Examining the Effectiveness and Efficiency of Two Delivery Models to Teach Children Abduction Prevention Skills

Kimberly E. Seckinger-Bancroft

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EXAMINING THE EFFECTIVENESS AND EFFICIENCY OF TWO DELIVERY MODELS TO TEACH CHILDREN ABDUCTION PREVENTION SKILLS

by

Kimberly E. Seckinger-Bancroft

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Psychology
Advisor: R. Wayne Fuqua, Ph.D.

Western Michigan University
Kalamazoo, Michigan
December 2010
Nearly all children receive abduction prevention training. Most traditional education programs increase the learner’s knowledge, but often fail to produce concomitant behavior change. Behavioral Skills Training (BST) is a multi-component, behavior-based training strategy with empirical support demonstrating its effectiveness in teaching children safety skills, behavioral generalization and maintenance over time. BST, however, is restricted by financial, human and time costs and limited resources to implement the training protocol. These factors likely limit widespread adoption of the training model. This study examined the use of computer-based instruction that emphasized active responding and mastery level performance requirements to teach school-aged children abduction prevention skills. Computer-Based Instruction (CBI) was compared against traditional BST (instructions, modeling, rehearsal, feedback and in situ training) on measures of training effectiveness and efficiency. Forty children ($M_{age} = 10$ years, 2 months) were randomly assigned to the CBI experimental group or BST control group. Evaluation was conducted via in situ assessments in laboratory and naturalistic settings at
baseline, post-training, two weeks and one month following training. Results revealed clinically and statistically significant improvements in child performance of target safety behaviors after training for both groups. Behavioral generalization to naturalistic settings and skill maintenance was demonstrated at follow-up assessments. Differences in child performance were not observed between training delivery models. Training time and number of training trials to program/skill mastery was less for BST compared to CBI. Costs and resource needs were greater during the program development phase for CBI. Program implementation expenses associated with CBI were minimal and cost per unit of delivery decreased exponentially with successive implementation of the intervention. Per unit of delivery costs for BST were fixed and total investment associated with this model increased across successive implementations. Taken as a whole, CBI was as effective as BST in teaching children abduction prevention skills. Across multiple learners, the computer-based instruction program becomes a more economical delivery model. Findings are also discussed relating to child emotional response during training and assessment sessions and correspondence between the learner’s verbal report of behavior during simulated abduction situations and behavioral performance during live assessments.
ACKNOWLEDGMENTS

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Kimberly E. Seckinger-Bancroft
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INTRODUCTION

Child abduction poses a grave threat to the physical health, safety and mental wellbeing of our nation’s youth. Prevalence data from the Second National Incidence Studies of Missing, Abducted, Runaway, and Thrownaway Children (NISMART-2) collected by the U.S. Department of Justice estimate that approximately 58,200 children are the victims of nonfamily abductions in the United States annually. These occurrences are characterized by a perpetrator taking the child, either by force, threat of bodily harm, or enticement, and detaining the child for one hour or longer in an isolated location with the intention of keeping the child permanently or for ransom. NISMART-2 also reports a yearly total of 115 child victims of stereotypical kidnappings, a more serious offense in which the abducted child is transported a distance of 50 miles or more and detained at least overnight for the purposes of ransom, permanent detainment or murder (Sedlak, Finkelhor, Hammer & Schultz, 2002). Over three-quarters of abducted children are the victims of other violent crimes while in captivity, such as physical and sexual abuse (Finkelhor, Hammer, & Sedlak, 2002).

Child survivors of abductions may also experience severe acute and chronic psychological symptoms and behavioral consequences, including post-traumatic stress disorder, depression, anxiety, suicide attempts, academic difficulties, substance abuse, delinquency and adult criminality (Boney-McCoy & Finkelhor, 1995, 1996). The physical and psychological trauma that ensues from a kidnapping episode affects not
only the child victim and family, but also the community, state and nation, thus underscoring the need for continued action against child abduction.

An examination of victim, offender and offense characteristics can be a first step to identifying child populations at highest risk for abduction in order to develop appropriate prevention measures. Boudreaux and colleagues (1999) reviewed 550 cases of alleged child abduction obtained from the Federal Bureau of Investigation files over a 10 year span in order to discern crime patterns. With regards to victim characteristics, female children were far more likely to be the victims of abduction and homicide than males (70% compared to 30%, respectively). Frequency of abductions peaked in elementary school-aged children (ages 6-11 years) and persisted at high levels through the pre-adolescence and adolescence periods. Gender proved to be an insignificant risk factor until children reached preschool age (between 3-5 years), at which time the threat of abduction increased threefold for girls. At this developmental period, sexually motivated crimes also rose. Family members and acquaintances were the primary offenders for infants, toddlers, and preschool children. This pattern shifted when children became school-aged as acquaintances and strangers were found to be the primary perpetrators for this and older child age groups.

Regarding offender characteristics, perpetrators were predominately male (87%), Caucasian (71%) and under the age of 30 (mean age, 28.06 years). Girls were more likely to be kidnapped by male offenders compared to boys (74% and 26%, respectively). Primary motives for abduction were sex (in approximately 60% of
cases), followed by emotion (e.g., revenge, retribution, or rage-based crimes) and profit. Male perpetrators were equally divided among acquaintances and strangers. They typically abducted their victims from the child’s home or neighborhood. In contrast, female offenders tended to victimize male and female children in equal proportions and were primarily driven by emotion-based motives (51%) or the intent of keeping the child (44%). Female perpetrators averaged 27.10 years of age and were likely to be family members or strangers. Female abductors were likely to take their victims from the child’s home, hospitals or cars. Both male and female offenders usually victimized children of their same race (Boudreaux et al., 1999).

One trend to highlight in this study is that the offender and offense profiles change as children age. This finding is corroborated by other researchers (Finkelhor, 1997; Finkelhor & Dzuiba-Leatherman, 1994). The nature, quantity and impact of child victimization will vary based upon the child’s capabilities, activities and environment that are characteristic of his or her developmental stage. As the child ages and becomes more independent, mobile and skilled, victimization by a family member becomes less likely while acquaintance and stranger abduction increases. Additionally, with maturation, victim gender becomes a more critical risk factor and offense profiles come to resemble adult crime patterns, e.g., sexually motivated or for profit crimes as in cases of drug-related offenses seen in adolescents (Bourdeaux et al., 1999). It is prudent that, as children age, they are equipped with self-protection skills to ensure their continued safety.
Startlingly, research has shown that a vast majority of children will readily go with strangers when enticed or given a compelling rationale (i.e., a lure). Poche and colleagues (1981) documented that 90% of children screened for their study agreed to leave with confederates when presented with an abduction lure. This high susceptibility to lures has been documented in several subsequent investigations (Gunby, Carr & LeBlanc, 2010; Johnson, Miltenberger, Egemo-Helm, Jostad, Flessner & Gatheridge, 2005; Marchand-Martella, Huber, Martella, & Wood, 1996; Poche, Yoder, & Miltenberger, 1988). Thankfully most children and adolescents will not encounter a kidnapping attempt, but for those who do, their safety depends upon their ability to respond in a quick and safe manner.

**Traditional Approaches to Child Abduction Prevention Training**

Since the 1980s, an increasing quantity and variety of child abduction prevention materials have become publicly available. These materials range from pamphlets, brochures, books and coloring books to videotapes, television programs, plays and puppet shows. Traditional prevention approaches often focus upon increasing children’s knowledge of topics such as “stranger danger,” abduction lures or tricks, and how to escape from an abductor.

Several criticisms have been raised against these traditional, knowledge-based approaches. To begin, little empirical investigation has been conducted to evaluate the programs and document their preventive effects (Bromberg & Johnson, 1997). In a survey of 33 publishers of commercially available child sexual abuse and abduction prevention materials, Roberts and colleagues (1990) found that only 6% of
respondents conducted systematic evaluation of their materials prior to publication, 58% performed informal field tests and 36% did not evaluate their materials at all. Following publication, even less investigation was done. Only 12% of respondents reported formally evaluating their materials and 6% indicated that informal evaluations were conducted (Roberts, Alexander & Fanurik, 1990).

One recent study evaluated the efficacy of a commercially available abduction prevention program, The Safe Side “Stranger Safety” DVD (Beck & Miltenberger, 2009). The DVD is marketed as a successful tool to teach children abduction prevention skills but lacked published data to support these claims. Using a multiple baseline design across six participants, Beck and colleagues assessed the effects of training during simulated abduction situations. Results revealed that participants did not perform the targeted safety behaviors after viewing the training DVD. This study provides reminder to consumers to be cautious of claims made regarding treatment efficacy without empirical support.

A second difficulty with traditional programs is the great variability in the educational materials (Bromberg & Johnson, 1997). The lack of standardization of content and presentation method for abduction prevention programming may result in a child receiving confusing, contradictory messages or inaccurate and potentially dangerous information. For example, one training program may instruct learners to leave the area immediately when enticed by an adult while another may teach learners physical self-defense skills to use in potentially dangerous situations. The child who
receives both types of training may become confused as to which is course of action is appropriate to take.

Further, critics have voiced objections against the “stranger danger” message. Examples include do not speak to strangers, do not get into cars with strangers, do not help strangers, do not allow strangers to touch your food or drink and if an adult is too friendly with you, report to a trusted adult. This popular warning is meant to educate children to perceive danger and avoid abduction by unknown adults. Critics of the “stranger danger” message purport that it does not actually protect children from harm. Nancy McBride, the Safety Director of the National Center for Missing and Exploited Children contends that children: 1) do not comprehend the true meaning of a stranger; 2) believe that a stranger is someone who is “ugly or mean”; 3) lack experience, mature judgment and decision-making skills to evaluate “good” versus “bad” people; and 4) witness adults breaking the “Do not speak to strangers” rule daily. Finally, she notes that the “stranger danger” message portrays a world that is scary and dangerous and essentially eliminates a key source of help for children if they are in trouble (McBride, n.d.). Moreover, nonfamily abductions are not committed by strangers solely. As highlighted above from the review by Boudreaux and co-investigators (1999), child victims are often acquainted with their kidnappers. Rather than focusing on teaching children to avoid contact with strangers, children must learn to recognize potential danger and resist enticement, irrespective of their relationships with the adults involved.
A third limitation of traditional abduction prevention programs is that most are based solely upon instructional control and thus, are developmentally inappropriate for young children. Young children lack the mature cognitive abilities to comprehend abstract concepts, such as the concept of a stranger (Bromberg & Johnson, 1997). Further, young children have not developed a repertoire of rule governed behavior and are unable to translate verbally mediated rules, such as “Never go with strangers” into behavior change. While traditional education programs provide children with a certain body of knowledge, they fail to assess concomitant behavior change. Knowledge is a necessary but insufficient condition to children acquiring a desired skill set. The true test of behavioral acquisition would be to place the child in a simulated situation and see if the child recognizes potential danger and performs the safety behaviors.

**Behavioral Skills Training**

As opposed to traditional approaches, behavioral approaches to child abduction prevention are skill-based and have a rich history of empirically investigated program outcomes. One training strategy for skill acquisition is Behavioral Skills Training (BST). BST is a multi-component intervention involving:

1) **instructions**, in which a trainer explains the rationale and target behaviors to the learner; 2) **modeling**, in which the trainer demonstrates the target behaviors; 3) **rehearsal**, in which the learner practices the target behaviors in role-play exercises; and 4) **feedback**, in which the trainer provides praise to the learner for correct responding and feedback to correct errors (Miltenberger, 2008). Skill mastery is measured in a number of ways, most notably through in situ assessments, or
simulations, that are conducted unbeknownst to the participant. In the case of an abduction in situ assessment, a confederate would approach a learner when he or she was alone and unaware and present an abduction lure. The learner’s behavior is observed to determine if he or she is able to perform the desired safety skills outside of the training situation.

Research examining BST has shown that children, even as young as 3 years of age, can acquire important self-protection skills, such as abduction prevention skills (Beck & Miltenberger, 2009; Carroll-Rowan & Miltenberger, 1994; Gunby, Carr, & LeBlanc, 2010; Johnson et al., 2005; Johnson et al., 2006; Miltenberger, Thiesse-Duffy, Suda, Kozak, & Bruellman, 1990; Miltenberger & Thiesse-Duffy, 1988; Olsen-Woods, Miltenberger, & Foreman, 1998; Poche et al., 1981; Poche et al., 1988); sexual abuse prevention skills (Miltenberger & Thiesse-Duffy, 1988; Miltenberger, Thiesse-Duffy, Suda, Kozak, & Bruellman, 1990; Wurtele, Kast, Miller-Perrin, & Kondrick, 1989; Wurtele & Sarno Owens, 1997); firearm injury prevention skills (Himle, Miltenberger, Flessner, & Gatheridge, 2004; Miltenberger, Flessner, Gatheridge, Johnson, Satterlund, & Egemo, 2004; Miltenberger et al., 2005); and fire emergency skills (Jones, Ollendick, McLaughlin, & Williams, 1989). Many of these studies have documented generalization of the targeted skills from the training setting to more naturalistic situations.

Although BST has been repeatedly shown to be an effective teaching strategy, not all learners acquire the targeted skills through traditional BST procedures and some fail to maintain the skills over time. To enhance behavioral acquisition and
maintenance, some researchers include an additional component – in situ training – to the BST package. In situ training begins with an in situ assessment. If the learner performs the targeted behavior correctly during the assessment, he or she receives praise. However, if the learner makes an error, the trainer immediately enters the situation, provides instructions, models the correct behaviors, and rehearses the scenario with the learner, while providing feedback, until he or she exhibits the appropriate behavioral sequence. Additional rehearsal trials may be included in an in situ training session, thus providing the learner with more practice opportunities.

Johnson and co-investigators (2005) provide an illustration of the use of BST with in situ training when teaching abduction prevention skills to 13 preschool children. Children participated in individual BST sessions completed over three consecutive days. In situ training sessions were conducted following the first training session, at the start of the second and third sessions, and as needed after Follow-up in situ assessments. Findings of this investigation revealed that five participants acquired the abduction prevention skills after the basic BST package while eight participants required the additional in situ training sessions in order to demonstrate skill mastery. Further, behavioral maintenance was demonstrated as all of the children available at 2-week and 1-month Follow-up sessions and five of the eight children available at the 3-month Follow-up session exhibited the correct safety responses (Johnson et al., 2005).

In a later study, this same research group compared BST only and BST with in situ training to teach 46 children abduction prevention skills in a small group format
(Johnson et al., 2006). They found that children in both groups performed the target skills equally after training and performed the skills better than children in the control condition who did not receive any form of instruction. However, the group receiving BST plus in situ training performed significantly better than the BST only group at the 3-month Follow-up assessment. These findings suggest that the inclusion of in situ training may produce better performance over time (Johnson et al., 2006).

The abovementioned study by researchers Beck and Miltenberger (2009) provides further illustration of the application of in situ training to teach children abduction prevention skills. As a second part to their investigation, participants who failed to demonstrate the safety skills following training from The Safe Side “Stranger Safety” DVD received in situ training delivered by their parents. All six participants in the study required supplemental in situ training. Parents were taught to implement the in situ training protocol by the investigators and did so following in situ assessments in which the child failed to perform the target safety skills. All participants performed the skills to criterion following in situ training and behavioral maintenance was demonstrated one- to five months after training. From these three studies, it can be seen that BST is a highly effective approach to teaching children abduction prevention skills, is superior to at least one commercially available program, and for some children, in situ training is necessary for the learner to master the target behaviors and ensure lasting behavior change.

Regrettably, BST is resource intensive, time consuming and requires special arrangements to orchestrate valid in situ assessments and in situ training sessions.
Some pragmatic concerns relating to BST include the financial, human and time costs associated with this training model and limited resources (i.e., trainers) in most communities to implement such programs. Research examining individual and group training has revealed that individual training is more likely to produce criterion performance in children. With group-based BST, (a training format most amenable to a school or community-based setting) approximately half of participants fail to master the safety skills and some continue to engage in unsafe behavior after completion of the training (Carroll-Rowan & Miltenberger, 1994; Olsen-Woods et al., 1998; Poche et al., 1988). Though previous research has shown that the addition of in situ training sessions can enhance skill acquisition and therefore increase the effectiveness of group training, (Gatheridge et al., 2004; Johnson et al., 2006), this, too, is time- and resource intensive. Some empirical investigations have also demonstrated that experts and teachers are more effective in implementing a BST protocol than parents (Carroll-Rowan & Miltenberger, 1994; Miltenberger et al., 1990), while one study documented that parents are effective in the trainer role when provided with telephone support from the researcher (Beck & Miltenberger, 2009). This translates into higher training costs to use experts and teachers as instructors or, alternatively, to prepare parents to be successful as trainers. Such efficiency and pragmatic issues may limit the widespread adoption BST, and therefore, examination of potential solutions to training efficiency and dissemination is warranted. Technology-based instruction is one avenue to explore as a training delivery alternative to traditional BST.
Technology-Based Approaches to Skills Training

Video modeling is a common technology-based intervention that presents the learner with instructions and video examples of the desired behavior. In addition to providing models of the targeted responses, nonexemplar models may also be demonstrated, allowing the learner the opportunity to discriminate between correct and incorrect displays of the targeted behavior. Video modeling has been demonstrated as an effective intervention strategy for training a variety of behaviors with many different populations. An abbreviated list of these interventions includes teaching social and perspective-taking skills to children with autism spectrum disorder (LeBlanc, Coates, Daneshvar, Charlop-Christy, Morris, & Lancaster, 2003; McDonald, Clark, Garrigan, & Vangala, 2005); domestic skills to individuals with intellectual disabilities and children with autism (Bidwell & Rehfeld, 2004; Rehfeldt, Dahman, Young, Cherry, & Davis, 2003; Shipley, Benamou, Latzker & Taubman, 2002); parenting skills to caregivers (Bigelow, & Lutzker, 1998; Webster-Stratton, 2005); and appropriate motor movement to athletes (Gray, 1990; Williams, 1989).

Advancements in computer technology have extended the possibilities with technology-based instruction even further and can offer users an interactive learning experience. Computer instruction can detect and deliver consequences to specific learner responses (both text and performance based), provide virtual reality applications, and reduce errors in the presentation of the material through automation. Additionally, in many cases, computer-based instruction programs serve as a unique and accessible means of training delivery as it can be disseminated through multiple
 mediums, including CD-ROMs, DVDs or the Internet, and easily implemented in a variety of settings, including schools, medical facilities, and community centers and at the learner’s home.

Ann Glang and colleagues (2005) offer an innovative example of computer-based instruction, using a 40-minute interactive multimedia computer program to teach pedestrian safety skills to 36 children. The intervention began with animated examples of target behavior. Next, the learners practiced the behavior in a computer animated environment while the computer program provided feedback and remedial instruction to correct errors. Then the learner rehearsed the skills during simulated video scenarios representing an array of real-life traffic scenarios. Computerized video assessments and computerized street simulations were used to measure the effects of the intervention. Significant improvements were found in participants’ correct identification of dangerous vehicles during video assessments and computerized street simulations (Glang, Noell, Ary, & Swartz, 2005). As illustrated with this and the abovementioned studies, technology-based instruction is a promising approach to safety education and may be a viable delivery alternative to live training.

Summary and Rationale

This study evaluated the use of a computerized technology to approximate the teaching components of Behavioral Skills Training as a training model to teach young children abduction prevention skills. The Computer-Based Instruction (CBI) intervention was compared against a traditional BST model (including instructions,
modeling, rehearsal, feedback and IST) on measures of training effectiveness and efficiency. The study investigated the following experimental questions:

1. Would participants in the CBI and BST groups demonstrate improvements in performance of the target abduction prevention skills at Post-training, 2-week and 1-month Follow-up in situ assessments, in comparison to Baseline assessments?

2. Would there be significant differences in child demonstration of the target abduction prevention skills at Post-training, 2-week and 1-month Follow-up in situ assessments as a function of training delivery model (i.e., CBI or BST)?

3. Would there be significant differences in training time and number of training trials necessary for the learner to demonstrate skill mastery as a function of the training delivery model?

4. Would there be significant differences in program development costs (resource and financial) as a function of the training delivery model?

5. Would there be significant differences in program implementation costs (resources and financial) as a function of the training delivery model?

In order to obtain other, potentially useful clinical information, four additional questions were explored:

1. What effect, if any, would age have on child performance during in situ assessments?

2. What effect, if any, would training delivery model have on adverse emotional response for the children during training and in situ assessment sessions?
3. Would children’s verbal report of how they would behave in potential abduction situations presented during computerized simulation assessments correspond with their actual behavior during in situ assessments?

4. How would children and caregivers rate satisfaction with and acceptability of the CBI and BST interventions?

METHODS

Participants

Recruitment. A group of 44 male and female children, ages 8- through 12-years, participated in this study. Recruitment was conducted through two community organizations. Six children were recruited from Camp 9-1-1, a free day camp that provided children with instruction by public safety professionals on a range of health and safety issues. Recruitment letters that described the study were included in registration packets mailed to all Camp 9-1-1 participants. Families that indicated interested in participating in the study by returning a signed slip with the child’s registration materials to request a telephone call from the student investigator, or families contacted the student investigator directly.

The remainder of the participant group was recruited from South County Community Services (SCCS), a non-profit human services agency that provides community programming in southern Kalamazoo County. Recruitment was conducted via flyers posted in public locations (e.g., libraries, businesses, restaurants, churches, elementary schools) in Schoolcraft, Vicksburg, Climax and Scotts, MI. This flyer invited children to participate in a free abduction prevention training class. Copies of
this flyer were also provided to five elementary schools to be distributed amongst students within the target age group. Additionally, a press release about the project was published in the community’s weekly circulating newspaper, the SCCS’s newsletter and posted on the organization’s website. Families interested in the study contacted the student investigator directly.

**Informed consent and assent.** The student contacted caregivers who expressed interest in the study via telephone. The study was described, including training and in situ assessment procedures, risks and benefits for participation and confidentiality. Caregivers were provided an opportunity to ask questions. If the caregiver agreed to allow his or her child to participate, written consent was obtained in person. During that meeting, the student investigator also provided caregivers with verbal and written instructions on how to respond should their child demonstrate signs of behavioral or emotional distress during involvement in the study (see Appendix A).

Child assent was also obtained for each participant. The child met with the student researcher with his or her caregiver present. The researcher explained the purpose of the study and the child’s involvement. The child was also informed that unannounced tests (i.e., in situ assessments) would be conducted periodically throughout the course of the study and that the he or she would be informed afterwards if a test was conducted. The child was not told, however, the nature of these assessments or that assessments would be conducted in naturalistic settings following training. Opportunity to ask questions was provided. If the child agreed to
participate, written assent was obtained. During the assent process, caregivers were instructed to refrain from prompting the child to agree or use other forms of pressure to ensure that the child was not coerced into participation.

Recruitment strategies, informed consent and assent processes and experimental procedures were reviewed and approved by Western Michigan University's human subjects institutional review board as well governing officers and boards of the participating agencies.

Inclusion and exclusion criteria. Children were included in the study if the parent (or guardian) and the child signed informed consent and assent forms, respectively. In addition, the child had to demonstrate basic computer operating skills. A child was excluded from the study if he or she achieved a behavior score of 3 or 4 on all Baseline in situ assessments (scores that indicated high pre-training levels of performance on abduction prevention skills) or if the child exhibited significant behavioral distress during the course of a Baseline in situ assessment and was inconsolable for more than 5 minutes after the termination of the assessment. Child’s temperament (e.g., highly sensitive, extremely shy or anxious) and any past traumatic history (e.g., kidnapping attempt or success, physical or sexual abuse) served as the remaining exclusionary criteria, should the training and assessment procedures be too distressing for this subset of children.

Participant sample. During recruitment, two children whose parent expressed interested in the study were excluded from involvement due to prior trauma histories. Three parents who indicated initial interest eventually decided to exclude their
children based on concerns that the in situ assessments may be too distressing for the child. Four children refused to provide assent and were disqualified from the study.

Forty-four children were recruited for the study. Three children from the CBI group and one child from the BST training group were disqualified from continued involvement in the study as they failed to complete training. In the CBI group, one child had poor reading skills, according to her mother’s report, which likely impacted her performance during the training and prevented her from finishing the program. Two other children in the CBI group became disinterested and requested to stop. In the BST group, one child did not return to camp the second day and training could not be completed with him.

A total of 40 children (21 females, 19 males, \( M_{\text{age}} = 10 \) years, 2 months, Caucasian = 40) comprised the final participant group, completing through at least the 2-week Follow-up assessment. Participant characteristics are provided in Table 1. Age of participants in the CBI experimental group (\( M = 119.2, SD = 15.1 \)) did not differ significantly compared to BST participants (\( M = 124.1, SD = 10.8 \)), \( t(38) = 1.19, p = .24 \). A chi-square test of independence was performed to examine the relation between group membership and gender. These variables were found to be unrelated, \( \chi^2(1, N = 40) = .90, p = .34 \).

Participants received a $10 gift card to a local store for their involvement in the study. Children who completed through 1-month Follow-up were given an additional $5 gift card.
Table 1

*Participant Characteristics by Experimental Group*

<table>
<thead>
<tr>
<th></th>
<th>CBI</th>
<th>BST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 20)</td>
<td>(n = 20)</td>
</tr>
<tr>
<td>Males</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Females</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Mean Age</td>
<td>9-9</td>
<td>10-4</td>
</tr>
<tr>
<td>Age Range</td>
<td>(8-0 to 12-9)</td>
<td>(8-3 to 12-0)</td>
</tr>
</tbody>
</table>

*Note.* Age is represented in years – months. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group

**Setting**

Training sessions were conducted on-site, at either the Camp 9-1-1 location (four different firehouses or the Kalamazoo Valley Family Museum) or at the South County Community Center building. BST training sessions occurred in classrooms, meeting rooms and outside of the building. CBI sessions were conducted in classrooms or meeting rooms. Rooms were equipped with tables or desks and chairs. Baseline and Post-training in situ assessments were performed in various locations around the training site, such as meeting rooms, hallways, and in front of the building. Follow-up in situ assessments were conducted in naturalistic settings for the child, such as in front of the child’s house, at grocery and retail stores, Farmer’s Market, parks, athletic fields, and bowling alleys.

**Materials**

*Training curriculum.* An abduction prevention training curriculum was developed based upon materials from the National Center for Missing and Exploited
Children (1998, 2000, 2002, 2005), Child Lures Prevention (2006), Holcombe and colleagues (1995), Johnson and colleagues (2005, 2006) and Poche and colleagues (1981). The content of the training curriculum was standardized across the CBI experimental and BST control groups, the only difference being the method in which it was delivered. All participants received the same instruction on abduction lure types and the target safety skills, observed the same situations enacted during modeling sessions and the same scenarios were presented during the discrimination/rehearsal trials (see Appendix B for the training curriculum).

Abduction lure types used in this study included: 1) **authority lures**, in which the adult confederate told the child that an authority figure had consented for the child to leave with him or her (e.g., “Your mother told me to pick you up from school”) or the confederate posed as an authority figure to get the child to come with him or her (e.g., “I am a police officer. You need to come with me right now”); 2) **incentive lures**, in which a request to leave with the confederate was given with the promise of a treat or reward (e.g., “I have some candy in my car. Come with me and I will give you a piece”) or an invitation to engage in an activity (e.g., “Would you like to do to the park with me?”); and 3) **assistance lures**, in which the confederate asked the child for help (e.g., “I lost my puppy. Can you help me look for him?”). Children were taught to identify instances in which these lures are used and to immediately say “No”, leave the area and report to a trusted adult.

**Computer-based instruction program.** A computer-based instruction program was created for this study to provide abduction prevention training for
children in the CBI experimental group. This program was designed using Microsoft Visual Studio 2008 – Visual Basic® and included the following visual, auditory, and textual stimuli: 1) one video of a safety instructor describing abduction lures and the target safety skills (length of video, 4 min 26 s); 2) ten textual questions with programmed text feedback provided contingent upon the learner’s responses (i.e., Instructions Comprehension Quiz); 3) three videos (one for each of the three abduction lure types) of child and adult actors modeling the target safety skills ($M_{\text{length}} = 46$ s); 4) five videos of a safety instructor providing instructions to the learner for discrimination trials ($M_{\text{length}} = 56$ s); 5) 111 video vignettes of child and adult actors acting out a variety of potential abduction situations and non-abduction situations ($M_{\text{length of vignette}} = 25$ s); 6) two response buttons ("Yes" and "No") for the learner to enter his or her response using the computer mouse; and 7) programmed textual praise or corrective feedback based upon the learner’s response. Appendix C provides an illustration of the computer program. The computer software also recorded training session data, including the participant identification number, time, and the participant’s responses on the Instructions Comprehension Quiz and discrimination questions. Data were saved to the computer’s hard drive. Program content was developed by the student investigator and programmed by a computer applications software engineer.

**Computer simulation assessments.** Two computer simulation assessments were also created for this investigation, one prior to training and one following training completion. These assessments consisted of scene video models of a child
and adult actor. Each assessment consists of three separate video models depicting one of the three abduction lure types. The average duration of the video models was 12 s.

Other equipment. The computer program and simulation assessments were loaded onto five Compaq Presario CQ60-420US Notebook Personal Computers. Children in the CBI group sat at a desk or table in front of a computer and each participant had access to his or her own computer during the training session. If multiple children were engaged in the program at the same time, each child was seated at a different table and provided with a set of Sony MDR110LP Ultra-Lightweight Headphones to wear in order to minimize distraction from other learners’ computers. Laptop computers were equipped with a build-in touch computer mouse; however, a Targus PAWM10 Wireless Optical Laptop Mouse was also available.

Target Behavior

The targeted abduction prevention skills for this study were similar to those used by Johnson et al. (2005, 2006) and other behaviorally based investigations. The target behavioral sequence consisted of three separate behaviors: 1) a verbal response of the child saying “no” within 5 seconds of the abduction lure; 2) a motor response of the child walking or running a distance of at least 6 meters away from the confederate within 10 seconds of the lure; and 3) a reporting response of the child telling a trusted adult about the lure within 30 seconds of coming into contact with the adult.
Child performance of the target behaviors was coded using the following numerical values: 0 = agrees to leave with the abductor; 1 = does not agree to leave with the abductor but does not say "no", does not leave the area and does not tell an adult; 2 = says "no" but does not leave the area and does not tell an adult; 3 = says "no", leaves the area but does not tell an adult; 4 = says "no", leaves the area and tells an adult.

**Behavior Assessment**

**In situ assessments.** Child demonstration of the target abduction prevention skills was evaluated through in situ assessments. A research assistant, unknown to the child, served as the confederate for in situ assessments. Confederates were Western Michigan University graduate and undergraduate men and women in their twenties and thirties. The trainer or student investigator was also present, but unseen to the child, during in situ assessments.

During an in situ assessment, the confederate approached the child when he or she was alone in a prearranged location and at a prearranged time (e.g., the child was in the meeting room alone watching a movie while the student investigator met with his or her caregiver across the hall or child was in the hallway, returning to the meeting room after running an errand for the trainer or). The confederate greeted the child and engaged in brief, social talk for approximately 10 seconds (for example, "Hi. How are you today? What are you doing here?"). Next, the confederate presented the child with an authority, incentive or assistant lure. Lures were similar, but not identical, to those used in training.
If the participant agreed to leave with the confederate during the in situ assessment, the confederate made an excuse to terminate the interaction (e.g., “I remember where I left my keys. I don’t need your help looking for them anymore. Thanks anyway”) and left the area without the child. If the child failed to leave the area within 10 seconds of the lure presentation, the confederate walked away without the child. If the child demonstrated the correct behavioral sequence, the adult whom the child reported the incident to thanked him or her. If the child exhibited behavioral or emotional distress during the test, the assessment was terminated and the trainer or student investigator entered the situation to comfort the child. Following the in situ assessment, the trainer or student investigator told the child that what just occurred was a test. Specific feedback on the child’s performance, however, was not provided. This nonspecific feedback was provided in effort to reduce any distress the child might have experienced as a function of the in situ assessment procedures.

Up to three Baseline in situ assessments (one for each lure type) were performed prior to the commencement of training for participants in both the CBI and BST groups. Three standard lures were used during Baseline assessments, and the order of the lure type used at each test was randomly selected for each participant. Repeated assessments occurred in a variety of locations at the training site, including in classrooms and meeting rooms, hallways, and outside of the building. Up to three Post-training in situ assessments (one for each lure type) were performed following the training session. These repeated assessments were conducted in the same manner as Baseline in situ assessments (i.e., three standard lures, random ordering of the lure
types across participants, and all assessments occurring in a variety of locations at the training site).

One in situ assessment was conducted at two weeks following training and again at one month. All follow-up assessments were conducted in a community setting, such as at the child’s home, stores, parks, athletic fields, thereby providing a measure of generalization of the target skills outside of the prescribed training situation (i.e., these in situ assessments were not conducted in the laboratory/training setting). Because only one in situ assessment was conducted at each follow-up time and due to the uniqueness of each setting and situation, standardized lures could not be used. Lures were selected on an individual basis and were chosen to be appropriate for the setting and situation. Lures were similar, but not identical, to those used in training. Lure type was randomly selected for each child.

**Computer simulation assessments.** For participants in the CBI experimental group, a computer simulation assessment was conducted before and after the training session. During the computer simulated assessment, the child viewed a brief video depicting an abduction scenario. In the video, the adult actor in the video presented a lure to the child actor, and then the scene ended. The learner was asked to describe what he or she would do in that situation and his or her response was recorded. Feedback was not provided. A total of three scene video models were shown (one for each lure type) at both Baseline and Post-training assessment times.

The child’s verbal report of what he or she would do in a potential abduction situation was compared to his or her behavioral performance during Baseline and
Post-training in situ assessments. The purpose of the computer simulation
assessments was to determine if this assessment tool would be a valid proxy measure
of behavior.

**Dependent Measures**

**Training effectiveness.** Effectiveness of the training delivery models was
quantified in three ways. The mean score on Instructions Comprehension Quiz (i.e.,
10 question quiz conducted following instructions component of training) for the CBI
and BST groups was the first measure of effectiveness. The mean performance
behavior score for the CBI and BST groups across Baseline, Post-training, and 2-
week and 1 month Follow-up in situ assessments served as the second measure of
effectiveness. Skill proficiency across learners, defined as the percentage of
participants earning each performance score (i.e., 0 to 4) across the assessment
periods, served as the third measure.

**Training efficiency.** Training efficiency was quantified by: 1) mean number
of discrimination/rehearsal trials required for the learner to demonstrate skill mastery
in the training session; 2) duration (in minutes) of total training time (i.e., sum of
training session time, in situ training (for BST group only) and booster training (if
needed)).

Program development costs were quantified based upon human, time, resource
and financial expense invested in the development and implementation of the CBI and
BST programs. For CBI, program development costs included wages for actors,
director, videographer, video editor and computer programmer. For BST, program

Program implementation costs are defined by equipment cost and wages for implementation of the CBI and BST protocols.

**Child emotional response.** Emotional response was measured in three ways throughout the study. First, the child’s affect were monitored during training and in situ assessments and rated as **positive** (smiling, giggling, laughing), **negative** (frowning, furrowed brow, trembling lip, crying) or **neutral** (flat affect, absence of positive or negative expression). Second, children were asked to rate their level of fear during the training session using a 5-point Likert scale (1 = not scared at all, 2 = slightly scared, 3 = moderately scared, 4 = very scared, 5 = extremely scared).

Third, children and their caregivers completed Side Effects Questionnaires that were administered at four points during the study – prior to the start of training (Baseline), one week after training (Post-training), one week after the 2-week Follow-up in situ assessment (2-week) and one week after the 1-month Follow-up in situ assessment (1-month). The child version of the Side Effects Questionnaire consisted of three statements assessing children’s current level of fear of adults and strangers, separation concerns and fear to be alone. The child rated each statement as it applied to him or herself over the past week using a 3-point Likert scale (0 = not at all, 1 = a little, 2 = a lot).
The parent version of the Side Effects Questionnaire was adopted from surveys used in previous investigations (Miltenberger et al., 1990; Johnson et al., 2005). This survey consisted of three statements assessing children’s current level of fear, caution and concern about safety issues. Respondents rated each statement as it applied to his or her child over the past week using a 5-point Likert scale (1 = much less, 2 = a little less, 3 = no change, 4 = a little more, 5 = much more). Respondents also indicated if their child had experienced nightmares. Side Effects Questionnaires were given to families or mailed to the child’s home, with instructions to return the completed surveys to the researcher in stamped, self-addressed envelopes provided to them.

**Verbal and behavioral performance correspondence.** Children in the CBI group participated in computer simulation assessments prior to and following training. The child’s verbal report of what he or she would do in the scenario presented during the video model was quantified using the same 5-point behavior coding system described above (i.e., 0 to 4). This score was then compared to the child’s performance score during in situ assessments. Trials in which the child’s verbal and performance scores matched were categorized as Correspondence (Verbal = Behavior). Trials in which the child’s verbal score was higher than the performance score were categorized as Verbal > Behavior. Trials in which the child’s performance score was higher were categorized as Verbal < Behavior.
Recording Procedures and Interobserver Agreement

Twelve undergraduate and graduate research assistants assisted with training and assessment sessions and data collection. Direct behavioral observations were conducted in locations where the training and assessments occurred (e.g., in meeting rooms, hallways, stores). Note should be made that observers were not blind to group assignment. Data collectors also served as trainers or assistants during the protocol implementation phase (e.g., trainer conducted Behavioral Skills Training protocol with child or was present as the child completed the computer program). Group membership was also pre-identified on data sheets by the student investigator for recording purposes. Observers were privy to this information.

Training sessions. The trainer served as the primary data collector while a second assistant collected reliability data. Data collectors were positioned 6 to 10 feet apart in effort to preserve the integrity of independent observations. During training trials, performance data were collected for the BST group only (recall that the computer program automatically tracked the CBI learner’s responses during training) and affect data were collected for participants in both the BST and CBI groups.

Regarding performance data, data collectors circled the target skills that corresponded to the child’s behavior in each trial (i.e., Agree = the child agreed to leave with the confederate; No = the child said no within 5 seconds of lure presentation; Leave = the child left the area within 10 seconds of lure; Tell = the child reported to an adult within 30 seconds of coming into contact with the adult). A performance score of 0 to 4 was then assigned using the aforementioned behavior
coding system. During non-example (an “innocuous interaction”) trials, child’s behavior was scores as either 4 if he or she engaged in appropriate prosocial behavior or 0 if he or she engaged in the safety skills which would have been unnecessary for that situation.

Affect data were collected using a momentary time sampling procedure. A timer was set for 1 minute and upon its signal, the data collector observed the child’s affect, rated it as positive, negative or neutral and recorded these data (see Appendix D for sample training session data sheet). This same procedure continued throughout the session.

Exact agreement was calculated separately for behavioral performance (BST group only) and affect data (CBI and BST groups) for each trial by dividing the number of agreements by the sum of agreements and disagreements, and then multiplying this ratio by 100, i.e., \((A / (A + D)) \times 100\). Agreement was defined as the corresponding records of performance/affect for the trial across the two data collectors (e.g., both observers recorded behavior scores of 4 or both observers recorded positive affect for the trial). Disagreement was defined as differences in records between observers for the trial (e.g., one observer recorded a behavior score of 3 while second observer recorded a behavior score of 4 or one observer recorded positive affect while second observer recorded neutral affect).

Reliability data were collected for 25.0% and 31.6% of training sessions for the CBI and BST groups, respectively. For behavioral performance, agreement
averaged 96.8% (range, 88 – 100%) for the BST group. For affect, agreement was 100% for the CBI group and averaged 86.5% for the BST group (range, 60 – 100%).

**In situ assessments.** The confederate served as the primary data collector while the second observed collected reliability data. The reliability data collector observed the interaction from a distance of 15 to 30 feet and in a concealed location (e.g., behind doors, behind trees or parked cars, standing in a crowd of people) in order to be unseen by the child participant. Performance and affect data were collected for participants in both experimental groups during in situ assessments.

During in situ assessments, the confederate carried a hidden tape recorder to record the child’s verbal response for the reliability data collector’s review if he or she was unable to hear from the concealed location. The parent or Camp 9-1-1 counselor informed data collectors if the child reported the incident if they were unable to hear.

Performance data were recorded and coded in the same fashion as training sessions. With regards to affect data, data collectors recorded the child’s predominate affect during the assessment as positive, negative or neutral. Data collectors also recorded if the child demonstrated negative affect at any point during the assessment (see Appendix E for sample in situ assessment data sheet). If the reliability data collector was unable to observe the child’s face from his or her vantage point, he or she did not score affect data.

For in situ assessments, exact agreement was calculated for the performance and affect data. Reliability data were collected for 26.1% and 29.9% of in situ assessments for the CBI and BST groups, respectively. For behavioral performance,
agreement was 100% for both the CBI and BST groups. For affect, agreement averaged 88.6% (range, 50 – 100%) for the CBI group and 91.5% (range, 75 – 100%) for the BST group.

**Computer simulation assessments.** During computer simulation assessments (for the CBI experimental group only), data collectors recorded the child’s verbatim response to the question of what they would do in the situation presented in the video. The data collector then assigned a score for the child’s response, based upon the operational definition of the target behaviors (i.e., 0 to 4). Reliability data were not collected for these assessments.

**Treatment integrity.** Treatment adherence checklists were used to ensure the accurate delivery of the BST protocol. A research assistant observed 31.6% of training sessions and scored the trainer’s behavior as correct or incorrect with regards to implementing the BST protocol. Procedural integrity was 100%.

**Procedure**

**Behavioral skills training.** Illustration of the experimental procedures for the BST control group is provided in Appendix F. Participants assigned to the BST control group received one to two individual sessions of Behavioral Skills Training, consisting of instructions, modeling, rehearsal, feedback and in situ training. Children were taught to respond to the three common types of abduction lures (i.e., assistance, incentive and authority lures). Training was administered with children individually, meaning the trainer engaged children on a one-on-one basis and the child progressed through the curriculum based upon his or her correct responding.
Training began with the instructions component of the training protocol, which included identification of trusted adults for the child, discussion of the types of lures used by abductors and the three target safety behaviors (to immediately say “No” leave the area and report to a trusted adult). A brief ten-question quiz (i.e., Instructions Comprehension Quiz) was performed to test the learner’s knowledge of the topic and information presented. Verbal feedback was provided to learners for their responses. Once the child completed the Instructions Comprehension Quiz, trainers modeled the target self-protection skills in the context of one of the three lure types. This served as the modeling component of BST. The presentation order of the lure types was randomly determined across participants.

After observing the model, the child rehearsed the skills with the trainer in a variety of role-play scenarios. This served as the rehearsal component of BST. Rehearsal trials included both situations in which abduction lures were presented and non-examples, or innocuous interactions with an adult. As an example of a non-example, the trainer approached the child and asked for direction but not try to get the child to leave with him or her. For non-example trials, the child did not need to engage in the self-protection behaviors. Rehearsal trials with examples and non-examples of abduction situations were incorporated into training to teach participants to discriminate abduction lures and to reduce the likelihood the child would develop an erroneous rule that all encounters with adults were abduction situations. The order of abduction examples and non-example trials was randomized at the time of curriculum development and remained constant across all learners.
During rehearsal trials, the trainer praised the child for correct behavior and provided corrective feedback when the learner made an error. The child rehearsed the safety skills until he or she was able to demonstrate the correct behavioral chain across five consecutive rehearsal trials, including both examples of potential abduction situations and non-examples. Once the child met this criterion for skill mastery, he or she progressed to the next lure type. The modeling, rehearsal and feedback process was repeated in the context of the remaining two lure types.

After the child demonstrated skill mastery within the context of each lure type individually, rehearsal trials were conducted with all three lure types presented simultaneously. Again, trials with non-example scenarios were included in the training block and the order of lure presentations and non-examples was randomized at curriculum development and remained constant across all learners. The child rehearsed the target self-protection skills until he or she accurately and independently exhibited the target behaviors across five consecutive trials. When this criterion was achieved, formal training was terminated.

An in situ assessment and/or in situ training session was completed with participants ten to fifteen minutes following the completion of the training session. If the child demonstrated the correct behavioral chain during the assessment, the trainer entered into the situation, informed the child that what occurred was a test and this assessment served as the first Post-training in situ assessment for the participant. If the child failed to demonstrate the correct self-protection skills, an in situ training session was conducted. The trainer entered into the situation, corrected the child’s
error (e.g., “You need to run away”), modeled the appropriate response, and rehearsed the same situation with the child while providing feedback until the child performed the correct behavioral sequence. The child practiced the safety skills to the same lure for three consecutive rehearsal trials as additional practice to ensure that he or she was fluent in performing the target behaviors.

**Computer-based instruction.** Illustration of the experimental procedures for the CBI experimental group is provided in Appendix G. Participants in the CBI experimental group received the same training as the participants in the BST control group, with two exceptions. As opposed to training delivered by a human trainer, participants in the CBI group were taught the target safety skills via the computer-based instruction program. This computer program approximated the BST training procedures through instructions and video modeling of the abduction lures and target safety skills, discrimination trials and programmed textual feedback based upon the learner’s responses. The CBI model also differed from the BST model in that the CBI participants did not receive in situ training after the formal training session.

Training was administered with children individually, meaning the children had access to his or her own laptop computer and progressed through the curriculum based upon correct responding. The child began the training session with the instructions component of the intervention. The learner received the same instructions as BST participants. Instructions were delivered via a video of the safety trainer. The child then completed the Instructions Comprehension Quiz by entering his or her responses to the questions by clicking on one of two response buttons (“Yes” or
"No") on the computer screen. The child received textual feedback based upon his or her answers.

The learner next watched a video presentation of a child and adult enacting an abduction scenario in the context of one of the three abduction lures. This approximated the modeling component of the BST protocol.

After the child observed the video model, he or she began the discrimination training trials. The learner watched video vignettes in which child and adult actors portrayed the same role-play scenarios used in BST, within the context of one of the three lure types. In these vignettes, the child actor demonstrated clear examples of safety behavior (that is, performed the correct self-protection behaviors), clear examples of incorrect behavior (e.g., agreed to the lure, left with the adult actor, or failed to report to a trusted adult), and more ambiguous examples of incorrect behavior (e.g., hesitated to the lure, said “Maybe”, or stayed in the vicinity of the confederate for an extended period of time before leaving). Video models were included that demonstrated non-examples of abduction situations, that is innocuous interactions in which the child actor did not have to perform the target behaviors.

After viewing the video vignette, the learner answered four questions regarding the situation and the child actor’s behavior. These questions required the learner to determine if an abduction lure was presented and if the child actor engaged in the appropriate behavior. The learner entered his or her answer by selecting either the “Yes” or “No” response buttons. Programmed consequences, in the form of textual praise for correct answers or textural corrective feedback for incorrect
answers, were provided based upon the learner’s responses. If the learner made an error, the video vignette replayed and the child was represented with the same question. The learner was required to answer each question correctly before moving to the next. If the child actor displays incorrect behavior during the original scene, a second vignette was shown after the learner correctly answered the four discrimination questions. In this second video vignette, the same situation was enacted and the child actor demonstrated in the correct safety behaviors. This procedure of discrimination and feedback approximated the rehearsal and feedback components of the BST protocol. Please refer to Appendix B for an illustration of the computer program.

The learner engaged in this process of viewing video vignettes and answering discrimination questions until he or she answered all four questions correctly across five consecutive discrimination trials. Within each series of five discrimination trials, at least one vignette provided an example of the safety skills performed correctly, at least one vignette provided an example of unsafe behavior, and at least one vignette was a non-example. Once the learner achieved the mastery criteria, the same process of video modeling, discrimination and feedback was repeated in the context of the remaining two lures. Similar to BST, the order of lure presentation was randomly determined across participants. A final training block of discrimination trials with feedback was conducted in the context of all three lures. Training was terminated once the child correctly answered all four questions across five consecutive discrimination trials.
Booster training and debriefing. If a child failed to demonstrate all of the target safety behaviors at the 1-month Follow-up in situ assessment, an in situ training session (as described above) was conducted as booster training.

Following the completion of the study, the student investigator conducted a debriefing session with the child and his or her caregiver. During this meeting, the target safety skills were discussed as well as the three abduction lure types. The experimenter reviewed the child’s performance during in situ assessments. Children were informed that the study was complete and no further tests would be conducted. They were encouraged to use the self-protection skills they had learned if they were presented with abduction lure in the future. Parents and guardians were encouraged to contact the student investigator if they had any questions or concerns.

Experimental Design

A 2 x 4 factor mixed experimental design was used to investigate the effects of training delivery model on child acquisition of target safety skills and behavioral generalization and maintenance of the skills. All participants were randomly assigned to one level of the between-subjects factor - training type (CBI and BST). Group membership was randomly assigned to participant identification numbers using a table of random numbers prior to the start of the study. As children were enrolled in the study, they were provided a participant number, in sequential number, thereby completing the random assignment procedures. Experimental groups consisted of 20 children each. Time of in situ assessments served as a within-subjects factor. In situ assessments were conducted before training (Baseline), after completion of the
training curriculum (Post-training) and at 2 weeks and 1 month after training (2-week Follow-up and 1-month Follow-up, respectively).

**Social Validity**

Children and caregivers were provided with brief social validity questionnaires at the 1-month Follow-up in situ assessment, or questionnaires were mailed to the houses of families that did not complete that assessment. Children completed a brief questionnaire to elicit feedback on their satisfaction with the training model and behavior change as a result of training. Caregivers completed a version of the Treatment Evaluation Inventory-Short Form (TEI-SH; Kelly, Heffer, Gresham & Elliott, 1989) modified for the purposes of this study. Families were instructed to return the completed survey to the researcher using self-addressed, stamped envelopes provided to them.

**RESULTS**

**Summary of Experimental Questions**

This study compared the effectiveness and efficiency of a computer-based instruction model against live, individual Behavioral Skills Training to teach children abduction prevention skills. The investigation sought to answer the following experimental questions:

1. Would participants in the CBI and BST groups demonstrate improvements in performance of the target abduction prevention skills at Post-training, 2-week and 1-month Follow-up in situ assessments, in comparison to Baseline assessments?
2. Would there be significant differences in child demonstration of the target abduction prevention skills at Post-training, 2-week and 1-month Follow-up in situ assessments as a function of training delivery model (i.e., CBI or BST)?

3. Would there be significant differences in training time and number of training trials necessary for the learner to demonstrate skill mastery as a function of the training delivery model?

4. Would there be significant differences in program development costs (resource and financial) as a function of the training delivery model?

5. Would there be significant differences in program implementation costs (resources and financial) as a function of the training delivery model?

The study also examined the following exploratory questions:

1. What effect, if any, would age have on child performance during in situ assessments?

2. What effect, if any, would training delivery model have on adverse emotional response for the children during training and in situ assessment sessions?

3. Would children's verbal report of how they would behave in potential abduction situations presented during computerized simulation assessments correspond with their actual behavior during in situ assessments?

4. How would children and caregivers rate satisfaction with and acceptability of the CBI and BST interventions?
Attrition

One-month Follow-up assessments were not conducted for 13 participants. One participant cried during the 2-week Follow-up in situ assessment. Upon telephone inquire with the participant’s mother, it was discovered that the child was ill at the time of the assessment, to which the caregiver attributed the strength of the child’s negative response. As the child demonstrated all target skills to criterion during the 2-week Follow-up assessment and caregiver reported the child was embarrassed by his reaction, caregiver and investigator decided to forego the second Follow-up assessment. For the remaining 12 participants (seven CBI participants and five BST participants), one-month Follow-up assessments were not scheduled due to failure to speak the caregiver after at least three telephone calls.

Data Analysis Overview

Visual inspection and descriptive and inferential statistical analyses were conducted. Because the study included multiple dependent variables that did not measure the same constructs (i.e., training effectiveness, efficiency, child emotional response, and verbal and behavioral correspondence) and because some of the variables were measured repeatedly, traditional multivariate analyses, such as MANOVA, conventional Bonferroni correction, or O’Brien nonparametric global tests, were insufficient analytic strategies. Therefore, for the inferential statistical analyses, training effectiveness served as the primary dependent variable of interest for formal hypothesis testing. The remaining dependent variables served as subsidiary measures, to which exploratory statistical analyses were conducted. For data analysis
purposes, one-month Follow-up data were included in visual and descriptive statistical analysis for the 27 participants who completed through this assessment period. Inferential statistical tests were conducted for Baseline, Post-training and 2-week Follow-up only as the entire sample completed these assessment periods.

Data were entered into an IMB SPSS Statistics 18 database. All figures in the database were double-checked against copies of the original measures for accuracy. Data were then examined for missing values. Recall that during Baseline and Post-training, as many as three in situ assessments were conducted with each participant (one for each lure type) but only one assessment was conducted at each follow-up period. Thus it appeared that data were missing at Follow-up times. As lure type was not a primary variable of interest, data were examined across lure type to search for differences in performance as a function of the stimulus (see Table 2). Overall, performance scores were similar across lure types, with mean differences ranging from .05 to .27. Therefore, performance scores at Baseline and Post-training periods were averaged to form a composite score for that assessment period. These composite scores were compared against the obtained score at 2-week Follow-up during inferential statistical testing of training effectiveness.

A possible threat to the external validity of the study’s results existed in the use of debriefing following each in situ assessment. As repeated assessments were conducted at Baseline and Post-Training times, it was possible that behavioral performance differences could be attributable to reactivity from receiving feedback after the preceding assessment. To test this possible threat, a paired samples t-test was
Table 2

*Mean Performance Scores by Stimulus across Assessment Periods*

<table>
<thead>
<tr>
<th>Time</th>
<th>Assistance Lure</th>
<th>Incentive Lure</th>
<th>Authority Lure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M(n)</td>
<td>M(n)</td>
<td>M(n)</td>
</tr>
<tr>
<td>Baseline</td>
<td>1.75 (36)</td>
<td>1.72 (29)</td>
<td>1.70 (24)</td>
</tr>
<tr>
<td>Post-Training</td>
<td>3.39 (22)</td>
<td>3.12 (24)</td>
<td>3.25 (20)</td>
</tr>
<tr>
<td>2-week Follow-up</td>
<td>3.86 (16)</td>
<td>3.57 (14)</td>
<td>3.63 (10)</td>
</tr>
<tr>
<td>1-month Follow-up</td>
<td>3.73 (11)</td>
<td>3.75 (8)</td>
<td>4.0 (8)</td>
</tr>
</tbody>
</table>

*Note.* Data are collapsed across Computer-Based Instruction (CBI) experimental group and Behavioral Skills Training (BST) control group conducted to examine the effects of debriefing following in situ assessments on behavioral performance during subsequent Baseline and Post-Training assessments. Statistical differences were not found at any of the points of comparisons, suggesting that the effect of debriefing following assessments did not significantly impact subsequence performance (see Table 3).

To answer questions of effectiveness of the training delivery models and the effects of age on child performance (experimental questions 1 and 2 and exploratory question 1), descriptive statistics were calculated, including the mean score on the Instructions Comprehension Quiz, the mean performance score across in situ assessments and the percentage of participants who earned each performance score across in situ assessments. A 2 x 3 repeated measures analysis of covariance
Table 3

*Paired Comparisons of Performance Scores across Repeated In Situ Assessments*

<table>
<thead>
<tr>
<th>Time I</th>
<th>Time J</th>
<th>Paired Differences (I - J)</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline 1</td>
<td>Baseline 2</td>
<td>-.27</td>
<td>1.25</td>
<td>1.16</td>
<td>-1.16</td>
<td>29</td>
<td>.26</td>
</tr>
<tr>
<td>Baseline 2</td>
<td>Baseline 3</td>
<td>-.69</td>
<td>1.35</td>
<td>2.03</td>
<td>-2.03</td>
<td>15</td>
<td>.06</td>
</tr>
<tr>
<td>Baseline 3</td>
<td>Post-Training 1</td>
<td>-.25</td>
<td>.86</td>
<td>1.17</td>
<td>-1.17</td>
<td>15</td>
<td>.26</td>
</tr>
<tr>
<td>Post-Training 1</td>
<td>Post-Training 2</td>
<td>-.28</td>
<td>.90</td>
<td>1.32</td>
<td>-1.32</td>
<td>17</td>
<td>.21</td>
</tr>
<tr>
<td>Post-Training 2</td>
<td>Post-Training 3</td>
<td>-.59</td>
<td>1.01</td>
<td>2.15</td>
<td>-2.15</td>
<td>9</td>
<td>.06</td>
</tr>
</tbody>
</table>

*Note.* Number refers to first, second, or third in situ assessment.

(ANCOVA) was conducted, with treatment group (CBI or BST) serving as the between-subjects factor, time (Baseline, Post-training, and 2-week Follow-up) serving as the within-subjects factor and age serving as the covariate factor.

To answer questions about efficiency of the training models (experimental questions 3, 4 and 5), comparisons of the number of learning trials needed to program/skill mastery and total training time were conducted. An analysis of covariance (ANCOVA) was conducted (covariate, age) to test for statistically significant differences across training delivery models. Additionally, resource investment (i.e., time, human, financial and equipment) associated with program development and implementation was tallied for a cost effectiveness analysis. Human financial costs (i.e., wages) were approximated based upon mean hourly wages of the respective (or similar) professions, according to the United States Department of Labor Bureau of Labor’s *Occupational Outlook Handbook, 2010 – 2011 Edition.* The
cost effectiveness analysis involved comparisons of the total investment and cost per unit delivery of training between the two delivery models (Levin & McEwan, 2001). It should be noted that figures presented are estimates of the projected direct costs for program development and implementation and are presented to illustrate cost differential between the delivery models across repeated implementation. These figures are not exact.

To address the question of child emotional response to training and in situ assessments (exploratory question 2), descriptive statistics were examined for the percentage of children who exhibited negative affect during training, the percentage of children who made each self-report of fear during training, and the percentage of child participants and caregivers who made each rating on the Side Effects Questionnaires.

To address the question of correspondence between child’s verbal report and behavioral performance (exploratory question 3), comparisons were made verbal and performance scores from Baseline and Post-training computer simulation assessments and in situ assessments. Percentages were calculated on the number of participants in which their verbal score matched their performance score (i.e., correspondence, Verbal = Behavior), the number of participants in which their verbal score was greater than their performance score (Verbal > Behavior) and the number of participants in which their verbal score was less than their performance score (Verbal < Behavior).
To address the question of social validity of the training models (exploratory question number 4), percentages were calculated based upon the children and caregivers’ responses on treatment acceptability questionnaires.

**Training Effectiveness**

**Instructions comprehension quiz.** Children’s responses during the Instructions Comprehension Quiz provided a measure of child’s knowledge. Mean score (with standard deviations in parentheses) on this quiz was 90.6% (7.9) for the CBI group and 96.2% (4.2) for the BST group. Individual scores did not fall below 80% for the CBI group and 90% for the BST group.

**In situ assessments.** The mean performance scores across the in situ assessment periods for each training model group are plotted in Figure 1. The percentage of assessments in which each performance score was obtained across time is presented in Table 4.

At Baseline, child behavior during in situ assessments was similar for the CBI \( (M = 1.72, SD = 1.02) \) and BST groups \( (M = 1.73, SD = 1.04) \). Performance score distribution was also comparable across experimental groups, with the modal score being 2 (equivalent to the child saying “No” to the lure). Participants in the CBI and BST groups agreed to leave with the confederate (i.e., obtained performance score of 0) for 13% and 12% of Baseline assessments, respectively, and performed all target safety skills (i.e., obtained performance score 4) for 8% and 7% of Baseline assessments, respectively (see Table 4).
At Post-training, behavioral performance improved for both the CBI ($M = 3.19, SD = 0.95$) and BST groups ($M = 3.31, SD = 0.99$; see Figure 1). Distribution of scores became positively skewed, with a score of 4 becoming the modal performance score for both groups (Table 4). Participants in both experimental groups did not earn performance scores lower than 2 during Post-training in situ assessments with the
Table 4

Percentage of Assessments in which Each Performance Score was Obtained across Experimental Groups and Time

<table>
<thead>
<tr>
<th>Time</th>
<th>Group</th>
<th>N</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>CBI</td>
<td>48</td>
<td>13</td>
<td>23</td>
<td>48</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>41</td>
<td>12</td>
<td>27</td>
<td>44</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Post-Training</td>
<td>CBI</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>36</td>
<td>8</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>32</td>
<td>3</td>
<td>0</td>
<td>19</td>
<td>19</td>
<td>59</td>
</tr>
<tr>
<td>2-week Follow-up</td>
<td>CBI</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>24</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>41</td>
<td>59</td>
</tr>
<tr>
<td>1-month Follow-up</td>
<td>CBI</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>83</td>
</tr>
</tbody>
</table>

Note. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group

exception of one child in the CBI group who agreed to leave with the confederate during one assessment.

Participants demonstrated further gains in the target behaviors during the 2-week Follow-up assessment (for CBI, $M = 3.78, SD = 0.42$; for BST, $M = 3.63, SD = 0.49$). These assessments were conducted in naturalistic settings for the child. All participants obtained performance scores of 3 and 4 at this assessment period, with a higher percentage of participants in the CBI group earning scores of 4 (76%) compared to the BST group (59%). Performance of the target skills remained high during the 1-month Follow-up assessment (for CBI, $M = 3.85, SD = 0.38$; BST, $M = 3.79, SD = 0.43$), with equivalent distribution of scores across groups (see Figure 1 and Table 4).
Behavior change across in situ assessment periods reached a level of statistical significance, according to results of the 2 X 3 repeated measures ANCOVA (Table 5). After controlling for age, a significant main effect of time was revealed, $F(2, 74) = 3.42, p = .04$. Insignificant group main effects ($p = .52$) and insignificant interaction effects between group and time ($p = .54$) were found.

Table 5

Repeated Measures Analysis of Covariance Summary

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Time</td>
<td>2.875</td>
<td>2</td>
<td>1.44</td>
<td>3.42</td>
<td>.04</td>
<td>.09</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>.556</td>
<td>2</td>
<td>.28</td>
<td>.67</td>
<td>.52</td>
<td>.02</td>
</tr>
<tr>
<td>Time*Group</td>
<td>.52</td>
<td>2</td>
<td>.26</td>
<td>.62</td>
<td>.54</td>
<td>.02</td>
</tr>
<tr>
<td>Error</td>
<td>31.08</td>
<td>74</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Computed using alpha = .05.

Because a significant main effect was found for assessment time, additional pairwise comparisons were conducted and results are presented in Table 6. Mean performance scores at Post-training ($M = 3.33, SE = .14$) were significantly higher than Baseline scores ($M = 1.70, SE = .12$), as were the mean performance scores at 2-week Follow-up ($M = 3.65, SE = .07$) in comparison to Baseline. Performance scores did differ significantly across Post-training and 2-week Follow-up assessments as well. Age was not found to be a significant predictor of child performance during in situ assessments, $p = .69$ (see Table 7).
Table 6

Pairwise Comparisons of Performance Scores across Assessment Periods

<table>
<thead>
<tr>
<th>Time I</th>
<th>Time J</th>
<th>Mean Difference (I - J)</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Difference a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-training</td>
<td>Baseline</td>
<td>1.63*</td>
<td>.17</td>
<td>1.21 - 2.05</td>
</tr>
<tr>
<td>2-week Follow-up</td>
<td>Baseline</td>
<td>1.95*</td>
<td>.14</td>
<td>1.60 - 2.31</td>
</tr>
<tr>
<td>Post-training</td>
<td>Post-training</td>
<td>.32*</td>
<td>.12</td>
<td>.01 - .62</td>
</tr>
</tbody>
</table>

Note. Based upon estimated marginal means.
* The mean difference is significant at the .05 level.

Adjustment for multiple comparisons: Bonferroni

Summary. Participants receiving training via the computer instruction program and Behavioral Skills Training model demonstrated knowledge acquisition during the Instructions Comprehension Quiz as well as skill acquisition, generalization, and maintenance of the targeted safety skills during Post-training and Follow-up in situ assessments. Statistically insignificant differences between training delivery models suggests that the computer-based instruction program was as effective in teaching the targeted safety skills as BST. Child’s age did not systematically impact performance during in situ assessments.
Table 7

Test of Between Subjects Effects on Performance during In Situ Assessments

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>13.22</td>
<td>1</td>
<td>13.22</td>
<td>20.18</td>
<td>.00</td>
<td>.35</td>
<td>.99</td>
</tr>
<tr>
<td>Age</td>
<td>.11</td>
<td>1</td>
<td>.11</td>
<td>.16</td>
<td>.69</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>.00</td>
<td>1</td>
<td>.00</td>
<td>.99</td>
<td>.00</td>
<td>.00</td>
<td>.55</td>
</tr>
<tr>
<td>Error</td>
<td>24.25</td>
<td>37</td>
<td>.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. a computed using alpha = .05.

Training Efficiency

Training time and trials. Total training time averaged 50.10 minutes and 45.64 minutes for the CBI and BST groups, respectively. Using an ANCOVA procedure, differences in training time across the experimental groups was insignificant, $F (1, 37) = .73, p = .40$, after controlling for the effects of age. Child age was found to be predictive of training time, $F (1, 37) = 4.06, p = .05$, with older children achieving program/skill mastery in less time than younger children in both experimental groups (see Table 8).
Table 8

Test of Between Subjects Effects on Training Time

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>681.65 a</td>
<td>2</td>
<td>340.82</td>
<td>2.65</td>
<td>.09</td>
<td>.15</td>
<td>.49</td>
</tr>
<tr>
<td>Intercept</td>
<td>2793.17</td>
<td>1</td>
<td>2793.17</td>
<td>21.73</td>
<td>.00</td>
<td>.41</td>
<td>.99</td>
</tr>
<tr>
<td>Age</td>
<td>521.69</td>
<td>1</td>
<td>521.69</td>
<td>4.06</td>
<td>.05</td>
<td>.12</td>
<td>.50</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>93.83</td>
<td>1</td>
<td>93.83</td>
<td>.73</td>
<td>.40</td>
<td>.02</td>
<td>.13</td>
</tr>
<tr>
<td>Error</td>
<td>39.84.48</td>
<td>37</td>
<td>128.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>83772.00</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Corrected total</td>
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<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. a R Squared = .15 (Adjusted R Squared = .09)

The average number of trials necessary to program/skill mastery was 45.45 discrimination trials (range, 27 – 120, SD 21.99) and 24.90 rehearsal trials (range, 20 – 33, SD 4.42) for the CBI and BST groups, respectively. After controlling for age, this difference was found to be statistically significant, \( F(1, 37) = 14.42, p < .01 \), using an ANCOVA procedure (see Table 9).

Program development costs. Estimates of direct program development costs for each training delivery model are presented in Table 10 while a summary report is provided in Appendix H. For development of the CBI model, six child actors, sixteen adult actors, one director and one video camera operator were involved in filming of video vignettes. Total time of filming was 20 hours and 187 vignettes were recorded. Video was then edited for sound and content and converted to .mp4 file format. Four research assistants and the student researcher edited film, for a total of 77 hours;
Table 9

Test of Between Subjects Effects on Training Trials to Program/Skill Mastery

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Type III Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>4920.77 a</td>
<td>2</td>
<td>2460.38</td>
<td>10.27</td>
<td>.00</td>
<td>.36</td>
<td>.98</td>
</tr>
<tr>
<td>Intercept</td>
<td>2450.56</td>
<td>1</td>
<td>2450.56</td>
<td>10.23</td>
<td>.00</td>
<td>.22</td>
<td>.88</td>
</tr>
<tr>
<td>Age</td>
<td>697.74</td>
<td>1</td>
<td>697.74</td>
<td>2.91</td>
<td>.10</td>
<td>.07</td>
<td>.38</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>3454.54</td>
<td>1</td>
<td>3454.54</td>
<td>14.42</td>
<td>.00</td>
<td>.28</td>
<td>.96</td>
</tr>
<tr>
<td>Error</td>
<td>8865.01</td>
<td>37</td>
<td>239.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>63277.00</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Corrected total</td>
<td>13786.78</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. a R Squared = .36 (Adjusted R Squared = .32)

however, it is estimated that this task could be completed by a professional video editor in 40 hours. One hundred eleven vignettes were used in the completed computer program. A computer applications software engineer completed programming for the computer instructional program in 60 hours. Estimated wages were calculated for actors, director, camera operator, video editor, and computer applications software engineer, using the U.S. Department of Labor Bureau of Labor's Occupation Outlook Handbook, 2010 – 2011 Edition. Total financial expense associated with program development of the computer instructional media was estimated at $11,950.
Table 10

*Estimated Cost Effectiveness Analysis of Training Delivery Models*

<table>
<thead>
<tr>
<th>Program Development</th>
<th>Total Investment (in dollars)</th>
<th>Cost per Unit of Delivery (in dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CBI</td>
<td>BST</td>
</tr>
<tr>
<td>Number of Implementations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11,950</td>
<td>384</td>
</tr>
<tr>
<td>2</td>
<td>13,450</td>
<td>400</td>
</tr>
<tr>
<td>3</td>
<td>13,450</td>
<td>416</td>
</tr>
<tr>
<td>4</td>
<td>13,450</td>
<td>432</td>
</tr>
<tr>
<td>5</td>
<td>13,450</td>
<td>448</td>
</tr>
<tr>
<td>10</td>
<td>13,450</td>
<td>544</td>
</tr>
<tr>
<td>20</td>
<td>13,450</td>
<td>704</td>
</tr>
<tr>
<td>40</td>
<td>13,450</td>
<td>1,024</td>
</tr>
<tr>
<td>50</td>
<td>13,450</td>
<td>1,184</td>
</tr>
<tr>
<td>100</td>
<td>13,450</td>
<td>1,984</td>
</tr>
<tr>
<td>200</td>
<td>13,450</td>
<td>3,584</td>
</tr>
<tr>
<td>400</td>
<td>13,450</td>
<td>6,784</td>
</tr>
<tr>
<td>800</td>
<td>13,450</td>
<td>13,184</td>
</tr>
<tr>
<td>840</td>
<td>13,450</td>
<td>13,824</td>
</tr>
<tr>
<td>870</td>
<td>13,450</td>
<td>14,304</td>
</tr>
</tbody>
</table>

*Note.* Figures are rounded to nearest dollar amount. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group.

For the BST model, twelve graduate and undergraduate research assistants completed a 2-hour training session on the BST protocol, in situ assessments and data collection. Total training time across individuals equaled 24 hours. Estimated wage was calculated for bachelor level elementary teachers (as an approximation of wages for a bachelor level psychologist or community service provider), using the U.S. Department of Labor Bureau of Labor’s *Occupation Outlook Handbook, 2010 – 2011*. 
Edition. Total financial expense associated with program development for BST was estimated at $384.

**Program implementation costs.** Estimates of program implementation costs for each training delivery model are depicted in Table 10 while a summary report is provided in Appendix I. Equipment costs constituted the only expenses associated with implementation of the CBI model. Five Compac Presario CQ60-420US Notebook Personal Computers were used during this phases, costing a total of $1500. Thus, total investment for the CBI program was fixed at $13,450 (sum of program development and program implementation costs). When distributed across multiple users, the per unit delivery costs exponentially decreased.

Financial costs associated with implementation of BST consisted of wages for the safety instructors. These costs were estimated at $16 per child (1 hour per child), for a total of $320 across the 20 learners. Financial expense for implementation of BST remained stable (that is, $16 per learner) and total investment associated with this training model increased with successive applications (Table 9). Based upon these estimates, the computer-based instruction model would become a more economical delivery model than BST after the 870th implementation.

**Summary.** Training time was equivalent across delivery models. Age proved to be predictive of training time, with older children completing the programs more quickly than younger learners. Participants in the CBI group required significantly more learning trials than BST participants to achieve mastery. More time, human and financial resources were required during the program development phase of the CBI
model compared to the BST model. Once the media was created, implementation costs associated with CBI were minimal and total investment remained stable across multiple learners. In contrast, per unit costs for delivery of the BST model were fixed and financial expenses were continually incurred across multiple trainings. Eventually, the CBI model would become more economical compared to the BST model.

Child Adverse Emotional Response

**Affect.** Children in both groups predominately displayed neutral affect during training sessions (an average of 95% and 82% of observation periods for the CBI and BST groups, respectively). Negative affect was observed during an average of 1.9% of observations periods during training for the CBI group (range, 0 – 14%, SD 3.80). Negative affect was not observed during training sessions for participants in the BST group. Children in the CBI group displayed positive affect an average of 3.1% of observation periods while children in the BST group displayed positive affect an average of 18% of observations periods during training sessions (see Table 11).

Similarly, children’s affect during in situ assessments across all periods was predominately neutral for both groups. Negative affect was demonstrated less than 10% of observations periods for participants in both experimental groups across in situ assessment periods. Only one child (from the BST group) cried during an in situ assessment.
Table 11

*Child Affect Rating during Training and In Situ Assessments Sessions across Experimental Groups*

<table>
<thead>
<tr>
<th>Time</th>
<th>Group</th>
<th>Positive</th>
<th>Neutral</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CBI</td>
<td>3.1</td>
<td>95.0</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>18.0</td>
<td>82.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Baseline ISA</td>
<td>CBI</td>
<td>26.3</td>
<td>65.8</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>17.2</td>
<td>82.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Post-training ISA</td>
<td>CBI</td>
<td>41.4</td>
<td>51.7</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>19.4</td>
<td>77.4</td>
<td>3.2</td>
</tr>
<tr>
<td>2-week Follow-up ISA</td>
<td>CBI</td>
<td>5.0</td>
<td>90.0</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>20.0</td>
<td>75.0</td>
<td>5.0</td>
</tr>
<tr>
<td>1-month Follow-up ISA</td>
<td>CBI</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0.0</td>
<td>92.9</td>
<td>7.1</td>
</tr>
</tbody>
</table>

*Note.* Data are presented as percent average of observation trials in which participants demonstrated positive, neutral and negative affect during in situ assessment. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group, ISA = In situ assessment.

**Child fear self-report.** Self-report ratings of fear during training sessions were collected for 10 children in each experimental group. Children in the CBI group rated their level of fear as an average of 1.3 out of 5 (range, 1 – 2, *SD* .48) while children in the BST group rated their level of fear as an average of 1.8 out of 5 (range, 1 – 3, *SD* .79).

**Side effects questionnaire, child version.** Survey return rates at Baseline, Post-training, 2-week Follow-up and 1-month Follow-up were: 100%, 65%, 40% and 35% for the CBI group, respectively; and 90%, 75%, 40% and 5% for the BST group, respectively. Results are displayed in Table 12. At Baseline, the majority of child
Table 12

*Side Effects Questionnaire, Child Version*

<table>
<thead>
<tr>
<th>Time</th>
<th>Group</th>
<th>Rating</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>Minimal to Moderate</td>
<td>Maximum</td>
</tr>
<tr>
<td></td>
<td>CBI (N = 20)</td>
<td>I am afraid of strangers and adults</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>BST (N = 18)</td>
<td>21</td>
<td>79</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Post-Training</td>
<td>CBI (N = 13)</td>
<td>17</td>
<td>83</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST (N = 15)</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2-week Follow-up</td>
<td>CBI (N = 8)</td>
<td>25</td>
<td>75</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST (N = 8)</td>
<td>63</td>
<td>37</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1-month Follow-up</td>
<td>CBI (N = 7)</td>
<td>29</td>
<td>71</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST (N = 1)</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I am afraid to be away from my parents or teacher</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>CBI</td>
<td>60</td>
<td>30</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>44</td>
<td>50</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Post-Training</td>
<td>CBI</td>
<td>38</td>
<td>62</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>53</td>
<td>40</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>2-week Follow-up</td>
<td>CBI</td>
<td>38</td>
<td>50</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>63</td>
<td>37</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1-month Follow-up</td>
<td>CBI</td>
<td>43</td>
<td>57</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I am afraid to be alone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>CBI</td>
<td>20</td>
<td>45</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>33</td>
<td>56</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Post-Training</td>
<td>CBI</td>
<td>31</td>
<td>54</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>47</td>
<td>53</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2-week Follow-up</td>
<td>CBI</td>
<td>12</td>
<td>50</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>37</td>
<td>63</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1-month Follow-up</td>
<td>CBI</td>
<td>14</td>
<td>71</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Data are reported as percentages. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group
participants endorsed minimal to moderate fear of strangers and adults (79% for CBI group and 78% for BST group). Only two participants in the BST group rated maximum fear of strangers and adults at Baseline. Following training, participants in neither group endorsed maximum fear of strangers and adults. Nearly three-quarters of CBI participants continued to endorse minimal to moderate level of fear, while there was an increase in ratings of no fear of strangers and adults for BST participants at Post-training and 2-week Follow-up assessment periods (40% and 65%, respectively).

At Baseline, two CBI participants and one BST participant endorsed maximum fear of being separated from their trusted adult. The majority of CBI participants (60%) rated no fear of separation while half of BST participants rated minimal to moderate fear. At Post-training, one child in the BST group endorsed maximum fear of separation and at 2-week Follow-up, one child in the CBI group endorsed maximum fear. There was an increase in ratings of no fear for the BST group across Post-training and 2-week Follow-up, while slightly more CBI participants endorsed minimal to moderate fear at the Post-training and Follow-up assessment periods.

With regards to fear of being alone, most participants in both groups endorsed minimal to moderate fear at each assessment period. At Baseline, seven CBI participants and two BST participants endorsed maximum fear of being alone. At Post-training, one CBI participant endorsed maximum fear, at 2-week Follow-up, three CBI participants endorsed maximum fear, and at 1-month Follow-up, one CBI
participant endorsed maximum fear of being alone. No BST participants endorsed
maximum fear of being alone after training.

**Side effects questionnaire, parent version.** Survey return rate at Baseline,
Post-training, 2-week Follow-up and 1-month Follow-up were: 90%, 65%, 45% and
35% for the CBI group, respectively; and 85%, 75%, 45% and 5% for the BST group,
respectively. Results are displayed in Table 13. On the dimension of fear, the majority
of parents in the CBI group rated their children as fearless of adults and separation
while the majority of parents in the BST group rated their children's level of fear as
age-typical. During all assessment periods following training, caregivers in both
groups most frequently endorsed no change in their child's behavior. Only one child
in the CBI group demonstrated an increase in fear, according to caregiver, after the 2-
week Follow-up in situ assessment. Caregivers did not rate their child as extremely
fearful at any point in the study.

Regarding the child's level of caution, caregivers of CBI participants most
frequently rated their child as much less cautious (44%) or age-typical (44%), while
caregivers of BST participants most frequently rated their child as less cautious (35%)
at Baseline. One parent in the BST group rated their child as more cautious at
Baseline. At all assessment periods following training, the majority of respondents
endorsed no change in their child's level of caution. At Post-training, two parents of
children in the CBI group rated their child as much less cautious while two other
parents of CBI participants described their children as more cautious. At 2-week
Follow-up, two parents from the CBI group and one parent from the BST group
Table 13

Side Effects Questionnaire, Parent Version

<table>
<thead>
<tr>
<th>Time</th>
<th>Group</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Much less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(N = 18)</td>
</tr>
<tr>
<td><strong>Baseline</strong></td>
<td>CBI</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>18</td>
</tr>
<tr>
<td><strong>Post-Training</strong></td>
<td>CBI</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0</td>
</tr>
<tr>
<td><strong>2-week Follow-up</strong></td>
<td>CBI</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0</td>
</tr>
<tr>
<td><strong>1-month Follow-up</strong></td>
<td>CBI</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0</td>
</tr>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Post-Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2-week Follow-up</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1-month Follow-up</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Post-Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2-week Follow-up</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1-month Follow-up</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Data are reported as percentages. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group.
rated their children as more cautious. Caregivers in neither group rated their children as much more cautious at any point during the study.

With regards to child’s concern for personal safety, parents of CBI participants most frequently rated their child as demonstrating much less concern about personal safety (44%) while parents of BST participants most frequently rated their child’s level of concern as age-typical (53%) at Baseline. One parent in each experimental group rated their child as demonstrating more concern at Baseline. During assessments following training, caregivers in both groups most frequently endorsed no change in their child’s behavior. One CBI parent and one BST parent indicated that their child demonstrated less concern at Post-training compared to Baseline. There was an increasing trend in CBI parents’ rating of their child demonstrating less safety concerns at 2-week and 1-month Follow-up periods (22% and 43%, respectively). Only one parent in the CBI group rated their child as demonstrating more concern at Post-training, 2-week and 1-month Follow-up periods. Parents in neither group rated their child as demonstrating much more concern at any point in the study. No reports of children experiencing nightmares were given either.

When asked to describe changes in their child’s behavior, three parents noted that their child appeared more confident, one parent reported his or her child demonstrated increased awareness, one parent indicated that his or her child appeared more “happy-go-lucky” and one parent reported that his or her child commented on been glad to have received the training.
Summary. Overall, children demonstrated minimal behavioral indicators of distress during training or in situ assessments, they denied feeling scared and endorsed few negative side effects from training. Children did not appear to develop a generalized fear of adults or strangers or separation anxiety as a function of this safety training, as evidenced by both child and caregiver report. The number of children who endorsed fear of being alone did not differ significantly from Baseline to post training. Caregivers, too, denied significant side effects. Alteration in child behavior or emotional status tended to be described as moderate (i.e., more or less) as opposed to extreme (i.e., much more or much less). Unique comments made by caregivers on Side Effects Questionnaires were favorable.

Verbal and Behavioral Performance Correspondence

The degree of correspondence between CBI participants' verbal report of behavior during computer simulation assessments and actual performance during in situ assessments is displayed in Figure 2. At Baseline, more participants (43.5%) earned higher performance scores live in situ assessments than verbal scores during computer simulation assessments. That is, children engaged in more safety behaviors during the live simulations than they reported they would during the computer simulations. Correspondence between verbal and performance scores was found in 21.7% of participants, while verbal scores were higher than performance scores in 34.8% of participants at Baseline. Notably, mean verbal and performance scores at Baseline were 1.73 and 1.70, respectively. This corresponds to children stating or performing only one of the target safety skills, on average.
At Post-training, performance scores during live in situ assessments exceeded children’s verbal report of behavior during computer simulation assessments for 43.8% of participants. Correspondence in verbal and performance scores rose to 31.3% of participants. Verbal report of behavior was higher than actual behavior in only 25% of participants. Mean verbal and performance scores increased to 3.12 and 3.33, respectively. In sum, participants were able to verbally identify and perform more of the safety skills following training in comparison to Baseline.

Figure 2. Correspondence Between Child’s Verbal Report of Behavior during Computer Simulation Assessments and Behavioral Performance during In Situ Assessments.
Social Validity

**Treatment evaluation inventory - short form.** Twelve parent measures of social validity were completed and returned to the researcher (response rate, 30%). These outcomes are summarized in Table 14.

Respondents agreed (17%) or strongly agreed (83%) with the survey item of having a positive response to the training. Respondents provided favorable ratings to survey questions of training effectiveness and acceptability and indicated a willingness to use the teaching procedures again to teach their child other safety skills. Three parents agreed with the statement that children would experience discomfort during training, while the remaining respondents either strongly disagreed ($n = 2$), disagreed ($n = 3$) or reported feeling neutral ($n = 4$) to this statement. The majority of respondents rated feeling neutral ($n = 4$) or agreed ($n = 6$) that it is acceptable to use these procedures without children’s consent. Likewise, most respondents reported feeling neutral ($n = 5$) or agreed ($n = 6$) that it is acceptable to use the procedures with individuals who cannot choose for themselves.
Table 14

*Caregiver Response to Treatment Evaluation Inventory – Short Form*

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I find this training to be an acceptable way to teach children self-protection skills</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>I am willing to use the teaching procedures again to teach my child other safety skills</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td>I believe the teaching procedures are acceptable to use without children’s consent</td>
<td>0</td>
<td>17</td>
<td>25</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>I like the teaching procedures used in this program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>58</td>
<td>42</td>
</tr>
<tr>
<td>I believe this program is likely to be effective</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>58</td>
<td>42</td>
</tr>
<tr>
<td>I believe children will experience discomfort during this program</td>
<td>17</td>
<td>25</td>
<td>33</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>I believe this program is likely to result in permanent improvement in safe behavior</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>58</td>
<td>34</td>
</tr>
<tr>
<td>I feel it would be acceptable to use this training program with individuals who cannot choose for themselves</td>
<td>0</td>
<td>8</td>
<td>42</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Overall I have a positive reaction to this program</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>83</td>
</tr>
</tbody>
</table>

*Note.* Data are reported as percent agreement with the statement.
**Treatment acceptability questionnaire.** With regards to child measures of treatment acceptability, seven surveys were completed and returned by participants from the CBI group (response rate, 35%) and nine measures were completed and returned by BST participants (response rate, 45%). These outcomes are summarized in Table 15.

Table 15

*Child Response to Treatment Acceptability Questionnaire*

<table>
<thead>
<tr>
<th>Item</th>
<th>Group</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I learned safe things to do if an adult asks me to go with him or her.</td>
<td>CBI</td>
<td>0 14 86</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0 22 78</td>
</tr>
<tr>
<td>I liked learning the safety skills.</td>
<td>CBI</td>
<td>14 14 72</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>0 44 56</td>
</tr>
<tr>
<td>I liked the computer program.</td>
<td>CBI</td>
<td>0 14 86</td>
</tr>
<tr>
<td>I liked practicing the safety skills.</td>
<td>BST</td>
<td>11 67 22</td>
</tr>
<tr>
<td>I act more safely around people I do not know.</td>
<td>CBI</td>
<td>0 14 86</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>11 33 56</td>
</tr>
<tr>
<td>This is a good way to teach kids safe things to do.</td>
<td>CBI</td>
<td>86 14</td>
</tr>
<tr>
<td></td>
<td>BST</td>
<td>100 0</td>
</tr>
</tbody>
</table>

*Note.* Data are reported as percent agreement with the statement. CBI = Computer-Based Instruction experimental group, BST = Behavioral Skills Training control group.
Overall, children in both groups provided favorable ratings to survey questions about skill acquisition, enjoying learning the safety skills, and acting more safely as a result of training. Notably, children in the CBI group more strongly endorsed liking the computer-based instruction program (83%) than BST participants’ endorsement of liking the rehearsal trials (22%). All but one child in the CBI group felt that the computer program was a good training model to teach children safety skills while all children in the BST group agreed that BST was a good training model.

**DISCUSSION**

When compared to baseline assessments, participants in both experimental groups performed better during in situ assessments after training and demonstrated improvements in the target safety skills in naturalistic settings. Behavioral improvements were maintained at 2-week through one month following training. Performance differences between the CBI and BST groups were negligible across assessment periods. Child age was not found to be a significant factor for skill acquisition.

Training time was equivalent across the two delivery models. However, children in the CBI group required significantly more learning trials to achieve mastery than children in the BST group. Inherent differences in the interventions may account for this finding. With technology-based interventions (e.g., video modeling, simulation, virtual reality), it is possible to present a greater range of stimulus features, including settings, situations and actor characteristics, that cannot be easily captured with live training. Further, participants in the CBI group were shown
variation in behavioral responses, such as the child actor demonstrating correct behavior, incorrect behavior (e.g., leaving with the adult actor) and less distinct incorrect behavior (e.g., response hesitation). In this way, children receiving computer-based instruction were taught very fine behavioral discriminations, which likely contributed to more learning trials. Learners in the BST group would not have received feedback on these finer distinctions unless they performed the target skills incorrectly during rehearsal trials.

With regards to cost effectiveness, human, time, and financial expense associated with the CBI delivery model was significantly greater than for the BST model during the program development phase. Once the computer program was operational, direct costs associated with this model were equipment related. (Of note, computers are likely present in many of the settings that this intervention might be disseminated to, i.e., schools, community centers, homes. Thus, these costs may be avoidable). Cost per unit delivery of the CBI protocol decreased with successive implementation. On the contrary, resources associated with each unit of delivery for live training remained constant and investment for this training model was cumulative across repeated implementation of the protocol across learners. In sum, the computer-based instruction program can be an efficient delivery model across multiple learners and becomes more economical than live training after repeated application with a large sample of learners.

Concern that behaviorally based training and assessment procedures may be too distressing for children is a frequently cited reason to avoid abduction prevention
training. However, participants in this study demonstrated minimal behavioral and emotional indicators of distress. Minimal levels of negative affect was observed in children during CBI training sessions while negative affect was not observed during BST sessions. Likewise, children in both experimental groups exhibited minimal negative affect during in situ assessments. Only one child participant cried during one in situ assessment. There were no reports of children experiencing nightmares during their study involvement. It is possible that debriefing which was conducted after the in situ assessments may have lessened any negative effects children may have experienced during the simulated tests. On self-report measures, children in both groups denied experiencing increased fear of adults, being alone or separation anxiety. Caregivers endorsed minimal to no change in their children’s fear of adults, level of caution and concern about personal safety. Taken as a whole, these data suggest that, with proper precautions and close monitoring, behavior-based abduction prevention training and in situ assessment procedures are well tolerated by children.

Correspondence between participant’s verbal report of behavior and performance during in situ assessments was also examined. At Baseline, performance scores during live in situ assessments were to comparable verbal scores during computer simulations. Notably, children only identified and performed one safety behavior. This response pattern changed at Post-training when children performance scores were slightly higher than verbal scores. Correspondence in verbal reports and behavioral performance was found in less than one-third of the participants at both assessment periods. This finding underscores one criticism of traditional education
programs that rely upon child report as indices of skill acquisition rather than behavior demonstration.

The computer simulation assessment employed in this study did not appear to be a valid proxy measure for child performance during in situ assessments. Several explanations can be proposed to account for poor verbal and performance correspondence. First, the computer simulation assessments occurred directly prior to and after training sessions and with a researcher present. These stimuli, which may have impacted the child’s verbal behavior during the computer simulation assessments, were not present during in situ assessments (that is, in situ assessments occurred outside of the prescribed training situation and the trainer was unseen by the child). Delayed responding may also have played a role in these differences. Children were not informed of the nature of the in situ assessments and assessments occurred at times and in places unbeknownst to the child. This surprising quality of the test may have caused the child to pause before responding. However, the confederate left the child after 10 seconds of non-responding following the lure presentation. It is possible that performance scores would have been higher if the child was given more time to act.

Additionally, establishing operations could have been stronger during one type of assessment compared to the other. For example, conditions associated with in situ assessments (e.g., child being alone and approached by a confederate) may have altered the effectiveness of negative reinforcement and evoked behavior to escape that situation. Further investigation is warranted to identify ways to improve verbal and
performance correspondence and strengthen computer simulations as behavioral assessment tools. Future studies can assess the use of point-of-view video modeling (that is, filming a video scene so it is viewed from first person perspective) to more closely approximately features of an in situ assessment or studies can examine the effects of programmed contingencies for accuracy in reporting.

This investigation is the first to directly compare a computer-based instruction model with the “gold-standard” BST to teach abduction prevention skills to school-aged children. Results suggest that the computer-based instruction model was as effective as BST in training target safety skills. These results differ from some previous studies of technology based interventions that produce little or limited improvement in child safety skills, including the Eddie Eagle Gun Safe program (e.g., Gatheridge et al., 2004; Himle, Miltenberger, Gatheridge & Flessner, 2004), video modeling (Carroll-Rowan & Miltenberger, 1994; Poche et al., 1988) and, most recently, The Safe Side “Stranger Safety” DVD (Beck & Miltenberger, 2009). In these studies, participants failed to acquire the target safety skills following the technology-based intervention and required supplemental training (rehearsal, feedback and/or in situ training) to perform the desired behaviors to criterion. Authors have suggested that rehearsal and feedback were the crucial components for training efficacy (Carroll-Rowan & Miltenberger, 1994; Poche et al., 1988).

Three key differences between this current study and the abovementioned research on technology-based interventions to promote child safety may account for these discrepant results. First, the CBI model demanded active responding from the
learner and differential consequences were applied based upon the learner's response. The learner advanced through the program contingent upon correct responding. Other technology-based interventions provide instructions and modeling of the target behaviors only, and with these interventions, it is possible for the child to be passive throughout the learning process. When breaks are incorporated into the media for active responding (e.g., to answer questions, opportunity for behavioral rehearsal), it is likewise possible for the learner to engage in incorrect behavior or not respond at all. Specific feedback cannot be provided to the individual learner. Alternatively, programmed learning breaks may be facilitated by an adult supervisor who provides response-contingent consequences. Skill acquisition then becomes, at least in part, dependent upon human trainers, thereby limiting the efficacy of technology-based training as a standalone intervention.

Second, the CBI model may have functioned by bringing behaviors already a part of the child's established behavioral repertoire under stronger stimulus control. It is likely that prior to training, learners were able to perform the safety skills of saying "No", leaving the area and reporting to an adult but failed to identify critical discriminative stimuli that make those behaviors necessary in certain situations. The CBI model may have produced behavioral improvements through intensive discrimination training across multiple exemplars of abduction situations as well as non-examples.

Third, participants in this study were older (mean age, 10 years 2 months) than participant samples in the other investigations (age range, 4 to 8 years). With this
older child sample, the technology-based intervention was equivalently compared to the Behavioral Skills Training model in child acquisition and performance of the desired safety skills. One study by Kelso and colleagues (2007) reported similar findings of older children demonstrating better performance of the desired safety skills (in this case, firearm injury prevention) after completion of the Eddie Eagle Gun Safety Program when compared to their younger counterparts (Gatheridge et al., 2005; Himle, Miltenberger, Flessner & Gatheridge, 2004). While, in this investigation, age was not found to be a significant predictive factor for skill acquisition, it did impact the speed in which children achieved the program/skill mastery criterion. Older children may have stronger repertoires of rule governed behavior repertoires than preschool and early elementary school-aged children, which could contribute to successful behavior acquisition and performance from observational learning opportunities. It is possible that younger children, too, can acquire self-protection skills through computer-based instruction, though modifications in the content and presentation (e.g., developmentally appropriate language, textual prompts coupled with auditory output, limited text on the computer screen) would likely be necessary in addition to reinforcement contingencies for instructional control.

There are some limitations to this current study worthy of discussion. One limitation is that one child became upset and cried after a follow-up in situ assessment conducted at his house. The degree of the child’s negative emotional response appeared related partly to factors outside of the assessment procedures. Despite being
distressed, the child was able to perform the appropriate safety skills. Upon follow-up telephone contact, his mother denied lasting negative behavioral or emotional effects from the assessment and remained satisfied with her child’s participation in the study.

Reactivity to repeated assessments exists as a possible threat to the external validity of the study’s results. Reactive assessment refers to the extent to which participants are aware that their behavior is being assessed and that this awareness influences behavior (Kazdin, 1982). Multiple in situ assessments at Baseline and Post-training times, the contrived nature of the assessments and the occurrence of the tests at the training location might have contributed to this threat. Possible reactivity was most apparent during the third assessment during the Baseline or Post-training series. Some children smiled or laughed when the confederate approached to present the lure or they would report the incident to the student investigator by stating, “That was another test”. Comparisons of behavioral performance between the first and third repeated assessment were approaching a statistically significant level. Participants did not demonstrate signs of reactivity during 2-week and 1-month Follow-up assessments.

A third possible limitation of the study was debriefings after in situ assessments. Though specific performance feedback was not provided, children were informed that a test had occurred. It is unknown what effect, if any, these debriefings had on the child’s emotional state or performance during subsequent assessments or during training. Future investigation should be done to examine the effects of this
feedback by comparing performance and emotional response for children who are debriefed following every in situ assessment against those who are not.

A fourth limitation of the study is that responses during the CBI intervention were forced. That is, "Yes" or "No" were the children's only two response options during discrimination questions. Responding may have been different if free operant responses were permitted. Free operant responding could enhance learning by increasing the learner's interactions with the material. This could be accomplished through simulation or virtual reality technology, though not without drawbacks. A more complex technology that would allow for free operant responding, like simulation or virtual reality applications, would add greatly to the expense of program development and hinder dissemination of the technology due to limited availability of needed equipment in many locations and increased investment.

Sample bias served as a final limitation of this study. Participants were recruited from families who expressed interest in the area of child safety, either by sending their child to a safety camp or by responding to the recruitment flyer and other advertisements. This bias could have impacted the child's motivation during training and/or caregivers' perception and acceptance of the intervention strategies. Different results might be found if the intervention was implemented with a participant sample from a general community setting (e.g., school classroom) where traditional, informational programs are typically offered.

Implications of this study are numerous. A computer-based instruction model offers several advantages over a live training delivery model. It requires less time and
effort on the part of adults facilitating the training, is readily available to users at times that are convenient (e.g., free times at school, in the evenings and weekends at home) and can be easily disseminated through DVDs or web-based applications. After the initial investment for program development, the per unit of delivery costs for computer-based instruction are minimal and across multiple implementations this model becomes more economical than a live training model, such as BST. Further work is needed to refine this delivery model into a viable alternative to live training.

Exploration of critical variables that affect child’s responding during discrimination trials can be useful to enhance training efficacy of the computer intervention. An analysis of CBI learners’ errors was done to examine common factors associated with incorrect responding on discrimination questions. Learners completed a common set of 22 discrimination trials, each consisting of 4 questions for a total 88 questions that were answered by all of the CBI learners. Within this set of 88 questions, seven questions had less than 80% accurate responses across learners (range, 51.4% to 76.7%). These questions followed video models that were characterized by the child actor hesitating for more than 5 seconds after the lure was presented before saying “No” \( (n = 5) \) or the child actor hesitating for more than 10 seconds after the lure before leaving the area \( (n = 2) \). Hesitation is a subtle discrimination for the learners to make. Training may be improved with focused instruction on this behavioral dimension.

Analysis of characteristics that are predictive of responders and non-responders is reasonable for the improvement of computer training programs. Based
upon this information, training interventions can be applied using a tiered approach, with those who are likely to respond receiving the computer based intervention. Children who demonstrate characteristics that suggest they would be less likely to acquire the target skills through a computer instruction program could receive the more labor intensive live training model (e.g., BST). This tiered approach to intervention may prove beneficial by conserving resources through more accurate prescription of intervention strategies that are best suited for the individual learner and by maximizing the likelihood that the learner will acquire the desired skills.

Replication of the computer intervention is called for with different populations, including younger children, to determine if similar results can be achieved. This delivery model may also prove well suited for use with individuals with neurodevelopmental disabilities and intellectual disabilities. For some of these individuals, repetition in training may be necessary for skill acquisition and maintenance, which can be more easily accomplished through an automated, technology based intervention. Lastly, other safety topics, such as internet safety, may be well suited for a computer-based instruction approach. Stimulus features associated with online dangers can be simulated, allowing for the creation of realistic training and assessment procedures. Such an application warrants further investigation.
REFERENCES


skills training procedures for teaching abduction-prevention skills to schoolchildren. *Journal of Applied Behavior Analysis, 39*, 25-34.


Appendix A. Caregiver Instructions for Managing Child Distress

While your child is learning personal safety skills, it is possible that he or she will show more fear or concern about safety than normal. Your child gains a sense of safety and security from you, the parent. One of the most important things you can do to help your child is to stay calm yourself and respond in a reassuring manner. Here are some changes in your child’s behavior that you can watch for and what you can do if you see these behaviors.

Changes in your child’s behavior to watch for
- Afraid to learn parents, caregivers, teachers
- Shows fear of strangers/adults
- Hesitant to go outside or be alone
- Shows concern about kidnapping or personal safety
- Crying
- Nightmares
- Changes in sleep
- Changes in eating

What to do if you notice change in your child’s behavior
- Remain calm yourself.
- Ask your child what is bothering him or her. Do not assume that he or she is upset about personal safety issues. Also, you do not want to reinforce for your child that it is something that he or she needs to be overly fearful/worried about.
- Give your child a hug, kiss or other form of soothing comfort. Physical touch can be very soothing for a child.
- Reassure your child that he or she is safe at home, at school and in the community, and that there are people in his and her life to keep him or her safe. Help your child identify trusted adults in his or her life, such as parents, grandparents, other family, teachers, neighbors, and law enforcement agents. Tell your child that he or she can always go to a trusted adult when in trouble or feeling scared or confused.
- Talk with your child about things an adult might say to get a child to come away with him or her (e.g., promise a gift, special treat or special activity, ask for the child’s help, pretend to be an authority figure, or say that the child’s trusted adult gave him or her permission to take the child). Talk with your child about what he or she should do if an adult tries to get your child to come with him or her. Praise your child for know the personal safety skills (to say no, walk/run away and tell an adult what happened immediately).
- Reinforce for your child that he or she knows what to do to stay safe. Praise your child for being smart and strong.
- Call Kim Bancroft at 269-598-5797 with any questions or concerns.
Appendix B. Abduction Prevention Training Curriculum

BST group: Introduce self. Interview child to learn about preferences, favorite activities and general rapport building.

Part 1. Instructions

Today I am going to talk to you about what to do if someone tries to get you to leave with him or her. I’ll also talk with you about things you can do to always stay safe. There are a lot of people who love you very much. Your parents, grandparents, older brothers and sisters and teachers make keeping you safe is their #1 concern. They do things all the time to make sure you are safe, like knowing where you are and being involved in things that you do. But they are not with you every minute of every day. There are things that YOU can do to be responsible and stay safe, because you are smart and you are strong.

Your parent or guardian is always there for you if you are in trouble or need help. There are others adults you can count on too. These are people like your teacher, or neighbor. (BST group: Encourage child to identify other trusted adults in his or her life). We call these people trusted adults. You can always talk to your parent or trusted adult if you need help or if you are feeling scared, uncomfortable or confused. They will be there to help you. It’s okay to tell them anything.

Most adults that you meet are good people. Most adults are kind and would never hurt you. If you are in trouble and your parent or trusted adult is not around, another adult can help you. For example, if you are lost in a store and cannot find your parent, what would you do? (BST group: Help child to identify an appropriate solution). You can go to a policeman or security guard who is dressed in a uniform, a store worker who is wearing a nametag or the person at the information desk. These adults can help you.

Sometimes, though, there are people who might try to trick or hurt you or others. That is NEVER okay. No one has the right to force, trick or pressure people into doing things they don’t want to do. No one has the right to force, trick or pressure YOU into doing something YOU do not want to do. You have the right to say NO if someone ever does something that makes you feel scared, uncomfortable or confused. You have the right to get away and tell someone you trust as quickly as you can. You have the right to always be safe.

You should NEVER go anywhere, do anything, help anyone, or accept anything, like a present or special treat, from anyone without FIRST checking with your parent or trusted adult and getting their permission. You should never get into a vehicle or leave with anyone unless your parent or trusted adult tells YOU yourself that it is okay. You should not leave with anyone without permission, even if the person is someone you know, like a family friend, a neighbor or coach. Never go with anyone
without your parent or trusted adult’s permission, even if the person says they know you and that it’s okay. You must always CHECK with your parent and get their permission FIRST before going with anyone. *(BST group: Talk with child about why it is important to always get parent’s permission first, even if the adult is known to the child and it is a non-abduction situation. For example, for the parent to know where the child is at all times. Talk with the child about it being okay to go with the adult if the parent has given permission).*

If someone tries to get you to go with him or her, there are 3 things that you should do to be safe. When the person tells you or asks you to leave with him or her, say NO right away. Even if you think you are being rude or mean, it is okay to say no to an adult when he or she is telling you to do something that you do not think is safe or that makes you feel scared, uncomfortable or confused. Second, leave the area right away. Walk or run in the other direction, away from the person. Third, find a parent or trusted adult right away and tell them what happened. Your parent or trusted adult will always be there to help you. You can tell them anything.

Always remember that you are smart and strong and that it is okay for you to stand up for yourself. If anyone ever tries to get you to go with him or her, remember your 3 safety skills: (1) Say NO right away, (2) walk or run away right away, and (3) tell a trusted adult right away what happened. Your trusted adult will always be there to help you, and this way you can always stay safe.

**Instructions Comprehension Quiz**

**(BST group: Record child’s response on Instructions Comprehension Quiz Data Sheet in participant’s folder.**)

1. If an adult asks you to help him look for his dog, should you say “Yes”?

   - Response  **NO**
     That’s right. Say “No” until a trusted adult tells you it’s okay.

   - Response  **YES**
     No. That’s not right. Say “No” until a trusted adult tells you it’s okay.

2. Should you walk or run away from the person?

   - Response  **YES**
     Good! Leave the area right away.

   - Response  **NO**
     No. Leave the area right away.
3. Should you tell an adult?

- Response **YES**
  Very good. Tell a trusted adult right away what happened. Nice job!

- Response **NO**
  No. That’s not right. Tell a trusted adult right away what happened.

4. If an adult promises to buy you a gift if you come with her, should you say “No”?

- Response **YES**
  You’re right. Say “No” until a trusted adult tells you it’s okay.

- Response **NO**
  No. That’s not right. Say “No” until a trusted adult tells you it’s okay.

5. At school, if your teacher asks you to help her carry boxes to the office, should you say “No”?

- Response **NO**
  You’re right. Your teacher is a trusted adult. If she asks for your help at school, it’s okay to help.

- Response **YES**
  No. Your teacher is a trusted adult who is asking for your help at school. It’s okay to help.

6. If your teacher asks you to come to her house to do a job, should you say “No”?

- Response **YES**
  You’re right. If your teacher asks for your help at home, say “No” until a parent tells you it’s okay.

- Response **NO**
  No. That’s not right. If your teacher asks for your help at home, say “No” until a parent tells you it’s okay.
7. If an adult asks you to go to the park with him, should you go?

- **Response NO**
  Good. Say “No” until a trusted adult tells you it’s okay.

- **Response YES**
  No. That’s not right. Say “No” until a trusted adult tells you it’s okay.

8. Should you walk or run away?

- **Response YES**
  Yes! Leave the area right away. Great job!

- **Response NO**
  No. That’s not right. Leave the area right away.

9. Should you tell an adult?

- **Response YES**
  Right. Tell a trusted adult right away what happened.

- **Response NO**
  No. That’s not right. Tell a trusted adult right away what happened.

10. If your parent tells you that your soccer coach will bring you home after practice, should you go with your coach?

- **Response YES**
  Right. Good. Your parent gave you permission first so it’s okay to accept the ride.

- **Response NO**
  No. That’s not right. Your parent gave you permission first so it’s okay to accept the ride.

**Part 2. Model, Rehearsal/Discrimination, Feedback**

(BST group: Order randomly determined for participants. Check order on data sheet before beginning)

**INCENTIVE LURES**
One way an adult may try to get you to come with him or her is by promising a treat or present or promising to take you somewhere to do something fun, like Disneyland.
If you have not gotten permission from your parents first, you should NOT go with the person. You need to IMMEDIATELY say no, walk or run away and tell a trusted adult. Watch me demonstrate.

Scene: At park, playing on playground equipment
Lure: “I have some candy in my car. Come with me and I’ll give you some”
Target Skills: Say “No”, leave, report

Now we’ll practice. See if I try to get you to come with me by promising you a treat or present or by promising to take you somewhere to do something. There may be some tricks though, so you will have to pay attention. Sometimes, I will just be friendly but not say anything to get you to come away with me. In these cases, you do not have to do the safety skills.

**Mastery Criteria:** 5 consecutive trials with child demonstrating correct behavioral sequence (BST group) or child answering all Discrimination probes correctly (CBI group)

*(BST group: Involve child in setting the scene based upon activities s/he typically does)*

**Trial 1: Abduction Scenario**
Scene: At the park, playing on playground equipment
Lure: “Come to my house and I’ll let you try some beer”
Target Skills: Say “No”, leave, report

**Trial 2: Abduction Scenario**
Scene: At a store. Child waiting for parent.
Lure: “Come with me? I’ll buy you something – whatever you want”
Target Skills: Say “No”, leave, report

**Trial 3: Non-example**
Scene: At Meijer, at penny horse. Parent does not have penny for child to ride the horse. Parent is present.
Lure: “I have a penny. Would you like it for the ride?”
Target Skills: Any prosocial behavior (e.g., ask parent’s permission, say thank you)

**Trial 4: Abduction Scenario**
Scene: In the neighborhood
Lure: “Come with me. I’ll give you $10.”
Target Skills: Say “No”, leave, report

**Trial 5: Abduction Scenario**
Scene: In front of child’s house
Lure: “Do you want to go to the park with me?”
Target Skills: Say “No”, leave, report
Trial 6: Abduction Scenario
Scene: At a store
Lure: “I have a surprise for you. You have to come to my car to get it”
Target Skills: Say “No”, leave, report

Trial 7: Abduction Scenario
Scene: At a store, in the pet aisle
Lure: “Come to my house and I’ll give you a puppy to keep from my litter.”
Target Skills: Say “No”, leave, report

Trial 8: Non-example
Scene: At school
Lure: “Which way is the library?”
Target Skills: Any prosocial behavior (e.g., giving directions)

Trial 9: Abduction Scenario
Scene: In the neighborhood
Lure: “Do you want to come to my house and go swimming?”
Target Skills: Say “No”, leave, report

Trial 10: Abduction Scenario
Scene: In front of child’s house
Lure: “Come to me to the toy store and I’ll buy you a new outdoor toy.”
Target Skills: Say “No”, leave, report

Trial 11: Non-example
Scene: In front of child’s house
Lure: “I used to love that game”
Target Skills: Any prosocial behavior

Trial 12: Abduction Scenario
Scene: In front of child’s house. Confederate drives up in car.
Lure: “I have some ice cream in my car. You can get in and have some if you like.”
Target Skills: Say “No”, leave, report

Trial 13: Abduction Scenario
Scene: At a library
Lure: “I’ll buy you a new book at the book store if you come with me.”
Target Skills: Say “No”, leave, report
Trial 14: Abduction Scenario
Scene: In the neighborhood
Lure: “Do you want to go for a ride in my car? It is really fast.”
Target Skills: Say “No”, leave, report

Trial 15: Abduction Scenario
Scene: At a store. Child waiting.
Lure: “Let’s go to the video arcade. I’ll buy you tokens so you can play all
the games you want.”
Target Skills: Say “No”, leave, report

Trial 16: Non-example
Scene: At school
Lure: “I am here to pick up my daughter to go to the dentist. Do you know
where Sarah usually sits?”
Target Skills: Any prosocial behavior (e.g., giving directions)

Trial 17: Abduction Scenario
Scene: In front of child’s house
Lure: “I just baked cookies at my house. Come over and I will give you one.”
Target Skills: Say “No”, leave, report

Trial 18: Abduction Scenario
Scene: In front of child’s house
Lure: “Do you want to come to my house and see my new puppy? He’s lots
of fun to play with.”
Target Skills: Say “No”, leave, report

Trial 19: Non-example
Scene: In front of child’s house. Playing a game.
Lure: “That looks like fun”
Target Skills: Any prosocial behavior

Trial 20: Abduction Scenario
Scene: In neighborhood
Lure: “Do you want to get in my car? I have a really cool present to show
you.”
Target Skills: Say “No”, leave, report

ASSISTANCE LURES
Another way an adult might to get you to leave with him or her by asking for help to
do something. If this happens, you should do the safety skills: IMMEDIATELY say
“No”, walk or run away and tell an adult right away. Watch me demonstrate.
Scene: At a store
Lure “I can’t find my little girl. Can you help me find her?”
Target Skills: Say “No”, leave, report

We’ll practice now. See if I try to get you to leave with me by asking for help. If I do, then you should do the safety skills: say no right away, leave the area and tell a trusted adult. But be careful. In some of the practices, I will just be acting friendly but not say anything to get you to come away with me. In those cases, you do not have to do the safety skills because I didn’t try to get you to leave with me. Pay close attention.

**Mastery Criteria:** 5 consecutive trials with child demonstrating correct behavioral sequence (BST group) or child answering all Discrimination probes correctly (CBI group)

(BST group: Involve child in setting the scene based upon activities s/he typically does)

**Trial 1: Abduction Scenario**
Scene: In the neighborhood. Confederate drives up in a car
Lure: “Can you show me where the library is? (If child gives verbal instructions, “Can you come with me and show me?”)
Target Skills: Say “No”, leave, report

**Trial 2: Abduction Scenario**
Scene: In front of child’s house
Lure: “I have a little boy/girl your age and tomorrow is his/her birthday. Will you come to the toy store with me and help me pick out a present for him/her?”
Target Skills: Say “No”, leave, report

**Trial 3: Abduction Scenario**
Scene: In front of child’s house
Lure: “I can’t find my little sister. Can you come and help me look for her?”
Target Skills: Say “No”, leave, report

**Trial 4: Abduction Scenario**
Scene: At a store
Lure: “Can you help me look for my wallet? I’ve lost it.”
Target Skills: Say “No”, leave, report
Trial 5: Non-example
Scene: In the neighborhood. Confederate drives up in a car
Lure: “I’m lost. Can you tell me how to get to Maple Street?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)

Trial 6: Abduction Scenario
Scene: In the neighborhood
Lure: “I’m hurt and need to get to the doctor’s office, but I don’t know where it is. Can you come with me to show me how to get there?”
Target Skills: Say “No”, leave, report

Trial 7: Abduction Scenario
Scene: In front of child’s house
Lure: “I need help delivering all my newspapers. Will you help me?”
Target Skills: Say “No”, leave, report

Trial 8: Abduction Scenario
Scene: In front of school
Lure: “I am new to town and don’t know where the grocery store is. Will you come show me where it is?”
Target Skills: Say “No”, leave, report

Trial 9: Non-example
Scene: Inside school
Lure: “Where’s the cafeteria?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)

Trial 10: Abduction Scenario
Scene: At a pet store
Lure: “Help me walk my dog.”
Target Skills: Say “No”, leave, report

Trial 11: Abduction Scenario
Scene: In front of child’s house
Lure: “Can you carry some of these bags to my house? I don’t live far from here.”
Target Skills: Say “No”, leave, report

Trial 12: Abduction Scenario
Scene: In front of child’s house
Lure: “Will you come help me please? My puppy is stuck under my porch and I need someone small to help get him out.”
Target Skills: Say “No”, leave, report
Trial 13: Abduction Scenario
Scene: At a store
Lure: “Come help me pick out a toy for my cat.”
Target Skills: Say “No”, leave, report

Trial 14: Non-example
Scene: Inside school
Lure: “Is this the way to the nurse’s station?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)

Trial 15: Abduction Scenario
Scene: In front of child’s house
Lure: “I have to go somewhere but I don’t want to leave my new puppy alone. Will you come to my house and watch her for me?”
Target Skills: Say “No”, leave, report

Trial 16: Abduction Scenario
Scene: In front of child’s house
Lure: “Can you do me a favor? Can you carry this to my house?”
Target Skills: Say “No”, leave, report

Trial 17: Abduction Scenario
Scene: In the neighborhood. Confederate drives up in a car
Lure: “I am suppose to meet my family at the park but I am lost. Can you come show me how to get to the park?”
Target Skills: Say “No”, leave, report

Trial 18: Abduction Scenario
Scene: In front of child’s house.
Lure: “Do you like cookies? I was just going to make some at my house. Why don’t you come and help me?”
Target Skills: Say “No”, leave, report

Trial 19: Non-example
Scene: Inside school
Lure: “Where’s the office?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)

Trial 20: Abduction Scenario
Scene: In the neighborhood
Lure: “Can you show me how to get to the hospital?”
Target Skills: Say “No”, leave, report
AUTHORITY LURE
Another way an adult might try to get you to leave with him or her is by saying an authority figure, like a parent or teacher, said it was okay for you to come away with him or her. Or the adult may pretend to be someone important, like a policeman or fireman, and tell you to come with him or her. If an adult does any of these things, you should not go with him or her. You should IMMEDIATELY say “No”, walk or run away and tell an adult right away. Watch me demonstrate.

Scene: At a store
Lure: “Your mom said it was okay for me to take you to get some ice cream. Let’s go”.
Target Skills: Say “No”, leave, report

Now you practice. In the practices, pay attention to see if I try to get you to come away with me by saying an authority figure, like a parent or teacher, said it is okay. Or, I may try to pretend to be someone important like a police officer or firefighter and tell you to come with me. If I do these things, you should do the safety skills: say no right away, leave the area and tell a trusted adult. In some of our practices I will just be nice to you but not say anything to get you to come away with me. In these cases, you do not have to do the safety skills.

Mastery Criteria: 5 consecutive trials with child demonstrating correct behavioral sequence (BST group) or child answering all Discrimination probes correctly (CBI group)

(BST group: Involve child in setting the scene based upon activities s/he typically does)

Trial 1: Abduction Scenario
Scene: Inside school
Lure: “Your teacher said it’s okay for you to come play outside with me. Let’s go.”
Target Skills: Say “No”, leave, report

Trial 2: Non-example
Scene: Inside school
Lure: “Where’s room 125?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)

Trial 3: Abduction Scenario
Scene: In front of child’s house
Lure: “I am a policeman. You need to come with me”
Target Skills: Say “No”, leave, report
Trial 4: Abduction Scenario
Scene: Inside school
Lure: “I am your Uncle Bill. Your mommy told me to pick you up today.”
Target Skills: Say “No”, leave, report

Trial 5: Abduction Scenario
Scene: In front of child’s house
Lure: “Your dad said it’s okay for you to come over to my house to play. Do you want to come over?”
Target Skills: Say “No”, leave, report

Trial 6: Abduction Scenario
Scene: At a store
Lure: “Your mommy asked me to take you to the toy store to get you a special gift.”
Target Skills: Say “No”, leave, report

Trial 7: Non-example
Scene: At a library
Lure: “Excuse me. I would like to check out these books. Do you know where I can check them out?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)

Trial 8: Abduction Scenario
Scene: In the neighborhood. Child waiting for a ride. Confederate drives up in a car
Lure: “I am your Uncle Joe. Your daddy asked me to pick you up and take you home.”
Target Skills: Say “No”, leave, report

Trial 9: Abduction Scenario
Scene: In the neighborhood
Lure: “I am a fireman. You need to come with me.”
Target Skills: Say “No”, leave, report

Trial 10: Non-example
Scene: In the neighborhood
Lure: “Hey. Can you tell me the way to the post office?”
Target Skills: Any prosocial behavior (e.g., give verbal directions)
Trial 11: Abduction Scenario
Scene: Inside school
Lure: “Your teacher said it would be okay for you to come help me get books out of my car to bring to the classroom.”
Target Skills: Say “No”, leave, report

Trial 12: Abduction Scenario
Scene: In front of a store
Lure: “The fireman is looking for you. There’s been a fire at your house. You need to come with me.”
Target Skills: Say “No”, leave, report

Trial 13: Abduction Scenario
Scene: Inside school
Lure: “Your teacher said that you are to come home with me.”
Target Skills: Say “No”, leave, report

Trial 14: Abduction Scenario
Scene: At a park. Child playing on playground equipment
Lure: “Your mom is looking for you. Come with me and I’ll take you to her.”
Target Skills: Say “No”, leave, report

Trial 15: Non-example
Scene: Inside school. Child is running down the hallway.
Lure: “Hey, hey! There is no running in the hallways. You need to come back here and walk.”
Target Skills: Any prosocial behavior (e.g., obey the teacher)

Trial 16: Abduction Scenario
Scene: At a store
Lure: “I am a security guard. You need to come with me.”
Target Skills: Say “No”, leave, report

Trial 17: Abduction Scenario
Scene: At a library
Lure: “Your dad asked me to take you to the store to get a special gift for your mom.”
Target Skills: Say “No”, leave, report
Trial 18: Abduction Scenario
Scene: In front of school. Confederate drives up in a car
Lure: "Your mom cannot pick you up from school today, so I am going to take you home. Get in my car."
Target Skills: Say "No", leave, report

Trial 19: Non-example
Scene: Inside school
Lure: "Have you seen my son Anthony? I am waiting for him."
Target Skills: Any prosocial behavior (e.g., obey the teacher)

Trial 20: Abduction Scenario
Scene: Inside school
Lure: "Your teacher said it is okay for you to come with me."
Target Skills: Say "No", leave, report

Part 3. Final Practice: Combination of Lures

You’ve learned three ways an adult might try to get you to leave with him or her. An adult might try to get you to leave with him or her by asking for help. Or an adult might promise you a present or special treat or promise to take you somewhere to do something fun. An adult might also try to get you to leave with him or her by saying that an authority figure, like a parent or teacher, said it was okay for you to go. Or the adult might pretend to be someone important, like a policeman, fireman, or security guard, and tell you to come with him or her.

You’ve also learned the safe things to do if an adult tries any of these things. Those safety skills are to IMMEDIATELY (1) say “No”, (2) walk or run away, and (3) tell an adult right away about what just happened.

Now we’re going to practice them all together. In some practices, I will try to get you to leave with me by doing any of those things we talked about: saying an authority figure said it’s okay, pretending to be an authority figure, making a promise of a special present or gift, promising to do something fun, or by asking for help. If I do any of these things, you should practice the safety skills by saying “No”, walking or running away and telling a trusted adult right away what just happened. In some of the practices, I will just be nice to you but not try to get you to leave with me. If this happens, you do not have to do the safety skills.

Mastery Criteria: 5 consecutive trials with child demonstrating correct behavioral sequence (BST group) or child answering all Discrimination probes correctly (CBI group)
(BST group: Involve child in setting the scene based upon activities s/he typically does)
Trial 1: Non-example
Scene: At a store
Lure: “I can’t find my daughter. Have you seen a little blonde girl around here?”
Target Skills: Any prosocial behavior

Trial 2: Abduction Scenario (Incentive)
Scene: At a store
Lure: “Do you want to come to the pet store with me? I will buy you a kitty.”
Target Skills: Say “No”, leave, report

Trial 3: Abduction Scenario (Incentive)
Scene: At a store
Lure: “Come with me and I will get you a toy from the toy aisle.”
Target Skills: Say “No”, leave, report

Trial 4: Abduction Scenario (Assistance)
Scene: At a store
Lure: “Can you help me look for my purse? I lost it somewhere.”
Target Skills: Say “No”, leave, report

Trial 5: Abduction Scenario (Authority)
Scene: At a store
Lure: “You’re daddy said it is okay for you to come with me.”
Target Skills: Say “No”, leave, report

Trial 6: Non-example
Scene: At the store, in the bread aisle
Lure: “I can’t find the Wonderbread anywhere. Do you see it?”
Target Skills: Any prosocial behavior (e.g., helping look for the bread)

Trial 7: Abduction Scenario (Authority)
Scene: In front of child’s house
Lure: “Your mommy said it is okay for you to come over to my house to play”.
Target Skills: Say “No”, leave, report

Trial 8: Abduction Scenario (Authority)
Scene: In front of child’s house
Lure: “Your daddy said it is okay for you to come over to my house to go swimming.”
Target Skills: Say “No”, leave, report
Trial 9: Abduction Scenario (Incentive)
Scene: At the library
Lure: “Do you like to color? Let’s go buy some new art supplies at the store.”
Target Skills: Say “No”, leave, report

Trial 10: Abduction Scenario (Assistance)
Scene: At a store
Lure: “I can’t remember where I parked my car. Can you come help me find my car?”
Target Skills: Say “No”, leave, report

Trial 11: Non-example
Scene: At a library
Lure: “You’re good at that game”
Target Skills: Any prosocial behavior

Trial 12: Abduction Scenario (Assistance)
Scene: In the neighborhood. Confederate drives up in a car
Lure: “I am lost. Can you come with me to take me to the bank?”
Target Skills: Say “No”, leave, report

Trial 13: Abduction Scenario (Incentive)
Scene: In front of child’s house
Lure: “Come to my house and we can watch a movie”
Target Skills: Say “No”, leave, report

Trial 14: Abduction Scenario (Authority)
Scene: At the park/athletic field
Lure: “I’m your daddy’s boss. He has to work late tonight and he asked me to pick you up.”
Target Skills: Say “No”, leave, report

Trial 15: Abduction Scenario (Incentive)
Scene: At the playground
Lure: “Come with me and I’ll get you some ice cream”
Target Skills: Say “No”, leave, report

Trial 16: Abduction Scenario
Scene: Inside school
Lure: “Which way is the principal’s office?”
Target Skills: Any prosocial behavior (e.g., giving verbal directions)
Trial 17: Abduction Scenario (Incentive)
Scene: At a store
Lure: “I am putting together a choir and I need someone else to join the group. You would be perfect. We’re rehearsing right now. You should come with me.”
Target Skills: Say “No”, leave, report

Trial 18: Non-example
Scene: At school or home. Child is working on schoolwork
Lure: “Are you doing your homework already? What a good student!”
Target Skills: Any prosocial behavior

Trial 19: Abduction Scenario (Incentive)
Scene: In front of child’s house
Lure: “Come to the bookstore with me and I will buy you a new book.”
Target Skills: Say “No”, leave, report

Trial 20: Abduction Scenario (Assistance)
Scene: In front of child’s house
Lure: “Can you help carry this to my house for my garden?”
Target Skills: Say “No”, leave, report

Conclusion
You are all done. You have learned all the safety skills. Awesome work. Remember, you are smart and strong, and there are three things you can do to stay safe: IMMEDIATELY 1) say no when someone asks or tells you to come with him or her; 2) walk or run away; 3) tell a trusted adult what happened. Your trusted adult is always there to help you.
Appendix C. Schematic of Computer-Based Instruction Program

Training components of instructions, Instructions Comprehension Quiz and video modeling are presented as (i), (ii), and (iii), respectively. During discrimination and feedback process, the learner viewed a video vignette (iv) and answered four questions based on the video (v). The video replayed contingent upon the learner’s errors (vi). If the original vignette depicted the child actor engaging in unsafe behavior, a second vignette played after the learner correctly answered the four discrimination questions. This second vignette showed the child actor engaging in the target behavioral skills within the same scenario presented in the original vignette (vii).

i.

After the video is done, press the Next button.

ii.

If your parent tells you that your soccer coach will bring you home after practice, should you go with your coach?

| Yes | No |

Right. Good. Your parent told you ahead of time so you can go with your coach.
iii.

After the video is done, press the red button.

iv.

v.

Did the child refuse right away to go with the adult?

Yes  No
Did the child refuse right away to go with the adult?

Yes  No

No. That's not right. Watch again.

Watch this video again. This time, the child will do all the safe things.
Appendix D. Sample Training Session Data Sheet

<table>
<thead>
<tr>
<th>Date</th>
<th>Data Collector</th>
<th>Primary / Reli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant #</td>
<td>Group: Comp / BST</td>
<td></td>
</tr>
<tr>
<td>Session start time</td>
<td>Session end time</td>
<td>Child Fear Report</td>
</tr>
</tbody>
</table>

Random Order of Rehearsal / Feedback (BST only)

<table>
<thead>
<tr>
<th>Trial</th>
<th>Behavior Coding</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Agree No Leave Tell</td>
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</tr>
<tr>
<td>14</td>
<td>Agree No Leave Tell</td>
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<td>15</td>
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<tr>
<td>16</td>
<td>Agree No Leave Tell</td>
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<tr>
<td>17</td>
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</tr>
<tr>
<td>18</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Agree No Leave Tell</td>
<td></td>
</tr>
</tbody>
</table>

**Mastery Criteria:** 5 consecutive trials with behavior scores of 4

**Behavior Score:**

0=agree to leave with confederate / (nonexample - engages in safety behavior)

1=does not leave with confederate

2=says "no"

3=says "no" and leaves the area

4=says "no", leaves the area and tells adult / (nonexample - engages in appropriate prosocial behavior)

**Affect:**

+ (positive) smile, laugh, giggle

- (negative) furrow brow, frown, lip tremble, cry

0 (neutral) flat, no smile/frown

**Safety behaviors:** Say "No" w/in 5s of lure (no hesitation), leave area w/in 10s of lure (no hesitation), tell adult w/in 30s of contact with adult
Appendix E. Sample In Situ Assessment Data Sheet

In-Situ Assessments Data Sheets: PRIMARY / RELI

Participant #_________    Group: Comp / BST

<table>
<thead>
<tr>
<th>Date</th>
<th>Trial</th>
<th>Lure Type</th>
<th>Behavior</th>
<th>Behavior Score</th>
<th>Time Start</th>
<th>Time End</th>
<th>Predominate Affect</th>
<th>Negative Affect</th>
<th>Initials</th>
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</thead>
<tbody>
<tr>
<td>Pre-Train 1</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
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<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
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<tr>
<td>Pre-Train 2</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pre-Train 3</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Post-Train 1</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Post-Train 2</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Post-Train 3</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>2-wk FU</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
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<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>1-mn. FU</td>
<td>AU AS IC</td>
<td>Agree</td>
<td>No Leave Tell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Behavior Score:**
0 = agrees to leave
1 = does not leave with confederate
2 = says “no”
3 = says “no” and leaves the area
4 = says “no”, leaves the area and tells an adult

**Affect:**
Positive (smile, laugh, giggle)
Neutral (flat, no smile/frown)
Negative (furrowed brow, frown, lip tremble, cry, scream)

**Safety behaviors:** Say “No” w/in 5s of lure (no hesitation), leave area w/in 10s of lure (no hesitation), tell adult w/in 30s of contact with adult
Appendix F. Schematic of Assessment and Training Procedures for Behavior Skills Training Control Group

(3) Baseline
In Situ Assessments
(1 for each lure type)
Laboratory setting

Instructions

Instructions Comprehension Quiz

Mastery 10 questions

Model 1 of 3 lure types*

Feedback

Rehearsal**
Mastery 5 consecutive trials

Rehearsal**
Feedback
All lure types

Rehearsal**
Mastery 5 consecutive trials

In Situ Training
(as needed)

(3) Post-Training
In Situ Assessments
(1 for each lure type)
Laboratory setting

(1) 2-Week Follow-Up In Situ Assessment
(1 of 3 lure types*)
Community setting

(1) 1-Month Follow-Up In Situ Assessment
(1 of 3 lure types*)
Community setting

* Lure type (i.e., Assistance, Authority, Incentive) randomly determined/ordered

** Rehearsal trials include examples of potential abduction situations and non-examples/benign interactions with adults but no lure is presented
Appendix G. Schematic of Assessment and Training Procedures for Computer-Based Instruction Experimental Group

(3) Baseline In Situ Assessments
(1 for each lure type)
Laboratory setting

Baseline Computer Simulation Assessment
(1 for each lure type)

Instruct -ions

Instructions Comprehen sion Quiz

Mastery 10 questions

Video Model 1 of 3 lure

Discrimination** Feedback

Mastery 5 consecutive trials

Discrimination** Feedback
All lure types

Mastery 5 consecutive trials

Post-Training Computer Simulation Assessment
(1 for each lure type)

(3) Post-Training In Situ Assessments
(1 for each lure type)
Laboratory setting

(1) 2-Week Follow-Up In Situ Assessment
(1 of 3 lure types*) Community setting

(1) 1-Month Follow-Up In Situ Assessment
(1 of 3 lure types*) Community setting

*Lure type (i.e., Assistance, Authority, Incentive) randomly determined / ordered

**Discrimination trials include examples of potential abduction situations and non-examples/benign interactions with adults but no lure is presented
Appendix H. Estimated Program Development Costs of Training Delivery Models

<table>
<thead>
<tr>
<th>Role</th>
<th>Number</th>
<th>Total hours</th>
<th>Wage (in dollars)</th>
<th>Subtotal (in dollars)</th>
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<tr>
<td>Computer-Based Instruction</td>
<td></td>
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<tr>
<td>Actors – child</td>
<td>6</td>
<td>120</td>
<td>29</td>
<td>3480</td>
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<tr>
<td></td>
<td></td>
<td>(20 hours / child)</td>
<td></td>
<td></td>
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<tr>
<td>Actors – adult</td>
<td>16</td>
<td>140</td>
<td>29</td>
<td>4030</td>
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<tr>
<td></td>
<td></td>
<td>(5 hours / adult)</td>
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<tr>
<td>Producer / Director Camera</td>
<td>1</td>
<td>20</td>
<td>32(^a)</td>
<td>640</td>
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<tr>
<td>operator</td>
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<td>40</td>
<td>$24 (^a)</td>
<td>960</td>
</tr>
<tr>
<td>Computer applications software</td>
<td>1</td>
<td>40</td>
<td>$41 (^a)</td>
<td>2460</td>
</tr>
<tr>
<td>engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expense</td>
<td></td>
<td></td>
<td></td>
<td>$11,950</td>
</tr>
<tr>
<td>Safety trainers</td>
<td>12</td>
<td>24</td>
<td>$16 (^{ab})</td>
<td>384</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2 hours each)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Expense</td>
<td></td>
<td></td>
<td></td>
<td>$384</td>
</tr>
</tbody>
</table>

\(^a\) Hourly wage calculated based upon mean yearly salary. \(^b\) Wages for safety trainers are based upon wages for bachelor level elementary school teachers.
Appendix I. Estimated Program Implementation Costs of Training Delivery Models

<table>
<thead>
<tr>
<th>Equipment / Role</th>
<th>Number</th>
<th>Total hours</th>
<th>Cost / Wage (in dollars)</th>
<th>Subtotal (in dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer-Based Instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laptop computers</td>
<td>5</td>
<td>300</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td><strong>Total Expense</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$1500</strong></td>
</tr>
<tr>
<td>Behavioral Skills Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trainers</td>
<td>1</td>
<td>20</td>
<td>16&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>320</td>
</tr>
<tr>
<td>(1 hour / child)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Expense</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$320</strong></td>
</tr>
</tbody>
</table>


<sup>a</sup> Hourly wage calculated based upon mean yearly salary. <sup>b</sup> Wages for safety trainers are based upon wages for bachelor level elementary school teachers.
Date: July 13, 2009

To: Wayne Fuqua, Principal Investigator
    Kimberly Seekinger-Bancroft, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 09-06-07

This letter will serve as confirmation that your research project titled "Examining the Effectiveness and Efficiency of Two Delivery Models to Teach Children Abduction Prevention Skills" has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: June 17, 2010
Date: July 14, 2009

To: Wayne Fuqua, Principal Investigator
Kimberly Seckinger-Baneroff, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 09-06-07

This letter will serve as confirmation that the changes to your research project entitled "Examining the Effectiveness and Efficiency of Two Delivery Models to Teach Children Abduction Prevention Skills" requested in your memo received July 14, 2009 (collaborating investigator added; four student investigators added) have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: June 17, 2010
Date: August 4, 2009

To: Wayne Fuqua, Principal Investigator
   Kimberly Seckinger-Bancroft, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 09-06-07

This letter will serve as confirmation that the changes to your research project entitled "Examining the Effectiveness and Efficiency of Two Delivery Models to Teach Children Abduction Prevention Skills" requested in your memo received August 4, 2009 (add student investigators Nicole Dinneweth, Matthew Dutcher, Amanda Dixon, Lindsey Williams, and Jeana Koerber) have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: June 17, 2010
Date: April 28, 2010

To: Wayne Fuqua, Principal Investigator
Kimberly Seckinger-Bancroft, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number: 09-06-07

This letter will serve as confirmation that the changes to your research project entitled “Examining the Effectiveness and Efficiency of Two Delivery Models to Teach Children Abduction Prevention Skills” requested in your memo dated April 27, 2010 (add additional training sessions in May 2010; weekday training sessions conducted 5pm-8pm; Saturday sessions conducted 10am-2pm; corresponding changes to recruitment flyer and telephone script) have been approved by the Human Subjects Institutional Review Board.

The conditions and the duration of this approval are specified in the Policies of Western Michigan University.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: June 17, 2010