EFFECTS OF PROMPTING AND MOTIVATING OPERATIONS ON ELOPEMENT

by
AMBER SHIPMAN
(Under the Direction of KEVIN AYRES)

ABSTRACT

Elopement is a common and dangerous behavior in children with disabilities. We evaluated the effect of verbal prompting procedures compared to manipulating motivating operations on elopement behavior in children with disabilities. Participants received no attention or prompting when eloping or were verbally prompted to sit in their seat. Another condition involved reinforcing a model for sitting in their seat while the participant eloped. These conditions were compared using an alternating treatment design. Results and outcomes are discussed.

INDEX WORDS: elopement, motivating operations, prompting, intellectual disability

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AMBER SHIPMAN
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AMBER SHIPMAN

Major Professor:	Kevin Ayres
Committee:	Rachel Cagliani
	Joel Ringdahl

Electronic Version Approved:

Ron Walcott
Vice Provost for Graduate Education and Dean of the Graduate School
The University of Georgia
December 2021

DEDICATION

I would like to dedicate this paper to my parents, Josh and Sheila Shipman. They offer advice any time I need it and believe in me when I do not believe in myself. They have been nothing but supportive throughout my whole academic career and I would not be where I am today without them.

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Chapter 1

Introduction

Elopement is a common maladaptive behavior in children with developmental delays and disabilities. Kiely et al. (2016) stated 49% of families reported their children eloping as early as four years old. Walker and McAdam (2015) define elopement as efforts to leave a designated area without any permission. This behavior is dangerous because children elope into the street or a body of water (Lang et al., 2009). Elopement also hinders individual and group instructional time in a classroom setting as well as leads to placing a child in a more restrictive environment for their safety (Piazza et al., 1997). Functions for elopement include escape from demands or less preferred activities, attention in the form of a teacher chasing them or verbally prompting them, and access to tangibles or preferred activities (Phillips et al., 2018). Retrieving the individual will increase the frequency of attention-maintained elopement. Oftentimes, ignoring elopement is not possible and the individual is eventually retrieved so including extinction in a treatment package for elopement is difficult (Boyle et al., 2020). Demands are also inadvertently removed until they return to the instruction area and that increases the occurrence of elopement if it is escape maintained. If the individual elopes for a tangible item and their therapist cannot block the desired tangible item, the child's success will reinforce their eloping behavior (Pennington et al., 2012). Considering the high prevalence, possibility of harm, and difficulty in treatment, effective interventions are needed.

There are a variety of possible interventions or treatments for elopement and other problem behaviors in children with disabilities. Functional communication training, prompting procedures, and antecedent-based interventions are discussed in the literature. (Perrin et al., 2008; Boyle et al., 2019). FCT is an effective alternative treatment that can reduce many

maladaptive behaviors that vary in maintaining function (Durand & Merges, 2001). This intervention teaches individuals to adopt appropriate behaviors to communicate what they want, hoping they will engage in this communicative response instead of engaging in maladaptive behaviors. After understanding the maintaining function of the problem behavior, functional communication responses (FCR) are taught. Perrin et al. (2008) compared the effects of an FCT procedure to noncontingent reinforcement (NCR) on elopement for two 3-year-old participants. Toys were on one side of the table during baseline and the teacher's attention was contingent upon elopement. During the NCR condition, toys were available on both sides of the table and attention was available throughout the sessions whether elopement occurred or not (Perrin et al., 2008). FCT sessions involved the presentation of a demand and praise was available if the child complied with the demand. Demands were continued contingent on elopement and preferred toys were removed. Following a successful FCT exchange, demands were removed and toys were made available. NCR and FCT are considered effective in reducing elopement for this study although FCT was less effective for one participant (Perrin et al., 2008). Boyle et al. (2020) discuss the use of FCT for a participant who engages in elopement maintained by access to stereotypy. He would elope in public places to play with doors and his mom wanted this behavior reduced or eliminated. The FCT sessions had the therapist teach the child to ask to play with the door instead of eloping to it (Boyle et al., 2020). If he engaged in the FCR then he could go play with the door for an allotted amount of time. Elopement was not blocked during the sessions but if elopement occurred, he was physically guided back to the FCR therapist after 3 seconds of door play. This was done to model the natural environment where he would elope to a door and have a few seconds of access then his caregiver would retrieve him. Boyle et al. (2020) figured the participant would figure out if he used an FCR he could have longer access to the

door when compared to 3 seconds of access if there was no FCR emitted. The results showed high baseline levels of elopement and elimination of elopement during FCT sessions (Boyle et al., 2020). Another study used different topographies of FCRs to reduce socially mediated problem behaviors in 25 children at an outpatient clinic (Jessel et al., 2018). The participants were taught FCRs according to their verbal repertoire so nonvocal participants used loose, large picture cards and the more complex FCRs involved smaller pictures inside of a binder. Participants with vocal repertoires were taught phrases like "my way" for simple FCRs and their complex FCRs involved them getting the therapist's attention before emitting a phrase like "may I have my way please" (Jessel et al., 2018). The results noted reductions in problem behavior across all participants and elimination in 18 of the 25 participants during FCT sessions. The more complex FCT sessions showed the elimination of problem behavior in 15 of 25 of the participants (Jessel et al., 2018). FCT is a popular option for treating elopement and these studies prove its effectiveness as an intervention.

When blocking or extinction procedures are not desirable, teachers and therapists might resort to less intrusive options like prompting procedures when aiming to reduce maladaptive behaviors. Prompting procedures are rarely used alone and are instead used along with other interventions in a treatment package. While using simple verbal prompts is not evident in the literature, it provides an alternative non-extinction-based procedure for unwanted behaviors. Horner and Keilitz (1975) were the first ones to describe 3-step guided compliance when teaching individuals to brush their teeth. The procedure involves a therapist giving more intrusive prompts contingent on noncompliance. Wilder and Atwell (2006) used a 3-step guided compliance procedure to increase compliance in typically developing preschool children. Six participants ranged from three to four years old and they were recruited from a university-based

clinic. The parents offered various demands to the therapist that their children did not comply with and those were used in the study. The consequence for compliance in baseline and intervention sessions was praise from the therapist. Noncompliance resulted in no response during baseline and the compliance procedure during the intervention (Wilder & Atwell, 2006). The therapist delivered a vocal prompt and waited for the individual to comply with the demand and if they did not then another prompt was delivered while the therapist also modeled the behavior. If there is still non-compliance, the prompt is repeated and they are guided to comply with the demand. The results discuss reduced noncompliance for four of the six participants and for the participants that still showed low levels of compliance, a differential reinforcement procedure was put in place (Wilder & Atwell, 2006). This study offers a possible effective intervention for noncompliance and the procedure is simple so it can be implemented by teachers and therapists as well as caregivers. Another study by Wilder et al. (2008) compared contingent access to items and guided compliance procedures when trying to increase compliance. Parents offered tasks that preceded non-compliance and those were used in the study. The contingent access to items condition involved a demand being placed and if the child completed the demand, they received a highly preferred edible and were allowed a low preferred tangible (Wilder et al., 2008). During the guided compliance condition, the response to noncompliance was the therapist modeling the desired behavior while repeating the instruction. Contingent on non-compliance, the therapist offered a third prompt while physically guiding the participant to complete the demand. Guided compliance was a moderately effective intervention when compared to baseline for the participants in this study. The contingent access to items sessions showed the highest levels of compliance overall so it was a more effective intervention when compared to guided compliance for these participants (Wilder et al., 2008).

Another alternative treatment option is manipulating motivating operations (MO) or antecedent-based interventions. Blowers et al. (2020) utilized antecedent manipulations for a child who engaged in attention-maintained elopement. There were multiple conditions involving FCT, differential reinforcement, and multiple schedule arrangements. Presession exposure to attention was used when the participant was engaging in elopement during extinction. Attention was preferred in the form of chase so the pre-session exposure was a game of chase between the participant and the therapist (Blowers et al., 2020). Chase was also used because it is the most common response by caregivers to elopement in the real world. The chase condition resulted in high FCR levels as well as low levels of elopement (Blowers et al. 2020). This intervention is aiming to lessen the participant's likelihood to elope during the session because he had noncontingent access to it before the session. A version of antecedent-based interventions involves manipulating MOs. MOs are things that change the value of reinforcers and in turn alter the frequency of the behavior the reinforcer is acting on (Michael, 1988). There are two types of MOs, the abolishing operation (AO) and the establishing operation (EO). An AO is in effect when the reinforcing value of something is decreased and so the frequency of the behavior that corresponds to that reinforcer also decreases. EOs act in the opposite direction so the reinforcing value as well as the frequency of the corresponding behavior increases (Cooper et al., 2020). MOs can be broken down further into unconditioned motivating operations (UMO) and conditioned motivating operations (CMO). There is no learning history involved with UMOs and everyone can exhibit these. Some examples of UMOs include pain, thirst, oxygen, and hunger (Michael, 1988). On the other hand, CMOs are often contrived and obtain their motivating effect through the person’s learning history (Laraway et al., 2003). There are three different categories of CMOs: surrogate, reflexive, and transitive. The surrogate CMO (CMO-S) is when a neutral

stimulus alters the reinforcing effect and the frequency of the corresponding behavior. The reflexive CMO (CMO-R) is when something signals the "improvement or worsening" of someone's current state. The last CMO category is the transitive CMO (CMO-T) and it is when a stimulus in the environment alters the value of existing reinforcers and the frequency of the corresponding behavior (Langthorne & McGill, 2009). A study conducted by Rispoli et al. (2011) looked at MO manipulations in relation to problem behavior and academic engagement for two boys with autism in a classroom setting. There was a condition with access to preferred items that preceded instructional sessions and the researchers thought this would decrease problem behavior. The other condition was regular classroom instruction time with the preferred items in sight but not available. The results discuss less problem behavior along with higher engagement in pre-session exposure sessions (Rispoli et al., 2011). Exposure to their preferred items most likely reduced the value of the items as reinforcers, therefore, decreasing the EO for them during instruction. This article also discusses exposure to the reinforcement available for academic engagement as a possible reason for an increase in engagement (Rispoli et al.,2011). The children were no longer engaging in problem behavior so they were contacting reinforcement for engaging in academic tasks. This study offers another demonstration of how pre-session exposures can therapeutically impact maladaptive behaviors.

The current literature discusses verbal prompting in the context of guided compliance as well as MOs in the context of antecedent manipulations. The main purpose of this study is to compare the therapeutic effects of verbal prompting procedures outside of guided compliance and manipulations of CMO-T procedures on reducing elopement length. Secondary aims of the study include comparing the quality of reinforcers in the CMO-T procedures and investigating if highly preferred reinforcers are more effective than moderately preferred reinforcers. Lastly,

there is a lack of research on CMO-T manipulation and verbal prompting procedures and their uses in reducing problem behavior. This study aims to lessen that deficit in the research as well.

Chapter 2

Method

Participants

Two students receiving special education services participated in this study. These individuals were selected based on elopement being a target behavior that interfered with learning. Parents and caregivers provided consent for all participants to be in research studies.

Kevin was a 13-year-old male diagnosed with moderate intellectual disability and a speech and language impairment. He received special education and behavioral services through a university based clinic. He communicated using an augmentative and alternative communication (AAC) device and one to two word vocalizations. His elopement involved sitting on the floor, under or on top of his work table, and standing away from the table for extended periods of time. A previous functional analysis (FA)was done on all of his problem behavior approximately 2 years prior to this study and the function was almost exclusively attention. Therapists have done a variety of things to reduce his elopement including a multiple schedules card with work and break pictures. During his work time, he needed to remain in his seat and work for preferred edibles and during his break time, he could sit anywhere in the room with his preferred items. If he eloped during work, this behavior was ignored unless engaging in dangerous behaviors or pica.

Sasha was a 5-year-old female diagnosed with Autism and a speech and language impairment. She received special education services through a university-run self-contained classroom at an elementary school. She communicated using three to four word phrases and would occasionally use a picture exchange communication system (PECS) book. Her elopement

included running around the classroom or sitting on the floor under or near her work table. Hypothesized functions of her elopement included positive reinforcement in the form of attention and access to tangible items. She eloped to get toys or she would elope and state things like "chase me" while running from the teacher. If demands were placed while eloping, she would comply so there was no hypothesized escape function. Efforts to reduce this behavior include three-step guided compliance and blocking. Three-step prompting included verbal, model, and full physical prompts to guide her back to her seat.

Settings and Arrangements

All of Kevin's sessions were conducted in a treatment room at the university clinic. The room was approximately 10 feet by 20 feet and had a kidney shaped table as well as a chair. One of the longer walls in the treatment room had a one way mirrored observation window. Sessions occurred daily during instructional times for both participants. Various therapists and behavior analysts performed the sessions throughout the study.

Sasha's sessions occurred in her special education classroom staffed by graduate students. The classroom was 38 feet by 24 feet with shelving along the walls and carpeted floor. There was a small section of tile under the sink and counter. There is a SmartBoard at the front of the classroom along with two whiteboards on either side. Five tables were placed around the room with a number of chairs at each table for teachers and students to sit. The table that each session was run was at the front of the classroom with the whiteboards directly in front of the table. This table was where meal times, whole group sessions, and individual instruction time occurred. Various graduate students performed the sessions throughout the study.

Materials

The materials used for this study included paper data sheets, a binder to keep data sheets organized, and two timers. Additional things included were reinforcement items like candy, popcorn, chips, soda, marshmallows, and various toys. For the CMO-T manipulation sessions, an additional therapist or teacher was needed to act as the model. The behavior clinic therapists wore protective equipment as well to prevent injury and manage Kevin's problem behavior. The protective equipment included arm guards, bite jackets, bite gloves, and helmets.

Response Definitions and Measurement

Behaviors

Elopement, for Kevin, included any instance where his bottom was not touching his chair. If he was sitting in his chair and moved his chair more than an arm's length away from his table this was also counted as elopement. For Sasha, elopement was any instance where she moved more than an adult's arm's length away from her table. Elopement had an onset and offset criteria of 3 seconds for both participants.

Measurement System

All sessions were 10 minutes in length. The therapist or teacher used one timer for session length and a second timer to gather elopement length throughout the session. At the end of each session, the total time eloped was divided by 10 minutes to compute the percentage of the session spent eloping. Duration measures were used because participants would elope for long periods of time prior to the study. Using a frequency measure would show low occurrences of elopement even if they eloped for the entirety of a session. Sessions would not begin until an instance of elopement occurred so each session captured the target behavior.

Reliability and Fidelity

Reliability data were taken by a secondary data collector independent of the primary data collector. Each collector had an elopement timer and recorded elopement time on the data sheet at the end of each session. Reliability data was taken for 47.5% of the baseline sessions, 37.5% of the verbal prompting sessions, and 30% of both CMO-T manipulation sessions for both participants. Inter-observer agreement (IOA) data on elopement length were calculated using point-by-point so the number of agreements was divided by the number of disagreements plus the number of agreements and multiplied by 100. There was a mean of 100% IOA for elopement length across all baseline sessions, 99% for all verbal prompting sessions, and 97% for all CMO-T manipulation sessions. Variations in elopement length were likely a function of data collector reaction time.

Procedural fidelity data were taken by a secondary data collector independent of the primary data collector as well. There was a procedural fidelity checklist filled out by a secondary data collector as the session was completed and varied slightly depending on the condition. The checklist included these steps for all conditions: (a) reinforcement and data collection materials gathered (b) bring child to instruction table from play area (classroom setting specific) (c) once child elopes, start session timer and elopement timer simultaneously (d) Do not give any attention to participant unless engaging in dangerous behavior (e.g., standing on furniture) or pica. For verbal prompting sessions, the checklist also included: (a) once child elopes, start session timer and elopement timer simultaneously (b) place a verbal prompt every 30 seconds reminding participant to sit in seat (c) if child sits, place demands for 30 seconds (d) reinforce sitting behavior every 30 seconds with toy or edible. The checklist also included these steps for the CMO-T manipulation sessions: (a) reinforce the model every 30 seconds for sitting in their

seat (b) if learner sits, place demands for 30 seconds before providing reinforcement (c) then reinforce their sitting behavior every 30 seconds while still placing demands. This data was taken on the same sessions that IOA data was taken. Procedural fidelity was calculated by dividing the number of steps completed by the researcher by the total number of steps on the checklist and multiplying by 100. The average procedural fidelity score was 100% in baseline sessions, 100% in verbal prompting sessions, and 99.8% in the CMO-T manipulation sessions. The only error made during one CMO-T manipulation session included placing demands for approximately 22 seconds before providing reinforcement instead of 30 seconds like stated in the checklist.

Experimental Design

The study used an alternating treatment design (ATD) in order to evaluate the therapeutic effects of three different interventions on elopement length. Baseline sessions were conducted throughout the study to act as a comparison for the other two treatments. Verbal prompting sessions, CMO-T manipulation sessions with highly preferred reinforcers, and CMO-T manipulation sessions with moderately preferred reinforcers were run in a random order. The first 7 sessions for Sasha and 5 sessions for Kevin were randomized using no parameters regarding frequency prior to repetition. After 7 sessions for Sasha and 5 sessions for Kevin, we equalized the exposures by randomizing the remaining sessions so that each participant was exposed to each condition 10 times.

Multiple Stimulus Without Replacement (MSWO) Preference Assessment

An MSWO preference assessment was completed to determine which reinforcers were highly or moderately preferred for Sasha. Kevin had a preference assessment done before this study was conducted so the results from that assessment were used in choosing possible reinforcers. MSWO preference assessments involve a group of items or edibles being placed

equidistant from the participant. The child is then able to choose an item or edible and eat or play with the item for an allotted amount of time. The item they choose is then removed from the array and the child must pick from the items left. This creates a hierarchy of preferred items that can then be used as reinforcers. There was an edible assessment and a separate tangible assessment done for Sasha. Items chosen for this participant were things she has worked for in previous instructional sessions like dinosaur toys and marshmallows. The edible preference assessment items were popcorn, skittles, starbursts, marshmallows, and Doritos. The results showed starbursts as most preferred followed by popcorn, marshmallows, Doritos, and skittles as least preferred. The tangible preference assessment included dinosaur figurine toys, “monster” figurine toys, a toy car, stuffed animals, and sea animal figurine toys. The assessment showed the following hierarchy: dinosaur figurine toys, the toy car, “monster” figurine toys, stuffed animals, then sea animal figurine toys as least preferred. Toys and edibles labeled as highly preferred were the first two edible items and the first three tangible items in the hierarchy so dinosaur toys, the toy car, “monster” figurine toys, starbursts, and popcorn were used in the highly preferred conditions. The moderately preferred items were stuffed animals, sea animal figurine toys, Doritos, and marshmallows.

Chapter 3

Procedures

General Procedures

The therapist gathered reinforcement materials, timers, demands, and data sheets. The session timer was set for 10 minutes and the second timer was used to time elopement. Both timers were started when the child eloped. The decision to start the session once elopement occurred was made to help reduce the number of sessions in which elopement did not occur. Each participant was seated for instructional time at their designated tables. Prior to each session, while the child complied with demands and stayed in their designated area, the therapist or teacher reinforced their sitting behavior every 30 seconds and this served to establish escape as a reinforcer.

All sessions were 10 minutes in length and were conducted in the clinic treatment room or the classroom depending on the participant. The average session number per day was 4 with a range of 2 to 6 sessions per day for each participant. Data collection was identical across all conditions and intervention was introduced to each participant only after baseline data was stable. The participant had to complete demands for 30 seconds after returning to their seat before receiving any reinforcement. This was done to prevent a chain of behavior developing where the participant eloped then sat in their seat to receive reinforcement and eloped again. These procedures were followed until the session was complete. When the session was over the therapist recorded the elopement time and calculated the percentage of elopement for the session.

Baseline

Once the child eloped, the session timer was started as well as the timer tracking elopement. The elopement behavior was ignored unless the child was engaging in dangerous behavior or was attempting to leave the room. The child at the clinic also attempted to bite pieces of drywall so this required the therapists to block pica attempts during this condition as well. If the child sat in their seat and was no longer eloping, the elopement timer was stopped. Then the therapist began placing demands and delivering reinforcement on a schedule identical to the one in place prior to elopement. This continued until the session timer went off. Once the 10 minute session was completed, the participant in the classroom was sent back to the group play area and the clinic participant was allowed a five minute break from demands. The therapist then recorded the elopement time on the data sheet and calculated the percentage of elopement for the session.

Verbal Prompting

This condition's set up mirrored the baseline set up. Once the child eloped for at least 3 seconds, the session timer was started as well as the timer tracking elopement. The therapist would place a verbal reminder every 30 seconds for the child to sit in their seat in order to earn reinforcement (i.e., "When you sit in your seat at the table, you can work for fun things like candy and toys"). If the participant sat in their seat and was no longer eloping, the elopement timer was stopped after an offset of 3 seconds. The onset and offset times were not subtracted from the total elopement time. Demands were then placed with reinforcement being delivered on a fixed interval reinforcement schedule of 30 seconds.

CMO-T Manipulations with Highly/Moderately Preferred Reinforcers

The only difference in these two sessions was the preference level of the reinforcement items. The therapist began by gathering demands, timers, data sheets, and the correct

reinforcement materials, either highly or moderately preferred edibles and toys. The child was seated for instructional time and the therapist or teacher acting as the model was seated next to the participant. The participants received no verbal or physical prompts while eloping during this condition. While the participant eloped, the therapist or teacher verbally praised the model for sitting in their seat and then delivered an edible or toy to the model on an identical reinforcement schedule to the one in place before elopement. If the child sat back in their seat and was no longer eloping, the child had to comply with demands while sitting in their seat for 30 seconds before "sitting" was reinforced. This was done to avoid creating a chain of behavior where the participant elopes then sits back in their seat to receive reinforcement then immediately elopes again and so forth. Once the first 30 seconds passed, the child received edibles or toys on a fixed interval reinforcement schedule of 30 seconds for sitting in their seat. The same procedures from above were followed for each instance of elopement during the sessions.

Chapter 4

Results

Figure 1 depicts the percentages of elopement during each session for both participants. The data collected in baseline, verbal prompting, and CMO-T manipulation sessions were examined using visual analysis. In baseline sessions prior to the comparison phase, both students exhibited long durations of elopement. This persisted through the comparison phase. Sasha's data stabilized after session 4 whereas Kevin's data stabilized after 5 sessions. The first condition change line denotes the introduction of verbal prompting and CMO-T manipulation procedures while still running baseline sessions. For both participants, the first verbal prompting session resulted in fairly low percentages of session time engaged in elopement. The second condition change line in Kevin's graph represents a change in procedures. This is when it was decided there should be 30 seconds of demands placed before reinforcement was delivered if he sat in his seat. The 7 sessions completed before that change involved him getting reinforced immediately when he sat in his seat. The change was made to avoid creating a chain of behavior where he eloped and sat back in his seat long enough to get reinforcement and then eloped again and sat to get reinforcement and so on and so forth. Overall, CMO-T sessions had lower levels when compared to baseline and verbal prompting sessions for both participants. For Sasha, verbal prompting was variable until it stabilized in the last five sessions. Kevin's CMO-T sessions were stable at a low level until session 20. Session 20, 22, 28, 29, and 30 were CMO-T sessions completed in the morning and there seemed to be no establishing operation for any reinforcers available. Session 26 for Sasha was the only CMO-T session at a high level.

The percentage of elopement averaged 99.3% of the session for Kevin during the first baseline conditions. Once intervention was introduced, his elopement percentage average was 99.03% for the remainder of baseline sessions. Baseline sessions had a range of 100% to 92%. Verbal prompting sessions had an average of 91.52% over the entire study with a range of 100% to 38.67%. CMO-T sessions with highly preferred reinforcement averaged 22.32% and had a range of 100% to 1.17%. Moderately preferred reinforcer sessions had an average of 38.63% with a range of 100% to 1.67%. Sasha's baseline sessions averaged 99.91% and the values ranged from 100% to 99.67%. Her verbal prompting sessions had an average of 73.44% eloping and a range of 100% to 13.5%. Her CMO-T sessions with highly preferred reinforcers averaged 18.25% with a range of 38.33% to 4.50%. The sessions using moderately preferred reinforcers had an average of 27.46% and a range of 98.67% to 4.00%.

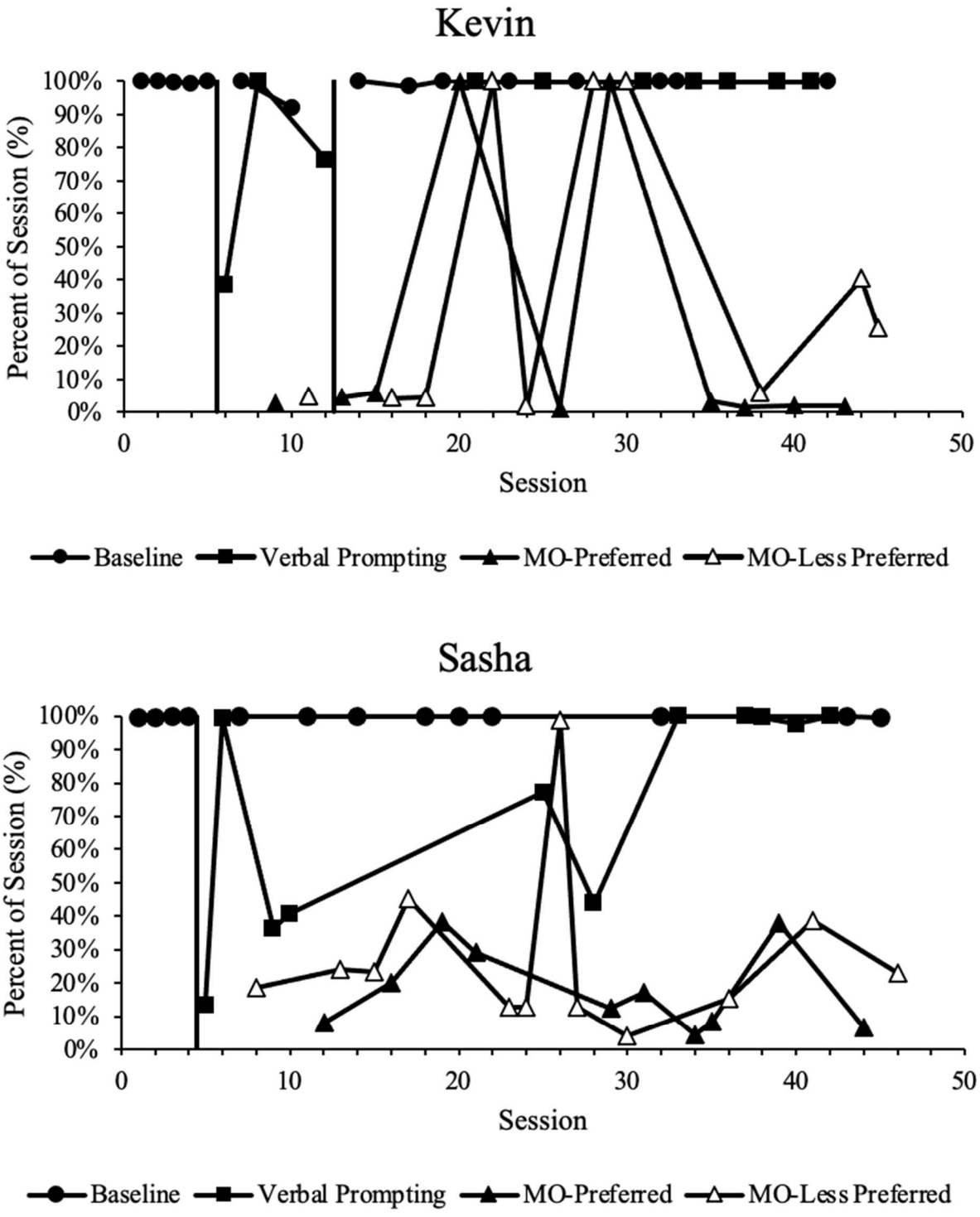

Figure 1
Participants percentage of elopement across baseline and intervention conditions.

Chapter 5

Discussion

The current study aimed to reduce elopement during instructional time by comparing the therapeutic effects of verbal prompting procedures and the manipulation of MOs. The results show that MO manipulation is more effective than verbal prompting overall across both participants. Both participants' baseline elopement percentages were stable at high levels for the entirety of the study. During treatment, Kevin showed slight responding to verbal prompting in the first 3 sessions but the trend flattened at 97% to 100%. This is believed to be caused by the reintroduction of attention in the form of verbal prompts whereas in baseline there was no attention being given. The elevated data points during CMO-T manipulation sessions were sessions conducted in the morning and Kevin seemed to have no EO for any of the reinforcers available. On the other hand, Sasha had variable responding for a majority of the study but the verbal prompting data path flattened towards the end of the study. Antecedent exposure may have had some impact on Sasha's elopement behavior in particular because she was brought to an instructional session from the play area. Similar to the Blowers et al. (2020) study where presession chase was used to lessen the EO for elopement during instruction, having access to toys before the sessions may have led to a decreased EO for toys during the CMO-T sessions.

Limitations

Although both interventions were effective when compared to baseline data for one or both participants, there are a variety of limitations to this study. One limitation of this study deals with the small participant pool, using two participants limits the generalizability of the study. The two participants were in different settings so this study does show it can be conducted in

multiple settings. No FA was conducted in this study but having those results would have led to a better idea of what maintained the participants' elopement. Knowing what maintained their elopement would aid in choosing intervention and possible reinforcement options. Another limitation arises concerning the randomization of the sessions in the ATD. Instead of using a block randomization technique, which is what is recommended for ATDs with four conditions, the total session amount was randomized with no parameters. This may have led to an inconsistent exposure pattern to each condition for the participants.

Future Directions

The limitations of this study discussed above suggest future research directions. One option for future research would include applying these procedures to a whole group setting. Instead of sessions occurring during one-on-one instruction, the sessions could be done with multiple students engaged in a whole group activity or lesson. When a child elopes, the other students would get reinforced for sitting in their seat in hopes the child eloping would be motivated to come back to their seat. Another avenue of research to go into would be to replicate this study with different varieties of problem behavior with differing maintaining functions. There is little research on CMO-T manipulations so this study along with future research ideas would add to the available research as well.

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