratings of phobic severity for participants in the direct treatment group compared with either observation group. Group by time interactions were not significant on physiological measures, BAT performance, or other self-report measures; however, significant improvements were evident across treatment groups at posttreatment assessment. Even so, for BAT performance the direct treatment group did better than the direct observation group at postassessments and follow-up assessments, and did better than the indirect observation group at postassessments. Notably, 75% of the participants in the direct treatment group evidenced clinically significant improvement.

Other researchers have also examined group treatment for spider phobia. Schienle et al. (2007) examined 26 women with spider phobia. They found that a small-group OST group improved significantly more by posttreatment than a wait-list on a BAT and on the spider phobia questionnaire (Klorman et al. 1974). A subsequent 6-month follow-up was conducted, though significant attrition and failure to follow up on a control group limit the interpretation of these findings (Schienle et al. 2009). Leutgeb et al. (2009) also examined small-group OST for women with diagnosed spider phobia. Compared with a wait-list control group, the OST group had improved significantly by 1-week posttreatment on a BAT and on the spider phobia questionnaire.

Götestam (2002) examined three separate group treatments, similar to those in Öst et al. (1997b), for individuals with spider phobia. Groups consisted of direct exposure (i.e., OST), indirect exposure (observing a participant receive treatment), and video modeling (viewing a video of a participant receiving treatment). Results showed no significant group differences at posttreatment: all groups significantly improved on self-report measures of body sensations, cognition, and self-efficacy. These findings were contrary to those found by Öst et al. (1997b) who also utilized group-administered OST.

Small Animal Phobias

Koch et al. (2004) evaluated the efficacy of one session of behavioral treatment (i.e., therapist provides instructions and models for each treatment step) to one session of CBT (loosely followed the guidelines of OST) for individuals with various small animal phobias. Participants were further randomized into a programmed generalization condition, which entailed "booster" sessions between postassessments, or a nonprogrammed generalization condition (i.e., no additional sessions). The participants in this study either met criteria for a full diagnosis of specific phobia or partial criteria (i.e., did not endorse Criterion E of the *DSM-IV* that requires the phobia to significantly interfere in the individual's life or cause them marked distress). Results showed that both treatments produced significant improvements in terms of behavioral measures and subjective fear. Further, the programmed generalization did not improve outcomes for either treatment. In terms of acceptability, participants rated

the OST condition as less intrusive than the participants in the behavioral condition. Overall, Koch et al. (2004) did not find significant differences between conditions.

Injection Phobia

Two controlled studies of OST for injection phobia have been conducted to date. In the first study, Öst et al. (1992) evaluated OST in comparison to five sessions of exposure for injection phobia. Participants in both groups improved, with OST (80% of participants) and the five sessions of exposure (79% of participants) achieving near equal improvement. Both treatments produced improvements in self-reported symptoms as well as on behavioral and physiological measures, with no significant group-by-time interactions. Similarly, Vika et al. (2009) compared OST with five sessions of CBT for dental injection phobia. As with Öst et al. (1992), both treatments led to improvement, even out at 1-year posttreatment, but no differences between treatments were observed.

Dental Phobia

Haukebø et al. (2008) examined the effects of treatment on dental phobia. Three groups were compared: an OST group, a five-session treatment group (details of the treatment are not specified though it is presumed to be CBT), and a wait-list control group. Forty adults participated and were assessed at pretreatment, post-treatment, and 1-year follow-up. Treatment was administered by a dentist trained in CBT. Results generally indicated that the active treatments were superior to wait-list treatments, and that the two treatments did not differ by 1-year follow-up.

Claustrophobia

The only controlled study of OST for claustrophobia was conducted by Öst et al. (2001a). Participants in this study were randomized into one of the four groups: OST, five sessions of exposure, five sessions of cognitive therapy, or a wait-list control condition. Results showed that the three active treatments were superior to the wait-list control condition. No differences emerged between treatment groups on behavioral, physiological, or self-report measures. At posttreatment, 80% of the participants in the OST condition showed clinically significant improvement, while 100% showed this improvement at the 1-year follow-up. Thus, all active treatment groups evidenced clinically significant improvement for the treatment of claustrophobia.

Flying Phobia

Öst et al. (1997a) evaluated the efficacy of OST as compared with that of five sessions of graduated exposure and cognitive restructuring for flying phobia. To date, this is the only controlled study for flying phobia using OST. As self-ratings of anxiety showed no significant differences, the authors found both conditions to be equally efficacious. The differences did not emerge at either posttreatment or a 1-year follow-up. Notably, 93% of the participants in the OST group and 79% in the five-session group took an unaccompanied return flight at posttreatment. At 1-year follow-up, improvements were maintained in both groups on all measures except the behavioral test, in which a total of 64% of the participants (both groups) took the flight.

Summary of Outcomes for OST with Adults

For the treatment of specific phobias, OST has led to significant improvement in all studies reviewed based on pretreatment to posttreatment differences. Moreover, OST has demonstrated versatility as it is able to address phobias of varying types (e.g., animal, situational, blood-injection-injury). OST has demonstrated equivalent to superior status when compared with numerous accepted treatments (e.g., exposure, modeling, and cognitive therapy) and demonstrated clear superiority to wait-list control groups. Further, OST has shown clinical utility in both individual and group therapeutic formats.

OST with Children

Compared with the adult literature, considerably less research has been conducted to examine the use of OST for the treatment of specific phobias in children and adolescents (see Table 11.3). Five studies, however, have compared OST with various other conditions (e.g., other treatments, psychological placebo, wait-list control). These studies have indicated that when carried out with children, OST results in impressive improvement, almost comparable to that seen with adults. In examining the effects of OST, some research indicates that OST demonstrates significant effects across the components of the fear response (see Davis and Ollendick 2005). Specifically, OST alleviated behavioral symptoms of specific phobia in children; however, the effects of OST with physiological and cognitive symptoms are somewhat mixed and undetermined.

Muris et al. (1997) conducted a crossover study comparing eye movement desensitization and reprocessing (EMDR) and OST per Öst's (1989) protocol for the treatment of spider phobia in children. Half of a group of 22 girls (aged 9–14 years) received 1.5 hours of OST followed by 1.5 hours of EMDR whereas the other half

Table 11.3 OST with children and adolescents

References	Phobic stimulus	Condition	N	Session length (minutes)
Muris et al. (1997)	Spider	OST	22	90
		EMDR		90
Muris et al. (1998)	Spider	OST	9	150 + 90
		EMDR	9	90
		Computerized exposure	8	150
Öst et al. (2001b)	Various stimuli	OST alone	21	Up to 180
		OST parent present	20	Up to 180
		Wait-list condition	19	
Ollendick et al. (2009)	Various stimuli	OST	85	Up to 180
		Psychological placebo	70	Up to 180
		Wait-list condition	41	
Flatt and King (2010)	Various stimuli	OST	17	Up to 180
		Psychoeducation/cognitive therapy	15	
		Wait-list condition	11	

OST one-session treatment, *EMDR* eye movement desensitization and reprocessing

of the group received 1.5 hours of EMDR followed by 1.5 hours of OST. Results indicated that OST was superior to EMDR in reducing behavioral avoidance and state anxiety at the maximum BAT step. However, neither treatment produced significant reductions of physiological symptoms and cognition was not measured.

Similarly, Muris et al. (1998) compared OST with EMDR and to a computerized exposure placebo in a sample of 26 girls (aged 8–17 years) with spider phobia. In this study, OST was found to be superior to EMDR and to the placebo treatment in the reduction of subjective fear. However, when considering the alleviation of behavioral symptoms, OST was found to be superior to the placebo treatment, but OST and EMDR did not significantly differ on the behavioral measure. Neither physiology nor cognition was measured.

Öst et al. (2001b) examined the effectiveness of OST with various stimuli in a sample of 60 children (aged 7–17 years) through random assignment to three conditions: (1) OST alone, (2) OST with a parent, or (3) a wait-list control condition. The OST alone condition followed closely to the protocol suggested by Öst (1989). The OST with a parent condition, however, varied significantly from the standard protocol by allowing the parent to serve as an observer, a model, and a source of comfort for the child throughout the session. Findings suggested that the two active treatment groups (OST alone and OST with a parent) did not significantly differ from each other in diagnostic outcome based on the child clinician ratings; however, both treatment groups evidenced significant overall improvement as compared with the wait-list condition (and OST alone had more children significantly improved on two of the three measures compared with OST with a parent). Furthermore, both treatment groups displayed significant improvement on the behavioral measures as compared with the wait-list condition. Significant differences in treatment effects

were not present for physiological symptoms between the three groups and effects on cognitive symptoms were not measured. Treatment gains were maintained and/or further improvement was demonstrated at 1-year follow-up for both treatment groups.

Ollendick et al. (2009) examined the use of OST with 196 children (aged 7–16 years) through random assignment to three conditions: (1) OST per Öst's (1989) protocol, (2) an educational support psychological placebo, or (3) a wait-list condition. The educational support psychological placebo consisted of a 3-hour session in which the child learned about fears, phobia, and anxiety through an educational interactive workbook. No exposure (in vivo or imaginal) was conducted during this treatment condition. Findings suggested that both the OST and the psychological placebo conditions were superior to the wait-list condition for overall treatment effects (i.e., statistically greater improvement, significantly lower CSRs, percent of participants diagnosed free). Furthermore, OST was superior to the psychological placebo for overall treatment effects at posttreatment and at 6-month follow-up. However, the three conditions did not differ on the measure of behavioral symptoms (i.e., BAT) at posttreatment. Measures of physiology were not reported and cognition was not measured. The wait-list condition received treatment after the predetermined waiting period.

Finally, Flatt and King (2010) conducted a study similar to that of Ollendick et al. (2009). They examined OST, psychoeducation, and wait-list conditions in 43 children at 1-week posttreatment and 1-year follow-up. No differences were found between OST and the psychoeducation group at posttreatment or follow-up treatment and both were superior to wait-list treatment. It should be noted, however, that the psychoeducation group was not the same as Ollendick et al. (2009) and its description was more consistent with cognitive therapy and psychoeducation without direct in vivo exposure during the session (though, for example, a detailed plan for self-administered exposure was reportedly developed for each child and practiced). In addition, the parents, not the researchers, conducted the 1-year follow-up, and 60% of the psychoeducation group was lost to follow-up (i.e., only 6 participants completed follow-up)—twice the rate of the OST condition that only lost 29% of participants to follow-up (i.e., 12 participants completed follow-up). For this study, investigators included measures of behavior (both treatments were superior to wait-list treatment but did not differ from each other), physiology (though results were either not reported or did not differ between groups), and cognition (both treatments were superior to wait-list treatment).

The results of these five studies collectively suggest that OST demonstrates significant overall treatment effects as compared with alternative treatments (e.g., EMDR, psychological placebo) and wait-list conditions when conducted with children and adolescents. Further research is needed, however, to examine the effects of OST on the improvement of individual components of fear (i.e., behavior, physiology, and cognition, particularly physiology and cognition as these components were neglected in numerous studies). As OST is further disseminated, investigated, and examined, expanded data collection and analysis in these three areas will help to improve our knowledge on the specific effects of the treatment and its utility for treating various specific phobias in children and adolescents.

Studies Not Included in the Review of EST Status

There are numerous studies that meet the criteria for inclusion in the preceding EST review that provide evidence for using OST with adults and children. In addition, however, there is also a growing literature that does not meet EST criteria per se, but supports the use of the treatment and its unique effects nonetheless. Setting the bar only at the level the Task Force requires, however, can have the effect of excluding studies which otherwise might add to the richness of a broader evidence-based review of OST. As a result, these additional studies will be highlighted briefly here to present the full evidence base for the use of OST.

Several studies examined the effects of OST on spider phobia (Antony et al. 2001; Arntz and Lavy 1993; Arntz et al. 1993; de Jong et al. 1991, 1993, 1996, 2000; de Jong and Merckelbach 1991, 1993; Götestam and Hokstad 2002; Huijding and de Jonng 2009; Merckelbach et al. 1991, 1993, 1996; Muris et al. 1993a, b, 1995; Muris and Merckelbach 1996a, 1996b; Olatunji et al. 2011; Öst 1996; Öst et al. 1998; Raes et al. 2011). These studies were not included in the formal EST review as a number of them essentially compared OST with OST (or slight variants thereof) with no other control group or no comparison or control group at all (Antony et al. 2001; Arntz and Lavy 1993; Arntz et al. 1993; de Jong et al. 1991, 1993, 1996, 2000; de Jong and Merckelbach 1991, 1993; Merckelbach et al. 1991, 1993, 1996; Muris et al. 1993a, b, 1995; Muris and Merckelbach 1996a, 1996b; Olatunji et al. 2011; Öst 1996; Raes et al. 2011). Still other studies were not included as they did not randomize participants to treatment conditions or did not meet other methodological criteria like having participants with diagnosed phobias (Götestam and Hokstad 2002; Huijding and de Jonng 2009; Öst et al. 1998). Even so, many of these studies show that OST is a viable treatment and expand our understanding of what is important about the OST procedure. For example, these researchers have suggested that additional verbal elaboration about the stimulus during OST does not produce improved results (Arntz and Lavy 1993), small vs. large group size in administering group OST results in similar outcomes (Öst 1996), and combining OST with counterconditioning does not lead to improvements over standard OST alone (de Jong et al. 2000).

The remaining studies not included involved a variety of stimuli including "technophobia" (Brosnan and Thorpe 2006), fear of snakes (Sabsevitz et al. 2010), roach phobia (Botella et al. 2010, 2011), various fears (Huey and Pan 2006; Öst 1987; Pan et al. 2011), and height and water phobias (Davis et al. 2007). These studies were not included due to problems with identifying OST as the treatment and/or significant modifications to OST (e.g., Botella et al. 2010, 2011; Brosnan and Thorpe 2006), lack of a control or comparison group/treatment (Botella et al. 2011; Sabsevitz et al. 2010), and other methodological difficulties (e.g., two-thirds of the participants in Pan et al. 2011 did not meet the criteria for a diagnosable phobia, though results generally showed two different types of OST were superior to a self-help manual; Huey and Pan 2006).

Two case studies of OST are also of note. Öst (1987) treated a woman with specific phobias of cats, snakes, rats, and worms using OST in a multiple baseline design

across phobias. The participant received three OSTs, each lasting between 40 minutes and 2-hour. OST effectively reduced behavioral avoidance and subjective distress as reported by the participant. Clinically meaningful improvement was observed on BATs and, although to a lesser extent, on physiological measures (i.e., heart rate and blood pressure). Little generalizability was observed, as improvements were not seen until the phobia in question was targeted with treatment. Improvements were maintained at 6-month follow-up. Also, a multiple baseline study by Davis et al. (2007) was not included as it was the only controlled single case study with a child conducted to date (i.e., fewer than the criteria required by Task Force criteria). The study by Davis et al. (2007) is noteworthy, however, because the authors demonstrated that OST could be effective with a 7-year-old child who also had an autism spectrum disorder diagnosis. They were able to use OST in an unmodified form to successfully treat the boy's specific phobias of heights and water with improvements reportedly continuing at a 6-month check-in (for additional information on using OST with those having intellectual or developmental disabilities see Chap. 9). Three other case studies/case reports have also been conducted; however, they did not meet the methodological criteria for inclusion either for various reasons including the overall number of case studies needed (Muris and Merckelbach 1995; Nelissen et al. 1995; Öst 1985).

Finally, two additional studies have been conducted which require further mention and description. First, Heading et al. (2001) compared a 3-hour prolonged exposure treatment with computer-aided exposure treatment and a wait-list treatment. This prolonged exposure treatment, however, was different enough as to prevent its inclusion in the EST review given the review criteria used for this chapter. Specifically, "No relaxation exercises, modeling, or behavioural experiments aimed at disconfirming specific beliefs were used in the exposure sessions" (p. 107). Instead, the authors state their goal was to examine, "The efficacy of prolonged single-session exposure alone, without other treatment components" (p. 103–104). Even though the results of the prolonged exposure treatment were superior to the other conditions, it was not included in this specific review of OST. It is worth noting, however, that by using less strict review criteria and including this study in the overall review, the evidence for OST in adults would merit "well-established" status.

Second, Hellström et al. (1996) conducted a study on a single-session applied tension treatment for blood phobia (see Chap. 4 for a description). With blood phobia, the patient is taught to tense muscles when confronted with an evocative stimulus to increase blood pressure and prevent fainting (i.e., applied tension). As a result, even though the study compared a massed 2-hour session of applied tension with two other conditions, it was sufficiently different from OST that it was not included in this review (i.e., OST does not involve pairing a response with exposure such as relaxation, or in this case, applied tension). Even so, the evidence behind using applied tension to treat blood phobia is strong.

Summary of the Evidence for OST

Given the evidence obtained from the 14 studies included using adult participants, OST remains a strong candidate for consideration when treating adult-specific phobias of varying types. As with previous reviews, OST has been found to be superior to a variety of already established evidence-based treatments (Zlomke and Davis 2008). OST has demonstrated superiority to modeling (Öst et al. 1997b), self-exposure (Öst et al. 1991), various manualized interventions (Hellström and Öst 1995), and a variety of wait-list conditions (Thorpe and Salkovskis 1997). As a result, OST with adults currently merits probably efficacious status. The use of OST with adults has been studied numerous times; however, it awaits replication of its effects by additional researchers who also include additional treatment conditions for comparison (i.e., the effects have been replicated by other researchers, but only against wait-list control groups; see Tables 11.1 and 11.2) using adequately powered studies in instances where equivalence is found (Kazdin and Bass 1989). Even so, the sheer quantity of studies showing the effects of OST with adults is impressive.

As evidenced by the five aforementioned treatment studies (Flatt and King 2010; Muris et al. 1997; Muris et al. 1998; Öst et al. 2001b; Ollendick et al. 2009), OST merits well-established status when conducted with children and adolescents. The treatment was found to be superior to an alternative treatment in two studies by the same research team (Muris et al. 1997; 1998) as well as superior to a psychological placebo by a separate research team (Ollendick et al. 2009). It was also found to be superior to wait-list conditions in several studies (Flatt and King 2010; Öst et al. 2001b; Ollendick et al. 2009). Each of these studies was adequately powered, utilized a recognized protocol by Öst (e.g., Öst 1989) for OST, and specified participant characteristics. Therefore, using Task Force guidelines, OST may be considered well established for the treatment of specific phobias in children and adolescents. Based on the studies reviewed, OST has continued to demonstrate strong diagnostic and behavioral effects; however, as with similar reviews in the past (Davis and Ollendick 2005; Davis et al. 2011), more research is still needed to fully determine OST's effects on the cognitive and physiological aspects of fear in children and adolescents.

Summary and Conclusions

OST is a massed exposure therapy for specific phobias that has developed a significant evidence base through decades of rigorous research. Overall, the use of OST to treat specific phobia has garnered strong support. In addition to meriting probably efficacious status with adults and well-established status with children and adolescents, OST can be considered probably efficacious when used in a group format as well (Zlomke and Davis 2008; see Table 11.2). Impressively, OST offers benefits similar to those seen with much larger doses of other therapies—even when compared with two to four times as much treatment (see Tables 11.1, 11.2, and 11.3). At

the same time, the rates of clinical improvement remain high with adults, ranging from approximately 70 to more than 90% clinically improved (though varying by the outcome studied). Rates for clinical improvement with children have similarly ranged from approximately 50 to more than 90% (again varying by the outcome variables examined). OST has also been found to be widely accepted by adult patients and child patients (and their parents) alike. Finally, the research to date has provided a wide array of options when conducting OST to fit a given patient or circumstance. For example, there are currently protocols addressing the provision of OST in either individual or group formats, the possible inclusion of parents in treatment, the administration of treatment using technology and augmented reality, the use of the treatment with those having a developmental disorder (see Chap. 9), and the administration of maintenance and generalization programs.

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Chapter 12
Using Virtual Reality and Other Computer Technologies to Implement Cognitive-Behavior Therapy for the Treatment of Anxiety Disorders in Youth

Lynn D. Miller, Cidalia Silva, Stéphane Bouchard, Claude Bélanger, and Terry Taucer-Samson

Introduction

Among the therapeutic strategies used in the treatment of anxiety, behavioral approaches featuring exposure to aversive stimuli occupy a central role. Research on the effectiveness of cognitive-behavior therapy (CBT) in the treatment of anxiety disorders generally places exposure at the heart of therapeutic change. In fact, these studies have shown their empirical effectiveness in adults as well as children (Barrett 2009; Carr 2009; Cartwright-Hatton et al. 2004). Despite their proven effectiveness, exposures can present significant challenges to the therapist as well as the client (see Bouchard et al. 2004; Davis et al. 2009).

Confronting a phobic stimulus may, for example, generate significant anxiety in clients, mobilizing routine avoidance strategies, and as a consequence undermine client motivation. In fact, during exposure clients may be reticent or may even stop therapy for the fear of being exposed to a highly frightening object or situation. In order to lessen the anticipated anxiety that the client feels toward the exposure exercises in vivo, the therapist can integrate relaxation or breathing exercises before the

S. Bouchard (✉)
Department of Psychoeducation and Psychology, Cyberpsychology Laboratory
Université du Québec en Outaouais, Gatineau, QC, Canada
e-mail: stephane.bouchard@uqo.ca

L. D. Miller
Department of Educational and Counseling Psychology and Special Education,
University of British Columbia, Vancouver, Canada

C. Silva
Psychology Department, Cyberpsychology Laboratory, Université
du Québec en Outaouais, Gatineau, Canada

C. Bélanger
Douglas Institute of Mental Health, Department of Psychology, Université
du Québec à Montréal, Montreal, Canada

T. Taucer-Samson
Ecole Une Autre Langue, Cannes, France

T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1_12, © Springer Science+Business Media, LLC 2012

exposure exercises or employ imaginal exposure. This last strategy may be inconvenient or involve a high cost/benefit ratio. One of the difficulties is that the therapist cannot directly know what the client thinks or is exposed to during the imaginal exposure exercises, which diminishes therapist control over circumstances that could influence the success of the intervention. For example, in imaginal exposure, it is difficult for the therapist to predict the intensity of arousal generated by the phobic stimulus. It is equally impossible to verify if, during the exercise, the exposure process is affected by cognitive avoidance or if the client is avoidant by distracting himself[1] or by thinking of something else.

During in vivo exposure, the therapist possesses some, albeit limited, control over the environment and on the variables surrounding the exposure process (Bouchard et al. 2003). For example, predicting and controlling animal behavior during exposure for the treatment of an animal-type phobia often represents a difficult challenge for the therapist. Dogs can become overly excitable and jump or bark more than anticipated. Although it can be useful to push exposure to limits that surpass everyday life situations (e.g., asking an arachnophobic child to touch a tarantula, or requesting a child who suffers from contamination obsessions to touch a series of dirty objects), it is most useful when a therapist can control the amount and extent of exposure (Kendall et al. 2005). It is also potentially therapeutic to vary the context during the process of exposure (e.g., exposing an arachnophobic youth to spiders of different sizes, or exposing a child who fears injections to either a chaotic or calm atmosphere, with or without adult support, when taking a blood sample or receiving a vaccination) in order to offer preferentially greater habituation as well as more opportunities for generalization of knowledge. The ultimate objective for controlling and varying the parameters of exposure is to maximize and stabilize gains incurred by the client. In certain circumstances, this effect can be achieved by exposing the youth over and above what natural conditions permit.

When exposing the child to situations that are potentially alarming or provocative, the therapist is at times confronted with the difficulty of maximizing the level of anxiety that can be tolerated by the child, while facing the fearful object. A situation that should arouse little anxiety can, at the time of exposure, prove to be more anxiety provoking than anticipated. For example, a child might panic at the sight of a dog that has more threatening behaviors than those foreseen in the exposure hierarchy (e.g., a dog that barks or is overly active during the first contact with the child). Problems with the exposure experiment (e.g., an elevator malfunctioning or especially loud thunder during a session of exposure with a child that is frightened of storms) or other unpredictable situations (e.g., a traffic jam or a road accident during an exposure exercise with a phobic adolescent in a car) can disrupt the exposure experiment, forcing a higher level of exposure in the hierarchy, but can also hamper the alliance the patient has with the therapist or his trust in the therapeutic process.

[1] For consistency, “he” and “him” will be used to represent both boys and girls.

In vivo exposure can present other difficulties related to the specificity of certain anxiety concerns and certain provocative situations. These situations may be challenging or impossible to create. For example, the therapist has limited capability to control weather conditions necessary for in vivo exposure for a phobia of storms, or similar difficulty creating a hierarchy of safe fire exposure for a child presenting with posttraumatic stress following a residential fire. The psychologist may also have difficulty recruiting volunteers in order to carry out the necessary exposure exercises in the treatment of certain types of anxiety concerns. Consider the treatment of social anxiety, where children are incapacitated by the fear of speaking in front of the class. The actual classmates required in order to recreate the exposure environment (the class) are not usually available at the time of the client's therapy, may not be interested in participating in such an activity, may not want to participate in the exposure, or may not be respectful of or understand the therapeutic process or confidentiality that is required. In other cases, confidentiality concerns might render in vivo exposure difficult, as it might be in the case for this socially phobic child who fears speaking in front of the class. Therapists who want to establish an exposure hierarchy for in vivo situations are frequently confronted with almost insurmountable challenges, most notably when the time comes to expose their clients to phobic stimuli.

Beyond difficulties associated with exposure strategies, other factors may hinder the use of this therapeutic approach. Economically speaking, the expense incurred in participating in certain types of exposure (e.g., exposure to overcome the fear of flying on an airplane), the costs of professional resources (fees for longer term therapeutic approaches, loss of time for the therapist and for the client), as well as the cost of therapy equipment, constitute variables that can affect the decision of children, their families, and adults to engage in therapy (Stephens and Joubert 2001). Other factors such as the difficulty of children to adhere to a treatment regime, the lack of flexibility in the schedules of families, and the lack of trained professionals in certain geographic areas add to the set of difficulties that can limit the accessibility of psychological services offered to individuals in need.

The arrival of new technologies in the field of mental health can offer greater alternatives to the more traditional methods of exposure as well as make up for the previously mentioned limitations. The development of new information and technologies of communication (computers, cell phones, CD/DVD, Internet, virtual reality, etc.) now permits better access to and greater availability of psychotherapeutic treatments. Virtual reality (VR), for example, as an alternative exposure method, allows us to reduce some of these obstacles. Notably, VR offers greater control over the environment and phobic stimuli, assures greater confidentiality for the clients, can enhance the desirability of the intervention for children, can make therapy engaging and attractive, and at the same time may reduce certain costs.

This chapter will present various new information technologies used in CBT of anxiety disorders with children, adolescents, and adults, beginning with those requiring more direct professional involvement with equipment or expertise in computer technologies (VR) and ending with more self-directed computer involvement (Internet).

Using VR to Implement CBT

The development of video games as well as the evolution of 3D environments during the last two decades, has inspired several researchers to create virtual environments with the goal of developing new assessment, intervention, and training techniques linked to health and education. A recent review of the literature by St-Jacques et al. (2007) concluded that the use of new technologies such as VR with young children has been focused primarily on the fields of physical and mental health and education. In psychology, for example, one of the biggest advances in technology in the treatment of anxiety is probably the use of VR as a method of exposure (Botella et al. 2009). As defined by several authors, VR designates a set of technologies that permits an individual to interact in real time with a 3D virtual environment, using his senses and innate skills all at once. This new technology can also be defined as being a form of advanced interface between a human and a computer. This interface permits the user to immerse himself and interact with the virtual environment (Pratt et al. 1995). With the aid of immersive hardware (immersion helmet—referred to as a head mounted display or HMD—fitted with screens and headphones, a computer, a joystick, and a motion tracker) and real-time 3D rendering software, the individual is immersed in a 3D environment, in which he behaves as if in real life (Wiederhold and Wiederhold 2005). Because of the immersion, VR is expected to afford a form of exposure that is more potent than merely presenting phobic stimuli on a computer monitor (a form of exposure that was not perceived to be very effective for children according to two case reports presented by Nelissen et al. 1995).

Rothbaum et al. (1995), Wiederhold et al. (1998), and Lamson (1997) published the first studies employing VR with adults as a method of exposure in the field of clinical psychology. Since then, several studies have demonstrated the effectiveness of this new therapeutic tool in the treatment of various anxiety disorders in adults (Anderson et al. 2004; Côté and Bouchard 2008; Klinger et al. 2005; Wallach et al. 2009). In children, however, few studies exist on the use and effectiveness of VR in the treatment of anxiety (St-Jacques et al. 2007; see Table 12.1). A pilot study using a single-case multiple baseline across participants design conducted by Bouchard et al. (2007) with nine children demonstrated the interest, feasibility, and effectiveness of conducting in virtuo (i.e., in VR) exposure with children suffering from spider phobia.

In a controlled outcome study, Gutiérrez-Maldonado et al. (2009) randomly assigned 36 school-age children (aged 10–15 years) suffering from school phobia to either a no treatment control condition or to 5 CBT sessions. The treatment included relaxation and both imaginal and in virtuo exposure. Two virtual scenarios were used, both with an easy (approaching and entering the school) and a difficult level (performing activities in the classroom). Overall, the participants in the virtual environment could go to a school and find their classroom while encountering other kids in the corridors, finding and taking a seat in the class, answering questions, giving an oral speech, receiving criticism from other children, etc. However, the involvement in the virtual environment was not highly immersive, as it was done on a 17-inch

Table 12.1 Summary of methodology in studies using VR with children suffering from anxiety disorders

References	Design	Diagnosis	Random assignment	Conditions	No.	Outcome measures	Results
Bouchard et al. 2007	Multiple baseline across participants with a 6-month follow-up	Spider phobia	Yes	3-week baseline 4-week baseline 5-week baseline	9	Daily self-monitoring, Spider Phobia Questionnaire for children, Fear Survey Schedule for Children, Spider Phobia Beliefs Questionnaire for Children	Significant treatment effect
Gutiérrez-Maldonado et al. 2009	Group design	School phobia/ refusal	Yes	In virtuo versus no treatment	36	School Fears Inventory, School Refusal Assessment Scale, Fear Survey Schedule for Children—Revised, State-trait Anxiety Inventory for Children	In virtuo > no treatment
St-Jacques et al. 2010	Group design, with assessment at pretreatment, after two-thirds of the treatment, and posttreatment, with a 6-month follow-up	Spider phobia	Yes	In vivo versus in virtuo	31	Spider Phobia Questionnaire for Children, Spider Phobia Beliefs Questionnaire for Children, BAT	In virtuo = in vivo
Doré and Bouchard 2006	Multiple baseline across participants with a 12-month follow-up	Social phobia	Yes	2-week baseline 3-week baseline 4-week baseline	5	Liebowitz Social Anxiety Scale, Confidence as a Speaker Questionnaire, Fear of Negative Evaluation, Beck Depression Inventory	Significant treatment effect

computer monitor instead of using a HMD and a motion tracker. Nevertheless, the results were positive and revealed significant improvements from pretreatment to posttreatment.

In a process study addressing motivation toward CBT with in virtuo exposure involving 31 arachnophobic children between 8 and 16 years of age, St-Jacques et al. (2010) compared motivation to complete a treatment consisting essentially of VR or in vivo exposure. The treatment intended for the experimental VR group included 4 sessions of in virtuo exposure followed by 1 session of in vivo exposure, while the "gold standard" control group had 5 sessions of in vivo exposure. The results of this study suggested that the children's motivation to complete VR treatment did not differ significantly from that expressed by children enrolled in the traditional treatment format. However, the authors noted that with several children, the VR treatment elicited higher rates of anticipatory fear, especially at the start of treatment. The unknown nature of the virtual environment was suggested as the basis of this phenomenon. The authors further indicated that before immersion, children did not know what to expect during immersion or how to react if, from their perception, the virtual situation became too frightening. In addition, while some children expressed the feeling of not being able to accomplish the task, others were afraid of remaining "imprisoned" in the HMD and not being able to escape in case of danger. Others perceived the experience in a negative way, imagining that the scenario in the virtual environment resembled a horror film. In light of this information, the authors suggested that the treatment program and the virtual environment should be better introduced and presented to children, and their concerns should be discussed before the treatment begins in order to make sure they are not frightened by the virtual environment. Their research also suggests that there may be a difference between the perception of virtual provocative stimuli (spiders) in children and adults. The research team in the St-Jacques et al. (2010) study suggested that, based on clinical impressions, children showed a greater tendency to evaluate the phobic stimuli in a more negative manner than adults. This observation dovetails with other clinical trials conducted by the same team with adults. Before entering a virtual environment, the children tended to think that the virtual spider would be more frightening, disgusting, and dangerous than did the adults. Yet, studies conducted by Harris and Reid (2005), indicate that virtual environments that present a diversity of activities offering challenges and opportunities to succeed, while at the same time giving the child the feeling of efficacy and control, tend to retain the involvement of the child in the completion of a virtual task (Harris and Reid 2005). St-Jacques et al. (2010) also followed-up with the clients 6 months posttreatment. They reported that comparison between both forms of exposure confirmed the effectiveness of using VR as a substitute for in vivo exposure, as efficacious outcomes remained after 6 months.

A preliminary study has also been conducted with 5 adolescents, between 15 and 17 years of age, diagnosed with social phobia (Doré and Bouchard 2006). They received a CBT program consisting mostly of in virtuo exposure for up to 8 sessions to treat their fear of public speaking by making oral presentations in front of small and large virtual audiences. The goal was to document the efficacy and credibility of in virtuo exposure with adolescents when using virtual environments populated

with virtual adult characters. Results of the multiple baseline across participants design indicated a decrease in anxiety symptoms, with a complete remission for one participant, partial remission for three other participants, and no change for the remaining one. However, all participants noticed broader positive changes in their social relationships, which were also supported by questionnaire results. The treatment was considered acceptable, although the experiment highlighted the need for the adolescents to give speeches in front of virtual adolescents instead of virtual adult characters.

In summary, the authors of the four studies reported several advantages. Among these advantages are the possibility of adapting the environments to the treatment needs of the client, the capacity of ensuring increased control over the variables surrounding the exposure, the possibility of having the exposure occur in a series of impossible or questionably safe real situations, as well as the possibility of giving care gradually while respecting the child's therapeutic pace. As previously discussed, when the therapist uses VR as a method of exposure, he possesses greater control over the environment, which allows the client to be exposed gradually to situations that he dreads, in a safe and protected environment. Exposure safety constitutes an interesting aspect of this method, in particular regarding the exposure of children to situations involving potential physical harm or injury. Information can be given to the client gradually, in small controlled doses, in order that he can progressively master the necessary strategies to face his fears or manage his anxiety in everyday life. Finally, more than just allowing children to experience new situations in safety, the use of VR allows preservation of confidentiality of the therapeutic process with children and their families (Botella et al. 2009; Glantz et al. 2003; For a review of ethical issues when conducting exposure, see Chap. 10). Conducting in virtuo exposure is not done exactly as in vivo as at least two additional concepts must be understood by the therapist: presence and cybersickness.

The Feeling of Presence

Several variables can influence the impact of immersion in a virtual environment. Presence, or more specifically the feeling of "being there" in the virtual environment, even though the individual is not "really" there physically, has also been dubbed as the illusion of nonmediation (i.e., not noticing that the experience is created by a technology medium; Lombard and Ditton 1997). Feeling present occurs while an individual is immersed in a virtual environment that assails at least one and ideally several senses at the same time (vision, hearing, touch, smell, etc.). It can be observed when the child acts in the virtual environment as if he was in a physical environment (Lombard and Ditton 1997). The individual therefore continues to express physical, sensory, and emotional responses toward the virtual objects or people in this environment, as if he really found himself there. Presence seems to be a complex and multidimensional perception experience, formed from sensorial information and a set of cognitive processes. In fact, the feeling of presence seems strongly related

to the capacity of paying attention to or to focusing on a task, to the capacity of being able to set aside or ignore the equipment generating the virtual environment, as well as to the person's emotional state (Price and Anderson 2007; Riva et al. 2007; Robillard et al. 2003; Wiederhold and Wiederhold 2005).

Two instruments relevant for the measurement of the feeling of presence have been adapted for children, the *Child Presence Questionnaire* and the *Child Immersive Tendencies Questionnaire* (St-Jacques et al. 2010). The 19-item *Child Presence Questionnaire* was developed to describe the subjective properties of the immersion that allow the child to feel present within a virtual environment. The items were adapted from the adult version of the *Presence Questionnaire* (Witmer and Singer 1998) and reworded to be better understood by children, and reduced in number (based on the factorial loadings of the adult version). The rating scale was simplified to a three point scale (0 = none, 1 = slightly, 2 = a lot). Examples of items include "What I experience in the virtual environment seemed natural," "My actions in the virtual environment seemed real," and "I felt that I was in the virtual environment." Although some authors have expressed criticism of the adult version of the *Presence Questionnaire* as being a better measure of the properties of the immersion than of the subjective feeling of the user (Bouchard et al. 2008; Robillard et al. 2002; Slater 1999), this test is still the most frequently used measure of the feeling of presence.

The *Child Immersive Tendencies Questionnaire* was also adapted by St-Jacques et al. (2010) from the adult version of *Immersive Tendencies Questionnaire* by Witmer and Singer (1998). Like the presence measure, original items were reworded, reduced in number, and the rating scale was modified to "never," "sometimes," or "often." The goal of this instrument is to measure factors that, according to Witmer and Singer (1998), increase the likelihood of feeling present, such as "feeling so involved in a movie that you are not aware of things around you," "feeling so involved in a videogame that you have the impression of being in the game," or "becoming involved in daydreams to the point of not being aware of things happening around you." This instrument is usually administered to predict who would respond best to immersions in virtual environments, and to compare samples to document the potentially detrimental impact of differences in immersive tendencies.

Side Effects/Cybersickness

A few factors can cause negative side effects during an immersion in VR. For example, if the head device (HMD) is too heavy for the child, wearing it for an extended time may cause neck strain. If the HMD is too tightly secured on the individual's head, this may cause a minor headache or some iatrogenic claustrophobia. Hours of nonstop use of an HMD could also cause tension in oculomotor muscles since the child would be constantly keeping his eyes fixed in the same position. Other side effects are associated with the user's movement in the virtual environment (Lawson et al. 2002), especially if the technology used is not processing the information quickly enough. During an immersion, the lag time between the information sent by

the vestibular system, indicating that the head is moving, and the visual information that is sent by the computer to the visual system, providing additional information to the brain that the head is in motion, can create in certain individuals unpleasant sensations referred to as cybersickness (Flanagan et al. 2004). Similar to the symptoms of motion sickness or to the sensations felt on a merry-go-round or Ferris wheel, cybersickness can present as a form of nausea, dizziness, headache, sweating, spatial disorientation, or postural instability (Lawson et al. 2002; Nichols 1999; Sharples et al. 2008). Despite the fact that most researchers report progressive reduction of cybersickness over time (Howarth and Hodder 2008), others emphasize the unpleasant effects of cybersickness may demotivate certain users (Nichols 1999). In using in virtuo exposure in the treatment of anxiety disorders, it is also important not to confound signs of anxiety (e.g., sweating, dizziness) with potential side effects of the immersion. Nevertheless, studies conducted during the last decade show that only a minority of individuals do not benefit from in virtuo treatments by the reason of these physical inconveniences, and that these side effects are usually brief and minor in adults (Botella et al. 2009; Bouchard et al. 2009) and children (St-Jacques et al. 2010).

The side effects of an immersion in VR can be assessed with the *Side Effects of an Immersion in Virtual Reality (Cybersickness) for Children* questionnaire (*SEIVR-C*; St-Jacques et al. 2010). This self-report measure consists of 10 items (plus an open-ended question) assessing on a 3 point scale (0 = none, 1 = slightly, 2 = a lot) symptoms such as headache, eye-strain, or nausea. It is an adaptation of the adult version of the *Simulator Sickness Questionnaire* (Kennedy et al. 1993). It is recommended to administer the *SEIVR-C* before and after the immersion, to control for physical symptoms already present in the individual before the immersion. For example, Bouchard et al. (2009) found that some people may report more symptoms before than after the immersion, which could be in part attributable to apprehension toward the upcoming immersion. Although Bouchard et al. concluded that cybersickness should not be a source of worry for care providers, they recommend measuring it routinely to confirm that VR immersions are not inducing significant side effects.

In 2005, St-Jacques and Bouchard compared the side effects experienced by children and adults postimmersion. The sample consisted of 23 children between 8 and 16 years of age (15 boys, 8 girls) and 35 adults between 18 and 60 years of age (22 women and 13 men). The participants' task consisted of exploring two virtual environments following a predetermined path for 10 minutes. One of the environments was likely to induce more side effects as it involved more active exploration of a vast virtual and complex environment, as opposed to other one that was less challenging. Participants were assessed for side effects induced by the immersion (cybersickness) at pre-experiment and post-experiment, as well as at 24 hours post-experiment. While immersed, participants were asked to rate verbally, on a 0–10 scale, the intensity of their side effects. Head motion was assessed, at a sampling rate of 10 times per second, and this data showed that children were moving their head significantly more (i.e., 3 times more head rotations) than adults, a behavior which should induce more side effects. The average intensity of cybersickness symptoms was rated with the *SEIVR-C* at 3.0 in the child sample (from a potential range between 0 and 20),

compared with 6.4 in the adult sample ($p < 0.05$). On the brief measure where children reported verbally during the immersion, no significant differences were observed, with an average rating of 2.5 on a 0–10 scale. The 24-hour follow-up confirmed that side effects remained minimal. This study is reassuring, as it documents that side effects are minimal in children. Nevertheless, it is probably safer to continue to monitor and document potential side effects until more data become available.

In summary, VR can be productively used to conduct exposures with children, adolescents, and adults suffering from anxiety disorders. The outcome studies available so far are promising but there is still a need to conduct large randomized control trials with various anxiety disorders to confirm its efficacy and effectiveness, especially so with children and adolescents. Experimenters and clinicians should pay attention to factors such as presence and side effects in order to get the most out of the virtual experience. It also seems important that clinicians address the expectations and apprehensions of individuals toward the virtual experience before the exposure session. Some children, for example, may expect the virtual stimuli to be more frightening than they really are.

Using Computers and Nonimmersive Technologies to Implement CBT

The use of computers in the CBT of anxiety disorders does not have to be limited to immersive situations. In the wave of integrating new information technologies in the healthcare system, the use of the computer as a clinical tool is becoming an acceptable alternative, especially if this avenue can avoid potential technical and financial hardships associated with traditional treatment formats. In fact, with North American families, owning a home computer has become the norm rather than the exception. In addition, Internet access appears to be widespread throughout the world. USC's Annenberg School released its 2008 findings of world Internet access, detailing the global impacts of online technologies in everyday life (Annenberg School for Communication 2008). Approximately 88% of young Americans have access to the Internet, lagging behind 95% of Canadians, 96% from the Czech Republic and Macao, 98% from Israel, and 100% of young Britons. This report also reveals that the majority of youth (88%) report they are confident using a computer. This accessibility and skill of young people using computers have led several researchers to question the feasibility as well as the efficiency of the integration of computer software in the treatment of childhood anxiety.

Dewis et al. (2001) were one of the first to use a nonimmersive exposure program assisted by computer to treat the fear of spiders in children. In a controlled study (see Table 12.2) conducted with 28 children between 10 and 17 years of age, these researchers compared the efficacy of a vicarious exposure program displayed on a computer monitor versus that of an in vivo exposure program. The results of three exposure sessions (45 minutes) administered to children indicated that the use of the nonimmersive vicarious exposure program had a clinically significant effect

Table 12.2 Summary of the methodology in studies using computers and nonimmersive technologies to implement CBT with children suffering from anxiety disorders

References	Design	Diagnosis	Random assignment	Conditions	No.	Outcome measures	Results
Dewis et al. 2001	RCT with 1-month follow-up	Spider phobia	Yes	In vivo exposure guiding an avatar (vicarious exposure), Waitlist	28	BAT, SUDS, Spider Phobia Questionnaire Individualized Phobic Target Impairment	In vivo > vicarious = waiting list
Khanna and Kendall 2008	Case report	Various anxiety disorders	No	One group	18	Feasibility and acceptability	*CCAL* is well received
Khanna and Kendall 2010	RCT with 3-month follow-up	Various anxiety disorders	Yes	CBT, *CCAL*, Control (computer-assisted information and support)	49	Dx (ADIS-P) Clinician severity ratings, Child Depression Inventory Multidimensional Anxiety Scale for Children	*CCAL* = CBT > control
Cunningham et al. 2009	Case studies with 3-month follow-up	GAD or SAD	No		5	ADIS-C-IV, Spence Children's Anxiety Scale-C/P, Children's Automatic Thought Scale, Barriers to Treatment Participation Scale	40% success based on the ADIS-C-IV, Clinical gains on the self-report

on symptoms of anxiety-related fear of spiders. Despite the pre effect or post effect sizes, the computer-directed treatment program allowed children to maneuver a virtual arachnophobic adult model in several scenarios facing spiders. The computer program with the youth sample was not as effective as what the authors previously observed with an adult sample (see Gilroy et al. 2000, 2003). A significant pretreatment to posttreatment improvement was noted on the phobic targets, but results on that measure, and in other measures, were not significantly higher than in the control condition, while in vivo exposure was clearly effective. Several methodological limitations might explain the difference between the results obtained by the two clinical groups. Among the possibilities, the authors mention the insufficient number of subjects (9 children by group); a large disparity between the types of exposure, and the program was not graphically adapted for children (vicarious virtual models were represented by an adult using simple black and white images, etc). A pioneer of its kind, this project seems nevertheless to have inspired and opened the door to other researchers who now work elaborating and validating software that can be used in the treatment of anxiety in children and in adolescents.

The Camp Cope-A-Lot Program (Khanna and Kendall 2008)

In the line of innovations of assisted therapeutic interventions, *Camp Cope-A-Lot* (CCAL; Khanna and Kendall 2008) is an interactive software treatment for children. Based on a program of CBT and the empirically supported *Coping Cat* program, described by Kendall and Hedtke in 2006, *CCAL* software consists of 12 treatment sessions and is intended for children between 7 and 13 years of age who suffer from separation anxiety, social anxiety, or generalized anxiety disorder. The therapeutic treatment strategies are found in the form of activities concerning emotion management techniques, relaxation training, cognitive restructuring techniques, exposure activities (vicarious and in vivo), a system of positive reinforcement, and problem solving.

The treatment protocol takes place in a virtual vacation camp where the children are accompanied by other virtual campers and experience numerous exciting adventures, but the adventures are also quite provocative for anxious children. The children go to an amusement park, give an artistic presentation, meet a new person, speak in public, and sleep in the dark. For the first 6 sessions, the child advances at his own pace in an independent manner. The objective of these sessions is to help the child develop anxiety management skills in a way that helps him to understand and prepare for the exposure exercises in vivo. The subsequent sessions are dedicated to exposure activities and should be completed with the help of a coach. Two sessions at the end of the program are directed toward parents.

The *CCAL* program is conceived as a way to guide the child step-by-step in the planning and implementation of the exposure exercises. These exercises which take place in imagination and in vivo provide different levels of anxiety provocation. They are illustrated by a series of videos as well as animated examples. At the end of each

step, or when the child completes his homework, he is reinforced by earning time to play a video game. This system of reinforcement was developed according to an operant conditioning approach similar to that of a token economy, with the objective to positively reinforce the efforts and accomplishments of the child overall during the real exposure situations. Throughout the treatment, the main character and his friends act as models for the child. These characters, with the help of concrete examples, demonstrate the usefulness of the learned strategies by teaching the child how to use them in the management as well as in the anticipation of different anxious situations that could occur either at school or at home. The exercises that are to be done at home are presented in the form of camp challenges: the "cope-a-lot contests." At the end of each step, the child is given a challenge to be completed during the week and recorded afterward in a supplementary workbook.

The clinical use of such a computerized treatment is less complex than VR and does not require specialized psychology training. It was conceived to be used by a wide variety of professionals working with children. The *CCAL* CD provides an extra tool that can contribute to optimizing pediatric services, especially in environments where professional resources specializing in anxiety treatment using CBT are scarce. On an empirical level, this program offers preliminary data on the acceptance and feasibility of the program (Khanna and Kendall 2008). Using data obtained from children between 7 and 12 years of age and from 8 therapists with a cognitive behavior orientation, the program was assessed favorably by the children and the therapists. Among the children participating in the trial, 18 presented with an anxiety disorder diagnosis (separation anxiety, social anxiety, or generalized anxiety) and 12 were drawn from the general population. The latest study on the clinical feasibility and effectiveness of this program (Khanna and Kendall 2010) involved 49 anxious children between 7 and 13 years of age as well as a group of school and clinical psychologists, without specific training in CBT. At posttreatment, *CCAL* youth demonstrated impressive gains of no longer meeting criteria for their principal anxiety diagnosis, compared with a traditional individual CBT or control condition consisting of a computer-assisted education program: *CCAL* 81%, *CBT* 70%, and control 19%. Parents and children rated all treatments acceptable, with *CCAL* and *CBT* getting higher program satisfaction, and maintaining significant treatment gains at follow-up. *CCAL* is available commercially (www.cope-a-lot.com). It contains a relaxation script which can be downloaded, a selection of videos depicting children involved in the exposure process, a system of reinforcement, the treatment material, and a printable version of the coaching manual and child's workbook.

The Cool Teens CD-ROM for Anxiety Management with Adolescents (Cunningham and Wuthrich 2008)

The software *Cool Teens* CD is based on the basic principles of CBT and derived from the Cool Kids therapist-guided group anxiety program (Cunningham et al. 2006). Divided into 8 therapy modules, this program is aimed at youth between 13 and

17 years of age. It is based on cognitive restructuring and exposure techniques, but also utilizes psychoeducation, coping skills exercises, and relapse prevention. Clinically, the program is aimed at adolescents presenting anxiety concerns (social anxiety, separation anxiety, generalized anxiety, specific phobia, or obsessive-compulsive traits). The treatment protocol is spread over a period of 8–12 weeks. The eight modules are presented on the main welcome page of the CD and can be completed in 30–60 minutes. *Cool Teens* is less structured than the *CCAL* previously described. Even though the authors suggest a sequence to follow to complete the modules, the teenager can decide for himself on what pace and in what order he completes the different treatment modules, according to the severity of his symptoms and the amount of time he can dedicate to therapy. Notwithstanding the fact that this software was developed to be used in a flexible and autonomous way, a minimum of professional accompaniment may be necessary in order to maintain the interest and motivation of the participants throughout treatment. The support of a therapist ensures the progression of the youth throughout the different modules and supports them in the therapeutic process. The therapist's support can be offered with brief telephone contact or by e-mail. During parent participation, parents receive information on the program but they are not directly involved in the computer therapy of their teen. The authors recommend however that the adolescent identify a mentor (a friend, a member of the family, or a significant person) who could aid and help to integrate the sessions and offer support during the exposure sessions during treatment, if needed.

Empirically, the *Cool Teens* CD offers promising but limited research data. One series of case studies conducted with 5 adolescents between 14 and 16 years of age, revealed promising results on the effectiveness of this program (Cunningham et al. 2009). In the pilot project, the treatment modules lasted 15–30 minutes every 2 weeks, and a CBT-trained therapist provided a follow-up session by telephone. At the end of 12 treatment sessions, the researchers observed that two adolescents did not meet the diagnostic criteria (Table 12.2) and these gains were maintained at 3-month follow-up. The authors also noted clinically meaningful improvements. Adolescent satisfaction regarding the program was evaluated with the help of a questionnaire regarding youth preferences and attitudes. As adolescents commonly are resistant in adhering to psychological treatment (Rickwood et al. 2007), an inventory involving obstacles that could affect the teen's therapeutic motivation and investment was integrated into the evaluation. All modules of the program were rated positively.

Other publications on the *Cool Teens* CD program provide information on the clinical validation phases (Cunningham et al. 2006; Cunningham and Wuthrich 2008; not included in Table 12.2 as these are not outcome studies; a larger outcome study has been announced by the authors). Cunningham et al. assessed the adolescent's satisfaction regarding this new form of treatment, specifically the capacity of the program to preserve their confidentiality and to lessen the stigma associated with the use of mental health services (Cunningham et al. 2006). The adolescents' opinions regarding the clinical material of *Cool Teens* CD (Cunningham and Wuthrich 2008) show that in general they appreciated the program's visual graphics, the audio messages, and the explanatory diagrams, as well as the navigation system. On the other hand, they had less appreciation for the interactive exercises integrated in

the program. Pilot participants have identified the principal obstacle interfering with their treatment is finding time to complete the modules (Cunningham et al. 2006; Cunningham and Wuthrich 2008; Cunningham et al. 2009).

Globally, introduction of these new forms of CBT treatment manuals includes several advantages. Computer-based programs can reduce treatment costs by providing complementary information and exercises. It may also increase motivation to come to therapy. The new information and communication technologies that are integrated so well in this latest generation's way of life permits professionals to better adapt their clinical tools to the needs of youth and their families. In addition, a psychologist who proposes treatment including a video game or Internet-interactive activities may more easily establish confidence in a client and increase motivation and interest for the treatment, than if only using traditional treatment strategies (Griffiths and Christensen 2006). Finally, with the help of the Internet, parents of children can better understand and support the therapeutic process of their child through the online version of the treatment programs. The constraints in terms of time (inflexible work hours, incompatible schedules, etc.) for parents as well as therapists become more easily managed.

In sum, early studies appear promising, and results from Khanna and Kendall (2010) show that using computers to deliver CBT to youth suffering from anxiety disorders is effective. As with any self-help treatment program, clinical skills may still be required at some point to tailor the treatment to the specific needs of each child, especially when the time comes to expose the child to a unique phobic object or situation. The integration of treatment programs assisted by computer can also compensate for the lack of services and the limited numbers of professional specialized resources in rural regions or more distant geographic locations.

Using the Internet to Implement CBT

The generations of people born after the 1970s are being raised in a world where technological advancement is part of their daily reality. Known as the "children of the millennium," or more often by the expression, "Generation Y" or "NET generation" (McCrindle 2006; Pouget 2008), these cohort generations are increasingly more at ease with new and evolving information technologies and are quite gifted in terms of knowledge about computer science (Cheng 1999; Peattie 2007). Video games, e-mail, chatting, instant messaging, texting, blogs, and social networking are just a few of the activities done online by today's youth (Subrahmayam and Greenfield 2008). In 2009, the census data from the Pew Internet and American Life Project team revealed that 93% of North American youth, between 12 and 17 years of age used the Internet daily, and 89% of those youth did so from their homes (Jones and Fox 2009). These percentages are witness to the omnipresence of these media in the daily life of every child and adolescent, socially, recreationally, and educationally (Bussière and Gluszynski 2004; Lévesque 2007).

With respect to education, many studies report that children often use the Internet as a search engine to do academic activities and to interact socially, but also to discuss subjects more intimate in nature, such as their physical or mental health. One study conducted by Gray et al. (2005) indicated notably that for several youth between 11 and 19 years of age, the Internet constituted their first source of information in health fields (Gray et al. 2005). Santor et al. (2007) noted equally that connection to web sites related to health correlated positively with the use of health services in school environments (counselors, health centers) as well as with the number of subsequent referrals to physical and mental health professionals.

As for the integration of new information technologies in the domain of mental health, the Internet seems to occupy an increasingly dominant place. In fact, this type of media has become more and more used as a prevention and information tool, especially among adolescents. From the Latin *adolescere*, which translates "to grow," adolescence is a synonym for change (Marcelli and Braconnier 2008). This period is the turning point from childhood into adulthood. During this period, youth are confronted with multiple changes and new experiences that permit them to explore and discover their identity as well as their own values (Bee and Boyd 2007). Faced with challenges inherent in this transition period, youth may feel alone, or face questions or situations that may not be easy to discuss with an adult or even their peers (Lévesque 2007). Confidential and anonymous, the Internet is a source of information that sufficiently meets the needs and context of life of the latest generation (Borzekowski and Rickert 2001; Gould et al. 2002; Gray et al. 2005). However, it is not only children and adolescents that use the Internet in this way. New families and young parents from the Y generation also use this media more frequently as a source of information.

For this digital generation, however, the Internet is not only an informative media (Gray et al. 2005; Skinner et al. 2003). It also allows people to communicate, to maintain a social network, to receive support among peers, and even affords access to the clinical support of professionals (Skinner et al. 2003). In other words, more than being an attractive and popular means of information for today's youth (Peattie 2007), the Internet possesses the characteristics and necessary properties for the development of new forms of mental health intervention.

Known by the general term "cyberpsychology " (e.g., Botella et al. 2009), CBT programs offered on the Internet can involve direct contact with the therapist (e-therapy) or provide self-help treatment programs on the web (web-based therapy: the client goes to a web site, reads the information, follows the instructions, and fills out surveys and questionnaires). The therapy can also take place in real time, in a synchronized fashion (e.g., chatting, web cam, teleconference) or an asynchronous approach with the aid of texts, audio messages, and videotapes. These different treatment programs can be offered on an individual or group basis (Barak et al. 2008). As with any new technology or therapeutic innovation, initial years of implementation and research warrant cautious attention. Issues of cross-jurisdiction liability, licensure issues when providing therapy across states or countries, self-diagnosis,

risk evaluation and response, limits and challenges to confidentiality, loss of nonverbal information, "hacker" activity, and other unforeseen circumstances will require additional therapeutic consideration.

Developed and progressively validated over a few studies by Spence and her team in Australia, the *Brave-Online* program is a web therapy program intended for youth suffering from an anxiety disorder and their parents (Spence et al. 2006a). This program has two versions: the 16-session version for children between 7 and 12 years of age, and the 20-session version for adolescents between 13 and 17 years of age. Each version includes 6 and 7 sessions designed for parents. A few empirical studies have evaluated *Brave-Online* (see Table 12.3) and confirmed that the program follows a clinical protocol based on cognitive-behavior principles. This program graphically creates games and interactive activities to stimulate motivation and facilitate learning in youth. Parent sessions are based on psychoeducation activities. Conceived as parental coaching, the purpose of these sessions is to help parents accompany and support their children when they are confronted with more anxious situations (e.g., during exposure exercises).

Every week the treatment sessions are available from *Brave-Online* and take 60 minutes to complete. During the hour, youth progress in a sequential manner, through several web pages: lectures, exercises (questions/answers) illustrated by examples, and games (quizzes) that address the clinical material of each session. In order to generalize learning from computer sessions to daily life, youth engage in exposure exercises to apply the learned strategies to personally provocative situations during the week. Throughout therapy, therapist support is offered to the participants and to their parents by e-mail or telephone. The program is privately moderated, so the therapist can have direct access to the child's activities as well as to weekly reports, which permits therapeutic follow-up for each child. The therapist, through the electronic messaging system, can confirm a personalized contact; the messages can clarify specific concepts and enhance motivation. In addition, the participants also receive messages automatically reminding them to complete the next treatment session, or congratulating them for having completed each treatment session. Finally, the therapist communicates with the youth and his parents by telephone at the beginning of treatment and before the exposure. This telephone contact seems essential for the establishment of a fear hierarchy best adapted to the needs of the client. As far as the clinical tools are concerned, games and questionnaires are used to increase the interactive character of the program, which captures the youth's attention and helps in the comprehension of the transmitted information. For younger children, the clinical comprehension of the different key concepts is assured and reinforced by automatic messages (pop-ups) that appear each time that the child writes in a response.

The *Brave-Online* program has been used in the treatment of separation anxiety, social anxiety, generalized anxiety, and specific phobia with children and adolescents. It can be administered in an individual (March et al. 2009; Spence et al. 2008) or group therapy format (Spence et al. 2006a). The first version of the program was intended to be the part of a standard (face-to-face) CBT treatment. Spence et al. (2006b) initially conducted an outcome study with three groups of children between 7 and 14 years of age (one condition received a standard CBT program which would later become

Table 12.3 Summary of methodology in studies using the Internet to implement CBT with children suffering from anxiety disorders

References	Design	Diagnosis	Random assignment	Conditions	No.	Outcome measures	Results
Spence et al. 2006b	3 groups with 6- and 12-month follow-ups	Various anxiety disorders	Yes	Brave face-to-face, 1/2 Brave face-to-face plus 1/2 online, Waitlist	72	ADIS-P Spence Children's Anxiety Scale—revised Children's Manifest Anxiety Scale, Children's Depression Inventory, Child Behavior Checklist—revised	Brave = 1/2 Brave + 1/2 Brave Online > WL
Spence et al. 2008	Case study	Various anxiety disorders	No	Pilot study	2	ADIS-C/P Clinician rating, Spence Children's Anxiety Scale, Child Behavior Checklist—revised	Promising results
March et al. 2009	2 groups with 6-month follow-up	Various anxiety disorders	Yes	Brave-Online, No treatment	73	ADIS-C/P Clinician rating, Spence Children's Anxiety Scale—revised, Child Behavior Checklist—revised, CES-Depression scale	Brave Online > no treatment

the *Brave* program, the second condition received half of the *Brave* program face-to-face and the other half online, and the third condition was a waitlist control; see Table 12.3). The results proved to be clinically and statistically significant for both active treatments. The efficacy of the combined face-to-face and online program was slightly lower than the traditional face-to-face format, although this was not statistically significant.

These encouraging findings led the researchers to adapt the program for an online only version (Spence et al. 2008, see Table 12.3) and conduct a randomized control study with 73 children between 12 and 17 years of age (March et al. 2009). *Brave-Online* is associated with levels of satisfaction and credibility similar to those obtained by traditional CBT. As for treatment gains, March et al. (2009) indicated that compared with a no-treatment control group, the children following the program *Brave-Online* reported a significant reduction in anxiety symptoms. Treatment gains were not optimal at post treatment, although many were statistically significant compared with the waiting list, but at the 6 months follow-up the results were more positive, with 75% of the children in the online treatment condition no longer meeting the criteria for an anxiety diagnosis. Hence, the use of the *Brave-Online* program yielded small but significant effects at post treatment and further significant improvements were observed in the months posttreatment. March et al. (2009) suggested the weaker effect of the treatment, when compared with traditional treatment programs, and the delay in treatment improvement may be due to participants' delay in completion of therapy sessions. Indeed, many participants had not completed all the sessions by the time the posttreatment assessment was done. Almost half of the children completed the *Brave-Online* program between the posttreatment and the follow-up.

Results from the web-based *Brave-Online* program highlight the importance of treatment compliance issues, which is an important success factor in all self-help or minimal-therapist contact CBT packages. Nevertheless, the *Brave-Online* program is particularly interesting, in so far as it increases accessibility to psychological services, particularly in situations characterized by a lack of professional resources, with minimal therapist involvement. As the Internet becomes more accessible and allows the running of more powerful applications, the support used to access the program (e.g., CD-ROM) progressively evolves toward more widely accessible and portable technologies, such as Internet web sites and, implicitly, portable devices such as laptops and hand-held devices (e.g., iPad or smartphones). The Internet also facilitates dissemination and the possibility of minimal therapist contact through asynchronous media such as e-mails. Table 12.3 summarizes the different studies using the Internet to implement CBT with children and adolescents suffering from anxiety disorders.

Conclusion

As we have suggested throughout this chapter, the integration of new technologies in the treatment of anxiety disorders in children is a relatively recent practice but appears to be very promising. It may be particularly attractive to implement with

young people born after the 1980s, and also with families who work or reside in areas where access to treatment is limited. Even though there are limited initial data on the therapeutic effects of these new tools (Webb et al. 2008), the case and clinical efficacy studies completed to date and conducted during the initial phase of these programs demonstrate significant results as well as measures that justify and encourage the development of these new forms of intervention.

As well as allowing therapists to assume better control of the environment and over phobia-provoking stimuli during exposure exercises, the nonimmersive treatment programs assisted by computer are also accessible and affordable. The Internet turns out to be an interesting information and prevention tool for children as well as their parents. Since new technologies are being incorporated more and more into the daily habits of modern society, their integration into the treatment of anxiety disorders may also encourage increased adherence to treatment by children and youth, as well as ensure greater confidence in privacy and reduce the risk of feeling stigmatized by their peers. Among these advantages we also note the opportunity to adapt treatments to the particular needs of the client, the capability of greater control over the variables surrounding the exposure, and the possibility of giving graduated care while respecting the child's pace of treatment acceptance in uncommon and safe places, all the while adding the benefit of increased confidentiality of the therapeutic process.

Despite their many advantages, the use of these new technologies nevertheless includes certain challenges. In many studies reviewed in this chapter, the small sample sizes or the lack of adequate control groups invites tempered enthusiasm. In addition, the researchers who made the use of asynchronous (i.e., no real time interactions) treatment methods, such as consulting websites, were confronted with the difficulty of adapting anxiety levels to an appropriate exposure hierarchy according to the child's needs. The presence of comorbidity in anxious children and adolescents also represents a challenge for clinicians who foresee the integration of new technologies in their professional practices. Mental health treatment professionals would need to learn how to compensate for a lack of affective information when using computerized technology, in particular that created by the decrease in verbal and visual signals that permit a therapist to detect treatment resistance or adherence difficulties when working face-to-face with children.

Regarding VR, the presence of cybersickness or even the difficulty of immersing oneself in a virtual environment could limit the use of this new form of treatment with certain children. These difficulties seem to affect a minority of people. It is important to mention that on a clinical level, the new forms of intervention presented in this chapter may contribute in one way or another to the decrease in costs related to actual professional practices. However, certain computer tools remain expensive. Considering that the integration of new information technologies is relatively recent, little information is available on the long-term effects of cyberpsychological techniques. Some authors point out the danger of cyberdependence in youth, the risk of isolation, and the danger of depersonalization. Professional codes and ethical guidelines should be adapted for technological challenges in order to protect and preserve the well-being of children and their families. In conclusion, increasing numbers of

rigorous studies validate the scientific use of new information and communication technologies in the field of mental health. Computer technology for mental health remains a promising field, in constant evolution, whose innovation will certainly contribute to the advancement of knowledge and the improvement of care given to today's children, natives of the digital era.

Acknowledgments This project was supported in part by the financial support of the Canada Research Chairs program awarded to the third author, Canadian Foundation for Innovation awarded to the first and third author, and Cyberpsychology and Schools, and the Myrne Nevison Research Professorship awarded to the first author. Portions of this chapter were inspired by a book chapter in French from Silva, Bouchard, and Bélanger (written for Turgeon, in press).

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T. E. Davis III et al. (eds.), *Intensive One-Session Treatment of Specific Phobias,*
Autism and Child Psychopathology Series,
DOI 10.1007/978-1-4614-3253-1, © Springer Science+Business Media, LLC 2012