Randomized Controlled Trial to Evaluate an Abuse Prevention Curriculum for Women and Men With Intellectual and Developmental Disabilities

Linda Hickson, Ishita Khemka, Harriet Golden, and Aikaterini Chatzistyli

Abstract
This study was designed (a) to assess the impact of the ESCAPE-DD curriculum on the decision-making skills of adults with intellectual and developmental disabilities (IDD) in hypothetical situations of abuse, (b) to examine the role of problem awareness, and (c) to identify factors associated with posttest decision-making performance. Fifty-eight women and men with IDD were randomly assigned to an intervention group or a wait-list control group. Participants who experienced ESCAPE-DD made significantly greater gains on measures of overall effective decision making and safe-now effective decision-making relative to participants in the control group. Problem awareness was related to decision making, but it did not improve as a result of the intervention. Implications of the findings for future curriculum-development efforts are discussed.

Key Words: abuse prevention; curriculum intervention; decision making; intellectual and developmental disabilities

There is evidence of an increased awareness of the extreme vulnerability to abuse experienced by individuals with intellectual and developmental disabilities (IDD). In a review of studies published between 1995 and 2005 on the prevalence of maltreatment, Horner-Johnson and Drum (2006) concluded that maltreatment, including all forms of abuse, was more prevalent for people with IDD than for people without disabilities. In a study by Fisher, Moskowitz, and Hodapp (2012), caregivers provided descriptions of the wide-ranging types of victimization experienced by adolescents and adults with IDD. Examples included ridicule and teasing; theft and financial exploitation; and physical, sexual, and psychological abuse. In another study, interviews with nine women with mild IDD revealed repeated incidents of severe sexual abuse along with participants’ limited strategies for reporting and preventing abuse and an apparent lack of intervention and support (Eastgate, van Driel, Lennox, & Scheermeyer, 2011). In a subsequent study, interviews and focus groups with parents and paid support workers confirmed this pattern and highlighted the difficulties experienced by people with IDD in employing effective refusal and self-protection strategies (Eastgate, Scheermeyer, van Driel, & Lennox, 2012).

The handling of situations that involve abuse or victimization typically requires decision making. However, people with IDD often lack the skills to make effective, self-protective decisions. A study by Hickson, Golden, Khemka, Urv, and Yamusah (1998) compared the decision-making responses of adults with and without IDD who were presented with a series of hypothetical situations in which a protagonist was faced with the possibility of interpersonal conflict or abuse. The adults with IDD recommended that the protagonist make effective/self-protective decisions only 50% of the time, whereas adults without IDD recommended effective/self-protective decisions 91% of the time. A recent review of available research on decision making in individ-
of the startling statistic that between 97% and 99% of the perpetrators of abuse are known and likely to be trusted by the person with IDD (e.g., Baladerian, 1991; Stevens, 2012). In the first of these two studies, Khemka (2000) compared the effectiveness of two approaches for teaching decision making in situations of sexual, physical, and verbal abuse. She found that an approach that addressed both cognitive and motivational aspects of decision making was superior to an approach that addressed only cognitive aspects of decision making. Both approaches led to superior performance, relative to a control condition, on measures of decision making and locus of control for women with IDD who had been randomly assigned to conditions.

In a subsequent study, Khemka, Hickson, and Reynolds (2005) reported on the effectiveness of ESCAPE (An Effective Strategy-Based Curriculum for Abuse Prevention and Empowerment) (Khemka & Hickson, 2002), a curriculum based on Khemka’s (2000) cognitive/motivational intervention that also addressed emotional aspects of decision making. Results of that study indicated that women with IDD who received the ESCAPE curriculum performed better than women in a randomly assigned wait-list control group on measures tapping knowledge of abuse concepts, empowerment, and decision making. However, in spite of the significant superiority of the intervention group, it was noted that there was variability in the extent to which the women had benefited from their exposure to the ESCAPE curriculum.

The present study was designed to broaden the scope of this line of research by evaluating the effectiveness of ESCAPE-DD (Khemka & Hickson, 2008), a version of the original ESCAPE curriculum that had been modified so that it would be appropriate for men as well as women. The inclusion of men with IDD in this study addresses the often-noted exclusion of males with IDD from research on abuse prevention, in spite of accumulating evidence of their vulnerability (e.g., Doughty & Kane, 2010).

The ESCAPE-DD curriculum is based on a theoretical model that emphasizes the interplay of the cognitive, motivational, and emotional processes involved in decision making. According to the model (Hickson & Khemka, 1999; 2001; 2013; Khemka & Hickson, 2006), the cognitive components of decision making include the ability to distinguish between healthy and abusive situations and to apply a stepwise decision-making

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strategy. The motivational components of decision making include the prioritization of self-protective goals and the establishment of empowered personal agency beliefs. The emotional components of decision making include recognizing feelings associated with healthy and abusive situations and regulating emotions to enable effective decision making. Unit 1 of the ESCAPE-DD curriculum emphasizes the cognitive components of developing a broad-based understanding of abuse concepts, including (a) distinguishing between healthy and abusive relationships, (b) the motivational components of establishing empowering self-beliefs and prioritizing personal safety and independence goals, and (c) the emotional components involving feelings that may be associated with abuse and their regulation. Unit 2 of the curriculum is designed to foster the acquisition and application of a four-step, reasoning-based, effective decision-making strategy. The strategy steps include (1) identifying a situation as abusive, (2) generating alternatives, (3) considering possible consequences of each alternative, and (4) choosing a course of action. Because this reasoning-based, decision-making strategy demands fairly complex hypothetical thinking, the curriculum employs a sequence of modeling, guided practice with interactive activities and visuals, and fading along with repeated opportunities to apply the strategy with a broad range of sexual, physical, and verbal scenarios depicting abuse by known individuals.

The purpose of the present study was therefore to (a) assess the overall impact of the ESCAPE-DD curriculum for increasing the effective decision-making skills of women and men with IDD in hypothetical situations of abuse, (b) monitor the role of problem awareness in decision making performance, and (c) identify factors that may be related to the extent to which women and men with IDD are able to benefit from participation in the ESCAPE-DD curriculum intervention.

Method

Participants

A sample of 71 women and men with mild and moderate IDD was recruited from seven adult day program sites operated by AHRC New York City, an agency that provides supports and services for individuals with intellectual and developmental disabilities. A screening form was distributed to client coordinators at the seven sites to identify individuals who met the following eligibility criteria for the study: (1) identified in agency records as having mild or moderate IDD; (2) chronological age over 18 and under 70 years; (3) no prior training with the current or previous versions of the ESCAPE-DD curriculum; and (4) no visual, hearing, or communication difficulties severe enough to interfere with participation in the study. Informed consent procedures were then conducted by the project team in accordance with the protocol approved by the Institutional Review Board (IRB) at Teachers College, Columbia University, to request consent from legal guardians and participants. Informed consent letters were sent to the parent/guardian of eligible participants. A member of the research team then met with small groups of potential participants whose parent/guardian had provided consent. The researcher read the Participant Consent Form aloud and responded to questions. An agency staff member was present as a witness and potential participants were assured that they did not have to take part in the project and that if they did choose to take part, they could quit at any time. Signatures, indicating a willingness to participate in the project, were obtained from 71 individuals.

Although all potential participants signed the consent forms, 11 of those individuals, who had initially provided informed consent, dropped out of the study, or were excluded, for various reasons prior to random assignment. It was discovered that three individuals did not meet inclusion criteria (two because they had received prior training with a previous version of the ESCAPE-DD curriculum and one because of unintelligible speech). Four individuals were not available to complete the pretest assessments because of frequent absences from their program \( (n = 2) \), injury \( (n = 1) \), or relocation \( (n = 1) \). The remaining four individuals decided, after having provided written consent, that they did not wish to participate in the study. The initial sample, therefore, consisted of 60 participants, 30 women and 30 men, who were assigned to either an intervention group \( (n = 30) \) or a control group \( (n = 30) \). Two additional subjects were lost from the control group due to unavailability for the posttest assessment because of a full-time work commitment \( (n = 1) \) and prolonged illness \( (n = 1) \). See Figure 1 for a flow diagram of progress through these phases.

The final sample consisted of 58 individuals, 30 in the intervention group and 28 in the control group. The mean chronological age of the final
sample was 38.81 years (SD = 13.85) and the mean IQ of the sample was 56.78 (SD = 9.01) based on either Wechsler Adult Intelligence Scale, Fourth Edition (Wechsler, 2008) or The Stanford-Binet Intelligence Scales, Fifth Edition (Roid, 2003) test scores in agency records. Most of the participants lived at home with their families (n = 38). The remaining participants lived in individualized residential alternative (IRA) settings (n = 10), supported apartments (n = 2), or alone (n = 6). Place of residence information was unavailable for two participants. The sample was diverse (African American, 36%; Caucasian, 31%; Hispanic, 28%; Asian, 5%).

Based on t tests for independent samples, it was determined that the intervention group did not differ significantly from the control group on age or IQ. Means and standard deviations for age and IQ are reported in Table 1. The representation of racial/ethnic groups appeared similar for the intervention group (African American, 30%; Caucasian, 33%; Hispanic, 30%; Asian, 7%) and the control group (African American, 43%; Caucasian, 29%; Hispanic, 25%; Asian, 3%) and chi-square analyses failed to indicate significant differences between the two groups.

**Research Design**

A randomization procedure with stratification and blocking was used to assign equal numbers of participants to an intervention and control group. Because participants represented a wide range of age, ability, and experiences within and across sites, an effort was made to balance the two groups on a pretest measure of decision-making effectiveness. As soon as pretesting had been completed at a given site, participants at that site were ranked on their performance on the pretest decision-making measure and then randomly assigned by the first two study authors, using a table of random numbers, from ranked pairs to either an intervention group, that received ESCAPE-DD, or to a wait-list control group that was given access to ESCAPE-DD after the completion of posttesting. The graduate students who were responsible for administering the intervention at each site were then given a list of the participants to be included in the intervention group at their site, but they

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**Figure 1.** Flow diagram of progress through the phases of two-group randomized trial.
were not made aware of the process by which participants had been assigned to receive the intervention. The dependent variables of primary interest included measures of decision making and problem awareness.

**Pretest/Posttest Instruments**

Participants received the *Decision-Making Scale (DMS)* as both a pretest and posttest measure in individual 30 to 40 min sessions. The *DMS* was developed for the present study to provide a measure of decision making in hypothetical situations of abuse. It consisted of six brief vignettes in which a protagonist was faced with a situation involving sexual, physical, or verbal abuse in a home or workplace setting, tapping the three types of abuse covered in the *ESCAPE-DD* curriculum, but with novel scenarios. Of the six vignettes, two represented each type of abuse, sexual, physical, and verbal. Three of the vignettes featured a female protagonist as the decision maker and three featured a male protagonist as the decision maker. Although validity of this instrument was not established in a formal way, the authenticity and relevance of the vignette situations for the participants was based on the fact that the situations were drawn from agency records of documented abuse incidents. See Table 2 for examples of vignettes.

Each vignette was read aloud twice by the interviewer. Then, the participant was asked two questions. The first question, *What is happening in this story?*, was intended to assess problem awareness—the participant’s ability to articulate the problem in the vignette situation. The second question, *What should (name of the protagonist) do?*, was intended to assess decision-making effectiveness. (In an exploratory manipulation to see if providing self-protective goals would affect decision-making performance, half of the subjects received an alternate form of the decision-making question on the pretest: *If (name of protagonist) wants to be independent and safe, what should she/he do?* Preliminary analyses on pretest measures failed to reveal any significant differences associated with the two forms of the question, and data for the two forms of the question were combined for all subsequent analyses. Accordingly, all participants received the same version of the decision-making question on the posttest: *What should (name of protagonist) do?*

Responses to the problem-awareness question were coded as indicating problem awareness if they reflected either a general awareness that something was not right or an awareness of abuse. All other responses were considered errors. Intercoder per-

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Means and Standard Deviations (in Parentheses) for Participant Characteristics</th>
</tr>
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<tbody>
<tr>
<td>Characteristic</td>
<td>Intervention Group (n = 30)</td>
</tr>
<tr>
<td>Gender (Female/Male)</td>
<td>14/16</td>
</tr>
<tr>
<td>Age in Years</td>
<td>39.42 (14.36)</td>
</tr>
<tr>
<td>IQ</td>
<td>56.83 (8.62)</td>
</tr>
</tbody>
</table>

Alex has a job at the shoe store. Recently, Jason, a new guy, was hired to also work in the store. One day at work, Alex was buying a Coke™ from the vending machine during his lunch break. Suddenly, Jason, the new guy in the store, comes up behind Alex. Jason then grabs Alex from behind and touches his private parts (sexual abuse).

Rosie lives with her parents. Rosie has just gotten a job in the neighborhood store. One day, when Rosie was leaving to go to work, her father gives her the finger. Rosie’s father laughs loudly at Rosie and tells her, “You are too stupid to hold a job, you loser. You will be fired by the end of the week” (verbal/psychological abuse).

Betty and Peter have been married for a year. Betty works at the grocery store and does not get home until late at night. Peter, her husband, stays at home and is supposed to cook the meals. One night, Betty comes home tired after work and finds her husband Peter watching TV. When Betty asks Peter what is for dinner, he does not answer Betty. When Betty asks again, Peter gets very upset and picks up a dish. He throws the dish at Betty and it hits her on the side of her head (physical abuse).
cent agreement was 90.4%. A Cronbach alpha of .76 was obtained as measure of the internal consistency of pretest problem awareness scores for the six vignettes.

Responses to the decision-making question were coded as indicative of overall effective decision making if they reflected either an attempt to seek safety now and/or later through independent action or by seeking help. In addition, a subset of overall effective decision-making responses were tallied as safe-now effective decision-making responses if they specifically indicated an action aimed at seeking immediate safety. Criteria for the coding categories are summarized in Table 3. Intercoder percent agreement was 90.4% for the decision-making response categories. A Cronbach alpha of .79 was obtained as measure of the internal consistency of pretest overall effective decision-making scores for the six vignettes.

The ESCAPE-DD Curriculum Intervention

Participants assigned to the intervention group participated in 12 small-group instructional sessions with ESCAPE-DD. ESCAPE-DD (Khemka & Hickson, 2008), based on the ESCAPE curriculum which was originally developed for women (Khemka et al., 2005), was modified so that it would be applicable with men as well as women. In addition, the curriculum was updated to increase the ecological validity of the abuse vignettes by basing the examples of sexual, physical, and verbal (psychological) abuse on actual incidents drawn from agency records. The curriculum lessons were designed to address the interplay among the (a) cognitive (e.g., distinctions between abusive and healthy relationships and acquisition of a stepwise strategy), (b) motivational (e.g., goal processes and personal agency beliefs), and (c) emotional (e.g., awareness of feelings and emotion regulation) processes involved in effective decision making.

Unit 1 of ESCAPE-DD, which is comprised of the first five lessons, was designed to teach key concepts of abuse as a basis for identifying sexual, physical, and verbal abuse situations that might require reasoned, deliberative decision making to avoid or escape from the abusive situation. In the final lesson of Unit 1, the importance of always considering the following three self-protective goals when making decisions in abuse situations is established: (1) be independent, (2) be safe now, and (3) be safe later.

The focus of Unit 2 (the remaining seven lessons) is to model and provide guided practice in the application of a four-step decision-making strategy to hypothetical situations involving abuse: (1) identify the problem, (2) generate alternatives, (3) evaluate possible consequences of each alternative in terms of the three established goals, and (4) select the best course of action for the situation. Instructional approaches employed to facilitate decision-making strategy acquisition and generalization featured a small-group, self-instructional approach using a decision-making flow chart along with modeling, prompting, and fading of prompts to foster independent application of the strategy. A sample of the decision-making flow-chart that was posted and used to prompt the application of the four-step decision-making strategy to specific vignette situations is shown in Figure 2. In step 1, group members were presented with a vignette describing either a healthy or abusive scenario (see sample abuse vignettes in Table 2) and they were asked to indicate whether the situation represented a problem requiring application of the four-step strategy. If yes, they
went on to step 2 and placed stickers representing possible options (e.g., speak up and tell someone) in the blank circles. The actual chart was presented on poster paper and it provided space for eight options. In step 3, group members used a marker to indicate whether each option would meet each of the three self-protective goals. Finally, in step 4, group members eliminated any options that did not meet all three of their key goals and then chose the one of the remaining options that appeared to best fit the situation.

Unit 2 mastery assessments were conducted for the intervention group during Lesson 12, the final lesson of the curriculum. Participants were presented with a new abuse vignette situation and with their own individual copy of the decision-making flow chart. Each participant was instructed to use the four steps on her or his own while the instructor observed and recorded whether the participant was able to apply each step independently or whether she or he required minimal prompts, extensive prompts, or was unable to apply a particular step to the vignette situation. The trainer assisted the participant to record her or his responses if needed. If a participant failed to meet the overall mastery criterion by correctly applying all four steps of the strategy (independently or with minimal prompts), the participant received an individual remedial session and was reassessed with a new vignette. Eighteen (60%) of the participants reached criterion without remediation. Of the 12 participants (40%) who required a remedial session, three of them reached criterion after remediation. Therefore, a total of 21 (70%) participants in the intervention group reached the overall mastery criterion for Unit 2 either with or without remediation. Participants who did not meet the mastery criterion independently or with minimal prompts were assisted to complete the task with extensive prompts as needed.

**Procedures**

After informed consent was given, the DMS pretest was administered to each participant in a 30- to 40-min individual interview session. Upon completion of pretesting at each of the seven

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**Figure 2.** Sample of decision-making flow chart for four-step strategy in ESCAPE-DD Curriculum.
facilities, randomization procedures were implemented to assign participants to either the intervention group or a wait-list control group.

**Intervention Group.** Participants assigned to the intervention group were then assigned to one of 10 training subgroups, based on scheduling availability, that consisted of two to four participants, who met with a trainer in a quiet room at their day program site for the twelve 45- to 60-min intervention sessions. All testing and training was conducted by six female, special education graduate students who had attended an all-day training session on the administration of the ESCAPE-DD curriculum. Intervention sessions were scheduled on a weekly or bi-weekly basis whenever possible, but intervals between intervention sessions varied widely. In a few cases, two training sessions took place in a single day, separated by other activities. In other cases, some sessions were separated by 2 or more weeks due to interruptions related to holiday schedules or vacations. As a result, weeks to completion of the intervention ranged from 3 to 16 and the mean was 7.67 (SD = 4.03).

If a participant in the intervention group was absent from one of their 12 scheduled small-group training sessions, he or she was provided with an individual make-up session prior to their next training session. The number of absences from small-group training sessions ranged from 0 to 7 and the mean was 2.20 (SD = 2.43). Although the make-up sessions ensured that all participants received instruction in all components of the curriculum, the individual make-up sessions did not allow for the lively small-group interaction that was considered an important part of the ESCAPE-DD instructional approach.

Fidelity of implementation observations were performed for eight of the 10 training subgroups once during ESCAPE-DD Unit 1 and for seven of the training subgroups once during Unit 2. As intended, five of the training subgroups were observed twice, once during Unit 1 and once during Unit 2. Because of scheduling difficulties, three subgroups were observed only once during Unit 1, and the two remaining subgroups were observed only once during Unit 2. Fidelity of implementation observations were conducted by a graduate-student trainer from one of the other subgroups. Scheduling difficulties for fidelity observations arose from the fact that all trainers were full-time graduate students who were not always able to coordinate their schedules with the dates and times when another training subgroup could have been observed. Fidelity of implementation observers were given a list of training components and asked to check always, most of the time, or inconsistently for each training component. The observers checked either always or most of the time for all components, verifying that the intervention procedures were being implemented with a fairly high degree of fidelity. The observers checked always 87% of the time for Unit 1 and 93% of the time for Unit 2.

**Control Group.** Participants in the control group received no specific intervention activities, but had voluntary access to the existing personal safety and abuse prevention services offered by the agency. These services included individual and couples counseling, women’s groups, individual rights groups, self-advocacy groups, anger management groups, and conflict resolution groups.

**Posttesting.** Approximately one week after completion of the intervention at a given site, all intervention and control group participants at that site received the DMS posttest in a 30- to 40-min individual interview session. Posttests were administered to intervention and control group participants by one of the six trainers who had not served as trainer for the participant’s subgroup and who was blinded to the participant’s treatment condition.

**Results**

**Problem Awareness**

Means and standard deviations for pretest scores, posttest scores, and pretest-to-posttest raw gain scores are presented in Table 4 for problem awareness. Mean number of pretest responses articulating an awareness of a problem in response to the question about what was happening in the vignette situation did not differ significantly for the intervention group and the control group. In order to compare pretest-to-posttest gains in the intervention group and the control group, while taking their starting points into consideration, a difference-in-difference strategy was employed. A one-way ANCOVA, with age, IQ, gender, and pretest scores as covariates, was conducted to compare the two groups on gain scores. Pretest-to-posttest gains in problem awareness scores did not differ significantly for participants in the intervention group and the control group. In addition, within-group t tests for paired observations failed to reveal any significant differences between
pretest and posttest problem awareness scores for either the intervention group or the control group.

**Overall Effective Decision Making**

Means and standard deviations for pretest scores, posttest scores, and pretest-to-posttest raw gain scores are presented in Table 4 for overall effective decision-making scores for the intervention and control groups. Mean number of overall effective decision-making responses in response to the question about what the protagonist should do (i.e., response involving any attempt to avoid or escape from the abuse) did not differ for the intervention group and the control group on the pretest. In order to compare pretest-to-posttest gains in the intervention group and the control group, while taking their starting points into consideration, a difference-in-difference approach was employed. A one-way ANCOVA, with age, IQ, gender, and corresponding pretest scores as covariates, was conducted to compare groups on gain scores for overall effective decision making. Participants in the intervention group made significantly greater pretest-to-posttest gains in overall effective decision making (Adjusted Mean = 1.40) than did participants in the control group (Adjusted Mean = 0.42), $F(1,52) = 6.61, p = .013$, partial eta squared = .113. The ANCOVA summary table for overall effective decision making is presented in Table 5. To check for the significance of within-group gains, within-group $t$ tests for paired observations were conducted. These tests failed to reveal any significant differences between pretest and posttest effective decision-making scores for the control group. However, effective decision-making scores significantly increased from pretest to posttest for the intervention group, $t(29) = 4.27, p < .001$. Participants who received the intervention recommended that the protagonist attempt to avoid or escape from the abusive situation approximately 84% of the time on the posttest compared with participants in the control group, who recommended that the protagonist attempt to avoid or escape from the abuse situation only 63% of the time.

**Safe-Now Effective Decision Making**

Means and standard deviations for pretest scores, posttest scores, and pretest-to-posttest raw gain scores are presented in Table 4 for safe-now effective decision-making responses (i.e., the subset of overall effective decision-making responses that indicated an action aimed at seeking immediate safety) for the intervention and control groups. A significant pretest difference was found between the intervention group and the control group, $t(56 \text{ df}) = 2.37, p < .05$. In order to compare pretest-to-posttest gains in the intervention group and the control group, while taking their starting points into consideration, a difference-in-difference approach was employed. A one-way ANCOVA, with age, IQ, gender, and corresponding pretest scores as covariates, was conducted to compare groups on gain scores for safe-now effective decision-making responses. The ANCOVA for safe-now effective decision-making responses yielded a significant difference in pretest-to-posttest gains between the intervention group (Adjusted Mean = 1.10) and the control group (Adjusted Mean = 0.18), $F(1,52) = 5.73, p = .020$, partial eta squared = .099, in favor of the intervention group. See Table 6 for the ANCOVA summary table. Within-group $t$ tests for paired observations failed to reveal any significant differences between pretest and posttest safe-now effective decision-making scores for the control group. However, safe-now effective decision-making scores significantly increased from pretest to posttest for the intervention group, $t(29) = 2.56, p < .05$. On the posttest, participants
in the intervention group recommended safe-now effective decision-making responses approximately 35% of the time whereas participants in the control group recommended safe-now responses approximately 15% of the time.

**Additional Analyses**

Pearson product-moment correlations were performed within the control group (N = 28) and within the intervention group (N = 30). The purpose of the correlations was to identify factors that may have been related to posttest overall effective decisionmaking or safe-now effective decision making.

**Control Group.** Potential correlates of posttest decision-making performance included demographic characteristics (age, IQ, and gender) and pretest problem awareness, overall effective decision making, and safe-now effective decision-making scores. Significant correlations were found between pretest problem awareness scores and posttest overall effective decision making scores ($r = 0.57$, $p < .01$) and between pretest overall effective decision-making scores and posttest overall effective decision-making scores ($r = 0.83$, $p < .001$). No other significant correlations were found.

**Intervention Group.** In addition to the demographic characteristics and the pretest scores investigated in the control group, potential correlates with the posttest decision-making measures in the intervention group included number of absences from group training sessions, time span of training, training subgroup, and overall mastery scores for Unit 2 as well as mastery scores for each of the four decision-making strategy components: (1) problem identification, (2) generation of alternatives, (3) evaluation of possible consequences, and (4) selection of a course of action. Pretest problem awareness scores were significantly correlated with both overall effective decision-making posttest scores ($r = 0.53$, $p < .01$) and safe-now effective decision-making posttest scores.

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**Table 5**

*Summary of Difference-in-Difference Analysis for Overall Effective Decision-Making Scores: One-Way ANCOVA on Pretest-to-Posttest Gain Scores With Pretest Scores, Age, IQ, and Gender as Covariates*

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**Table 6**

*Summary of Difference-in-Difference Analysis for Safe-Now Effective Decision-Making Scores: One-Way ANCOVA on Pretest-to-Posttest Gain Scores With Pretest Scores, Age, IQ, and Gender as Covariates*

<table>
<thead>
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<th>Partial Eta Squared</th>
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<tr>
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</tbody>
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scores ($r = .47, p < .01$). The only significant correlation involving Unit 2 strategy mastery scores was between the third step, evaluation of possible consequences, and posttest safe-now effective decision-making scores ($r = .37, p < .05$). Most participants were able to apply each of the individual strategy components independently or with minimal prompts: Identify the problem (90%), generate alternatives (80%), evaluate possible consequences (70%), and select an appropriate decision action that met all three key goals (83%), experiencing the most difficulty with evaluation of possible consequences. However, evaluation of consequences, which required considering the possible consequences of each alternative in light of the three self-protective goals, appeared to be the most demanding.

**Discussion**

The findings of this study indicated that participation in the *ESCAPE-DD* curriculum intervention was associated with increased application of effective decision-making skills in response to scenarios involving sexual, physical, and verbal abuse. Women and men with IDD who received *ESCAPE-DD* increased their overall effective decision-making scores and their safe-now effective decision-making scores significantly more than control-group women and men who did not receive *ESCAPE-DD*. When asked how a protagonist should handle an abuse situation, participants who had received the curriculum intervention recommended overall effective decision-making responses 84% of the time on the posttest, whereas participants in the control group recommended effective strategies only 63% of the time. Furthermore, the participants who had received *ESCAPE-DD* recommended actions aimed at seeking immediate safety 35% of the time, compared with 15% of the time for participants in the control group.

A second purpose of this study was to better understand the role of problem awareness in the decision-making performance of adults with IDD. Significant correlations were found between pretest problem awareness scores and both posttest decision making measures in the intervention group and between pretest problem awareness scores and posttest overall effective decision-making scores in the control group. However, no significant differences between the intervention and control groups were found in pretest-to-posttest gains in problem awareness. These findings suggested that limited awareness of the problems in the vignette situations may reflect incomplete understanding of the potential harm or danger inherent in the abuse situations. Such incomplete understanding could be a contributing factor in the limited decision-making effectiveness of individuals with IDD. The failure of problem awareness to improve as a function of participation in the *ESCAPE-DD* curriculum, indicates that further research is needed to seek ways to improve these skills.

Of course, the ability to articulate an awareness of a problem is obviously only one example of an underlying cognitive process that can play a pivotal role in decision making. Other research has highlighted the integral roles of motivational and emotional processes in decision making (e.g., Hickson & Khemka, 2001; 2013; Khemka & Hickson, 2006). Motivation, in the context of abuse prevention, encompasses the prioritization of goals pertaining to personal safety and also adoption of the personal agency belief that one can act to protect oneself. Decision-making training has been found, in earlier studies, to have an impact on measures that tap these aspects of motivation, such as locus of control (Khemka, 2000) and empowerment (Khemka et al., 2005). The potential importance of emotional factors in decision making was suggested by the findings of a study which compared women with IDD with and without a documented history of abuse during the past 5 years (Hickson, Khemka, Golden, & Chatzistyli, 2008). A documented history of abuse, which has been associated with long-lasting emotional distress, was associated with a distinctive decision-making style characterized by higher levels of passive/avoidant decision making. It is important for future research to continue to tease out the roles of these cognitive, motivational, and emotional processes so that targeted interventions can address them effectively.

A third purpose of the present study involved exploratory analyses to identify factors associated with the extent to which women and men with IDD are able to acquire effective decision-making skills. Somewhat disappointing, these analyses yielded few clues as to which factors might be related to the ability of participants to benefit from exposure to the *ESCAPE-DD* curriculum intervention. No significant correlations were found between posttest overall effective decision-making scores or safe-now effective decision-
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Limitations and Future Directions

It is important to highlight some of the limitations of the present study so that they can be addressed in future research. The findings of the present study were limited by the fact that it focused on assessing the impact of ESCAPE-DD on self-protective decision-making skills in six brief, hypothetical abuse scenarios. To the extent that future abuse-prevention curriculum development and evaluation studies can expand the range of assessments, a fuller understanding of the interplay of the complex processes involved in effective decision making may be obtained. Another limitation pertains to the sample study. Although the participants in this study were racially and ethnically diverse, the sample was drawn from a single geographic area. A further limitation is that it was not possible to assess the potentially important role of diagnosis or etiology in responsiveness to the intervention. Limitations are also apparent in relation to the training of trainers and the monitoring of fidelity of training. Although trainers received training in the delivery of the intervention, their competencies were not formally assessed prior to their implementation of the curriculum. In addition, fidelity of implementation checks were sparse due to scheduling difficulties.

Taking these and other possible limitations into consideration, the present findings suggest potentially fruitful directions for the further development of abuse-prevention interventions for individuals with IDD, including finding ways to foster a heightened awareness and understanding of a broad range of problem situations, strengthening personal safety goals and personal agency beliefs, and building emotion regulation capabilities to address heightened arousal and anxiety that can interfere with taking immediate action to seek safety. It is likely that abuse prevention efforts will need to include supports and scaffolds to assist individuals with IDD with handling the complex processing demands of abuse situations. Finally, although ESCAPE-DD was designed to teach the application of decision-making skills in hypothetical situations, it was developed with the intent of providing women and men with IDD with tools that they can apply in real-life situations to protect themselves from abuse and increase their personal safety. Further research and curriculum development is needed to attain this long-term goal.
References


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