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ABSTRACT

A study examined the effectiveness of a resistance-based prevention program to increase subjects' ability to comprehend and apply resistance skills. Subjects were 30 participants in kindergarten through third grade. Fifteen subjects received resistance-based prevention training from the We Help Ourselves (WHO) program. The remaining 15 subjects received no formal resistance training. All subjects responded to the WHO Application Questionnaire (WAQ). The WAQ is a 37-item instrument specifically designed to test the effectiveness of the WHO program. The questionnaire addresses each of the five content areas covered by the WHO program: strangers, physical hurts, emotional hurts, secrets, and touches. In addition, the questionnaire examined subjects' ability to comprehend and to apply the information presented in the WHO program. Results indicated that: (1) trained subjects produced higher resistance skill ratings than untrained subjects; (2) trained subjects attained significantly higher rating than untrained subjects in their ability to respond to comprehension questions; (3) items asking the trained subjects if it is okay to resist an adult who was hurting them were often answered with a negative response; and (4) trained subjects were superior to untrained subjects in their ability to apply behaviors and techniques designed to resist abusive behaviors. Findings provide support for the effectiveness of the WHO program's ability to increase students' resistance skills. (Three tables of data are included; 39 references, the questionnaire, and the coding sheet are attached.) (Author/RS)

TESTING THE EFFECTIVENESS OF INTERVENTION PROGRAMS ON CHILDREN'S COMPLIANCE-RESISTING BEHAVIORS

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Running Head: TESTING THE EFFECTIVENESS

ABSTRACT

The study examined the effectiveness of a resistance-based prevention program to increase subjects' ability to comprehend and apply resistance skills. This investigation involved 30 participants in kindergarten through 3rd grade. Fifteen subjects received resistance-based prevention training from the We Help Ourselves Program (WHO). The remaining 15 subjects received no formal resistance training. All subjects responded to the WHO Application Questionnaire (WAQ). The WAQ is a 37-item instrument specifically designed to test the effectiveness of the WHO program. The questionnaire addresses each of the five content areas covered by the WHO program: Strangers, Physical Hurts, Emotional Hurts, Secrets, and Touches. In addition, the questionnaire examined subjects' ability to comprehend and to apply the information presented in the WHO program. Results provide support for the effectiveness of the WHO program's ability to increase students' resistance skills.

"Just say no," the slogan that former First Lady, Nancy Reagan, used in the media to promote her anti-drug campaign, typifies the perspective adopted by many campaigns and programs designed to encourage children to resist the use of drugs and other dangerous substances. While the intention of the slogan is commendable, it is incomplete. It oversimplifies the process of resistance by providing only one very general verbal strategy, and giving little or no instructions or advice on how to modify that strategy to meet the demands of specific contexts. To adequately build resistance in high-risk situations, defined as any threatening or victimizing situation in which the potential victim has little control, children must receive instruction on how to recognize and successfully avoid compliance in those situations. The present study explores the impact of compliance-resistance based prevention programs on children's ability to cope with victimizing situations.

Resistance-based prevention programs are educational programs targeted toward individuals confronted with encounters in which they must recognize and resist potentially harmful behaviors. The rationale for these programs rests on the assumption that children who are provided with resistance training are better able to protect themselves from being victimized than children who have not been exposed to such training. A great amount of effort and planning has gone into the development of prevention programs. Brassard, Tyler, and Kehle (1983) point out that today's programs are in "marked contrast to the education programs of the past in which children were warned about dangerous strangers" (p. 20). Current programs attempt to make children aware that potential offenders include those people whom they may know well and like, and have attempted to give children alternatives for action in any victimizing situation. However, the evaluation of these programs has focused on students' abilities to retain and recall the content of the programs, rather than on their abilities to apply the information learned in the program. Consequently, there is no evidence that they are actually accomplishing their objectives (see Conte, 1984; Fryer, et al., 1987; Garbarino, 1986; Peraino, 1985; Wurtele, 1987).

Effective Implementation of Prevention Programs

Three components are necessary for the effective implementation of prevention programs: 1) a

method of instruction that stresses participative learning, 2) instruction of compliance-resistance skills, and 3) competency in effectively applying compliance-resistance skills. The instructional method used in prevention programs has an impact on the effectiveness of the programs. Traditional educational approaches in which the teacher sends and students receive and later recall information facilitates cognitive objectives. However, this approach may not be the most effective method for enhancing behavioral objectives, which involve a student's ability to apply information appropriately according to specific situational demands. Participative learning and simulation facilitate the instructional objectives of the program, which are based on the principle of educating potential victims about resistance skills and providing information to competently apply those skills in high-risk situations. According to Bandura's (1977) theory of social learning, there is no real learning unless the learner is motivated to apply information after it is acquired. Thus, learning effectiveness is improved when the student is actively involved in the learning process.

While student participation facilitates the instructional process of prevention programs, compliance-resistance skills and competence in communicating those skills provide the foundation for the content of the program. The victim's ability to resist is a primary factor in the prevention of abuse. A substantial body of research has been conducted on compliance-resistance (Flay, 1985; Gilchrest & Schnike, 1984; McQuillen, 1986; Rorbach, et al., 1987; Thompson, 1978; Tobler, 1986), which focuses on the action and resources available to the receiver in a persuasive situation. The findings of this research indicate that resistance is not a self-initiated process, but rather a process that results from the incongruous relationship between the intent of the agent of the request and the compliance of the receiver (McQuillen & Higgenbothan, 1986). Compliance-resistance focuses on the person being persuaded and their ability to resist the persuasive message, and can be viewed as "reflexive persuasion" (McQuillen et. al., 1984).

Research on sexual abuse supports bolstering resistance of the victim as an effective method for decreasing abuse. According to Kenning (1985), "Experience of clinicians working with child victims suggests that many children could have been spared substantial suffering if they had processed simple

pieces of information about their right to refuse sexual advances, whom to appeal to when problems arise, or the inappropriateness of some adult behavior" (p. 18). Moreover, it has been argued that children receive inadequate information on child sexual abuse, or may receive adequate information too late for it to be utilized effectively (Finkelhor, 1984). Intervention efforts in child sexual abuse cases indicate that children might have been able to protect themselves if they had possessed information about resistance strategies (Finkelhor & Araji, 1983). Finkelhor (1984) argues further that in order for abuse to occur four conditions must be met: 1) the potential offender must have some motivation to abuse; 2) the potential offender must have overcome internal inhibition; 3) the potential offender must behave contrary to societal impediments; and 4) the potential offender must subdue the victim's resistance. Prevention programs strive to make it more difficult for the offender to overcome the victim's resistance, thus impeding successful victimization.

Flay (1985), Thompson (1978), and Tobler (1987) studied intervention programs which focused on early-stage adolescents and the social pressure to smoke cigarettes. In these programs students who received only information that smoking was a health risk resisted peer pressure less effectively than students who received the same information plus resistance skills training. These results suggest that simply telling students that smoking or any other high-risk situation is dangerous or harmful is insufficient; students also need to be taught skills that can help them resist compliance in those situations.

The successful application of knowledge about compliance-resistance strategies to specific contexts marks the ultimate step in resistance-based prevention programs. According to Spitzberg and Cupach (1984), communicative competence entails both *knowledge*, or knowing what to say or do in a specific situation, and *skill*, or the actual performance of what one has learned. Situational characteristics provide important information that can assist the student in making an appropriate message choice. In fact, the appropriate application of knowledge about a specific context in formulating a compliance-resistance message can determine how effective that message is. Since these characteristics vary across contexts, behavioral flexibility (Wiemann, 1977; Bochner & Kelly, 1974)

and communicative adaptability (Duran, 1983) play a vital role in the students' communicative competence in compliance-resistance situations. According to Higgenbotham (1984), "Flexibility seems to be a key element in acquiring communicative competence. Life more or less continuously places us in new situations and casts us in new roles. The measure of our communicative competence lies in our ability to recognize and adapt to the communication demands of each situation" (p. 5).

We Help Ourselves: A Secondary Prevention Program

There are two types of prevention programs available to address the problem of victimization of children. The first type of program emphasizes *primary prevention*. These programs are designed to target the general population. Primary prevention programs stress the goal of preventing abuse before it occurs by educating, identifying, and/or counseling the potential abuser. The second type of prevention, *secondary prevention*, focuses on the potential victims of abuse--children. Secondary prevention programs are implemented in schools by trained personnel or trained staff from outside agencies such as the Department of Human Services, Youth and Family Services, and County Health Centers.

An example of a secondary prevention program is the We Help Ourselves (WHO) program. In theory, the WHO program is a training program that makes children aware of abusive signals and suggests appropriate courses of action for dealing with that abuse. By preparing children in advance the program hopes to avoid, or at least reduce, the consequences of abusive situations. Specifically, the WHO program attempts to bolster the children's resistance as a method of defending themselves from abuse. Accordingly, resistance is viewed as the primary method of intervention (Ingmundson, 1988).

There are four levels of the WHO program. The first level is developed for children in kindergarten through third grade, and the second level is designed for students in grades four through six. Both levels deal with similar subject matter; however, the content is modified to adapt to the cognitive development of the target audience. The third and fourth levels of the program are targeted toward junior and senior high school students, respectively. The content of these presentations contains more sophisticated predicaments and incorporates more discussion of video-taped scenarios. Issues more

salient to the junior and senior high school programs include peer pressure, running away, dating abuse, and suicide.

The WHO program constructs each level of the program in accordance with the cognitive levels suggested by Piaget's Cognitive Development Theory. The major emphasis of Piaget's Taxonomy is the child's developing knowledge of the physical world. Piaget (1926) proposed four developmental stages of learning. The *sensorimotor* stage stresses the shift of reflexive behaviors into goal-oriented, trial and error exploration, while the *pre-operational* stage involves learning that is unidimensional and controlled by immediate perceptions rather than reason. In the *concrete-operational* stage learning is restricted to reasoning about the "real" world, and does not entail abstract or hypothetical analysis. Finally, in the *formal-operational* stage learning is characterized by logical thinking about abstract ideas (Cowan, 1978).

The levels of the WHO program coincide with the concrete-operational and formal-operational developmental stages of Piaget's Taxonomy. A distinguishing factor between concrete-operational and the preceding stages is the child's ability to adapt communication behavior to the listener's perspective. This ability to take into account the perspective of another person develops as the child interacts over time with a variety of people in different situations. The progressive complexity of perspective-taking or role-taking is a critical element in the learning of resistance strategies. Role-taking is necessary to implement effective resistance strategies, because children must be able to take into consideration the thoughts, intentions, and actions of another individual. Therefore, the cognitive ability to interpret social contexts from various perspectives is a necessary precursor to the construction of adaptive communication strategies.

The WHO program contains information that includes situational elements which can be understood from the experimental base of a particular age group of children. Wording of resistance strategies is unambiguous and constructed from a vocabulary appropriate to the child's ability. To further facilitate understanding of the program, each presentation relies on a videotape presenting training materials and student interaction with a trained presented/interviewer. This type of learning

process requires the child to react to elements that exist in actual high-risk situations. This imagined scenario requires the child to rationalize the best course of action based on his/her repertoire of resistance strategies.

WHO program developers recognize the lack of empirical support for the program, a deficiency that is relevant to prevention programs in general (Ingmundson, 1988). Wurtele (1987) stressed that there is a "dearth of controlled efforts at evaluating the effectiveness of such resistance programs, relative to the panoply of teaching materials available" (p. 486). This point is echoed by other investigators in the field (Conte, et al., 1983; Fryer, et al., 1987; Garbarino, 1986; Peraino, 1985).

Previous research testing the effectiveness of the WHO program addressed comprehension of the program's objectives, but did not address the application of those objectives. Studies conducted by Peraino (1985) and Ingmundson (1986) indicated that students recalled information from the program, but provided no evidence of transference of that information into effective resistance behaviors. This lack of evidence is in part a function of the methodology used in both studies. The measuring instrument used in both studies emphasized "rote memorization." Questionnaire items were worded exactly as they were presented in the instructional program, and references to characters in the instructional video were included in the items. Due to the similarity between the techniques used to train the children and the formatting of the questions used to test the children, these studies appear to have tested subjects' comprehension and memory, but did not investigate subjects' ability to apply any of that information.

Studies testing the effectiveness of other prevention programs also reveal a tendency to focus on information retention rather than the demonstration of resistance skills. Conte, Saperstein, and Rosen (1983) evaluated a sexual abuse prevention program using a 17-item questionnaire to test students' *knowledge* of prevention concepts. No evaluation of the childrens' abilities to apply this knowledge was conducted. Wall (1983) used a paper-and-pencil forced-choice test to evaluate the effectiveness of a Child Assault Prevention project. Testing conducted two to four weeks after the presentation of the program indicated that only 10% of the student-sample remembered specific personal safety information presented in the program. Since comprehension of information must occur before a student

can apply it to a novel situation (Bloom, 1956), it is unlikely that this program provided students with viable resistance strategies. Finally, Overvold (1984) and Lutter (1985) conducted studies evaluating the Children's Awareness Training program, which is designed to increase children's knowledge of good and bad touch, increase appropriate assertive behaviors in victimizing situations, and increase children's reporting of sexual abuse. Results indicated that children retained information on touching and resources for help, but it was not clear if they became more assertive as a result of the program.

Some researchers have focused on the application of principles learned in prevention programs. Poche, Brower, and Swearigne (1982) conducted a study approximating "real world" circumstances. In their study confederate adults approached three preschool children who had been taught self-protection skills. All three children responded appropriately to verbal victimization attempts, despite the fact that only one of the three children demonstrated *knowledge* of appropriate self-protection skills.

The Poche, et. al. study was criticized on ethical grounds for putting children in actual threatening situations. Using a more moderate methodology, Downer (1984) conducted a study evaluating the Talking About Touching (TAT) program. TAT is a prevention program designed to increase elementary school children's knowledge of personal safety as well as their ability to solve problems in situations concerning their personal safety. The program also seeks to increase assertiveness skills. Downer used pre- and post-test interviews with 13 control and 14 experimental subjects. In the interview Downer used puppets and story cards about children in potentially victimizing situations which required the subject to participate in a role-play situation. The implementation of personal safety behaviors in the role-play situation validated subjects' abilities to apply learned information about personal safety into appropriate behavior. Bandura (1977) and Corsini and Cordone (1966) acknowledge the relationship between role-playing and behavioral change. In fact, these researchers define role-play as knowledge translated into behavioral skills and generalized to imaginary scenes.

Conclusions and Hypotheses

Given the available empirical data evaluating child prevention programs, two general conclusions may be drawn. First, the testing of prevention programs must be conducted with special attention to the ethical and practical concerns of the subjects. Since the subjects are children, primary concern must be given to the protection of their mental and physical well-being. Second, merely requiring students to *know* information from resistance-based programs is insufficient; measurement techniques must be realistic enough to provide some means of determining whether the student can apply that information. Taking these conclusions and limitations into account, the current study addressed the following:

H1. Students who received WHO program training will demonstrate more effective resistance skills on composite items than subjects who have not received the program.

H2. Students who received WHO program training will demonstrate more effective resistance skills on comprehension items than subjects who have not received the program.

H3. Subjects who have received WHO program training will demonstrate more effective resistance skills on application items than subjects who have not received the program.

H4. Subjects who have received WHO program training will demonstrate more effective resistance skills on comprehension test items on strangers, hurts, secrets, touch, and emotional abuse than subjects who have not received the program.

H5. Subjects who have received WHO program training will demonstrate more effective resistance skills on application test items on strangers, hurts, secrets, touch, and emotional abuse than subjects who have not received the program.

METHOD AND PROCEDURES

Subjects

This investigation involved participants in the kindergarten through 3rd grade level of the WHO program. By addressing the most primary level of the program, the testing provided a basic understanding of the program's effectiveness that can be vital to testing higher levels of the program. Furthermore, children in these grades are less likely to have come into contact with extraneous sources of information concerning resistance and victimization. This lack of contamination may permit a more direct conclusion about the link between the content of the WHO program and its effective application.

Subjects for this study were 30 children from a large midwestern city. A convenience sample was used based on children's exposure or lack of exposure to the WHO program and parental permission. Fifteen children had been exposed to the program and fifteen had not. Eighteen of the subjects were male and 12 were female. The mean age for the sample was 7.3.

Variables

Resistance training, operationalized as participation in the WHO program, was the independent variable. The dependent variable was the effectiveness of the WHO program, which was operationalized as scores on the WHO Application Questionnaire (see Appendix A), a test developed by O'Brien (1989) to measure both the comprehension of resistance strategies and the ability to apply those strategies.

Instrumental Development: The "WHO Application Questionnaire"

The WHO Application Questionnaire addressed the three WHO objectives of verbal resistance, action, and report. The items referenced new situations or situations with characteristics different from those referenced in the WHO presentations; thus, the Questionnaire complied with Bloom's (1956) criteria for application.

Specifically, the Questionnaire consisted of 37 items based on the five topics presented in the WHO program: Strangers, Physical Hurts, Emotional Hurts, Secrets, and Touches. A series of items was developed for each of the topics. The initial question for each topic asked for a definition of the

critical concept connoting that section. Subsequent questions required the subject to apply the instructional objectives of the WHO program to situations similar in content but different in detail to those presented in the program. This four-item pattern of questions was repeated with slight variation in content for the same topic, resulting in eight questions per topic. The second set of questions within each topic provided a method for checking the reliability of the subjects' responses.

The conceptual distinction between comprehension and application was used as the basis for developing the two different types of questions. "A problem in the comprehension category requires the student to know an abstraction well enough that he/she could correctly demonstrate its use when specifically asked to do so" (Bloom, 1956, p. 18). In contrast, application questions require a student to show that he/she could use the abstraction correctly in a novel situation.

Bloom (1956) describes the application category in terms of the objectives of the testing situation. To construct questions of application, situations must either be new to the student or contain new elements which differ from the situation in which the abstraction was learned.

> If the situation presented the student to test 'application' are old ones in which he/she originally learned the meaning of the abstraction, the student does not have to 'apply' the abstraction. Rather, he/she needs merely to recall the original situation in which he/she learned the abstraction, a behavior herein classified as knowledge or a level of comprehension. This is likely to mean that the problem must either a) be posed in a situation which is fictional; b) be one which is drawn from material with which the student is not likely to have yet had contact; or c) be on a problem known to the student but with a new slant that he/she is unlikely to have thought of previously. Ideally, we are seeking a problem which will test the extent to which the individual has learned to apply the abstraction in a practical way. (p. 26)

Procedures

All children were brought individually to a small private room and interviewed by a single

interviewer. The interviewer introduced herself and explained that the study was related to the information the subjects knew about avoiding harmful situations.

Subjects were seated at a small table and informed that the session would be tape-recorded. To put the subjects at ease with the tape-recorder, each was asked to say or sing the alphabet. After the subjects completed this task the interviewer played the tape back for them to hear. When the subjects were observed to be comfortable, each was asked a number of demographic questions. The WHO Application Questionnaire was then presented orally by the interviewer. Oral testing was used in order that, when necessary, some items could be elaborated or rephrased to facilitate the subjects' and interviewer's understanding. Upon completion of the session, debriefing and correction of inaccurate responses were provided by the researcher. Debriefing consisted of reviewing the instructional objectives of the WHO program: say no, get away, and tell someone.

Coding and Scoring of Test Items

The responses of each subject were transcribed into manuscript form and coded by three of eight expert raters, who were asked to rate each subject's response on a scale of 1 (most accurate) to 5 (least accurate) (see Appendix B). These three judgments were averaged, and the mean rating was used as the subjects' scores for each item. Thus, a subjects score could range from 37 to 185. The reliability of the rater's judgments was checked by comparing the ratings of the three experts who judged any particular response from any particular subject.

All eight expert raters were trained WHO program instructors, who were selected on the basis of their extensive experience as a presenter/trainer for the program and an educational background in either education or counseling. Each coder judged the responses of 5 to 10 subjects. Each response was judged on the basis of the WHO program's instructional objectives: accurate definition and appropriate use of the term; verbal resistance strategies; action; and reporting.

Data Analysis

To test the possible effects that the WHO program had on subjects' scores on the WHO Application Questionnaire, a series of independent t-tests procedures were employed. The first set of t-

tests analyzed the differences between the trained and untrained groups on the composite test score for the five WHO topics. A second and third set of t-tests analyzed between-group differences on the comprehension and application items for the five WHO topics.

RESULTS

One major hypothesis and four subhypotheses were posed as the basis of this study. The major hypothesis of the study addresses the comparison of scores on the WHO Application Questionnaire between students who have had resistance-training and students with no resistance training. The second and third hypotheses address differences between trained and untrained subjects in response to questions designed to measure comprehension of the concepts related to resistance (H2) and questions designed to assess subjects' ability to apply resistance-based knowledge (H3). Hypothesis Four examines trained and untrained subjects comprehension knowledge as a function of the five areas of the WHO program. Hypothesis Five analyzes the same comparison with a focus on application knowledge.

The results of the data analyses are presented as follows: (1) independent t-test differences on overall test scores between groups of trained and untrained children, (2) independent t-test of differences between groups on: a) overall scores on comprehension items and b) overall scores on application items, (3) independent t-test of differences between groups' scores on the five separate sections; strangers, hurts, secrets, touches, and emotional abuse.

Analysis of Differences between Groups on Overall Test Scores

Resistance skills were defined as the mean score of each group's responses to the WHO Application Questionnaire (WAQ). Lower scores on the WAQ indicate more effective resistance skills. A statistically significant difference in overall resistance skills was found between the trained and untrained groups. An independent t-test revealed subjects with resistance training produced significantly higher resistance skill ratings than subjects with no training ($t(28) = 5.56$, $p < .05$). The trained group recorded a mean score of 65.67 as compared to mean score of 92.60 recorded by the control

group. This analysis supports the notion that subjects with resistance training display more sophisticated and effective resistance skills than subjects that have not received resistance training.

The remaining analyses for this section focus on the five different concept areas that serve as the foundation for the WHO program. These five sections address the issues of strangers, physical abuse, secrets, sexual abuse, and emotional abuse. All sections, except for secrets, revealed statistically significant differences between groups. For a summary of the individual t-test see Table I.

In the first section, strangers, a statistically significant difference was found between the two groups ($t(28) = 3.30$, $p < .005$). The trained group reported a mean score of 11.90 as compared to a mean score of 16.01 reported by the control group. This indicates trained subjects demonstrated more effective resistance skills toward strangers than untrained students.

In the section of Hurts, trained subjects responses exhibited significantly higher effectiveness scores than untrained subjects ($t(28) = 4.43$, $p < .05$). Trained subjects mean score on Hurts was 12.72 while untrained subjects recorded a mean of 20.68. These findings illustrate trained subjects superior abilities to implement resistance strategies when confronted with physical abuse.

A statistically significant difference was also found between trained and untrained subjects in the section of Touch ($t(28) = 7.51$, $p < .05$). The mean score for subjects exposed to the WHO program was 11.12 and the mean score for the control was 19.90. According to these results, trained students were significantly better at resisting sexual abuse than untrained students.

Emotional abuse was the final section to show a significant difference between groups ($t(28) = 3.43$, $p < .05$). WHO trained students exhibited a mean score of 17.44 as compared to a mean score of 22.54 for the control group. This analysis supports the assumption that trained students will exhibit more effective resistance skills when confronted with emotional abuse than untrained subjects.

Secrets was the only section which did not achieve a significant difference between groups. Mean scores for the trained and untrained groups differed only by a single point. Trained students reported a mean score of 12.40 as compared to a mean score of 13.4 for untrained students.

Analysis of Differences between Groups on Comprehension Items

To test the differences between trained, untrained subjects ratings of comprehension questions, a composite score consisting of all ratings for comprehension questions was computed. Groups means were used to compare overall comprehension effectiveness. Generally, trained subjects had more effective scores on comprehension items than untrained subjects. The mean score for trained students was 16.02 as compared to a mean score of 21.09 for the control group ($t(28) - 5.90$, $p < .05$).

To examine the relative comprehension effectiveness in reference to the five major areas of the WHO program, comprehension items were separated and totaled. Means for each area were compared between the trained and untrained groups. Section by section analysis of comprehension items showed statistically significant differences existed between trained and untrained groups in the sections of Strangers ($t(28) = 2.28$, $p < .05$), Hurts ($t(28) = 2.71$, $p < .01$), and Touch ($t(28) = 2.42$, $p < .02$). These results support the notion that trained subjects perform better than untrained subjects when confronted with high risk involving strangers, physical abuse, or sexual abuse. Although significant differences were not demonstrated in the areas of Secrets and Emotional Abuse, a number of interesting tendencies were discovered. (See TABLE II)

In the section addressing secrets, trained subjects gave slightly more effective responses on comprehension items than untrained subjects. However, these differences did not achieve statistical confirmation. Cell means for comprehension items were 2.26 for trained subjects and 3.26 for untrained subjects ($t(28) = 1.95$, $p < .05$).

The area of Emotional Abuse also did not achieve statistical confirmation. Mean scores for trained and untrained subjects were 4.46 and 4.30 respectively ($t(38) = 0.32$, $p < .05$). Little difference was found between groups on the ability to comprehend resistance skills information.

Analysis of Differences between Groups on Application Items

To test the effectiveness between trained and untrained subjects rating of application skills, a composite score consisting of all ratings for application items was computed. This analysis found statistically significant differences between trained and untrained subjects in their ability to respond

effectively to questions requiring them to apply resistance skills information. Trained subjects demonstrated more effective resistance skills on overall application items than untrained subjects (t (28) = 5.90, $p < .05$).

To examine the relative application effectiveness in reference to the five major areas of the WHO program, application items related to each area were separated and analyzed. Trained subjects demonstrated more effective application of resistance skills in the areas of Hurts (t (28) = 4.36, $p < .01$), Touch (t (28) = 6.84, $p < .01$), and Emotional Abuse (t (28) - 3.43, $p < .02$). These results maintain the assumption that trained subjects respond more effectively to questions requiring them to apply resistance skills information associated with physical, sexual, or emotional abuse. Statistical confirmation was not found in the areas of Strangers or Secrets. (See TABLE III)

In the section of strangers, a significant difference was not found between groups in their ability to effectively apply resistance skills (t = 1.88 df 28 $p > .05$). However, trained subjects tended to report more effective responses than untrained subjects. Trained subjects reported a mean score of 8 as compared to a mean score of 10 reported by untrained subjects.

A statistical difference was not found for application items in the section of secrets. However, a surprising tendency was revealed. On application items in this section, untrained subjects achieved higher effective ratings than trained subjects (t = 1.38 df 28 $p > .05$). Trained subjects recorded a mean of 11.20 and untrained subjects reported a mean of 9.20. These results suggest that untrained subjects are more able to effectively apply resistance skills in response to the area of secrets than trained subjects.

Overall, hypothesis projecting higher performance by trained subjects on the entire test and on individual sections of the test were confirmed except for the sections of Secrets and Emotional Abuse. Hypothesis suggesting higher performance by trained subjects on comprehension and higher performance in application were also confirmed. Trained and untrained subjects demonstrated equal comprehension of Emotional Abuse while in the category of secrets untrained subjects demonstrated higher scores on application items addressing resistance skills than trained subjects.

DISCUSSION

This study represents an initial step in determining the effectiveness of the WHO program to increase students' ability to comprehend and apply resistance skills. The findings of the study provide evidence that students exposed to the WHO program do demonstrate more sophisticated resistance skills than children not exposed to the WHO program. More specifically, students' abilities to resist potentially abusive situations were analyzed within each of the five areas emphasized by the WHO program. These analyses provided measures of the effectiveness of the program to produce adequated comprehension and application skills in the areas Strangers, Physical Abuse, Secrets, Sexual Abuse, and Emotional Abuse.

In support of the first hypothesis, trained subjects as compared to untrained subjects produced higher resistance skill ratings in response to the WAQ. According to these results, the WHO program does increase students' ability to resist a range of abusive situations. Responses produced by trained subjects evidenced superior understanding of when to use resistance skills and how to apply these skills to appropriate situations. For example, while both trained and untrained subjects acknowledged they would not get into a car with a stranger, only the trained subjects were able to go beyond recognizing the situation as victimizing. In addition to recognition/comprehension, trained subjects were able to apply their knowledge in attempts to "say no," "get away," and "tell someone."

Trained subjects achieve significantly higher performance ratings in four (Strangers, Hurts, Touch, and Emotional Abuse) of the five areas of the WHO program. In the remaining area, Secrets, scores indicated a tendency for the trained subjects to achieve higher performance ratings (i.e., lower mean scores than the untrained subjects, $M = 12.47; 13.47$, respectively).

Comprehension Competence

Results associated with the second hypothesis, subjects' ability to respond to comprehension questions, revealed that trained subjects attained significantly higher ratings than untrained subjects. This suggests that the trained subjects were better able to recognize, define, and explain an abstract

concept related to abusive situations and behaviors than subjects who had not received resistance training.

However, this superior performance was evidenced in only three of the five areas (Strangers, Hurts, and Touch), and revealed a slight tendency to achieve higher performance ratings in a third area, Secrets (Untrained M = 3.26; Trained M = 2.26). The strongest effect was found in the area of Touch. This result suggests that the WHO program provides clear conceptual information addressing the topics of private body parts and the inappropriateness of certain types of behavior involving these parts of the body.

However, an unexpected effect was discovered. Untrained subjects received slightly higher ratings in the area of Emotional Abuse. Though not statistically significant, this difference suggests a tendency for the untrained subjects to produce more accurate comprehension responses in the area of Emotional Abuse than trained subjects, M = 4.32; 4.46, respectively. Because the difference is so small, 0.14, it is argued that the groups are not differentially competent. Both groups are lacking in this area. Though the untrained group did not "out perform" the trained group, the trained group did not perform as expected. The less sophisticated ratings achieved by the trained subjects in the areas of Emotional Abuse highlight the need to provide increased training to at-risk children in the K through 12th grades.

Items asking the trained subjects if it is okay to resist an adult who was hurting them were often answered with a negative response. Children might fail to resist an abusive adult do to fear of punishment or parental anger (Kenning, 1985). This refusal to resist adult behavior is a major obstacle requiring further attention and emphasis by resistance programs. The WHO program stresses that some adult behaviors are inappropriate and that children should consider it appropriate to resist in those situations where they are not sure if the adult's behavior is appropriate. However, the present analysis provides evidence that the WHO program needs to re-double its efforts in this area. More material and improved instructional techniques need to be added so as to eliminate this deficiency in the program.

Application Responses

Analysis related to hypothesis four found that trained subjects were superior to untrained subjects in their ability to apply behaviors and techniques designed to resist abusive behaviors. These results offer superficial evidence that the training offered by the WHO program does translate into some forms of behavioral competence. However, given the safe, artificial nature of the testing environment and the fact that children's anticipated behavior, rather than their actual behavior, was tested, this conclusion should be accepted very conservatively.

The analysis of the individual areas of the WHO program revealed some interesting and disturbing results. Trained subjects demonstrated superior application skills in the areas of Hurt, Touch, and Emotional Abuse. Hypotheses projecting better performance by trained subjects in the areas of Secrets and Strangers were not confirmed. Untrained subjects as well as trained subjects demonstrated high application scores in the area of Strangers. The high scores achieved by untrained subjects can be attributed to the common nature of the information and the tendency for children to receive instructions in this area from other sources, such as home and school. Stranger safety is the most common of the five areas addressed in the program. It is a topic which has long been addressed in the schools, churches, and at home (Brassard, Tyler, & Kehle, 1983). Most children know to verbally resist strangers, but often become confused when asked to identify strangers. Identification is the strength of prevention programs. They attempt to provide complete information so children know when and to whom to say "no."

Secrets is addressed in the program in reference to physical and sexual abuse. Secrets is presented in this way because bribes or threats often accompany abuse as a way to keep a child from seeking help. Results of the study surprisingly show that untrained students are better able to apply resistance skills than trained students in the area of Secrets. However, these results may be misleading. The nature of the instruction provided by the WHO, may cause subjects to be overly sensitized to the area of Secrets. This over sensitizing may cause subjects to be overly analytical about their responses.

Even if the oversensitizing explanation is partially correct, this type of performance-training reversal is disturbing. At best, the reversal suggests some validity/reliability problem with the testing instrument. At worst, it may indicate that the WHO program is reinforcing and /or training behaviors that are not supportive of the target goal, resisting abuse. These results highlight a need to closely examine both the items used by the WAQ to test this area and the materials, information, and techniques used by the WHO program to provide instruction in this area.

Limitations

Although the majority of the findings of this study were consistent with the proposed rationale, these results and interpretations must be considered conservatively in light of the limitations associated with this study.

First, the validity and reliability of the instrument must be substantiated further. The instrument developed for the current study needs to be refined. Efforts need to emphasize the development of an instrument for all resistance-based programs as opposed to individual instruments devised for each special program.

Repeated tests for reliability were not possible due to the limited availability of subjects and the constraints of the public school system. Validity was established by employing expert raters to evaluate items. Expert raters coded items as either comprehension or application in nature. Results of this analysis indicated 85% agreement on comprehension items and 90% agreement on application items. More precise validation of the instrument is advisable before further implementation.

A third methodological concern is the artificial nature of the experimental condition. The fact that hypothetical situations were used in the evaluation of effective application of resistance skills may have affected the final results. True application would test the actual behavior of the child in a victimizing situation. Subjects confronted with actual threatening situations may react differently than the results indicated in this study.

One final consideration involves the sample itself. All members were selected based on parental permission and availability to the researcher. While the experimental and control groups

were drawn from two comparable cities, randomization was not possible within each of the groups. Generalizability are limited to only the populations of the schools from which the two samples were drawn.

Implications for Future Research

Keeping in mind the limitations outlined above, several suggestions for research addressing the effectiveness of prevention programs are offered. First, greater emphasis should be given to establishing the validity and reliability of the WAQ. Second, the study should be replicated with an increased and more representative sample. A broader sample of students from a larger population would perhaps provide different results regarding the effectiveness of the WHO program.

Third, the testing should conform to the instrument in a structure interview format, so as to permit clearer evaluation of the student's ability to apply information from the program. Role-play situations involving pictures, puppets, or video tapes would strengthen the conceptual link between hypothetical and real-life situations.

Fourth, research needs to be conducted on ways to improve the presentation of material which consistently receives ineffective test scores such as the areas of Secrets and Emotional Abuse. Knowing that children receiving the program have overall better resistance skills than untrained children is not enough. More indepth analysis of within group differences should be considered.

Finally, further research on the evaluation of prevention programming, with concentration on application of information, is crucial to devising effective programs which will prepare children to help themselves.

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TABLE I

ANALYSIS OF DIFFERENCES BETWEEN GROUPS
ON OVERALL TEST SCORES

Variable	Number of Cases	Mean	T Value	Degrees of Freedom	2-Tail Probability
STRANGERS			-3.30	28	0.003*
trained	15	11.9067			
untrained	15	16.0067			
HURTS			-4.43	28	0.000*
trained	15	12.7267			
untrained	15	20.6800			
SECRETS			-0.55	28	0.584
trained	15	12.4733			
untrained	15	13.4667			
TOUCH			-7.51	28	0.000*
trained	15	11.1200			
untrained	15	19.9000			
EMOTIONAL ABUSE			-3.43	28	0.002*
trained	15	17.4467			
untrained	15	22.5467			

*Significant at 0.05 level.

TABLE II

ANALYSIS OF DIFFERENCES BETWEEN GROUPS
ON COMPREHENSION ITEMS

Variable	Number of Cases	Mean	T Value	Degrees of Freedom	2-Tail Probability
STRANGERS			-2.28	28	0.032*
trained	15	3.73			
untrained	15	5.82			
HURTS			-2.71	28	0.012*
trained	15	2.67			
untrained	15	4.28			
SECRETS			-1.95	28	0.063
trained	15	2.26			
untrained	15	3.26			
TOUCH			-2.42	28	0.023*
trained	15	2.03			
untrained	15	4.25			
EMOTIONAL ABUSE			0.32	28	0.754
trained	15	4.46			
untrained	15	4.32			

*Significant at 0.05 level.

TABLE III

ANALYSIS OF DIFFERENCES BETWEEN GROUPS
ON APPLICATION ITEMS

Variable	Number of Cases	Mean	T Value	Degrees of Freedom	2-Tail Probability
STRANGERS			-1.88	28	0.073
trained	15	8.17			
untrained	15	10.18			
HURTS			-4.36	28	0.000*
trained	15	10.05			
untrained	15	16.39			
SECRETS			1.38	28	0.178
trained	15	11.20			
untrained	15	9.20			
TOUCH			6.84	28	0.000*
trained	15	9.08			
untrained	15	15.64			
EMOTIONAL ABUSE			3.48	28	0.002*
trained	15	13.12			
untrained	15	18.08			

*Significant at 0.05 level.

APPENDIX A

WHO APPLICATION QUESTIONNAIRE

STRANGERS

1. Tell me what a stranger looks like.
2. What would you say if a stranger offered you a ride?
3. What would you do if a young woman wanted you to get into their car?
4. If a stranger offered you a ride, would you tell anyone?
5. Who would you tell?
6. Can you tell if someone is a stranger by the way they look?
7. Would you get into a car with a young man you didn't know?
8. *(if answer "no")* What would you do, if anything?
   (if answer "yes") Why would you get into the car? What would you do?
9. If the man said not to tell anyone they offered you a ride, would you tell anyone?

HURTS

10. Do you know what it is called when an adult hits a child, hurting them?
11. Can you say something to make someone stop hurting you?
12. If that person doesn't stop, what would you do?
13. What would you do to get help?
14. What could a child say, if anything, to an adult abusing them?
15. Who could a child talk to if they were being abused?

SECRETS

16. Can you tell me about a surprise you've had?
17. Can you tell me what a secret is?
18. If someone were hurting you and asked you to keep it a secret, would you?
19. Would you tell anyone if you weren't sure if it was a secret or a surprise?
20. If someone hurt you then said they would buy you a toy if you didn't tell, would you tell?
21. What if someone does something to you that you don't like, then makes you promise not to tell. Is it okay to tell?
22. What should you do if you're not sure if you should tell that someone has been hurting you?

TOUCHES

23. What is the word for abuse that involves the private parts of the body?
24. What would you say to someone who tried to touch you in the private parts of your body?
25. What if you told this person "no", and they didn't stop. What would you do?
26. Do you know what a touching problem is?
27. Is it okay to say something to someone who is touching you in the private parts of your body?
28. What would you say?
29. Besides telling a person to stop, what else could you do if there is a touching problem?
30. Would it be hard to tell about a touching problem?

EMOTIONAL ABUSE

31. What is it called when someone calls you names and hurts your feelings?
32. What could you say, if anything, to a person who was hurting your feelings?
33. Would you want to stay with or away from the person saying mean things to you?
34. Is it important to tell if someone is saying mean things, but not hurting you?
35. Could you say anything to a person who said things that made you sad?
36. If you told someone who was hurting your feelings to stop and they didn't, what would you say?
37. Who could you tell if someone was saying things to you that made you feel bad?

APPENDIX B

CODING SHEET

Please rate the responses by circling the number which best represents the accuracy of the response with "1" being the most accurate response and "5" being the least accurate response.

(1)	1	2	3	4	5	(20)	1	2	3	4	5
(2)	1	2	3	4	5	(21)	1	2	3	4	5
(3)	1	2	3	4	5	(22)	1	2	3	4	5
(4)	1	2	3	4	5	(23)	1	2	3	4	5
(5)	1	2	3	4	5	(24)	1	2	3	4	5
(6)	1	2	3	4	5	(25)	1	2	3	4	5
(7)	1	2	3	4	5	(26)	1	2	3	4	5
(8)	1	2	3	4	5	(27)	1	2	3	4	5
(9)	1	2	3	4	5	(28)	1	2	3	4	5
(10)	1	2	3	4	5	(29)	1	2	3	4	5
(11)	1	2	3	4	5	(30)	1	2	3	4	5
(12)	1	2	3	4	5	(31)	1	2	3	4	5
(13)	1	2	3	4	5	(32)	1	2	3	4	5
(14)	1	2	3	4	5	(33)	1	2	3	4	5
(15)	1	2	3	4	5	(34)	1	2	3	4	5
(16)	1	2	3	4	5	(35)	1	2	3	4	5
(17)	1	2	3	4	5	(36)	1	2	3	4	5
(18)	1	2	3	4	5	(37)	1	2	3	4	5
(19)	1	2	3	4	5						