

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

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 Bamberg 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.

References

- Altabet, S.C. (2002). Decreasing dental resistance among individuals with severe and profound mental retardation. *Journal of Developmental and Physical Disabilities, 14*, 297–305.
- Aman, M.G., Singh, N.N., Stewart, A.W., Field, C.J. (1985). The aberrant behavior checklist: A behavior rating scale for the assessment of treatment effects. *American Journal of Mental Deficiency, 89*, 485–491.
- Baghdadli, A., Pascal, C., Grisi, S., Aussilloux, C. (2003). Risk factors for self-injurious behaviours among 222 young children with autistic disorders. *Journal of Intellectual Disability Research, 47*, 622–627.
- Begeer, S., Koot, H.M., Rieffe, C., Terwogt, M.M., Stegge, H. (2008). Emotional competence in children with autism: Diagnostic criteria and empirical evidence. *Developmental Review, 28*, 342–369.
- Bouton, M. (2004). Context and behavioral processes in extinction. *Learning and Memory, 11*, 485–494.
- Brown, T.A., DiNardo, P.A., Barlow, D.H. (1994). *Anxiety disorders interview schedule for DSM-IV (ADIS-IV)*. Albany: Graywind.
- Burgio, L.D., Willis, K., Burgio, K.L. (1986). Operantly based treatment procedure for stair avoidance by a severely mentally retarded adult. *American Journal of Mental Deficiency, 91*, 308–311.
- Chalfant, A.M., Rapee, R., Carroll, L. (2007). Treating anxiety disorders in children with high functioning autism spectrum disorders: A controlled trial. *Journal of Autism and Developmental Disorders, 37*, 1842–1857.
- Chok, J.T., Demanche, J., Kennedy, A., Studer, L. (2010). Utilizing physiological measures to facilitate phobia treatment with individuals with autism and intellectual disability: A case study. *Behavioral Interventions, 25*, 325–337.
- Davis III, T.E. (2009). PTSD, anxiety, and phobias. In J. Matson, F. Andrasik, & M. Matson (Eds.), *Treating childhood psychopathology and developmental disorders* (pp. 183–220). New York: Springer.
- Davis III, T.E., & Ollendick, T.H. (2005). A critical review of empirically supported treatments for specific phobia in children: Do efficacious treatments address the components of a phobic response? *Clinical Psychology: Science and Practice, 12*, 144–160.
- Davis III, T.E., Kurtz, P., Gardner, A., Carman, N. (2007). Cognitive-behavioral treatment for specific phobias with a child demonstrating severe problem behavior and developmental delays. *Research in Developmental Disabilities, 28*, 546–558.
- Davis III, T.E., Ollendick, T.H., Nebel-Schwalm, M. (2008). Intellectual ability and achievement in anxiety-disordered children: A clarification and extension of the literature. *Journal of Psychopathology and Behavioral Assessment, 30*, 43–51.
- Davis III, T.E., Ollendick, T.H., Öst, L.G. (2009). Intensive treatment of specific phobias in children and adolescents. *Cognitive and Behavioral Practice, 16*, 294–303.
- Davis III, T.E., Fodstad, J.C., Jenkins, W., Hess, J.A., Moree, B.N., Dempsey, T., et al. (2010). Anxiety and avoidance in infants and toddlers with autism spectrum disorders: Evidence for differing symptom severity and presentation. *Research in Autism Spectrum Disorders, 4*, 305–313.
- Davis III, T.E., Hess, J.A., Matthews, R., Fodstad, J.C., Dempsey, T., Jenkins, W., et al. (2011a). The moderating effect of anxiety on development in atypically developing toddlers. *Journal of Psychopathology and Behavioral Assessment, 33*, 171–177.
- Davis III, T.E., Hess, J.A., Moree, B.N., Fodstad, J.C., Dempsey, T., Jenkins, W., et al. (2011b). Anxiety symptoms across the lifespan in people with autistic disorder. *Research in Autism Spectrum Disorders, 5*, 112–118.
- Davis III, T.E., May, A.C., Whiting, S.E. (2011c). Evidence-based treatment of anxiety and phobia in children and adolescents: Current status and effects on the emotional response. *Clinical Psychology Review, 31*, 592–602.

- Davis III, T.E., Moree, B.N., Dempsey, T., Reuther, E.T., Fodstad, J.C., Hess, J.A., et al. (2011d). The relationship between autism spectrum disorders and anxiety: The moderating effect of communication. *Research in Autism Spectrum Disorders*, 5, 324–329.
- Davis III, T.E., Moree, B.N., Dempsey, T., Hess, J.A., Jenkins, W.S., Fodstad, J.C., et al. (2012). The effects of communication deficits on anxiety symptoms in infants and toddlers with autism spectrum disorders. *Behavior Therapy*, 43(1), 142–152.
- De Bruin, E.L., Ferdinand, R.F., Meester, S., de Nijs, F.A., Verheij, F. (2007). High rates of psychiatric co-morbidity in PDD-NOS. *Journal of Autism and Developmental Disorders*, 37, 877–886.
- Dekker, M.C., & Koot, H.M. (2003). DSM-IV disorders in children with borderline to moderate intellectual disability: Prevalence and impact. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 915–922.
- Esbensen, A.J., Rojahn, J., Aman, M.G., Ruedrich, S. (2003). Reliability and validity of an assessment instrument for anxiety, depression, and mood among individuals with mental retardation. *Journal of Autism and Developmental Disorders*, 33, 617–629.
- Erfanian, N., & Miltenberger, R.G. (1990). Contact desensitization in the treatment of dog phobias in persons who have mental retardation. *Behavioral Residential Treatment*, 5, 55–60.
- Feinstein, C., Kaminer, Y., Barrett, R.P., Tylenda, B. (1988). The assessment of mood and affect in developmentally disabled children and adolescents: The emotional disorders rating scale. *Research in Developmental Disabilities*, 9, 109–121.
- Fombonne, E. (1999). The epidemiology of autism: A review. *Psychological Medicine*, 29, 769–786.
- Hagopian, L.P., & Jennett, H.K. (2008). Behavior assessment and treatment of anxiety in individuals with intellectual disabilities and autism. *Journal of Developmental and Physical Disabilities*, 20, 467–483.
- Hagopian, L.P., Crockett, J.L., Keeney, K.M. (2001). Multicomponent treatment for blood-injury-injection phobia in a young man with mental retardation. *Research in Developmental Disabilities*, 21, 141–149.
- Hurley, A.D. (2004). Treatment of multiple phobias and agoraphobia in a man with Down syndrome. *Mental Health Aspects of Developmental Disabilities*, 7, 142–148.
- Kessler, R.C., Chiu, W.T., Demler, O., Merikangas, K., Walters, E.E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry*, 62, 617–627.
- Koegel, R.L., Koegel, L.K., Vernon, T.W., Brookman-Frazee, L.I. (2010). Empirically supported pivotal response treatment for children with autism spectrum disorders. In J.R. Weisz & A.E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents—2nd edn.* (pp. 327–344). New York: Guildford.
- Leyfer, O.T., Folstein, S.E., Bacalman, S., Davis, N.O., Dinh, E., Morgan, J., Tager-Flusberg, H., Lainhart, J.E. (2006). Comorbid psychiatric disorders in children with autism: Interview development and rates of disorders. *Journal of Autism and Developmental Disorders*, 36, 849–861.
- Lehmkuhl, H.D., Storch, E.A., Bodfish, J.W., Geffkin G.R. (2008). Brief report: Exposure and response prevention for obsessive compulsive disorder in a 12-year-old with autism. *Journal of Autism and Developmental Disorders*, 38, 977–981.
- Lindsay, W.R., Michie, A.M., Baty, F.J., McKenzie, K. (1988). Dog phobia in people with mental handicaps: Anxiety management training and exposure treatments. *Mental Handicap Research*, 1, 39–48.
- Love, S.R., Matson, J.L., West, D. (1990). Mothers as effective therapists for autistic children's phobias. *Journal of Applied Behavior Analysis*, 23, 379–385.
- Luiselli, J.K. (1977). Case report: An attendant-administered contingency management program for the treatment of a toileting phobia. *Journal of Mental Deficiency Research*, 21, 283–288.
- Luscre, D.M., & Center, D.B. (1996). Procedures for reducing dental fear in children with autism. *Journal of Autism and Developmental Disorders*, 26, 547–556.

- Matson, J. (1981). A controlled outcome study of phobias in mentally retarded adults. *Behaviour Research and Therapy*, *19*, 101–107.
- Matson, J., & Bamburg, J.W. (1998). Reliability of the assessment of dual diagnosis (ADD). *Research in Developmental Disabilities*, *19*, 89–95.
- Matson, J. & Wilkins, J. (2008). Reliability of the autism spectrum disorders-comorbidity for children (ASD-CC). *Journal of Developmental and Physical Disabilities*, *20*, 327–336.
- Matson, J., Bamburg, J., Cherry, K., Paclawskyj, T. (1999). A validity study on the Questions About Behavioral Function (QABF) scale: Predicting treatment success for self-injury, aggression, and stereotypes. *Research in Developmental Disabilities*, *20*, 163–176.
- Matson, J., Smioldo, B., Hamilton, M., Baglio, C. (1997). Do anxiety disorders exist in persons with severe and profound mental retardation? *Research in Developmental Disabilities*, *18*, 39–44.
- Matson, J., Wilkins, J., Macken, J. (2009). The relationship of challenging behaviors to severity and symptoms of autism spectrum disorders. *Journal of Mental Health Research in Intellectual Disabilities*, *2*, 29–44.
- Mindham, J., & Espie, C.A. (2003). Glasgow anxiety scale for people with an intellectual disability (GAS-ID): Development and psychometric properties of a new measure for use with people with mild intellectual disability. *Journal of Intellectual Disability Research*, *47*, 22–30.
- Moree, B. & Davis III, T.E. (2010). Cognitive-behavioral therapy for anxiety in children diagnosed with autism spectrum disorders: Modification trends. *Research in Autism Spectrum Disorders*, *4*, 346–354.
- Moss, S., Prosser, H., Costello, H., Simpson, N., Patel, P., Rowe, S., et al. (1998). Reliability and validity of the PAS-ADD checklist for detecting psychiatric disorders in adults with intellectual disability. *Journal of Intellectual Disability Research*, *42*, 173–183.
- Nebel-Schwalm, M., & Davis III, T.E. (2011). Preliminary factor and psychometric analysis of the motivation for fear (MOTIF) survey. *Journal of Anxiety Disorders*, *25*, 731–740.
- Obler, M., & Terwilliger, R.F. (1970). Pilot study on the effectiveness of systematic desensitization with neurologically impaired children with phobic disorders. *Journal of Consulting and Clinical Psychology*, *34*, 314–318.
- Ollendick, T.H. (1983). Reliability and validity of the revised fear survey schedule for children (FSSC-R). *Behaviour Research and Therapy*, *21*, 685–692.
- Ollendick, T.H., Davis III, T.E., Muris, P. (2004). Treatment of specific phobia in children and adolescents. In P.M. Barrett & T.H. Ollendick (Eds.), *Handbook of interventions that work with children and adolescents: Prevention and treatment* (pp. 273–299). West Sussex: Wiley.
- Ollendick, T.H., Davis III, T.E., Sirbu, C. (2009) Specific phobias. In D. McKay & E. Storch (Eds.), *Cognitive behavior therapy for refractory cases in children and adolescents* (pp. 133–141). New York: Springer.
- Ornitz, E.M. (1989). Autism at the interface between sensory information and information processing. In G. Dawson (Ed.), *Autism: Nature, diagnosis, and treatment* (pp. 174–207). New York: Guilford.
- Öst, L.-G. (1987). One-session treatments for a case of multiple simple phobias. *Scandinavian Journal of Behavior Therapy*, *16*, 175–184.
- Öst, L.G. (1997). Rapid treatment of specific phobias. In G.C.L. Davey (Ed.), *Phobias: A handbook of theory, research, and treatment* (pp. 227–247). New York: Wiley.
- Öst, L.G., Svensson, L., Hellström, K., Lindwall, R. (2001). One-session treatment of specific phobias in youths: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *69*, 814–824.
- Peck, C.L. (1977). Desensitization for the treatment of fear in the high level adult retardate. *Behaviour Research and Therapy*, *15*, 137–148.
- Puig-Antich J., & Chambers, W. (1978). *The schedule for affective disorders and schizophrenia for school-age children (Kiddie-SADS)*. New York: New York State Psychiatric Institute.
- Ramirez, S.Z., & Luckenbill, J.F. (2007). Development of the fear survey for adults with mental retardation. *Research in Developmental Disabilities*, *28*, 225–237.

- Rapp, J.T., Vollmer, T.R., Hovanetz, A.N. (2005). Evaluation and treatment of swimming pool avoidance exhibited by an adolescent girl with autism. *Behavior Therapy*, 36, 101–105.
- Reaven, J., & Hepburn, S. (2003). Cognitive-behavioral treatment of obsessive-compulsive disorder in a child with Asperger syndrome: A case report. *Autism*, 7, 145–164.
- Reaven, J., Blakeley-Smith, A., Nichols, S., Dasari, M., Flanigan, E., Hepburn, S. (2009). Cognitive-behavioral group treatment for anxiety symptoms in children with high-functioning autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, 24, 27–37.
- Reynolds, C.R., & Kamphaus, R.W. (2004). *BASC-2 behavioral assessment system for children manual* (2nd edn.). Circle Pines: AGS.
- Riccardi, J.N., Luiselli, J.K., Camare, M. (2006). Shaping approach responses as intervention for specific phobia in a child with autism. *Journal of Applied Behavior Analysis*, 39, 445–448.
- Runyan, M.C., Stevens, D.H., Reeves, R. (1985). Reduction of avoidance behavior of institutionalized mentally retarded adults through contact desensitization. *American Journal of Mental Deficiency*, 90, 222–225.
- Shabani, D.B. & Fisher, W.W. (2006). Stimulus fading and differential reinforcement for the treatment of needle phobia in a youth with autism. *Journal of Applied Behavior Analysis*, 39, 449–452.
- Silverman, W.K., & Albano, A.M. (1996). *Anxiety disorders interview schedule for DSM-IV, child and parent versions*. San Antonio: Psychological Corporation.
- Silverman, W.K., & Ollendick, T.H. (2005). Evidence-based assessment of anxiety and its disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, 34, 380–411.
- Sofronoff, K., Attwood, T., Hinton, S. (2005). A randomized controlled trial of CBT intervention for anxiety in children with Asperger syndrome. *Journal of Child Psychology and Psychiatry*, 46, 1152–1160.
- Sze, K.M., & Wood, J.J. (2007). Cognitive behavioral treatment of comorbid anxiety disorders and social difficulties in children with high-functioning autism: A case report. *Journal of Contemporary Psychotherapy*, 37, 133–143.
- Sze, K.M., & Wood, J.J. (2008). Enhancing CBT for the treatment of autism spectrum disorders and concurrent anxiety. *Behavioural and Cognitive Psychotherapy*, 36, 403–409.
- White, S.W., Oswald, D., Ollendick, T.H., Scahill, L. (2009). Anxiety in children and adolescents with autism spectrum disorders. *Clinical Psychology Review*, 29, 216–229.
- Wood, J.J., Drahota, A., Sze, K., Har, K., Chiu, A., Langer, D.A. (2009). Cognitive-behavioral therapy for anxiety in children with autism spectrum disorders: A randomized, controlled trial. *Journal of Child Psychology and Psychiatry*, 50, 224–234.
- Zlomke, K., & Davis III, T.E. (2008). One-session treatment of specific phobias: A detailed description and review of treatment efficacy. *Behavior Therapy*, 39, 207–223.