

*EVALUATION OF BEHAVIORAL SKILLS TRAINING FOR  
TEACHING ABDUCTION-PREVENTION SKILLS TO  
YOUNG CHILDREN*

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This study examined the effectiveness of individual behavioral skills training in conjunction with in situ training in teaching 13 preschool children abduction prevention skills. Children's performance was measured during baseline, training, and at 2-week, 1-month, and 3-month follow-ups using in situ assessments in which abduction prevention skills were measured in naturalistic settings. Results revealed that all the children learned the skills and all the children available at the 2-week and 1-month follow-ups maintained the skills at criterion level. All but 3 children's criterion-level performances were maintained at the 3-month follow-up as well.

DESCRIPTORS: behavioral skills training, children, abduction prevention skills, in situ training, in situ assessment

The mere thought of child abduction causes parental anguish, and actual abduction is a nightmare beyond compare. Thankfully, most children will never encounter an abduction situation, but the consequences for those who do (e.g., sexual abuse, death) are so horrific for those children, their parents, and the culture at large that research on prevention of abduction is a veritable necessity. The U.S. Department of Justice classifies child abduction into two major categories: nonfamily and stereotypical kidnappings. Finkelhor, Hammer, and Sedlak (2002) define nonfamily abduction as an "abduction perpetrated by a stranger or slight acquaintance involving the movement of a child using physical force or threat, the detention for a substantial period of time (at least 1 hr) in a place of isolation using threat or physical force, or the luring of a child younger than 15 years old for purposes of ransom, concealment, or intent to keep permanently." Stereotypical kidnapping, a more serious form of nonfamily abduction, is an "abduction perpetrated by a

stranger or slight acquaintance in which a child is taken or detained overnight, transported a distance of 50 or more miles, held for ransom or with intent to keep the child permanently, or killed." Although children are sometimes abducted by family members (e.g., noncustodial parents), nonfamily abduction is a more serious threat to child safety and is the focus of this research.

In 1999, there were 58,200 nonfamily abductions and 115 stereotypical kidnappings. Forty percent of the victims of stereotypical kidnappings are killed, and another 4% are not recovered. Nearly half of all child victims in stereotypical kidnappings and nonfamily abductions are sexually abused (Finkelhor et al., 2002). In addition, an estimated 19% of victims of stereotypical kidnappings are 5 years old or younger.

Despite these statistics, few safety skills training programs have been developed to teach children what to do if a stranger asks the child to leave with him or her. A handful of studies on abduction-prevention skills training has demonstrated that preschool children are able to learn the safety skills and use these skills in simulated abduction situations, or in situ assessments, when presented with an abduction

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lure. During an in situ assessment the child does not know that he or she is being assessed. A confederate, unknown to the child, approaches the child and presents a lure (asks the child to leave with him or her). The child's response is measured to see whether he or she will respond with the appropriate target behaviors. The four lures identified by researchers to be widely used by perpetrators are simple, authority, incentive (Poche, Brouwer, & Swearingen, 1981), and assistance lures (Holcombe, Wolery, & Katzenmeyer, 1995). The simple lure is a request to go with the confederate with no incentive or a particular reason given (e.g., "Would you like to take a walk with me?"). In the authority lure, the confederate tells the child that a parent or teacher gave the child consent to leave with the him (e.g., "Your dad told me to pick you up early from school today."). In the incentive lure, the confederate promises the child a reward for leaving with him or her (e.g., "If you come with me, I'll buy you some ice cream."). For the helping lure, the confederate asks the child for assistance (e.g., "I lost my puppy. Will you help me find it?").

Poche *et al.* (1981) were the first to find that behavioral skills training (BST) was effective in teaching abduction-prevention skills to children. The authors developed and evaluated a BST program involving instructions, modeling, rehearsal, and feedback to teach 3 preschool children self-protective behaviors to prevent abduction. Training and in situ assessments took place on the school premises, and children were taught to respond to simple, authority, and incentive lures by saying "No, I have to go ask my teacher," and running towards the school building when presented with any of these lures. In situ assessments were implemented to see if children could perform the correct safety responses. All 3 children learned the skills, but the skills were maintained by only 1 of the 2 children available for assessment at the 3-month follow-up.

Marchand-Martella, Huber, Martella, and Wood (1996) also evaluated individual BST for teaching abduction-prevention skills to young children. During BST, the children were taught to say "no," run away, and tell a teacher when presented with simple, authority, and incentive lures. Although the children performed the correct behaviors during the in situ assessments, they were unable to perform the safety responses to criterion level at the 7-week and 64-week follow-up assessments.

Both Poche *et al.* (1981) and Marchand-Martella *et al.* (1996) showed that young children could learn abduction-prevention skills with individual BST but found minimal maintenance of the skills following training. Subsequent studies that have investigated the effectiveness of BST have focused on group training with preschool or school-aged children. These studies of group training procedures have shown that children's safety skills improve overall, but only about half the children exhibit the criterion safety skills when BST is implemented at the classroom level (Carroll-Rowan & Miltenberger, 1994; Olsen-Woods, Miltenberger, & Foreman, 1998; Poche, Yoder, & Miltenberger, 1988). Furthermore, these studies did not collect long-term follow-up data to evaluate maintenance of the safety skills. Although BST with groups appears to be less effective than BST with individual children, using group training to teach abduction-prevention skills is a more efficient way for teachers to train a large number of children; therefore, group training is more likely to be adopted as a classroom-based program by schools (Miltenberger & Olsen, 1996).

Because existing research has shown that BST is not entirely effective for teaching abduction-prevention skills to children individually or in groups, research is needed to enhance the efficacy of BST so that all children learn the skills and maintain the skills over time. Recent research in firearm injury prevention has demonstrated that an added in situ training

component increases the efficiency of BST (Gatheridge et al., 2004; Himle, Miltenberger, Flessner, & Gatheridge, 2004; Miltenberger et al., 2004). These studies added an in situ training session following BST when children failed to perform the skills correctly during in situ assessments. Results of these studies suggest that in situ training is an effective method for teaching children who do not learn the skills in the initial training phase, thereby increasing the overall effectiveness of individual or group training. During an in situ training phase, when the child does not perform the skills correctly during an in situ assessment, the trainer enters the assessment situation, has the child perform the safety skills, and provides the child with corrective feedback and praise. This proceeds until the child can perform the chain of safety responses correctly several consecutive times.

In each of the studies in which in situ training was evaluated, it was added after children failed to demonstrate the skills following BST. Researchers have yet to investigate whether incorporating in situ training into BST procedures would increase the effectiveness of BST. The purpose of this study was to examine the effectiveness of BST with in situ training in teaching abduction-prevention skills to preschool children and to evaluate the long-term maintenance of skills following training to determine whether BST with in situ training was more effective than BST as evaluated in previous investigations.

## METHOD

### *Participants*

The initial pool of participants included 17 4- and 5-year-olds (12 boys and 5 girls) recruited from an area day-care program. Only children whose parent or guardian signed the consent form participated in the study. The study was approved by the university's institutional review board and the participating day-care program. Four children dropped out of the study prior to the initiation of training.

### *Settings*

Training took place at each child's day-care program in a classroom in the building, hallways, or on the playground outside the building. Baseline, training, and follow-up in situ assessments took place in a variety of locations, including inside the school building, on the playground outside, and at the child's home.

### *Target Behaviors*

The abduction-prevention skills consisted of three responses: saying "no" when presented with an abduction lure by a confederate, immediately walking or running away from the confederate (the child must leave within 10 s and distance him- or herself at least 6 m from the confederate), and immediately telling an adult about the abduction lure.

The safety responses were coded with the following numerical values: 0 = agrees to leave with the abductor; 1 = does not agree to leave with the abductor but fails to say "no," get away, or tell; 2 = says "no" but does not leave the area or tell an adult; 3 = says "no" and leaves the area but does not tell an adult; 4 = says "no," leaves the area, and tells an adult.

### *Assessment*

In situ assessments were conducted during baseline, training, and 2-week, 1-month, and 3-month follow-ups. To assess abduction-prevention skills, a confederate approached the child when the child was left alone (at a predetermined time and place) and presented an abduction lure. The child was not told that an assessment was taking place. In addition to the confederate, an assessor (unseen by the child) was present to record the child's responses to the lure. If the child agreed to leave with the confederate, the confederate made up an excuse to terminate the interaction and left without the child. If the child engaged in the correct safety skills and told a parent or teacher, the adult thanked the child for reporting the incident. Children were assessed with four different lures that were randomly assigned

throughout baseline, training, and follow-up phases.

#### *Interobserver Agreement*

The primary observer was the confederate involved in the assessments. The child's verbal responses were tape-recorded by the confederate during each assessment. A second researcher observed from a distance and recorded whether the child ran away and reported to the parent or teacher. The parent or teacher recorded whether the child reported the incident. Agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements for each of the four target responses (did not go with the abductor, said "no," got away, told the adult) and multiplying by 100%. An agreement was defined as the two observers recording the same response. Overall, interobserver agreement was 100%.

#### *Side-Effects Questionnaire*

We administered a six-item questionnaire to assess changes in each child's behavior following completion of training and parent's or guardian's attitudes toward training. These questionnaires were mailed home to the parent or guardian of all 13 participants who completed training (see the Appendix).

#### *Experimental Design and Procedure*

A multiple baseline across subjects design was used to evaluate the effectiveness of BST.

In baseline, we observed the children's responses to the presentation of abduction lures during in situ assessments. Next, BST was conducted over 3 consecutive days at the child's day-care program.

*Baseline.* One to four baseline assessments were conducted as described above. No feedback was provided to the child for performance during baseline assessment.

*BST.* An individual BST program consisting of instructions, modeling, rehearsal, praise, and corrective feedback was used to teach the skills to use when confronted with an abduction lure.

The first training session involved a brief discussion of the types of lures used by an abductor and the appropriate safety skills to use when presented with an abduction lure. After the child could state the appropriate safety skills, the researcher modeled the appropriate responses in the context of four different abduction lures. After the child observed the safety skills modeled in response to the four different types of lures, he or she then rehearsed the safety skills in role-played scenarios involving each of the lures. Praise was provided for correct responses, and further instruction was given to correct errors. The child rehearsed the skills until the safety skills were demonstrated correctly without prompts in response to all four types of lures.

Immediately following the BST session (within 15 min), in situ training commenced. The BST trainer left the child alone while observing clandestinely from another location (inside the school building). A research assistant, unknown to the child, approached the child and presented him or her with one of four randomly chosen abduction lures. Upon presentation of the lure, if the child demonstrated the correct safety responses (said "no," ran back to the school building, and told the teacher), the trainer entered the situation and praised the child for the correct behavior. If the child failed to demonstrate the appropriate sequence of responses, the trainer entered the situation and provided corrective feedback, modeling, and instructions until the child performed the appropriate safety responses.

In Session 2 of BST, training began with in situ training. A teacher left the child alone and a different confederate presented the child with a different, randomly chosen lure. As with the first session, if the child demonstrated the correct safety responses, the trainer appeared and praised the child for the correct behavior. If the child failed to demonstrate the appropriate sequence of responses, the trainer entered the situation and provided corrective feedback,

modeling, and instructions. The child rehearsed the skills in a role-play of the same situation until the child performed the appropriate safety responses. Further training occurred with the child rehearsing the safety skills with praise and feedback in the context of role-plays of the three types of lures until the child performed correctly five consecutive times.

Session 3 of BST began with a new confederate presenting the child with a third lure. Session 3 then proceeded in the same manner as Session 2. The fourth remaining lure was presented to each child during an in situ assessment following the third training session. If the child failed to exhibit the correct behavior in any subsequent assessment, an in situ training session was conducted.

## RESULTS

Figures 1 through 3 illustrate the children's responses to abduction lures during baseline, training, and follow-up. During baseline, children's safety scores ranged from 0 to 2. Eight of the 13 children agreed to leave with the confederate at least once during baseline. For 7 of the children, one baseline in situ assessment was obtained at the home. All other baseline assessments took place at the school, with no systematic differences in performance occurring between the two sites. There were no systematic differences in the children's responses to the four different lures in baseline or training phases.

All of the children (except Keith, who dropped out of the study) performed the correct safety responses during three consecutive in situ assessments following training. Five of the 13 children who completed the study (Colin, Cameron, Nathan, Cole, and Noah) did not require corrective feedback during in situ training, because they performed the correct safety skills in each in situ assessment. Eight children required in situ training sessions (one to seven sessions) before their performance improved to criterion level. Nine children were

available for 2-week follow-up, and 8 children were available for the 1-month follow-up; all performed the correct safety responses during in situ assessments. A 3-month follow-up in situ assessment was conducted for 8 children. During this assessment, 5 children performed the correct safety responses. Three children responded "no" to the lure but did not run away and tell an adult.

The participation of 4 children was terminated during baseline. We were unable to set up an in situ assessment for 1 child because she refused to be left alone by her parents. Two children ran away when approached by the confederate before the lure was delivered, so assessment could not be conducted. One child completed baseline but refused to participate in training. A total of 5 children completed training but terminated participation in the study before follow-up assessment could be completed. Two of these children moved away from the area. The mother of the 3rd child reported that her daughter had developed a preoccupation with talking about strangers, so the mother discontinued the assessments. At his mother's request, the 4th child discontinued the in situ assessments, because she reported that he was acting more fearful of being left alone. The 5th child's mother reported that he was acting more cautious and asked that assessments be terminated.

### *Side-Effects Questionnaire*

Of the 13 anonymous questionnaires mailed to the parent or guardian of each child who underwent training, 5 were completed and returned to the researchers. When asked to denote whether their children appeared to be more scared following the study, 3 parents indicated that there was no change and 2 indicated that their children appeared a little more scared. When asked whether their children seemed more cautious compared to before the study, 1 parent indicated that there was no change, 2 indicated that their children seemed a little more cautious, and 2 indicated

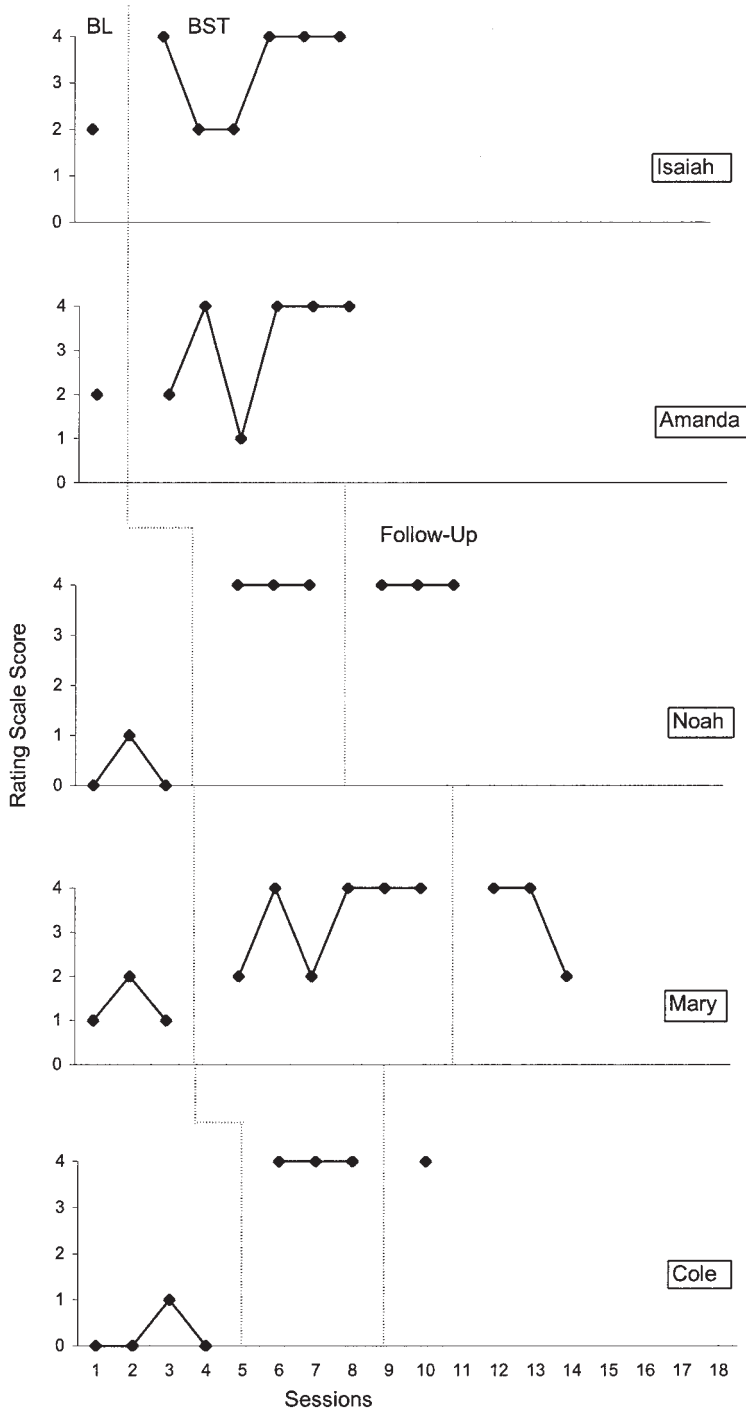


Figure 1. Rating scale scores for Isaiah, Amanda, Noah, Mary, and Cole across baseline, BST, and follow-up phases. The three data points in the follow-up phase indicate 2-week, 1-month, and 3-month assessments.

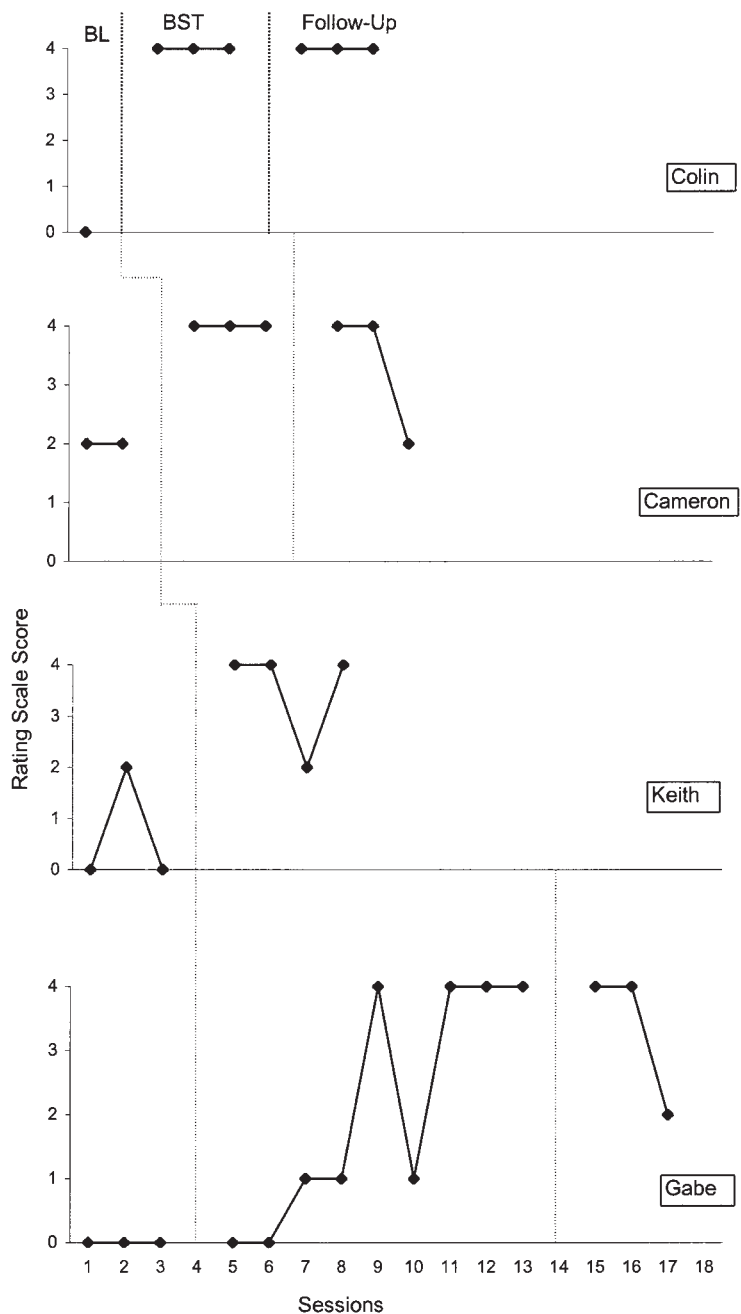


Figure 2. Rating scale scores for Colin, Cameron, Keith, and Gabe across baseline, BST, and follow-up phases. The three data points in the follow-up phase indicate 2-week, 1-month, and 3-month assessments.

that their children seemed much more cautious. Three parents reported that their children did not seem to be upset following the study, and 2 reported that their children seemed to be a little more upset. When asked to describe any

changes that were noted in the child’s behavior, 1 of the 5 parents reported that her child refused to play in the front yard alone after participating in the research. Three parents reported that they were pleased with their

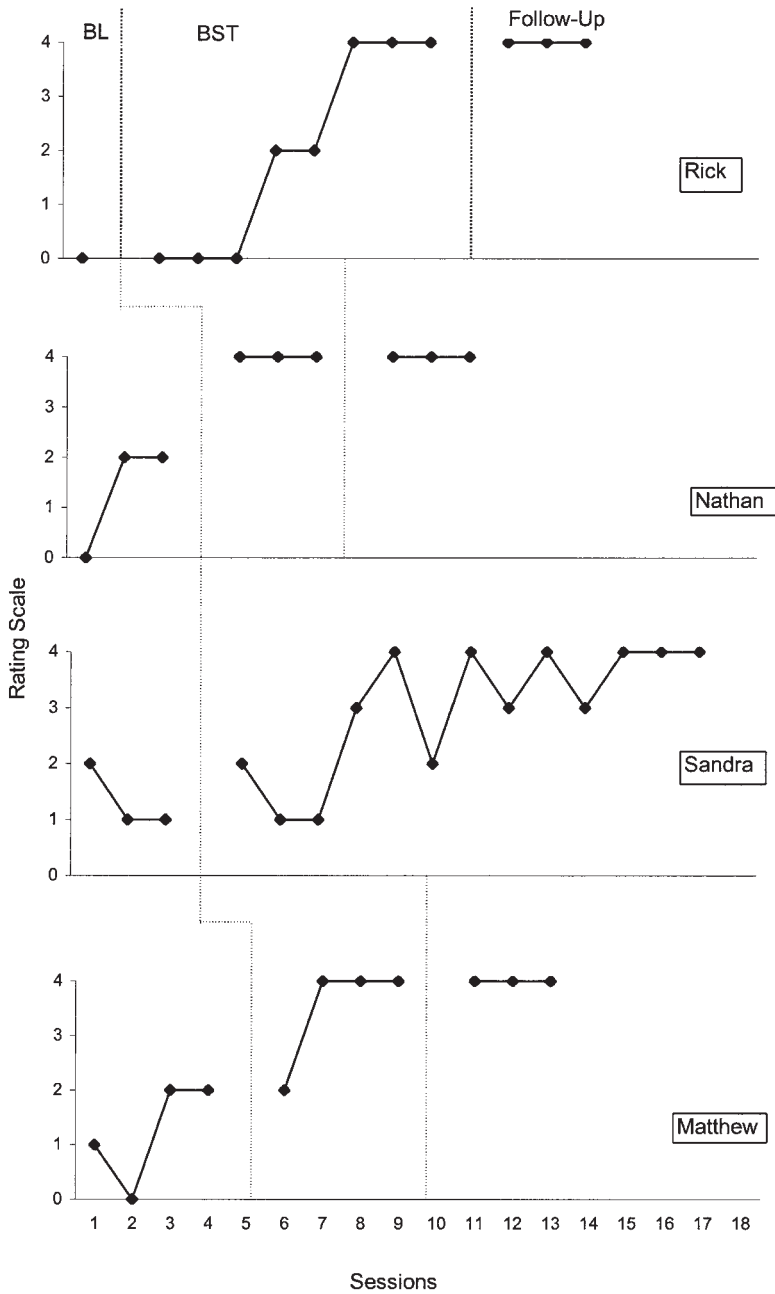


Figure 3. Rating scale scores for Rick, Nathan, Sandra, and Matthew across baseline, BST, and follow-up phases. The three data points in the follow-up phase indicate 2-week, 1-month, and 3-month assessments.

children's participation in the study, and 2 indicated that they felt neutral about their children's participation. None of the parents who returned questionnaires had terminated their children's participation.

## DISCUSSION

The results of this study demonstrate that incorporating in situ training into BST improved the acquisition and maintenance of abduction-prevention skills in preschoolers



relative to the results from previous studies evaluating BST procedures. In previous research, only half of the children exhibited the safety skills following group BST and, in research evaluating individual BST, the skills were not maintained at long-term follow-up. In the current study, all children exhibited the skills following training. Furthermore, all of the children assessed at 2-week and 1-month follow-ups maintained the safety skills. Only 3 children were unable to perform the correct safety responses at the 3-month follow-up. Although these children refused to leave with the confederate, they failed to run away and report the incident to an adult. Running away and reporting may be the most critical components of the three target behaviors, because they ensure the child's safety and alert an adult who can contact the proper authorities. The few studies that have investigated the effectiveness of individual BST in teaching abduction-prevention skills to preschool children have shown that there is poor maintenance at long-term follow-up. This study provides support for incorporating in situ training into BST as a procedure to increase both skill acquisition and long-term maintenance.

A limitation to this study was the number of children who terminated participation before completing the study. The parents of 3 children terminated their participation before follow-up could be completed because their children were acting more cautious or scared. This may have resulted from the repeated exposure to abduction lures during the in situ assessments. Furthermore, we could not conduct baseline assessments with 3 children because they refused to be alone or ran away before a lure could be delivered, suggesting that they were fearful of the assessment.

Another limitation was the poor return rate for the side-effects questionnaire. Only 5 of 13 parents returned the questionnaire. However, more than half of the parents who returned the questionnaire were pleased with their children's

participation, and none were displeased. Two parents reported that there was an increase in fear in their children following the study, and 4 parents indicated that their children displayed a higher level of caution around people and their surroundings. Evidence of negative emotional or behavioral side effects resulting from abduction-prevention skills training has not been reported in past studies that have administered a parental questionnaire after training (Miltnerberger & Olsen, 1996). However, these results suggest that repeated exposure of abduction lures during in situ assessment may cause adverse side effects for some children and presents a limitation in this study.

Investigators should address the issue of adverse side effects in future research. Perhaps negative emotional reactions to training or assessment could be minimized by altering the number or timing of assessments or exposing children to test settings in the absence of an abduction lure. In addition, a risk-benefit analysis may help to determine whether the benefits of training outweigh the possibility of increasing a child's apprehension of strangers or of being alone. It is also possible that an increase in such apprehension may enhance the benefits of training.

Another limitation of the current study was the inclusion of only one baseline data point for 3 participants. Although we included only one data point for these individuals to decrease the number of in situ assessments, the logic of a multiple baseline design calls for repeated assessments in baseline.

The results of this study suggest that in situ training increases the effectiveness of individual BST when implemented early in training. Even though BST with in situ training produced correct safety skills for all children, some children required substantially more training sessions than did others (i.e., Gabe, Rick, and Sandra). It is not clear why some children required more training, but the results point to the importance of repeated assessment over time to identify the amount of training needed to

produce skill acquisition for each child. Although individual BST was effective for all children in this study, group training is more efficient, and thus is a more practical means for training children in classroom-based programs. Unfortunately, the handful of studies that have investigated group BST in teaching abduction-prevention skills to preschool children have shown that not all children learn the skills (Carroll-Rowan & Miltenberger, 1994; Holcombe *et al.*, 1995; Olsen-Woods *et al.*, 1998). Research in the area of firearm injury prevention has found that in situ training can increase the effectiveness of group training (Gatheridge *et al.*, 2004). Although the practicality of using in situ assessments in classroom-based programs remains an obstacle, the earlier introduction of in situ training might decrease the overall number of assessments needed. Researchers should examine the effectiveness of implementing group BST with early in situ training in teaching abduction-prevention skills to preschool children.

Future research should also examine further the possibility of preschoolers developing negative emotional or behavioral side effects from training. These incidences could be examined over the short and long term to determine whether they dissipate over time. Overall, research needs to be directed towards identification of the most effective skills-training approach for preschoolers, because this age group is particularly vulnerable to abduction solicitations.

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## APPENDIX

### Side-Effects Questionnaire Items

1. Compared to before this study my child now appears:

- a. scared: afraid to leave parents, showing fear of strangers
  - much more scared
  - a little more scared
  - no change
  - less scared
  - much less scared

If a change occurred, please describe briefly.

- b. cautious: hesitant to go outside or be alone
- much more cautious
  - a little more cautious
  - no change
  - less cautious
  - much less cautious
- If a change occurred, please describe briefly.
- c. upset: concerned about the issue of strangers, personal safety, etc.
- much more upset
  - a little more upset
  - no change
  - less upset
  - much less upset
- If a change occurred, please describe briefly.
2. Other changes I noted in my child's behavior are:
- Please describe or mark N/A if no change was observed.
3. How pleased are you that your child participated in the study?
- very pleased
  - pleased
  - neutral
  - disappointed
  - very disappointed
4. How satisfied are you with the way the researchers communicated what was going on throughout the study?
- very satisfied
  - satisfied
  - neutral
  - unsatisfied
  - very unsatisfied
5. Did you terminate your child's participation in the study? Yes or No
- If yes, please explain why.
6. Please note any additional comments you have about the study.

### STUDY QUESTIONS

1. Briefly describe the four common lures used by abductors.
2. What two dimensions of child behavior were measured, and how were they coded?
3. Describe the recording procedure used to assess interobserver agreement.
4. How did the authors assess abduction-prevention skills?
5. Describe the components of the behavior skills training procedure.
6. Summarize the results in terms of the children's safety-skills performance. What response dimension accounted for maintenance failures observed at the 3-month follow-up?
7. What was one potentially negative result of the treatment procedure?

8. The authors concluded that in situ training improved children's performance. On what basis was this conclusion reached, and how could it have been strengthened?

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