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UTILIZING PHYSIOLOGICAL MEASURES TO FACILITATE PHOBIA TREATMENT WITH INDIVIDUALS WITH AUTISM AND INTELLECTUAL DISABILITY: A CASE STUDY

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Despite the conceptualization of phobic fear as a multi-factorial response, the measurement and treatment of phobias is often not comprehensive. The extant literature on the treatment of phobias for individuals with intellectual disabilities has exclusively focused on indices of behavioral avoidance. The present study demonstrates the treatment of behavioral avoidance and physiological reactivity in a child diagnosed with autism, intellectual disability, and a dog phobia. The results indicate that the individual often experienced physiological reactivity in the presence of the feared stimulus despite engaging in behavioral approach. Treatment of both behavioral avoidance and physiological reactivity resulted in successful generalization of treatment effects across three additional dogs and maintenance of treatment effects during a six-month follow-up assessment. Implications for examining multiple aspects of the anxious response when treating children with intellectual disabilities and severe language delays are discussed. Copyright © 2010 John Wiley & Sons, Ltd.

Phobic fear has been conceptualized as a multi-factorial response (i.e., behavioral, cognitive, physiological) to a feared stimulus (Lang, 1968). Upon encountering the feared stimulus, individuals with phobias experience cognitive distortions about its potential threat, (Jones & Menzies, 2000; Marshall, Bristol, & Barbaree, 1992), behavioral avoidance of the stimulus (Miller, 1948), and increased physiological activity (Nesse, Curtis, Thyer, McCann, Huber-Smith, & Knopf, 1985).

The treatment of phobias, however, has traditionally focused on the behavioral and cognitive elements of the anxious response. In their review of empirically supported treatments for children and adolescents with anxiety disorders, Ollendick and King (1998) indicated that reinforced practice (exposure and reinforcement for approaching) and participant modeling are 'well-established' treatments for specific phobia. Systematic desensitization, cognitive-behavioral therapy, and other variants of modeling (live, filmed) were deemed 'probably efficacious'. While each of these treatments

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addresses one or more of the components of the anxious response, none of them incorporate a full assessment and treatment of each component. Moreover, none of these treatments include physiological outcome measures.

In their updated review of the treatment of specific phobia for children and adolescents, Davis and Ollendick (2005) suggested holding future treatment outcome studies of specific phobia to a higher standard of empirical support that indicates all three components of the fear response have been targeted for treatment, and have improved over the course of treatment. Demonstration that the individual's subjective feeling of fear has improved was also recommended.

Davis and Ollendick's (2005) proposal holds interesting implications for the treatment of children with autism, particularly those with co-morbid intellectual disability and little to no functional language. Addressing the cognitive component, as well as the subjective feeling of fear, in this population would be very difficult, and in some cases impossible. For example, a key component of reporting changes in anxiety level involves providing subjective units of distress ratings, which requires basic language and mathematical skills (e.g., the concept of a continuum of varying intensity), as well as insight into one's emotional state. Interventions focusing on the cognitive component of anxiety typically include the detection of automatic negative thoughts, challenging the accuracy of these thoughts, and then restructuring them to be more in line with reality.

It is not surprising then, that Jennett and Hagopian (2008)—in their review of empirically supported treatments for phobias in individuals with intellectual disabilities—found that nearly all studies relied exclusively on behavioral measures of approach/avoidance to evaluate the effectiveness of treatment (one study incorporated a self-report measure of fear). The authors supported empirically evaluating a multifaceted model of assessing and treating anxiety, but voiced similar concerns about the feasibility of doing so with individuals with severe communication deficits.

Notwithstanding these concerns, measuring and targeting the physiological component of fear remains a promising avenue to explore within this population. For example, the use of physiological measures provides additional information about the anxious response of a child with limited language ability. Clearly, anxiety can be experienced even when approaching feared situations, so the absence of avoidance, or the approaching of a once feared stimulus, does not necessarily imply the absence of fear. One need only imagine the thought of giving a speech in front of a large crowd, experiencing turbulence on an airplane, etc. to gain an appreciation for the role physiological arousal plays in creating discomfort even when behavioral avoidance is not evident. Individuals with severe language deficits, however, are limited in their ability to communicate this aspect of their distress. Second, certain physiological measures, such as a heart rate monitor, are inexpensive, easy to equip, and relatively non-invasive (e.g., an individual can wear a chest strap and/or watch, a ring, etc.). More

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sophisticated monitors come with storage drives so data can be easily outputted to a computer software program for analysis.

Heart rate in particular is an attractive choice for measuring the physiological component of fear because of its prominence in the anxious response. It is a hallmark feature of the phobic response (except for blood phobia), with increases in heart rate in the presence of a feared stimulus being documented in a number of studies (e.g., Heimberg, Hope, Dodge, & Becker, 1990, Marks & Huson, 1973; McNeil, Vrana, Melamed, Cuthbert, & Lang, 1993; Nesse et al., 1985; Priganto & Johnson, 1974; Teghtsoonian & Frost, 1982). Thyer and Himle (1987) found that rapid heartbeat was the strongest symptom reported by individuals with specific phobia when they ranked a list of common symptoms. Moreover, consistent with the contention of Davis and Ollendick (2005) that phobia treatments targeting multiple components of the anxious response will be more effective, a recent investigation found that increased heart rate at the beginning of the first exposure session was more predictive of treatment response (in comparison to relying solely upon self-report of fear) in a group of individuals with claustrophobia (Alpers & Sell, 2008).

The current clinical case study combined the use of physiological and behavioral measures to treat a dog phobia in a child diagnosed with autism and moderate mental retardation. Behavioral avoidance and increased heart rate were targeted for treatment. Distance from the dog, the presence of behavioral escape/avoidance, and heart rate were used as dependent variables to measure treatment outcome. As it did not seem feasible to assess the cognitive component of anxiety, as well as the subjective feeling of fear, we felt this was the most complete manner in which to assess and treat anxiety with the particular child to whom we were providing services.

METHOD

Participant and Setting

The participant of the current study was a 15 year-old boy (Bill) attending a private day and residential school for children with developmental disabilities at the time of this treatment. Bill had been attending this school for approximately 7 years prior to treatment. He had been previously diagnosed, using Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychological Association, 2000) criteria, with autistic disorder, moderate mental retardation, and specific phobia, animal type. Bill also exhibited severe delays in expressive and receptive language.

In terms of Bill's specific phobia diagnosis, animal type, he had demonstrated an intense fear of dogs. On repeated occasions he had engaged in dangerous behavior

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upon encountering a dog as far as '20 yards (18.3 m) away' (according to parental report). These behaviors included running away into traffic, running into the woods, screaming, and engaging in self-injurious behavior in the form of hits to the head, hitting his head against inanimate objects, and biting himself. One or more of these behaviors occurred invariably upon encountering actual dogs over the last several years, although no fear response was noted to related inanimate stimuli, such as pictures of dogs, stuffed animal dogs, or dog figurines.

Materials

A shepard mix canine (24.9 kg, black and tan in color) was used as the primary dog for baseline and treatment (Dog 1). Three other dogs of varying sizes, colors, and temperament were used to assess how generalized Bill's fear was prior to treatment, as well as whether or not treatment would generalize to other dogs if a successful intervention was realized (Dogs 2–4).

Heart rate was measured using a Polar F11M heart rate monitor (www.polarusa.com), which included a chest strap that measures heart rate, along with a watch on which the heart rate was displayed. A digital stopwatch was used to keep track of time intervals used during exposure trials.

Procedure

Baseline

Treatment occurred across two settings (outdoors, indoor office) because Bill typically encountered dogs during walks in the community and inside the homes of family members during gatherings. However, baseline data were only collected in the outdoor setting given the severity of Bill's behavioral response to dogs even at far distances. Prior to collecting baseline data outdoors, heart rate was measured using the Polar F11M heart rate monitor at a single point in time each consecutive school day while Bill was engaged in an academic task. His mean heart rate was 79.7 beats per minute (bpm), with the values ranging from 71 to 97 bpm, and 22 out of the 24 data points falling below 90 bpm. Therefore, Bill's baseline heart rate zone was considered to be any heart rate below 90 bpm.

Given that Bill's parents reported that he exhibited dangerous behaviors in response to dogs approximately 60 ft (18.3 m) away, we began baseline trials 150 ft (45.7 m) from the dog in a large grassy area in the front of our school building. Inside of the school building, immediately preceding each session, Bill's heart rate was observed and recorded to ensure that he was in his baseline zone prior to exposure. If it was not, the staff members would have waited with Bill for 2-min intervals until his heart rate

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was less than 90 bpm at the conclusion of an interval. However, Bill's heart rate was never 90 bmp or higher prior to the start of any of the sessions. After establishing Bill's heart rate was within his baseline zone, two staff members accompanied Bill (one on each side), with one staff member following close behind in the event that Bill attempted to elope or become aggressive. A fourth staff member, standing still with a leashed dog, remained in the same location (marked by a cone) throughout the baseline and treatment trials. To encourage generalization, the staff member standing with the dog was rotated between each of the four staff members on a session-by-session basis. At the start of each trial, an accompanying staff member would say, 'Bill, let's go for a walk' and begin walking with Bill toward the dog handler. The moment Bill began to display behavioral avoidance (stopped walking, walked away or backed up from the dog), a cone was dropped, his heart rate was recorded (a staff member flanking Bill was holding the watch), and Bill was allowed to go back inside. Once Bill was inside, the dog handler measured and recorded the distance between the two cones with a tape measure. Three baseline trials were conducted for Dog 1, with an additional trial being conducted for each additional dog. In total, six baseline sessions were conducted.

Intervention

Reinforced practice was chosen as the intervention given its classification as a well-established treatment of phobias (Ollendick & King, 1998). Social praise was chosen as the reinforcer for approach given that it had been established as an effective motivator of his behavior in the past and because it is easily transportable to other settings and people.

One exposure session was carried out each school day (Monday through Friday) at various times depending upon the Bill's academic schedule. The exposure sessions began outdoors at the median distance (65 ft or 19.8 m) established during the three baseline trials for Dog 1. Again, heart rate was recorded immediately prior to the start of each session to ensure Bill was within his baseline zone. After stating, 'Bill, let's go for a walk', staff provided continuous enthusiastic praise for walking toward the dog (e.g., 'Great job walking toward the dog Bill!' 'You are doing such a great job walking!'). If Bill stopped walking, staff recorded his heart rate and remained silently with him for a specified amount of time (2 min; initial time interval). Once the timer beeped, Bill's heart rate was immediately recorded (ending heart rate). If his heart rate was less than 90 bpm, he was encouraged to keep walking and provided with continuous praise so long as he continued to move toward the dog. If his heart rate was greater than 90 bpm, but he was not walking away from the dog (i.e., he was standing in place), staff provided the vocal prompt 'Let's wait here', paired with a gestural cue, and remained with Bill for another 2 min (this was repeated until Bill's heart rate

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fell below 90 bpm). Bill had demonstrated mastery of both the vocal and non-vocal prompts during academic instruction prior to the start of treatment. If Bill began to move away from the dog, a staff member would provide the same prompt ('Let's wait here') paired with a gestural cue. If Bill remained, 2-min time intervals ensued as described above. If Bill continued to move away, the session was terminated, a cone was dropped at the point of escape, and Bill's heart rate was recorded. Treatment success in the outdoor setting was defined as standing at a distance of 5 ft (1.5 m) from the dog with a heart rate of less than 90 at the start and end of the initial 2-min interval at that distance. The distance of 5 ft (1.5 m) was chosen as a target goal because Bill's parents wanted him to be able to be near dogs without trying to escape, but they did not want him getting too close to dogs. They had concerns that if Bill was comfortable approaching and touching dogs, he might approach unfriendly dogs when they were in the community.

Following the outdoor treatment, exposure trials were conducted in a 14 ft by 12 ft (4.3 m by 3.7 m) office. Trials started with Bill sitting at a table facing Dog 1 at a distance of 5 ft (1.5 m). It should be noted that by the time he reached the indoor setting, Bill's parents supported the intervention proceeding to the point of Bill making physical contact with the dog. In order to minimize disruption to his academic programming, each session began with Bill completing academic objectives for 5 min while seated at a desk. The interval time was increased from 2 min (in the outdoor setting) to 5 min to allow for enough time for Bill to complete an academic task during each session. Once every 30 s, Bill was prompted to 'look at (dog's name)' or to 'say hi to (dog's name)' paired with a gestural cue (staff pointed to the dog). Once Bill oriented his eyes toward the dog, work or leisure continued. Exposure trials proceeded

Table 1. Steps in the exposure hierarchy for the indoor treatment condition.

Step	Description of step	Distance from dog (m)
Desk, academic materials		
1	Dog 1 in a locked travel crate	1.5
2	Dog 1 in a travel crate with the door open	1.5
3	Dog 1 freely roaming on the far half of the room (2 × 4 piece of wood laid across to demarcate halves)	1.5
4	Dog 1 freely roaming on the same half of the room as Bill	1.5
No desk, no academic materials		
5	Dog 1 on a leash on the far half of the room—encouragement to approach and pet the dog by reaching across the divider	0
6	Dog 1 on a leash on the same side of the room as Bill—encouragement to approach and pet the dog	0
7	Dog 1 roaming freely (off the leash) in the room with Bill—encouragement to pet the dog	0

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according to the hierarchy displayed in Table 1. For all indoor conditions, additional 5 min periods were provided until Bill had an ending heart rate within his baseline zone. This was done to ensure that significant anxiety was not paired with the feared stimulus (the dog) upon exiting. In order to move to the next step in the hierarchy (across outdoor and indoor settings), Bill needed to: (a) reach the distance criterion for that setting/step; (b) have a beginning heart rate of less than 90 bpm for the initial time interval; (c) have an ending heart rate less than 90 bpm for the initial time interval; and (d) make no attempts to escape or avoid throughout the entire initial time interval.

It is worth noting that for steps 5–7—during which Bill and the dog were freely moving throughout the room (no furniture, no academic task)—exposure was conducted in a more fluid manner than is typical for standard exposure sessions. At the start of each session, Bill was encouraged to make contact with the dog through a variety of enthusiastic vocal statements (e.g., 'Pet the dog Bill!' 'Give him a belly rub!' 'Feel his ears, aren't they soft?' etc.) and gestural cues. If Bill moved away from the dog, a staff member would make note of his heart rate. If Bill's heart rate was less than 90 bpm, all staff provided encouragement to approach the dog and delivered a chorus of praise when he did so. If Bill's heart rate was greater than 90 bpm, the staff member would make a statement such as 'take your time Bill' and make a hand motion indicating that it was okay to wait. The staff member would then continuously monitor Bill's heart rate (by holding the watch nearby). Once Bill's heart rate was below 90 bpm, the staff member would then make a statement of encouragement and the rest of the team would join in by providing similar statements.

Generalization

Following the outdoor and indoor treatment sessions, Bill was asked to walk toward each of the generalization dogs (presented individually, leashed, during separate sessions) in the outdoor setting. Initial and ending heart rate was recorded for each session, along with distance from the dog, and whether or not escape/avoidance occurred during the session. No encouragement or praise was given for these trials. If Bill was able to approach and pet the dog, have a starting and ending heart of less than 90 bpm during the initial interval, and display no escape behavior during the entire initial interval, the treatment effect would be considered to have generalized. If not, treatment would ensue (as outlined above) for whichever dog(s) Bill did not reach 100% of the treatment success criteria.

Interobserver Agreement (IOA)

A second, independent observer was present for 78% of all sessions. IOA was calculated by adding the number of agreements on dependent variables by the primary

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and secondary observers, and dividing that number by the number of agreements plus disagreements and then multiplying by 100. For initial heart rate and ending heart rate, IOA was 93.0 and 90.7%, respectively. When examining trials in which there was disagreement between raters, the magnitude of the average difference in recorded bpm was small (1 bpm for initial heart rate, 1.2 bpm for ending heart rate). In terms of behavioral avoidance, IOA was 100% for the presence of escape/avoidance at the start, end, and within each time interval.

RESULTS

The top panel of Figure 1 displays the percentage of criteria Bill met for each condition of the treatment. As depicted in the figure, Bill achieved all of the criteria within six sessions in the outdoor setting. In the office setting, Bill required 12 sessions to meet all of the treatment success criteria for conditions that elicited anxiety at the distance of 5 ft (steps 1–4). When Bill was required to touch Dog 1 (steps 5–7), it took 21 additional exposure trials before the ultimate indoor treatment goal was attained.

The bottom panel of Figure 1 displays distance from the dog at the time of escape, or the treatment success distance criterion if Bill was able to achieve it on a given trial. Heart rate is also displayed. Since the baseline condition did not incorporate a time interval, initial heart rate is Bill's heart rate at the time of escape. For the remaining treatment settings/conditions, initial heart rate was defined as the heart rate at the start of the first time interval recorded. As an example, during the first intervention trial in the outdoor setting, Bill stopped walking forward at 65 ft. His heart rate was recorded at the start of that initial 2-min time interval at that distance, as well as at its conclusion (ending heart rate). Ending heart rate was higher than initial heart during only 2 of the 39 (5%) intervention trials. These two instances occurred during sessions in which the dog sneezed. The sneezes elicited an immediate spike in heart rate. During the first of these instances, Bill quickly backed away from the dog; however, during the second instance, he continued to pet the dog despite his startle response.

As evident in the data, during baseline sessions Bill began avoiding at greater and greater distances for Dog 1, with a successive decrease in his heart rate at the time of escape. His distance of escape stabilized when baseline trials were conducted for Dogs 2–4. It appears that Bill's escape behavior was being negatively reinforced during baseline trials, and he began to demonstrate avoidance behavior in the absence of an anxious physiological response. During the outdoor intervention trials, Bill refused to move closer than 65 ft (19.8 m) to the dog for three consecutive trials and then walked all the way to the distance criterion of 5 ft on the next trial. Bill's ending heart rate was within his baseline zone during the three exposure trials at 65 ft, which

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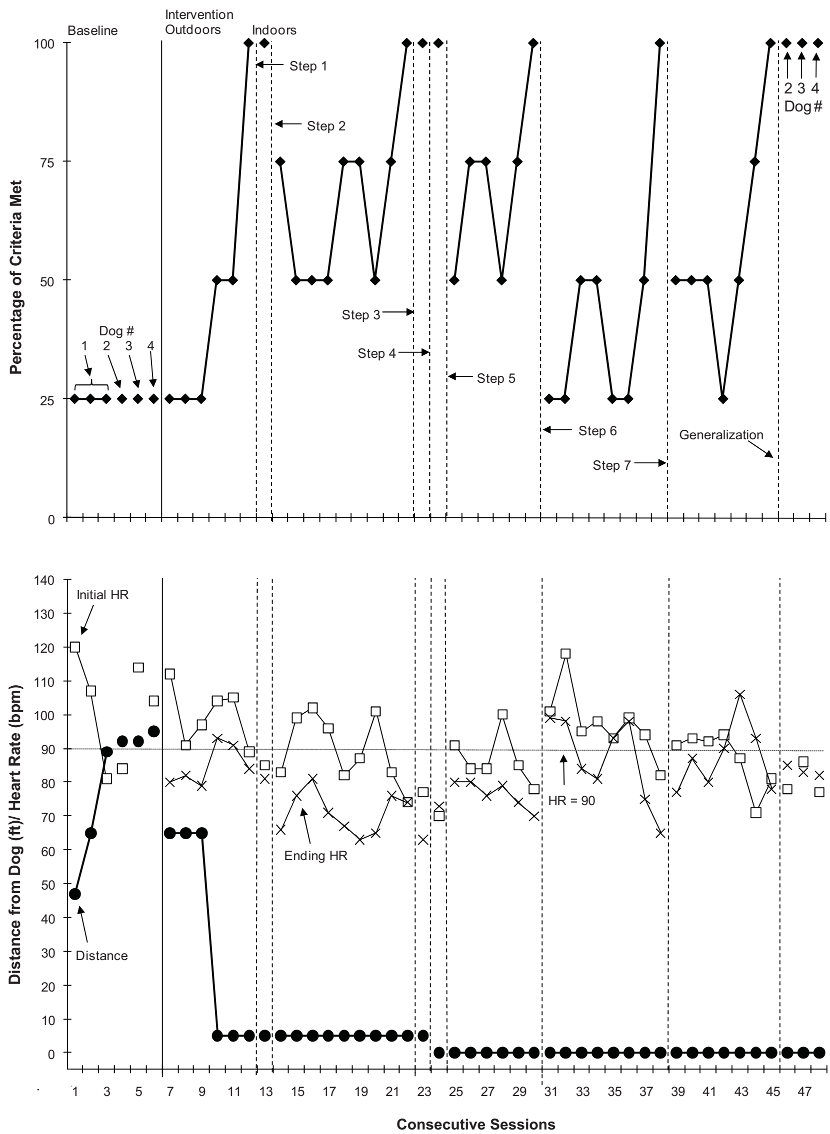

Figure 1. The top portion of the figure displays the percentage of treatment success criteria that Bill met for a given session. The bottom portion of the graph displays distance (in ft) Bill was from the dog for that particular session, initial heart rate in bpm (heart rate at the beginning of the first timed interval), and ending heart rate in bpm (heart rate at the conclusion of the first time interval). The solid vertical line denotes the beginning of the intervention following baseline, and the dashed vertical lines mark the beginning of each step in the exposure hierarchy for the indoor setting. The dotted horizontal line on the lower portion of the figure distinguishes heart rate data points that were within Bill's baseline zone (below 90 bpm) from those that were above his baseline zone ($\geq$90 bpm).

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perhaps made it less anxiety provoking to walk closer to the dog on the next trial. When he stopped at the distance criterion of 5 ft, Bill's initial heart rate and ending heart both rose again for two trials, before settling within his baseline zone during the third exposure session.

With regard to the physiological measurement of anxiety, Bill's initial heart rate fluctuated during the treatment sessions with a gradual decreasing trend at a specified distance (in the outdoor setting) or within each step in the treatment hierarchy in the indoor setting. There were multiple occasions (21% of the indoor sessions) during which Bill had a starting and ending heart rate within his baseline zone, but treatment did not advance to the next step in the hierarchy because Bill evidenced escape behavior at some point during the initial time interval (and potentially a spike in heart rate, although this data was not recorded). Conversely, there were also numerous occasions (27% of indoor sessions) when Bill did not initially display escape/avoidance of Dog 1 at the start of the session, yet had an initial heart rate above his baseline zone (approach behavior in the context of an anxious response as measured by heart rate).

In the outdoor setting, two additional 2-min exposure trials (33% of outdoor treatment trials) were conducted on separate occasions at a distance of 5 ft (1.5 m) given that Bill's ending heart rate was not within his baseline zone following the initial exposure interval. Indoors, additional 5-min exposure trials were conducted on seven occasions (21% of indoor treatment trials), and a third consecutive 5-min exposure trial was necessary on five occasions (15% of indoor treatment trials) as Bill's ending heart rate was not within his baseline zone. An attempt to escape/avoid occurred on only one of the seven occasions in which ending heart rate was >90 bpm, again providing evidence that physiological reactivity to the feared stimulus was often evident in the context of behavioral approach.

After Bill met the treatment success criteria for the last step in the exposure hierarchy, generalization sessions were conducted for Dogs 2–4. Trials were conducted outdoors (given that baseline data for the dogs was collected in that setting) and proceeded in the same manner as the initial baseline sessions. However, the distance criterion was changed from 5 ft (1.5 m) to 0 ft/m (touching the dog) given that Bill's parents were now in support of Bill making contact with dogs. As the data indicate in Figure 1, Bill was able to meet 100% of the criteria for treatment success in one session with each of the generalization dogs.

To assess maintenance of treatment gains, a 6-month follow-up was conducted and trials were carried out in the same manner as the generalization trials. During these sessions, Bill did not demonstrate behavioral avoidance of any of the four dogs. Bill's heart rate was also within his baseline zone at the start and end of each session for Dogs 1–3, and slightly above his baseline zone at the start of the session for Dog 4 (94 bpm). Three follow-up sessions with Dog 4 resulted in Bill demonstrating no behavioral avoidance and a heart rate within his baseline zone during the start and end

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of each session for all three sessions. Approximately 9 months after the conclusion of treatment, Bill's parents reported that he was able to approach a pair of large dogs that the neighbors were out walking, one of which was described as very excitable. Bill's mother remarked, 'It was quite amazing, given the type of dog, that he was so agreeable to petting them. Always nice to celebrate another success'. His parents added that they have not observed any aggression or self-injurious behavior during their outings with Bill since the treatment began. In addition, it is worth noting that aggression and self-injurious behavior did not occur during any of the exposure sessions conducted during this treatment.

DISCUSSION

The current clinical case study demonstrates the treatment of a dog phobia in a child with autism and intellectual disability using multiple response measurement. In accordance with Davis and Ollendick's (2005) contention that the treatment of phobias should target multiple domains of the anxious response, both physiological reactivity to, and behavioral avoidance of the feared stimulus were measured and targeted for treatment. Although other dimensions of anxiety were not measured or targeted for treatment (e.g., cognitive distortions, subjective feeling of distress), it was felt that this approach to treatment was the next best alternative given the participant's cognitive limitations. To these authors' knowledge, this is the first investigation to measure and target multiple aspects of the anxious response in an individual with intellectual disability.

Despite the popularity of the behavioral conceptualization of phobias as developing from both respondent and operant conditioning (Lissek et al., 2005; Miller, 1948), the treatment of phobias (and measurement of responsiveness to treatment) often focuses on the operant behavior emitted by the individual participating in treatment. In studies of individuals with intellectual disabilities, treatment success has been exclusively demonstrated by establishing that the participants approached the feared stimulus. What remains to be measured, however, is whether or not a reflexive anxious response (the conditioned response) is evident in the context of behavioral approach. Utilization of physiological measures allows for such an analysis. In the current study, a conditioned physiological fear response was often evident in the context of behavioral approach. It is recommended that future investigations of the treatment of phobias minimally assess both behavioral approach/avoidance and physiological reactivity to the feared stimulus. This type of analysis allows the treatment provider to be more confident that both operant and respondent extinction have occurred prior to the termination of treatment.

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A major limitation of the current study is the lack of a comparison between multiple treatment conditions. For example, it would have been interesting to see whether basing treatment success solely on behavioral approach would have led to reduced generalization or maintenance of treatment effects in comparison to relying solely on physiological reactivity or the combination of behavioral and physiological criteria. Although the incremental value of incorporating physiological measures into the assessment and treatment of phobias has been demonstrated in participants without intellectual impairment (e.g., Telch, Valentiner, Ilai, Petruzzi, & Hehmsoth, 2000), the utility of doing so with individuals with intellectual disability has yet to be established (Jennett & Hagopian, 2008).

In addition, given the novelty of the treatment, and the increased need to monitor moment-to-moment fluctuations in physiology, it would have also been useful to have incorporated measurement of treatment integrity. In the future, clinicians employing this type of procedure should measure treatment integrity with regard to the essential components of this intervention, particularly the more fluid aspects that were characteristic of the indoor treatment phase. This would help to ensure that the treatment is being delivered exactly as prescribed.

The current study serves as an initial demonstration that behavioral approach can occur in the context of anxiety-based physiological arousal, suggesting that relying solely on behavioral approach as an indicator of treatment success may not adequately address the respondent component of fear extinction. In addition, given the limited capacity of individuals with an intellectual disability (and in this case, co-morbid autism) to assent to treatment, the use of physiological measures affords the treatment provider the opportunity to selectively guide the individual receiving treatment through the fear hierarchy using a quantitative measure (heart rate). This can be of particular advantage when the individual cannot subjectively report the intensity of their anxiety and when anxious responding has been shown to occasion dangerous behavior. Given that the intensity of heart rate has been shown to increase as phobic fear increases (Nesse et al., 1985), conducting exposure sessions with the guidance of heart rate data allows the clinician to more fluidly encourage approach behavior or allow habituation to occur. Assumedly, in turn, this would minimize the probability that the individual with a history of maladaptive responding in the presence of the phobic stimulus would engage in such behavior.

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