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Intensive Treatment of Specific Phobias in Children and Adolescents

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One-session treatment (OST), a variant of cognitive-behavioral therapy, combines graduated in vivo exposure, participant modeling, reinforcement, psychoeducation, cognitive challenges, and skills training in an intensive treatment model. Treatment is maximized to one 3-hour session. In this paper, we review the application of OST for specific phobia in youth and highlight practical matters related to OST and its use in a clinical setting. We also briefly review results of treatment outcome studies and suggest future directions for clinical research and practice. We conclude that OST is an efficient and efficacious treatment.

It has been suggested that if a clinician is thinking about using cognitive-behavioral therapy (CBT) with anxious youth the clinician should "think exposures" (Kendall et al., 2005). Beyond this initial advice, however, conducting exposure therapy with children and adolescents is more complicated than one might "think." Many questions are evident. What kind of exposure should be used (in vivo, in imagination, on audio/video tape, or in virtual reality)? Precisely what materials and stimuli will be needed? How will they be obtained? Where will they be kept? Can I do it myself or do I need an assistant? What length of exposure (i.e., brief or prolonged) should I use? At what dose (spaced or massed)? How does one plan and conduct an exposure? Does one need to get specialized training or supervision to ensure competence? As a result, "thinking exposure" with anxious youth is complicated and requires a rich understanding of developmental psychopathology and familiarity with increasingly intensive and efficacious treatment formats (cf. Davis, 2009; Ollendick, Davis, & Sirbu, in press).

In this paper, we will focus on a host of practical issues associated with using exposure therapy for the treatment of specific phobia in children and adolescents. In doing so, we briefly review the literature, which has brought exposure therapy for child phobia from a multi-session downward extension of adult therapy to a more developmentally informed, intensive, single session of cognitive-behavioral therapy (CBT) termed "One-Session Treatment" (OST; cf. Öst, 1987a, 1989, 1997; Ollendick et al., in press). In addition, in as much as a systematic review of the conceptual underpinnings of OST and its treatment efficacy has recently been published (Zlomke & Davis, 2008), we will focus more on the actual implementation of OST with children in this paper and on extending the techniques described in the unpublished OST manual for children (Öst & Ollendick, 2001).

Specific Phobias in Children

Experiencing fear and anxiety is normal and healthy in the course of child development and emotional growth. These emotions can even be looked upon as adaptive and, more importantly, as impressive markers of increasingly complex cognition and abstract thought processes (Muris, Merckelbach, Meesters, & van den Brand, 2002; Ollendick, Hagopian, & King, 1997). The evolution from transient, concrete fears of animals to more elaborate fears of supernatural phenomena (e.g., the "Boogeyman") in children signals a welcome progression in the capability for abstract thought. However, when these fears linger and become more intense, a different type of developmental event may be signaled—the development of a specific phobia. In particular, strong, persistent, specific fears lasting more than 6 months and accompanied by intense physiological symptoms and avoidance or distress typify the presence of a specific phobia (*Diagnostic and Statistical Manual of Mental Disorders—4th edition, text revision*; *DSM-IV-TR*; American Psychiatric Association, 2000). Such fears have been shown to exist in 5% of children in community samples and up to 10% of children in mental health settings (Ollendick et al., 1997). Other research based on parental reports has suggested, however, that as many as 17.6% of children with "childhood fears" may meet criteria for specific phobia (Muris & Merckelbach, 2000) and, based on child report, that 22.8% of children who report

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specific fears may meet criteria for an actual phobic disorder (Muris, Merckelbach, Mayer, & Prins, 2000). Moreover, although the average age of onset of specific phobia is between 9 and 10 years of age (although a wide range has been reported that varies by type of fear; cf. Öst, 1987b), fewer than 10% of adults report ever seeking treatment for their phobias and that the average duration of their phobias is 20 years (Stinson et al., 2007). The developmental, psychological, and medical impact of these phobias is significant, with sufferers accessing medical care at a rate higher than those with obsessive-compulsive disorder and second only to panic disorder (Deacon, Lickel, & Abramowitz, 2008). This plight is especially distressing given the efficacious child treatments that may offset such developmental impacts.

Clinicians treating child phobias are able to choose from several evidence-based treatment options that focus on exposure: for example, reinforced practice (i.e., contingency management), participant modeling, systematic desensitization (though historically efficacious, it has not received widespread use or study with children in recent decades), and CBT. Interestingly, however, with few notable exceptions most of the research on these efficacious treatment modalities with children is decades old (Davis & Ollendick, 2005; Ollendick, King, & Chorpita, 2006). Innovation in treating child phobias in recent years has come less from reinventing the wheel than from engineering how the wheels can move together to be more efficient: newer treatment alternatives have typically represented innovative ways of combining older, established techniques into a single therapy. It is this transformation, combination, and adaptation of treatments provided over the course of several sessions into a well-tolerated, single massed session of exposure to which we now turn.

Details About Applying the Treatment to Children

Overview

Treatments for child anxiety have been suggested to work through diverse processes such as counterconditioning, extinction, habituation, change in catastrophic cognitions, development of coping skills, increased self-efficacy, emotional processing, and changes in expectancies and perceptions of dangerousness (Bouchard, Mendlowitz, Coles, & Franklin, 2004; Kendall et al., 2005). While one, some, or all of these processes may be implicated as mechanisms of change, what are really being proposed are alterations in one or more of the components of the tripartite phobic emotional response—physiology, behavior, and cognition. OST theoretically excels at targeting all three components of the phobic response (Davis & Ollendick, 2005). OST combines graduated in vivo exposure, participant modeling, reinforcement, psychoeducation, cognitive challenges, and skills training (Öst, 1997; Zlomke & Davis, 2008). The use of these techniques may seem a daunting and draining exercise to most clinicians unfamiliar with exposure therapy; however, we believe it is most beneficial to view the various techniques as tools in a clinician's toolkit specifically designed to address different aspects of the problematic fear. Hierarchical exposure, then, serves to elicit the child's fear and allows the clinician to implement one or more techniques to address the nuances of a child's phobic

Table 1
Parting thoughts and reminders for conducting One-Session Treatment

- 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.*

Note: * 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?"

emotional response. As a result, adequate assessment and knowing as much as possible about the child's fear and reactions to exposure beforehand are crucial. See Table 1 for additional detail.

Before Treatment

Diagnostic assessment. As has been emphasized elsewhere (Ollendick, Davis, & Muris, 2004; Silverman & Ollendick, 2005), assessment is a crucial component to choosing the appropriate evidence-based treatment for a child's difficulty. While a thorough review of the assessment procedures for specific phobias in children is beyond our scope, a few aspects are worth mentioning. Foremost, an evidence-based, multimethod, multi-informant approach cannot be emphasized enough. In addition, this approach provides a rich source of data, not only for diagnostic purposes, but also for treatment planning. Specifically, we recommend using the Anxiety Disorders Interview Schedule for DSM-IV—Child and Parent Versions (ADIS-IV C/P; Silverman & Albano, 1996), child self-report instruments such as the Fear Survey Schedule for Children–Revised (FSSC-R; Ollendick, 1983), and a behavioral avoidance test (BAT) if at all possible. The ADIS-IV C/P assists the clinician in making an evidence-based diagnosis of specific phobia while also familiarizing the child with a rating system that will be used throughout treatment (a 0 to 8 feelings thermometer where 0 is "none" and 8 indicates "very severely disturbing/disabling"). The FSSC-R has been found to be useful in discriminating types of phobia (e.g., animal, environmental, situational, and blood-injection-injury; see Weems, Silverman, Saavedra, Pina, & Lumpkin, 1999) and for providing an overall index of fear level and intensity (Ollendick, King, & Frary, 1989). Finally, whereas BATs may be difficult to arrange outside of a research setting, we believe the information obtained from actually observing the child's reaction and avoidance to the stimulus can be very important to the treatment process, and we strongly encourage their use whenever feasible.

Functional assessment. Following the traditional diagnostic assessment, preparation for OST begins with the clinician meeting with the child and parent or guardian in a separate functional assessment session lasting approximately 45 minutes. The purpose of this session is to transition from assessment to treatment and prepare for the massed session. As a result, the functional assessment session is used to determine any maintaining variables, generate a fear hierarchy, catalog the child's most severe catastrophic cognitions, determine the onset and course of the phobia if possible, build rapport, and present the rationale for treatment (Öst, 1997; Öst & Ollendick, 2001; Zlomke & Davis, 2008). We prefer to conduct the majority of this session with the child him- or herself and then confirm findings with the parent or guardian towards the end of the session; however, for very young children we may have a parent or guardian present to assist the child throughout.

OST is partly premised on the theory that it is the child's expectancies and catastrophic cognitions about confrontation with the feared stimulus that maintain the avoidance behavior (Öst, 1997; Öst & Ollendick, 2001; Zlomke & Davis, 2008). As a result, this session flows between creating a fear hierarchy and simultaneously probing for catastrophic thoughts associated with the varying levels of exposure. This can be a difficult task with children; however, the two lines of questioning complement one another in that the concrete steps of the fear hierarchy help provide a stable structure from which to generate the more complex catastrophic cognitions and vice versa. Developmentally, we make several alterations to this interview process when working with children. First, we keep in mind that development flows from concrete to increasingly more complex and abstract thinking. For example, asking younger children about cognition is a heady endeavor. Such thinking involves perspective-taking, emotional development and understanding, episodic and autobiographical memory, as well as numerous other developmental prerequisite skills. Given this, we anticipate younger children will answer with concrete examples or stories about phobic experiences instead of abstract concepts about the hypothetical underpinnings of their fear. We wade through the information to obtain details about behavioral avoidance, physiological arousal, and cognition (at least as far as what can be obtained from what the child has shared with us). Second, we try to simplify the creation of the fear hierarchy to the extent possible. Developmentally, asking a younger child to generate 10 to 15 increasingly more fearful behavioral exposures would be unlikely; however, a more concrete approach lends itself to presenting bifurcated options. For example, we might begin by asking the child what the easiest interaction with the stimulus is (i.e., #1), then the most difficult (i.e., #10). What would then be something about halfway between the easiest and hardest (i.e., #5 or #6)? Then we would examine interactions halfway between each of these (i.e., #3 and #8), etc., until we have flushed out a workable hierarchy. This bifurcated approach provides the child with concrete anchors from which to judge the situations. We also try to determine what aspects of the stimulus might affect the level of fear (e.g., the size, color, shape, certain body parts, etc.). Determining these aspects of the hierarchy can be where a BAT is particularly useful (i.e., having a recent concrete memory of exposure from which to draw details from), but it is also useful to inquire about the child's last experience with the stimulus, the first experience, the worst experience, etc. Third, we try to be sensitive to the power differential and our status as adult

authority figures. We are sensitive to starting our probing with open-ended questions and only later resorting to leading the child in our interviewing. Within reason, we want to create a setting in which the child feels comfortable correcting or contributing to our assessment and not merely succumbing to our assertions or hypotheses.

The onset and cause of the phobia, to the extent it is known or can be recalled, can also provide important information; however, the crucial information to be obtained is delineating what variables maintain the phobia and avoidance. A basic conceptualization that the fear maintains the avoidance is of little therapeutic use (Öst & Ollendick, 2001); instead, to the extent possible understanding the specific functions of the behavior will better support a formulation of the phobia and inform treatment (e.g., attention, tangible objects, escape, etc.). Finally, an underlying goal of the functional assessment session should be to assess both child and parent(s)' or guardian(s)' motivation for treatment.

Logistically, it is best to have the functional assessment session 1 week prior to the actual massed exposure session (however, when we have individuals seeking treatment from afar we have conducted the functional assessment the day before or day of treatment). There are several reasons for this preference: It provides more time to prepare for the exposure session, there is an opportunity to acquire the specific stimuli needed for the exposures, and there is less of a demand placed upon the child and less potential for fatigue. The functional assessment session also provides an opportunity for the clinician to present feedback from the assessment and review the case conceptualization with the family. We prefer to provide this information with the parent(s) or guardian(s) present. To further build trust and rapport, we typically get child assent to discuss the session with the parent present before the parent is brought in. Adding the family at this point also provides an additional opportunity to probe or confirm any behaviors of the immediate family which may contribute to the fear and potentially hamper the generalization of treatment gains to the home.

Family and parental factors. It is important to consider that most children presenting for treatment of their phobias have had some sort of exposure experience already—usually to the child's detriment. In our experience, it is likely that children will have had negative experiences with parents, siblings, classmates, bullies, etc., who have forced exposure upon them. Such experiences likely confirm catastrophic beliefs about the feared situation and reinforce avoidance. Anecdotally, these are usually either genuine attempts to help the child "face his/her fear" or ill-conceived attempts at jest or teasing. It is imperative that the clinician inquire about such experiences during the functional assessment to be prepared for them, both during OST and in preparation for maintenance afterwards. Also, the clinician must build rapport and trust with the child and this information should be included in the rationale (see below) to assuage the child's fears and catastrophic expectations about treatment. Finally, problems with family members, peers, and others may need to be addressed following treatment in additional separate sessions.

The issue of phobia accommodation (i.e., parents and others acting in ways which maintain the fear) cannot be ignored. We have routinely seen accommodation as an obstacle to seeking treatment or continuing with treatment successes after the intervention. For example, we worked with a family whose members had all gone to bed at dusk for years because of a child's phobia of dark and discomfort at hearing noises and people in the house after dark. This family presented for treatment to "help [us]" (i.e., help the research staff) with an ongoing study because the fear "was not a problem" to them. We also worked with a child with a phobia of bees who regularly had panic attacks and tantrums around flying insects; the family did not seek treatment until a tantrum nearly ran the family car off the interstate—for the second time that summer—due to a fly getting in the car. Stories such as these are common in our experience as families with children with specific phobias either do not know how to handle their child's fears, think it will go away after a "phase" or "stage," or have just grown to accept the fear and have altered their lives to live with it. As a result, clinicians need not only to address the child's phobia, but also to address any number of family and environmental variables (e.g., accommodation; parenting skills deficits; the reinforcement of fear and avoidance through attention, escape from demands, tangible items such as preferential seating or safety items, etc.).

Rationale and pretreatment instructions. As is customary with CBT, at the conclusion of the functional assessment session, we provide a brief rationale for the use of OST. The rationale serves to not only inform the child and parent(s) or guardian(s) of what to expect in the coming treatment session, but also is an opportunity to alleviate misconceptions about the treatment and how it will be conducted and experienced. As mentioned above, most children (and adults) presenting for exposure therapy have had a history of exposure experiences already and in our experience many have had their expectations shaped even further by television (e.g., eating roaches or being submerged in snakes for "reality" television game shows). As a result, the information collected to this point allows the clinician to make an argued and developmentally tailored case for the child's phobia, hypothesized mechanisms for how it is being maintained, why OST will be a good fit for this type of phobia (if in fact it is), and, perhaps most importantly, how OST will differ from the child or parent's previous conceptions of exposure therapy. As a result, we emphasize

that compared to previous exposure experiences, OST will consist of planned, graduated, controlled, prolonged, and collaborative exposure (Öst, 1997; Öst & Ollendick, 2001). The goal is not to create another traumatic experience, but to create the opportunity for the child to learn that the negative expectations and thoughts believed to surround the stimulus either do not occur or if they do occur are not as anxiety-arousing as believed. Finally, the clinician emphasizes that the massed session should be seen as the start of something the patient should continue in natural situations. While a great deal can be accomplished in the single, 3-hour session, it will take several weeks to months of self-exposure and practice to solidify treatment gains (Öst & Ollendick, 2001; Zlomke & Davis, 2008). As such, the end product of treatment is not that a child loves the fear-inducing stimulus or wants a dog, snake, etc.; but rather, the child can function normally when exposed to the stimulus and not have the fear interfere with his or her life and daily activities.

We also review the instructions for how treatment will be done briefly at this point and more fully at the beginning of the treatment session. A team approach to treatment is emphasized—the child does not have to accomplish this alone. It is explained that exposure will be carried out via a three-step procedure using behavioral experiments derived from the fear hierarchy and functional assessment: the clinician and child will discuss a possible exposure, the clinician will demonstrate the exposure, and the clinician and child will complete the exposure together. The clinician emphasizes that nothing will be done without the child's permission and the goal is not to shock or overwhelm the child or catch him or her by surprise (Öst & Ollendick, 2001; Zlomke & Davis, 2008). In addition, referencing the information from the diagnostic interview and the functional assessment, it is explained that the goal of treatment is not to match the fear and helplessness of a previous traumatic experience, but rather to gradually learn how to handle the fear in manageable increments. Even so, while unwieldy levels of anxiety are not the goal, the child must also understand that in order for the treatment to be effective he or she must experience moderate levels of fear—though, not levels that will "break their personal record" (Öst & Ollendick, 2001, p. 5). Finally, we emphasize that the collaborative team members each have a role to play. It is the child's responsibility to try to do his or her best and be motivated, and it is the clinician's responsibility to grade and control the exposures and prompt the child to do his or her best. Developmentally, we have found it beneficial to couch the description with younger children in terms of being "scientists." As a result, we explain we are going to conduct controlled "experiments" about the child's fear and how to better help the child learn from the experience, face the fear, and handle the subsequent sensations, expectancies, and cognitions.

Conducting OST

Overview. As previously mentioned, the actual massed exposure session is a combination of techniques that are implemented during in vivo exposure. In addition to the exposure itself, the clinician makes use of cognitive challenges, participant modeling, reinforcement, psychoeducation, and skills training. The treatment session begins with the clinician reviewing the rationale for treatment and the pretreatment instructions: namely, the three-step process for the behavioral experiments and that nothing will be done to shock the child or surprise him or her. Following this, OST proper begins and is maximized to 3 hours, with the occasional brief break between tasks and as therapeutically appropriate to combat fatigue (i.e., not when such a break would reinforce escape or thwart behavioral momentum). Ideally, OST with children should even be a fun turn-taking game of planning and then executing exposures.

Exposure. In vivo exposure is the key feature of OST. In particular, massed exposure seems to impart additional therapeutic and logistical benefits. With OST, the exposure component has three main purposes: it is a mechanism for eliciting fear so that catastrophic cognitions and expectancies can be activated and addressed, it permits fear to habituate and avoidance to extinguish, and it prevents behavioral and cognitive avoidance in a safe and controlled environment (Zlomke & Davis, 2008). Exposure is carried out as a series of negotiated behavioral experiments based on the fear hierarchy and catastrophic cognitions obtained during the functional assessment. During the negotiation process, children agree to remain exposed until their fear decreases, ideally by at least 50% of their highest subjective units of distress (SUDs) rating or by the clinician's appraisal of the child's emotional state (Zlomke & Davis, 2008).

During this negotiation process, we have found it particularly useful to use "foot in the door" and "door in the face" techniques to avoid children suggesting tasks which are too simple. Initially, an agreement may be made to begin the exposure session with a very simple experiment (i.e., foot in the door); however, as the session progresses and the child learns the format and has greater trust, the clinician may suggest very difficult steps with the expectation that the child will pick something less extreme, but still difficult (i.e., door in the face). For example, a clinician may suggest going over and petting a dog that is leashed 15 feet away. The child may not agree to the step, to which the clinician can counter with only approaching halfway to the dog, which the child finds more agreeable.

Finally, overlearning is an important aspect to the behavioral experiments—both in doing a single experiment until it becomes more routine-like, but also in

completing experiments that by far exceed normative interactions (Öst & Ollendick, 2001; Zlomke & Davis, 2008). Overlearned steps involve placing one's hand near the dog's mouth, catching spiders and holding them for a prolonged period of time, and standing on the top rung of a ladder, until such steps are less evocative or even commonplace. Normative, incidental, casual exposure outside of session should then be comparatively easier. Also, the use of distraction is to be avoided at all times during the session.

Cognitive challenges. Given one of the main purposes of the behavioral experiments is to provide new knowledge, clinicians must actually elicit catastrophic cognitions and use the exposure to challenge preconceived ideas about what interacting with the stimulus will evoke. Before implementing a behavioral experiment, the clinician will ask the child to describe what he or she believes will happen (i.e., to make a prediction). Directly after the experiment the child is asked to describe what actually happened. In this way, the behavioral experiment is used to test a catastrophic belief, but also to increase approach behavior. Following an experiment, the cognitions and expectations are discussed. If there was success then that is confirmed; if there was failure, then that too is discussed and inconsistencies between catastrophic beliefs and actual events are highlighted.

Participant modeling. Participant modeling is another important technique during OST. Participant modeling serves to further break down difficult steps in the fear hierarchy into more manageable tasks, add additional structure to the step, and increase social support and guidance during initial approximations of the step (Zlomke & Davis, 2008). First, a clinician physically demonstrates a step (e.g., petting a dog) while also modeling coping behaviors and competence and challenging the child's catastrophic cognition (e.g., "Do you think the dog will bite me if I pet him?"). Second, the clinician brings the child into the modeled exercise by having him or her complete the step with some degree of clinician physical contact (e.g., the clinician may stand between the dog and the child and have the child place his hand on the clinician's while the clinician actually pets the dog). Third, physical contact with the clinician is faded out until the child can complete the step independently (e.g., the clinician may move from hand over hand to just a hand on the shoulder to just giving verbal instructions and support). Even if participant modeling is best suited for animal phobias, it can also occur during exposure in other types of specific phobia (Öst & Ollendick, 2001; Zlomke & Davis, 2008). For example, a height exposure may be assisted by the clinician modeling holding on to a railing and looking over the railing followed by a hand on the shoulder while the child accomplishes the same step.

Reinforcement. Reinforcement of the child's attempts and successes at behavioral experiments is very important. During OST, reinforcement typically takes the form of verbal praise and occasional physical contact (e.g., pats on the back). These reinforcers are used to shape approach behavior during the behavioral experiments and increase rapport and social support. Contingent use of praise is also very important—one of the potential mechanisms through which the treatment may work. For children who have an attention component to the maintenance of their phobia symptoms, the consistent application of praise and attention during approach behaviors can be potent (Davis, Kurtz, Gardner, & Carman, 2007). Conversely, the withdrawal of such attention or praise (but not appropriate empathy and support) during fearful responses can assist in selectively reinforcing the appropriate behavior. As a result, the clinician can use the reinforcement of approach and the withdrawal of reinforcement for fearful responses functionally maintained by attention, escape, etc., as a powerful shaping tool during the session (Davis et al., 2007; Zlomke & Davis, 2008). In other words, clinicians must take care not to inadvertently reinforce fearful behavior by allowing escape from the exposure or praising fearful responses.

Psychoeducation and skills training. The two final components of OST are the provision of psychoeducation and skills training during the massed session. While these are common components of many CBT treatments, these components do double-duty here as both therapeutic tools and means for keeping the extended exposure session interesting, informative, and focused on the behavioral experiments. In other words, psychoeducation and skills training about the stimulus and fear responses in general assist in correcting myths, false assumptions, and catastrophic expectancies as well as address the lack of a needed skill set (e.g., how to pet a dog without scaring it); however, they also provide a means to fill silent voids during prolonged behavioral experiments while not distracting or detracting from the exposure. Clinicians should be prepared and know the details about the feared stimulus and have a knowledge base with which to contradict faulty beliefs about stimuli. For example, clinicians should know the basic structure and function of a roach's body parts or the way in which an elevator works safely. In addition, it is important to work on the child's knowledge and skills at determining when naturalistic approach is safe and when it is contraindicated (e.g., how to tell a "good dog" from a "mean dog," not to approach and pick up snakes in the wild). In as much as OST works for a majority of children, families need to be prepared to initiate safe self-exposures following treatment.

Implementation. The implementation of OST over the course of several hours occurs at an uneven pace and may

differ considerably from child to child, even for the same phobic stimulus (though systematic research examining this pace has yet to be done). Some children may progress quickly through the exposures throughout, others may progress slowly and then the pace may improve with subsequent generalization stimuli, still others may progress quickly and then become fearful at a particular step (maybe not even one that was anticipated to be difficult). As a result, making specific time lines for treatment to follow beyond fleshing out a rough fear hierarchy are difficult and even ill-conceived; however, with this caution and to provide a hypothetical example of how a session might progress, we have included a rough overview in Table 2 of the first introduction of a dog with a child phobic of dogs. The important advice for the clinician to remember is that the fear should dissipate as long as avoidance is prevented and the child remains in the exposure.

After OST

After the massed exposure session, we have typically found it beneficial to bring the parent(s) or guardian(s) in and have the child briefly demonstrate his or her newly acquired approach behavior, and we demonstrate how behavioral experiments are conducted. Instructions are also given to continue self-exposures for the next few months to solidify treatment gains. Parents and guardians are educated as to how behavioral experiments are conducted and are encouraged to provide opportunities for their children to safely practice their new-found skills. Finally, follow-up appointments for assessment and, if necessary, additional clinician-directed exposure should be arranged. After several months, partial responders and those found to be refractory to change should be addressed (for a review see Ollendick, Davis, & Sirbu, in press).

Benefits and Costs of an Intensive Format

There are several factors that should be considered when implementing OST with children. As reviewed above, OST easily lends itself to developmental scalability: the treatment can be altered to fit a wide range of cognitive abilities. In addition, while such an intensive approach may be viewed as "cruel" to some, researchers have found the treatment generally follows the majority of children's expectations (75.4%) and that most children are satisfied with it (82.1%; Svensson, Larsson, & Öst, 2002). OST may also be a better match to parents with

Table 2
Hypothetical example of the progression of treatment for a child with a dog phobia

A. First Dog (approximately 1 to 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 4 more feet closer to the dog and discuss/challenge cognitions and predictions.
5. The child agrees to allow the dog 2 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., until treatment is completed.

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 overlearned until the child exhibits little or no fear.

Note. 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.

little time to spare for multiple sessions, or who travel from afar for treatment, or who have poor motivation and seem more likely to have difficulty attending sessions over a longer term. OST also offers a less-restrictive and more ethical choice of treatment for some of those with intellectual or developmental disabilities compared to some reports in the literature of treatments making use of forced exposure or restraint in that population (Davis et al., 2007).

These positive features notwithstanding, there are potentially drawbacks to the intensive approach. It has been suggested that OST might meet resistance from third-party reimbursement as well as community practice as it does not follow current 50-minute session models. At least with adults, however, 180 minutes of OST has been found to be comparable in treatment gains to 300 minutes of spaced sessions of exposure or cognitive therapy (e.g., Öst, Alm, Brandberg, & Breitholtz, 2001). As a result, we would expect that the potential cost-effectiveness of OST would have a positive influence (Zlomke & Davis, 2008). Blocking out a nonrecurring 3-hour block may be another challenge for community-based practitioners—the benefit of 3 hours of reimbursement (if allowed by third parties or paid out of pocket by the family) must be weighed against the inevitable 3-hour down time from cancelled or missed appointments. In addition, scheduling such lengthy appointments would no doubt conflict with other weekly bookings; however, such appointments are not without precedent to those experienced with anxiety disorder treatment (e.g., extended exposure with response prevention sessions for obsessive-compulsive disorder). Yet another consideration is that there is not enough detailed research with children to determine what moderating variables may be important in deciding which children benefit or do not benefit from an intensive approach. While this is an important area for future research, the findings from the studies to date (reviewed below) are supportive of its use. In addition, little is known about how best to integrate OST for a specific phobia into a wider treatment package for a child with comorbid diagnoses (e.g., should one treat the phobia first, other anxiety disorders first, etc.?).

Examining the Use of OST with Children

To date, the use of OST with children has been reported in three clinical trials (Muris, Merckelbach, van Haaften, & Mayer, 1997; Muris, Merckelbach, Holdrinet, & Sijsenaar, 1998; Öst, Svensson, Hellström, & Lindwall, 2001) and one single-case design study (Davis et al., 2007). In addition, results of a large randomized control trial conducted in Sweden and the United States (Ollendick et al., in press) will soon be published. Recent reviews of these studies using established, empirically supported treatment criteria indicate the use of OST with children merits probably efficacious status (for detailed reviews see Davis, 2009; Zlomke & Davis, 2008). Based on the group studies mentioned above, OST has been found to be more efficacious than eye-movement desensitization and reprocessing (EMDR; Muris et al., 1997; Muris et al., 1998), superior to a wait-list control with results being maintained at 1-year follow-up (Öst, Svensson, et al., 2001), and superior to an education/support control group (Ollendick et al., in press). Similar to group findings, Davis et al. (2007) found OST to be effective in a multiple baseline design across phobias with a boy with developmental delays and severe behavior.

As reported in the literature, OST has been used to treat a variety of phobias including those of spiders (Muris et al., 1997; Muris et al., 1998); multiple phobias including those of dogs, spiders, insects, storms, and the like (Öst, Svensson, et al., 2001); and heights and water (Davis et al., 2007). In the Ollendick et al. (in press) trial, 14 different phobias were successfully treated. OST has been given in massed sessions varying from 90 to 180 minutes (note: the 90-minute sessions were part of a crossover design; it is recommended the treatment be maximized up to 3 hours), with children ranging in age from 7 to 17 years, and has been efficacious despite significant comorbidity (cf. Davis et al; Öst, Svensson, et al.; Ollendick et al.). Differences from pre- to posttreatment have also been quite robust across a variety of instruments, with large effect sizes observed on BATs (mean d = 1.40), SUDs (mean d = 1.91), and self-report measures (mean d = 1.43; see Zlomke & Davis, 2008, for a review). As a result, OST has been found to work quite well for a variety of phobias across a range of ages and comorbidities, though maybe slightly better with girls and those with animal phobias (Öst, Svensson, et al.). Further, Öst, Svensson, et al. found that treatment effects generalized to secondary diagnoses with the severity of those disorders decreasing significantly from pre- to posttreatment and then again from posttreatment to follow-up 1 year later.

Mechanisms of Change

Treadwell and Kendall (1996) and Kendall and Treadwell (2007) have been the only investigators to examine mediators of child anxiety treatment in randomized controlled trials and have focused on change in the cognitive component. No randomized controlled trials with specific phobias have yet reported on mediators of change. As a result, the brief discussion that follows is highly speculative. However, Davis et al. (2007) found that a decrease in negative and/or fearful verbal statements during a BAT followed OST for a specific phobia of heights (i.e., BATs were video recorded and transcribed). In the context of their multiple baseline design, however, negative statements increased after OST for specific phobia of water. Even so, a closer examination of the

content of those statements led to a conclusion that the content had actually changed from fear-related statements to what might be considered the "healthy and expected protests of a typical 7-year-old boy needing a bath" (Davis et al., p. 556). Interestingly, following treatment for both phobias, neutral statements during both BATs decreased. Presumably, and given that he was able to complete 100% of the steps for the BATs following treatment, this might tentatively be interpreted as fewer attempts at distraction and task avoidance. In sum, and when taken with the findings by Kendall and Treadwell, it may be that OST's impact on cognition is both through the alteration of negative cognitions and a reduction in cognitive avoidance and distraction—both specific goals of OST. Currently, however, findings supporting this assertion are still awaiting examination in a larger group design. Moreover, OST's very format makes the examination of mediation and mechanisms of change difficult—one would need to halt the single session to obtain the data needed for strict meditational analyses. Ongoing research is, in fact, attempting to do just that: one current study is examining potential mediators at 1-hour intervals during treatment while another is measuring physiology throughout the treatment and examining the effects of massing versus spacing the treatment.

Conclusion

Although considerably more research must be undertaken before OST can be viewed as a "well-established" and evidence-based treatment with youth, it shows much promise. In the studies conducted to date, the treatment has been shown to be effective with a wide range of phobias and in a relatively brief period of time. Surprisingly, although the treatment has been available for some years (Öst, 1989, 1997), it has not enjoyed widespread use, likely due to problems with treatment dissemination (Ollendick & Davis, 2004). In the hands of skilled clinicians, it works well and is an efficient and seemingly cost-effective treatment.

Additional research will need to examine the moderators associated with OST in its standard format using in vivo exposure, as well as clarify its generalized effects on comorbid diagnoses. It will also be important to examine which components of the multicomponent procedure are most critical for behavior change via controlled componential analyses studies. It will also be desirable to examine more critically the format of its delivery. For example, the intensive exposures could be delivered imaginally (imaginal exposure) or through virtual reality (VR exposure), as has been done in the treatment of phobias with adults (Antony & Barlow, 2002). This may be particularly useful with certain phobias that are more difficult or impractical to treat via in vivo exposure (e.g., storms, flying). Although much remains to be accomplished, it is nonetheless evident that OST is a valuable addition to our clinical armamentarium.

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