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Decreasing Elopement in Individuals with Intellectual Disability Using a Modified Jacobson Method

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Decreasing Elopement in Individuals with Intellectual Disability Using a Modified
Jacobson Method

Michelle Goldstone

Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Arts in Education

California State University, Monterey Bay

May 2017

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DECREASE IN ELOPEMENT

Decreasing Elopement in Individuals with Intellectual Disability Using a Modified
Jacobson Method

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DECREASE IN ELOPEMENT

Abstract

Many students with moderate to severe disabilities have challenges with communication and because of this, may use elopement as a way to avoid or escape an undesired situation. The purpose of this study was to use a function-based intervention, the Jacobson Method, to decrease elopement behavior in ninth and tenth grade students with a diagnosis of intellectual disability along with moderate/severe disabilities. The Jacobson Method is a function-based intervention where the participant tenses and relaxes their muscles bringing the participant into a state of relaxation with the goal of being able to emotionally regulate him or herself. The study was a single-case AB design with three participants. After each participant reached three stable data points of no more than a difference of two, then intervention began. Results revealed an overall decrease in the average number of elopement attempts for each participant; however, there was considerable variation in the percentage of nonoverlapping data. The intervention was highly effective for one participant and minimally effective for the other two.

Keywords: elopement, function-based intervention, Jacobson Method, emotional regulation

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Decreasing Elopement in Individuals with Intellectual Disability Using a Modified
Jacobson Method

Literature Review

Individuals with moderate to severe disabilities often exhibit challenging and maladaptive behaviors that can impact their quality of life (Bouvet & Coulet, 2016). Elopement, or escaping a designated area without permission or supervision, is considered one of these challenging behaviors (Pennington, Strange, Stenhoff, Delano, & Ferguson, 2012). For example, a student may not want to return to class after a fun unstructured activity, and therefore, he or she runs off or attempts to escape the situation. This is a common example of elopement as returning to class for structured work tasks are often not preferred.

The estimated frequency of elopement, as reported by Jacobson (1982) is 4.9% in a population of 30,000 individuals receiving services for developmental disabilities (Piazza et al., 1997). Developmental disabilities include intellectual disabilities and autism (Pennington et al., 2012). Furthermore, elopement is a documented problem for children on the autism spectrum. For example, Anderson and colleagues (2012) found that 49% of the 1,218 families surveyed stated that their child with autism had attempted to elope since the age of four with elopement attempts peaking at age five years four months (Kiely, Migdal, Vettam, & Adesman, 2016). Young children with autism may use elopement at a young age to escape situations as they often have delays in communication. This is similar for students with intellectual disabilities and emotional regulation challenges as many students struggle to communicate their needs when in a heightened emotional state.

Communication and Students with Disabilities

Individuals need to be taught how to express themselves when in a relaxed state; this includes being able to communicate their needs. The research has shown several different ways to communicate, such as, simple gestures (Neidert, Iwata, Dempsey & Thomason-Sassi, 2013), sign language (Call et al., 2011) and simple phrases (Davis et al., 2013). Individuals need to constantly be working on their communication skills, so that they are able to get their needs met no matter what the reason. Research has shown that when an individual is able to communicate his or her needs effectively, then there is a decrease in elopement behavior (Lehardy, Lerman, Evans, O'Connor, & Lessage, 2013). However, it is difficult for a student to use communication skills when they are unable to communicate effectively when deregulated as well as struggling with emotional regulation (Bouvet & Coulet, 2016).

Emotional Regulation and Students with Disabilities

Emotional regulation is the process that individuals put into place to regulate their emotions and it is an area that individuals with intellectual disabilities suffer with greatly (Bouvet & Coulet, 2016). Individuals with intellectual disabilities struggle with their emotions along with those of others making emotional regulation complicated and challenging leading to unexpected responses to situations (Bouvet & Coulet, 2016). These difficulties have negative effects on their emotions and the way in which they are able to express themselves (Bouvet & Coulet, 2016). Bouvet and Coulet (2016) noted that at this time, to their knowledge, there have been no studies conducted on the effects of emotional regulation on individuals with intellectual disabilities.

Concerns with Elopement

The most common locations for individuals to attempt elopement are their home or other homes (74%), stores (40%) and classrooms or schools (29%; Anderson et al., 2012). The behaviors of an eloper are concerning because the individual may put him or herself into immediate danger (Lang et al., 2010). For example, an individual may elope from home and wander in their surrounding neighborhood (Lehardy et al., 2013). This would pose several dangerous situations for the individual; they could run into the street and get hit by a car, get lost, or encounter strangers while wondering (Lehardy et al., 2013). The potential for dangerous and/or fatal situations puts an increased amount of stress on the family in working to keep their eloper safe. A more serious situation was noted in a study conducted by Call and colleagues (2011), in which a participant in his study was a young male that loved playing in water. This young boy had a tendency to elope toward water sources; although he was unable to swim, he jumped into a lake and almost drowned (Call et al., 2011). The behaviors of the eloper not only affect themselves, but all the individuals that care for them.

Another example would be an individual attempting to run out of a classroom or school building; this needs to have an immediate response from the teacher (Pennington et al., 2012). The teacher needs to react immediately in order to prevent the individual from entering into a potentially dangerous situation, (i.e. getting off school grounds or running into traffic, resulting in the teacher halting instruction and possibly leaving the remainder of the class unsupervised to retrieve the eloper; Pennington et al., 2012). The teacher can block the door, so the student is unable to get out of the classroom or they can utilize other resources on campus. For example, the teacher can inform the school

resource officer or administration to receive assistance. This would allow the remainder of the class to continue rather than losing important instructional minutes.

Interventions to Decrease Elopement

Prior to 2009, few studies had researched elopement interventions (Lang et al., 2009); however, in recent years, experimental research studies have been conducted to decrease elopement behaviors in individuals with Autism Spectrum Disorders and Intellectual Disabilities (Anderson et al., 2012; Call et al., 2011; Davis et al., 2013; Kiely et al., 2016; Lang et al., 2010; Lehardy et al., 2013; Neidert et al., 2013; Pennington et al., 2012). These studies found that elopement can be reduced through noncontingent reinforcement (Lang et al., 2010), differential reinforcement (Pennington et al., 2012), function-based interventions (Lehardy et al., 2013), and functional communication training (e.g. teaching communication skills; Davis et al., 2013).

Noncontingent reinforcement is positive reinforcement that is not related to the target behavior and is given on a fixed-time interval regardless of target behavior being displayed (Lang et al., 2010). For example, a teacher would say, “I really like how focused you are on your work.” Differential reinforcement is only reinforcing the appropriate response or behavior (Pennington et al., 2012). For example, a teacher would praise a student by saying, “You are doing a great job sitting in your seat.” Function-based interventions address the purpose that the behavior serves (Lehardy et al., 2013). An example of this would be if a student consistently ran out the gates and laid in the crosswalk in order to receive a ride in the cart back to class. Lastly, functional communication training is a differential reinforcement where the individual is taught an alternative response, more recognizable communicative forms, to reinforce correct

behavior (Davis et al., 2013). For example, an individual would use the phrase “outside please” instead of running out the door. The most effective strategies for reducing elopement behavior to date are function-based interventions (Lang et al., 2010; Lehardy et al., 2013) and teaching communication skills (Davis et al., 2013; Lehardy et al., 2013; Tarbox, Wallace & Williams, 2003).

Function-based interventions. The use of function-based interventions and differential reinforcement are key in working with elopement. Differential reinforcement should be used to reinforce positive behaviors while at the same time reducing elopement (Pennington et al., 2012). For example, give the individual specific positive praise for the behaviors’ that are appropriate, such as sitting quietly in their seat. Some students need tangible reinforcement; others need access to more positive attention, while still others may need fewer demands placed on them during the day (Pennington et al., 2012). In other words, an individual could be given an incentive for displaying appropriate behaviors. The incentive could be that the student is able to pick a prize out of the prize bag after sitting in their seat quietly working for 10 minutes. There are many different conditions that apply, so investigations need to be completed to determine which would work best for a particular student because the reinforcer will depend on the function of the student’s behavior (Piazza et al., 1997).

The function of elopement behavior is individual to each case. Elopement can be associated with escape (e.g., escaping from a non-preferred task, task demands) or attempts to gain attention (Lang et al., 2009). Research has indicated that a functional analysis of elopement is crucial in determining how to best assist the student with his or her behaviors (Piazza et al., 1997). Functional analyses, the process by which the

functions of challenging behaviors are determined, of elopement have shown that elopement may be maintained by different operant contingencies (i.e. the individual's response producing a consequence) and can be reduced using function-based interventions (Lang et al., 2010). For example, Bowman (1996) noted that upon giving a participant an independent work task to complete, the participant attempted to elope. Following elopement, the participant received a preferred activity, which was a car ride back to his residence. The function of his elopement was hypothesized to be escape from work and access to a car ride (Lang et al., 2009). Treatment for this participant was designed to give him more frequent access to car rides and more breaks from work (Lang et al., 2009). Function-based interventions have shown a decrease in elopement behavior when the intervention directly correlates to the function of the elopement behavior as in the above example (Lang et al., 2009). Other interventions have been utilized to decrease elopement behaviors; such as teaching communication skills (Lehardy et al., 2013; Tarbox et al., 2003).

Communication interventions. In studies by Tarbox and colleagues (2003) and Lehardy and colleagues (2013), the participants were taught different ways to communicate their needs. Individuals with moderate to severe disabilities have different means of communication. There are individuals that are able to communicate their needs well using their verbal skills and those that have limited verbal skills using only one- to two-word phrases (Lehardy et al., 2013). Gestures are another form of communication in which individuals with moderate to severe disabilities are able to get their needs met (Lehardy et al., 2013). A sound-generating device (SGD) is a device that is used by an individual who is unable to communicate verbally or through gestures (Davis et al.,

2013). The participants used either short phrases, such as *toy store please* or *go outside*, or communication cards to communicate their need to their care provider (Lehardy et al., 2013; Tarbox et al., 2003). For one participant in a study conducted by Davis and colleagues (2013), the participant gained access to preferred activities by using a SGD for communication. Across the studies, the participants were given different means of communicating their needs in order to gain access to preferred activities. During baseline, high levels of elopement were seen in participants with no means of communication (Tarbox et al., 2003). On the other hand, during treatment, high levels of communication were displayed with a lower frequency of elopement (Tarbox et al., 2003). In looking at the results of previous studies, it is clear to see that when participants were able to communicate their needs the frequency of elopement decreased. When the participant is able to communicate and be understood, it empowers them and they feel more in control of themselves. This in turn allows them the ability to make more appropriate and thought out decisions.

The Jacobson Method. Research has demonstrated that when a participant is able to communicate his or her needs appropriately, then the participants have less reasons to elope and are better able to implement emotional regulation strategies (Davis et al., 2013; Lehardy et al., 2013; Tarbox et al., 2003). Emotional regulation is a key component for the eloper. When they are in a heightened state, they will have an increased desire to elope. In a study completed by Bouvet and Coulet (2016), 30 participants with mild/moderate intellectual disabilities were taught the Jacobson Method to assist them with relaxation from anxiety, self-esteem and emotional regulation. The Jacobson Method is a physiological method consisting of reducing neuromuscular tension

(Bouvet & Coulet, 2016). The idea behind the Jacobson Method is that it will reduce muscle tension, and therefore decrease physiological arousal and anxiety (Bouvet & Coulet, 2016). Researchers were under the assumption that relaxation would occur immediately following the release of tension on the muscle, but in fact were surprised to find a delayed reaction (Lehrer, Batey, Woolfolk, Remde, & Garlick, 1988). This gives the participant a feeling of calmness and peace with the intent to assist with emotional regulation and decrease their need to elope. The findings from a study conducted by Bernstein and Borkovec (1973) stated that the contraction of the muscles produced an automatic reduction in muscle tension although the feeling of relaxation was not felt for several minutes after muscle release (Lehrer et al., 1988).

Methods

The research has shown that communication is essential for participants to have their needs met, along with emotional regulation being a critical component of relaxation. Research has been conducted with participants diagnosed with mild/moderate intellectual disabilities on function-based interventions and emotional regulation, although at this time there is no connection between the emotional regulation aspect and elopement. Therefore, this study examined how emotional regulation, using the function-based intervention of the Jacobson Method, worked to decrease the behavior of elopement in participants with intellectual disabilities in the moderate/severe setting.

Research Question

Will the implementation of a modified emotional regulation strategy, such as the Jacobson Method, decrease elopement in ninth and tenth grade students in a moderate/severe special day class?

Hypothesis

The researcher hypothesized that elopement behavior would decrease slowly over time as the participants' began to learn how to emotionally regulate themselves and decrease their urge to elope (Lehardy et al., 2013).

Research Design

The research design was a single-case AB design; which included baseline and intervention and three participants. The researcher collected data on the use of a modified Jacobson Method of muscle tension and release as an intervention for elopement behavior with three intellectually disabled ninth and tenth grade participants. Intervention began with each participant individually after three stable baseline data points were obtained. The participants did not begin their interventions at the same time as stability in baseline needed to be reached individually for each participant.

Independent variable. The independent variable was the teaching of a modified Jacobson Method routine to the participants. The emotional regulation strategy included the tensing and releasing of the muscles in the participants' face, arms, shoulders, and legs, followed by taking several slow deep breaths (Lehrer et al., 1988).

Dependent variable. The dependent variable was the collection of data on the frequency of elopement along with Antecedent Behavior Consequence data to establish patterns of behavior.

Setting & Participants

The setting of this study was a 2,877 student central California high school campus in a contained moderate/severe classroom. The local community was classified as 49% low income and the school had 49% free and reduced lunch. The male/female

distribution was 51% male and 49% female, with 11% English Language Learners. The school largely consisted of Hispanic students (69 %), followed by 28 % White students (www.greatschools.org).

Furthermore, the gender distribution of the classroom mimicked the school at large. The class was 42% female and 58% male; however, when examining ethnicity the participants in this sample are different from the general school population. The class used in this study is 58% white, 25% Hispanic and 2% other. Three of the 13 students in the moderate/severe classroom were used as participants in the study. Purposeful sampling was used in order to determine the participants. The participants all displayed elopement behavior at least one time per month since the beginning of the school year. Of the three participants, all have eloped from their seat or out of the classroom. All participants have been diagnosed with an intellectual disability. Two of the participants are verbal and one of the participants uses a communication device in order to communicate his needs. Pseudonyms were used for the participants for confidentiality reasons.

Participant 1. Sally is a female student. She is 16 years one month old and qualifies for special education services under the categories of intellectual disability and speech and language impairment. Sally frequently elopes the classroom and engages in loud self-talk outside. She does not try to leave the school grounds; she only escapes the classroom.

Participant 2. Alexis is a female student. She is 16 years seven months old and qualifies for special education services under the categories of intellectual disabilities and speech and language impairment. Alexis elopes the classroom when there is too much

noise. She will run out the door and sit right outside the classroom door. On several occasions she has attempted to elope off campus, but staff has been able to catch her before getting out the gate.

Participant 3. Adam is a male student. He is 15 years two months old and qualifies for special education services under the categories of autism and speech and language impairment. He uses a communication device in order to communicate his needs. Adam elopes from his seat multiple times throughout the day. He simply elopes and wanders the classroom until redirected to sit down.

Measures

The researcher's primary measure was frequency event recording of the number of times the participants' left an area without permission or supervision (see Appendix A). In this case elopement was leaving their chair, the classroom, the school grounds, or other designated area (Pennington et al., 2012). The participants were taught a modified version of the Jacobson Method of muscle tension and relaxation (see Appendix B). It began with the participant sitting in his or her chair, and then scrunching up his / her face tensing those muscles. The participant held the scrunch for 10 seconds and then released. They did this three times. The participant then followed the same procedures with his / her arms, then shoulders and lastly legs. The final step in the process was taking slow deep breaths.

Data were collected in five-minute sessions, or until elopement occurred, three to five times per day four days per week (Neidert et al., 2013). The sessions were broken up into one-minute increments; this allowed the participant multiple attempts to elope within the five-minute time frame. A tally mark indicated when the participant left his or her

designated area without permission; if the participant returned within that one-minute time it was counted as one. If the participant did not return to his or her designated area (e.g., returned to desk within the one-minute time), then the incident continued until they returned and was scored as one incident (Neidert et al., 2013). The target behavior was defined on the top of the frequency-recording sheet. Antecedent Behavior Consequence data was taken in each occurrence to determine the antecedent to the target behavior.

Validity. The modified Jacobson Method of repeated tensing and relaxing muscles was developed in working with the behavior specialist and occupational therapist that assist in the researcher's district. The team collaborated to find a relaxation/breathing routine that met the sensory needs of the researcher's moderate/severe student population. The target behavior was defined at the top of the frequency data collection sheet in order to ensure that all observers were tracking the appropriate behaviors.

Reliability. Data was collected by the researcher and by two staff members within the classroom environment to establish inter-rater reliability. To ensure that all members of the research team were collecting data correctly, there were two observers for three sessions per participant with 80% agreement.

Intervention

The intervention consisted of using a modified Jacobson Method, so that the participants could work on emotionally regulating themselves when they felt the urge to elope. This allowed staff to assist the participant in the emotional regulation process. In teaching the participants to emotionally regulate along with collecting Antecedent Behavior Consequence data, the researcher was looking to find patterns of behavior. The

researcher was teaching the participants an emotional regulation routine that met their emotional needs. All of this was completed in an effort to decrease elopement behavior in the participants.

The participants were taught how to use a modified Jacobson method in order to assist with emotional regulation (Lehardy et al., 2013). The routine was taught first with the use of visual supports in order to assist with emotional regulation during times of high emotion, in the hope to regulate the participants' emotions and decrease the need to elope (Lehardy et al., 2013). Once the interventions were taught, the routine worked to assist with the target behavior. The researcher anticipated the participants would need visual prompting when first learning the routine with the visual prompt fading into a verbal prompt over time. The prompting diminished as the participants' became more comfortable with the flow of the routine and they were more aware of when they needed to use it. The interventions were put into place for four to eight sessions depending on when the participant moved from baseline to intervention (Niedert et al., 2013).

Procedures

The process began by completing frequency recording baseline data for each student; this included the frequency of elopement along with the Antecedent Behavior Consequence data to see if a pattern of behavior is evident. Frequency data was collected in order to determine an increase or decrease in elopement behavior (Penington et al., 2012). Antecedent Behavior Consequence data was also taken in order to establish patterns of behavior. In taking Antecedent Behavior Consequence data, the observer was able to determine possible triggers, look at the behavior and the consequence given to the participant.

Each student entered baseline at the same time. Intervention began on an individual basis once the student reached stability in baseline. Stability for each student was categorized as a difference of no more than a difference of 2 attempts to elope. Data was collected in five-minute sessions, or until elopement occurs, two to three times per day, four days per week (Neidert et al., 2013).

Data collection. Data were collected in five-minute sessions, or until elopement occurred, two to three times per day, five days per week for three weeks to get appropriate baseline and intervention data for the three participants (Neidert et al., 2013). Frequency recording data sheets were used in order to determine how often the students were leaving their designated area (e.g., desk), walking out the classroom door, or leaving school grounds. The data collector put a “+” when the behavior occurred any time within one minute and a “-“ if the behavior did not occur within one minute (Neidert et al., 2013). Antecedent Behavior Consequence data was taken for each occurrence as well.

Fidelity. Fidelity was ensured through proper staff training of the data collection and intervention. The use of the relaxation/breathing routine was taught to staff, so they were able to correctly work with their participant during intervention. Two of the three participants have a one to one additional adult assistant; fidelity was 90% (see Appendix C).

Ethical Considerations

It was important to keep confidentiality and to maintain ethical standards during this study. The descriptions given of the school environment and participants were broad and pseudonyms were used to ensure anonymity. The safety of the participants and staff

were taken into consideration as well. All staff were trained on the steps that need to be taken if the participant elopes off school grounds.

Validity threats. The researcher ensured that the staff was properly trained in how to collect data appropriately along with making sure that they knew how to teach the intervention to the participants. The behaviors and interventions were clearly defined, so that there was little to no confusion from staff as to what they were looking for and/or teaching. It is also important to note that the researcher and staff are emotionally invested in these participants and that can lead to researcher bias. This was addressed by ensuring that the researcher and staff were properly trained on the behaviors that they were tracking, along with properly tracking the data.

Social Validity

At the completion of the study, two classroom paraprofessionals completed a four-point Likert scale (i.e., 1 = strongly disagree to 4 = strongly agree) social validity questionnaire (see Appendix D). The questionnaire, adapted from Berger, Manston and Ingersoll (2016), consisted of nine questions designed to understand the perceived usefulness, significance and satisfaction with the implemented intervention (Kennedy, 2005). Participant responses were kept confidential and descriptive statistics were conducted to gain insights regarding the intervention.

The results of the Social Validity Questionnaire were very similar between the two paraprofessionals. They agreed the intervention was effective as both respondents reported seeing immediate decreases in the target behavior. Furthermore, they both suggested using the intervention with additional students. They did state disagreement with questions dealing with family functioning and family experience, primarily because

they did not have details as to how the participants' behaviors changed in the home environment.

Data Analyses

The frequency of elopement and Antecedent Behavior Consequence data was collected and analyzed to determine patterns of behavior from the participants in order to see a decrease in elopement behavior, along with the possible function of the behavior. The data was graphed and visually analyzed for non-overlapping data points and to determine any trends in the data.

Results

Figure 1 below shows the impact of the intervention on Sally's elopement behavior. The x-axis is the session number and the y-axis is the number of elopement attempts. The dashed line separates the baseline data from the intervention. During baseline, Sally had a range of one to three elopement attempts per observation with an average of 2.5. During intervention, Sally's range decreased to zero to two attempts per observation with an average of 1.5. In reviewing the Antecedent Behavior Consequence data, Sally would elope during the same parts of the day. She would elope right after break and lunch. Not only was her self-talk a driving force, but it was also to escape a work task. After break, she would be given her math assignment to complete and she would immediately stand up, begin her self-talk and walk out the door. She would stay on school grounds within sight of staff; she would not attempt to elope through the gates or off campus. When staff attempted to block the door, Sally threw a tantrum. She would throw herself on the floor, scream and cry, and try to kick staff.

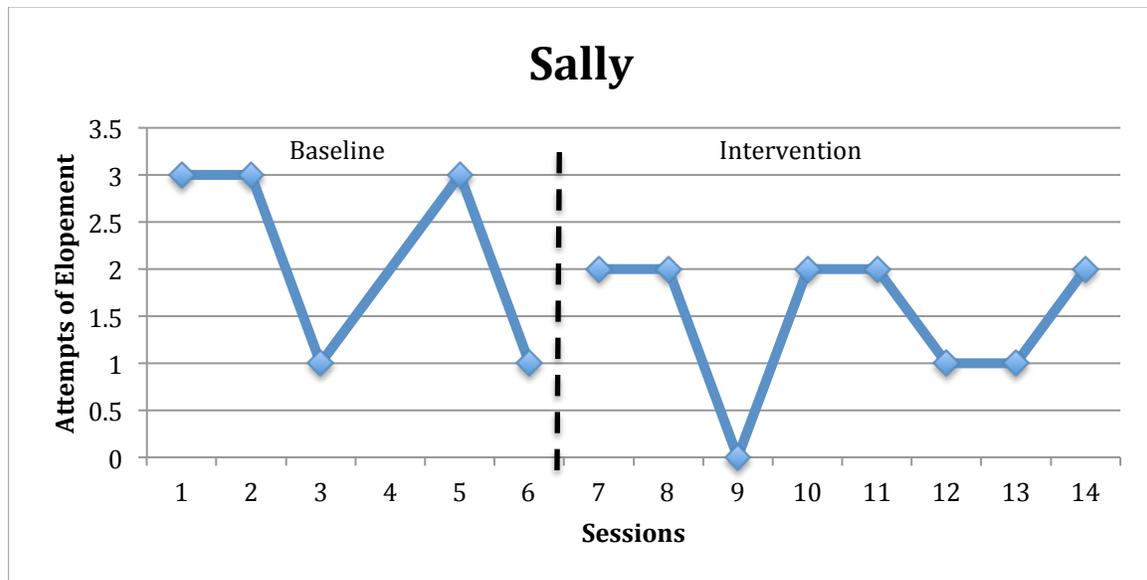


Figure 1. The number of elopement attempts for Sally in baseline and intervention.

Figure 2 shows the impact of the intervention on Alexis's elopement. The x-axis is the session number. The y-axis is the number of elopement attempts. The dashed line separates the baseline data from the intervention. During baseline, Alexis had a range of one to two attempts per observation with an average of 1.75. During intervention, Alexis did show a decrease with zero to one attempt per observation with an average of 0.5. In reviewing the Antecedent Behavior Consequence data, her elopement attempts were due to the behaviors of other students in the classroom environment rather than being at a consistent time of day. When a student within the classroom would show undesirable behaviors, such as screaming, crying, or yelling, Alexis would cover her ears begin to scream, run out the door and sit on the ground right outside the classroom. Alexis was trying to escape from the behaviors within the classroom, not a work task or demand

placed on her.

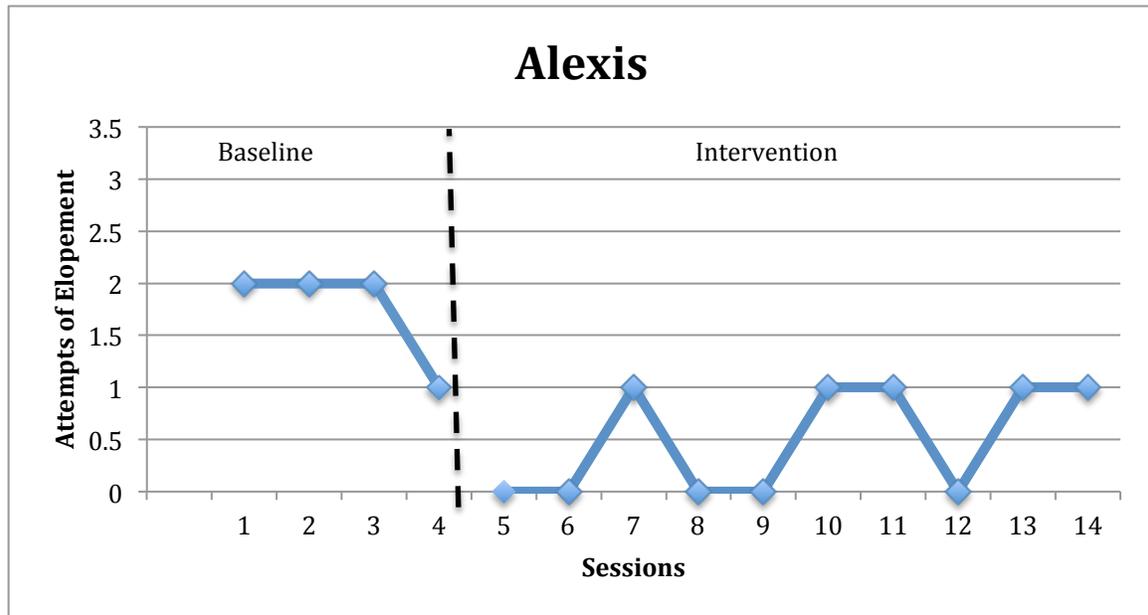


Figure 2. The number of elopement attempts for Alexis in baseline and intervention.

Figure 3 below shows the impact of the intervention on Adam's elopement. The x-axis is the session number. The y-axis is the number of elopement attempts. The dashed line separates the baseline data from the intervention. During baseline, Adam had one attempt of elopement per observation with an average of one. During intervention, his elopement attempts decreased to zero. In reviewing the Antecedent Behavior Consequence data, his elopement attempts were low in frequency and upon elopement there was a purpose. For example, he would get out of his seat to put a pencil away or to say hello to a classmate. Adam never tried to elope out the door, he stayed within the classroom and he could be redirected back to his seat.

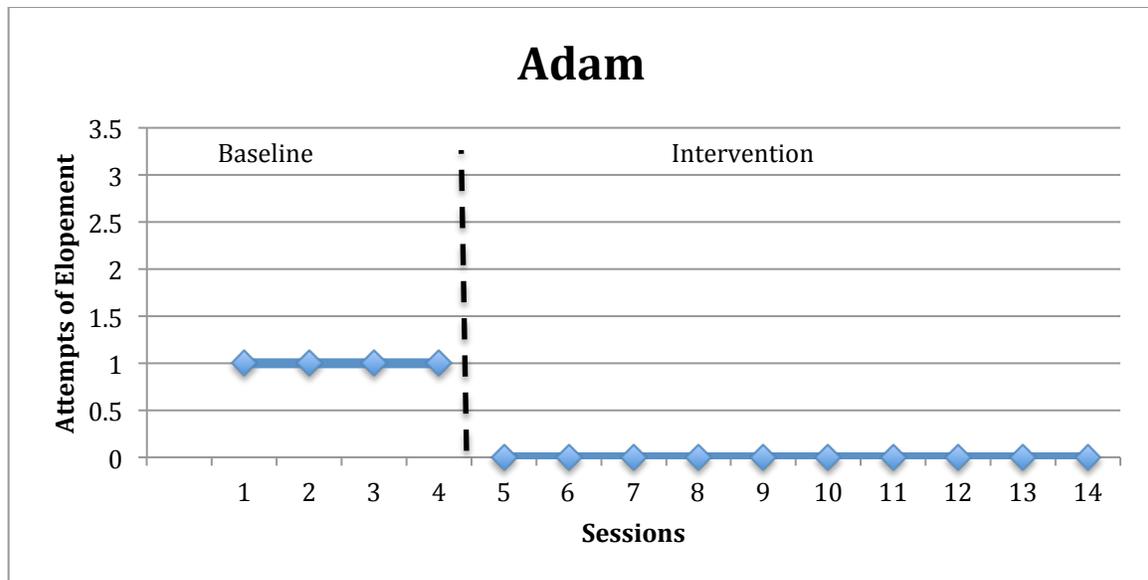


Figure 3. The number of elopement attempts for Adam in baseline and intervention.

Discussion

The purpose of this study was to examine the use of a function-based intervention, the Jacobson Method, to decrease elopement behavior in participants with moderate/severe disabilities. For the three participants in the study, there was an overall decrease in elopement behavior. However, the percentage on non-overlapping data varied from 57%-100% indicating that the intervention was minimally for two participants and to highly effective for one.

During baseline, Sally showed the most variability in her results. She attempted to elope between one and three times a day with an average of 2.5 attempts during baseline. It is important to note the Sally was absent for two days during baseline. Despite these absences, Sally showed a decrease in elopement attempts during intervention. Specifically her attempts lowered in frequency to between zero and two attempts per day. Her average also decreased to 1.5 times per day. Further, 64% of Sally's data were non-overlapping data points. This indicates a minimally effective

intervention. Her elopement durations occurred for long periods of time; for example, during some instances she was out of the classroom for an hour or more. Sally engaged in frequent self-talk and talks to several voices in her head. Her elopement behaviors mostly involved her searching for someone while engaging in self-talk. During the study, she would pretend to be “Gabriel” who was searching for “Ray.”

Alexis had a range of one to two attempts of elopement, during baseline, with an average of 1.75. She did show a decrease during intervention with her range lowering to zero to one attempt with an average 0.5 per day. Alexis had 57% non-overlapping data points. Alexis was redirect able and her elopement only lasted between 30 seconds to no more than three minutes in duration.

Adam began the study with the lowest frequency of elopement and he continued to maintain that throughout the study. He had one attempt of elopement during baseline with an average of one. During intervention, he had no elopement attempts. He had 100% non-overlapping data as he had no elopement attempts during intervention. Adam was easily redirected and, when he did elope, his elopement attempts lasted no longer than 30 seconds.

In reviewing the data, it should be noted that there was an overall trend in the decrease of the target behavior. This is similar to previous studies conducted by Lang et al. (2009), Lang et al. (2010) and Lehardy et al. (2013); the elopement behavior decreased after intervention, but did not become extinct. There was an immediate change shown in the target behavior for the participants once intervention began; however, the percentage of non-overlapping data for two of the three participants indicated minimal

effectiveness while the third participant's data (Adam's) indicated the intervention was highly effective.

As noted by Bovet and Coulet (2016), there have been no studies conducted on emotional regulation with individuals with intellectual disabilities, so the findings in this study relate to the participant's ability to be able to communicate their needs effectively (Call et al., 2011; Davis et al., 2013; & Neidert et al., 2013). Furthermore, with continued intervention, it is likely that the behavior would continue to decrease although as the research has shown elopement behavior will not become extinct; it simply decreases (Tarbox et al., 2003).

After completing the relaxation routine, there was noticeable relaxation from Alexis. She would maintain a calm state for a longer period of time after completing the relaxation routine. Although, after the second day of intervention when asked to complete her relaxation routine by staff in beginnings of escalation Alexis would push the visuals to the side and say, "No, I'm fine," then continue working. The visuals proved to be a deterrent in escalation without even completing the relaxation routine.

Furthermore, visuals assisted Alexis in using her words to communicate her needs. Adam followed the routine with assistance from staff twice a block, once at the beginning and once at the end along with being prompted by staff when elopement was being attempted. He did show improvement although his frequency of elopement was already low. He was able to calm himself with the relaxation routine. Sally went through the motions of the routine and did ask specifically for her "icons" on order to complete the routine, but the relaxation routine did not show much affect with her elopement behavior. The frequency of elopement did decrease and she was asking appropriately to

use the routine, but she did not feel relaxation effects of practicing the routine. It is possible that over a longer period of time there would be a greater decrease in elopement.

Limitations and Future Research

Although the three participants showed a decrease in the target behavior, prolonged instruction of the intervention might enable participants to be better equipped to complete the relaxation routine independently and generalize the routine across settings. Further, the sample used was a limitation in that it was not a random sample, but a purposeful and convenience sample. In addition, the sample size used for the study was small, with only three participants. Future studies should use a larger sample size. Researcher bias is a limitation in that the participants were within the researcher's classroom along with the staff assisting with data collection and intervention.

An additional limitation is the danger that elopement presents to students. When a student elopes it is not always possible to engage in this intervention because the primary focus must be on ensuring physical safety. As such, future research should examine the use of emotional regulation as a tool to assist when students are in a heightened state. More research needs to be conducted that connects the emotional state of an individual to their behavioral status; proactive strategies need to be taught.

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Appendix B

Modified Jacobsen Method

RELAXATION ROUTINE

1. SIT ON A CHAIR...



2. "SCRUNCH" UP YOUR FACE... THEN... RELAX IT...



3. TENSE YOUR ARMS... THEN... RELAX THEM



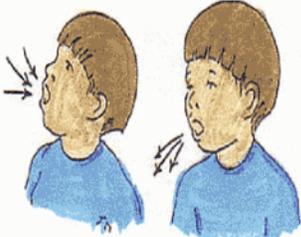
4. TENSE UP YOUR SHOULDERS AND CHEST... THEN... RELAX THEM



5. TENSE UP YOUR LEGS... ...THEN RELAX!



6. BREATHE IN RELAXATION... ...BREATHE OUT TENSION



Appendix C

Fidelity Checklist

Adam

Date	Baseline/Intervention	Signature/Initials
Tuesday March 14, 2017	Baseline	
Tuesday March 21, 2017	Intervention	
Tuesday March 28, 2017	Intervention	

Alexis

Date	Baseline/Intervention	Signature/Initials
Wednesday March 15, 2017	Baseline	
Wednesday March 22, 2017	Intervention	
Wednesday March 29, 2017	Intervention	

Sally

Date	Baseline/Intervention	Signature/Initials
Thursday March 16, 2017	Baseline	
Thursday March 23, 2017	Intervention	
Thursday March 30, 2017	Intervention	

Appendix D

Social Validity Questionnaire

Questions:		1	2	3	4
		Strongly disagree	Disagree	Agree	Strongly Agree
1	This treatment was effective				
2	I found this treatment acceptable for increasing the student's skills				
3	Using the treatment improved skills across multiple contexts (home, classroom, community)				
4	I think the student's skills would remain at an improved level even after the treatment ends				
5	This treatment improved family functioning				
6	This treatment quickly improved the student's skills				
7	I would be willing to carry out this treatment myself if I wanted to increase the student's skills				
8	I would suggest the use of this treatment to other individuals				
9	This treatment decreased the level of stress experienced by the student's family				