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ABSTRACT

Primary prevention programs aimed at helping adolescents develop personal and social coping skills have received empirical support as methods capable of reducing the incidence of substance use. This study examined the effectiveness of school-based coping skills training with adolescents at high-risk for substance abuse. Students (N=279) at 29 secondary schools participated in the study. The schools were matched in terms of size, racial composition, and percentage of students receiving a free lunch and then were randomly assigned to one of three treatment conditions: (1) school intervention--coping skills training for students plus training for school staff; (2) school plus parent coping skills intervention; and (3) comparison control. Results indicated that students in the coping skills conditions increased their knowledge of the skills; however, positive changes in personality characteristics, substance knowledge, and behavior growth for those in the coping skills training groups did not differ from those for the comparison control group. While these data suggest that preventive intervention can have a positive effect on high risk youth, the role of coping skills training in preventing substance abuse in high risk adolescents remains unclear and is in need of further investigation. (Author/ABL)

# Coping Skills Training with Adolescents at Risk for Substance Abuse

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Abstract

This study examined the effectiveness of school-based coping skills training with adolescents at high-risk for substance abuse. Two hundred seventy-nine students at 29 secondary school participated in the study. The schools were matched in terms of size, racial composition and percentage of students receiving a free lunch and then randomly assigned to one of three treatment conditions: (1) school intervention - coping skills training for students plus training for school staff, (2) school plus parent coping skills intervention, (3) comparison control. Results indicated that students in the coping skills conditions increased their knowledge of the skills, however, positive changes in personality characteristics, substance knowledge, and behavior for the conditions receiving coping skills training groups did not differ from those for the comparison control.

# Coping Skills Training with Adolescents at Risk for Substance Abuse

Primary prevention programs aimed at helping adolescents develop personal and social coping skills have received empirical support as methods capable of reducing the incidence of substance use. These programs, based on social learning theory (Bandura, 1977) and problem behavior theory (Jessor, 1977), posit personal and social/environmental factors as the causes of adolescent drug use. Accordingly, coping skills training represents an attempt to counter one or more of the personal and social/environmental variables believed to be related to the use of substances.

The coping skills program with the most empirical support is the Life Skills Training (LST) program (Botvin, 1983). LST teaches general life skills as well as skills and knowledge specifically related to the prevention of substance abuse. Initially, LST was evaluated with respect to the prevention of cigarette smoking in secondary school students (Botvin & Eng, 1982; Botvin, Eng & Williams, 1980; Botvin, Renick & Baker, 1983). The program was found to produce lower rates of smoking onset and more positive changes on cognitive, attitudinal, affective, and social measures than was observed in no-treatment controls. Equally as

important, the changes were maintained through a one-year follow-up. Botvin, Baker, Renick, Filazzola & Botvin (1984) later extended the applicability of the program by showing its utility in preventing alcohol and marijuana use.

The final report of a five year investigation of LST (Botvin, 1987) indicated that at posttest, students participating in a peer led LST group were significantly different from control group students with regard to tobacco, alcohol and marijuana use, as well as several mediating variables. Behavioral changes were still evident at the one and two year follow-up assessments during which time booster sessions had been implemented. However, after the two year follow-up, the booster sessions were terminated and one year after termination, no effects were present. This result might indicate the importance of continued intervention through booster sessions since the prevention of substance use by adolescents who remain in a social environment that encourages use is not likely to occur without continuous sustained effort.

In addition to the research on primary prevention, coping skills have been shown to be effective in tertiary interventions. In fact, most of the initial

research on individual coping skills training was conducted with clinical populations with identified psychological and/or social pathology (Ross, 1981). Given the fact that coping skills training approaches appear to be effective with both primary prevention and tertiary prevention populations, it appears likely that these approaches may also be of value with secondary prevention populations, i.e., with adolescents judged to be at-risk for substance abuse. Since at-risk adolescents have social, personality, or behavioral characteristics shown to be predictive of later substance use or abuse; and since many of them might already have begun to experiment with substances, they are an important target for intervention efforts. The purpose of the South Carolina Coping Skills Project (SCCOPE), therefore, was to evaluate the effectiveness of personal and social coping skills training with generalization programming in the social environment, in preventing substance abuse in high-risk adolescents.

## Method

### Design

Thirty secondary schools were matched in groups of three on the basis of secondary level (middle versus high school), racial composition, percentage of students receiving free lunch, and school size. Within

each matched cluster, schools were randomly assigned to one of three treatment conditions: school intervention (SI), school plus parent intervention (SPR), or a comparison control (CC). All students were assessed prior to the intervention, immediately after training, and at a one year follow-up.

Subjects

Referral for inclusion in the project was made by school staff based on the students having two or more of the following characteristics: (a) a high number of disciplinary incidents (b) low grades (c) a high number of unexcused absences (d) drug or alcohol use by most friends (e) drug or alcohol abuse by family members (f) low self-esteem (g) social withdrawal or (h) experimental alcohol or drug use. Information from the referring teachers indicated that on the average, the students presented four of the risk characteristics listed above, with the most common being poor academic performance, low self-esteem, involvement with peers suspected of substance use, and impulsivity.

The training and the pre and post treatment assessments were completed by 279 students. At the one year follow-up, 201 students completed the questionnaire. The average age of the total sample at pretest was 14.43 years. Two hundred seven of the

students were white, 67 were black, 1 was Hispanic and 3 were other races. Males comprised 64 percent of the sample and females 36 percent.

The high-risk nature of this sample is further attested to by the reported levels of substance use. The project SCCOPE sample reported lifetime incidence rates for alcohol and other drugs that are considerably higher than that reported in the 1985 NIDA Survey of Households sample.

Dependent measures

The questionnaire administered to the students at the pretest, posttest, and follow-up contained items asking for demographic information; self-report of: frequency and type of substances used, attitudes towards substance use, knowledge of substances, self-esteem, self-confidence, self-satisfaction, influenceability, smoking influenceability, influence by external sources, and attitudes toward school and teachers. Classroom behavior was further assessed by means of the Teachers form of the Child Behavior Checklist (Achenbach & Edelbrock, 1986) and the number of tardies and unexcused absences were taken from the school records. A series of videotapes portraying problem situations in which each coping skill would be appropriate was used to measure the acquisition of the

coping skills.

Treatment

School Intervention. The student training component of this treatment condition was a broad spectrum program based on Botvin's (1983) Life Skills Training. It consisted of a 10 session small group training experience conducted once a week, two hours per session during the school day in the school setting as well as two, two hour booster sessions conducted one year after termination of the initial training. During the training sessions, students learned coping skills in four major areas: behavioral self-management, emotional self-management, decision making and interpersonal communication. In addition, substance information was addressed. The students were provided with a handbook containing summaries of concepts, facts, and skills which had been discussed during group sessions; printed materials for group exercises and activities; and directions for completing homework assignments.

The objective of the school staff training component of this condition was to enhance generalization of behavior change by teaching school personnel to encourage use of coping skills in the classroom and school setting on a daily basis. This

training component consisted of a 1/2 day inservice during which each coping skill was presented along with information on how the skill could be encouraged through modeling; cueing; and reinforcement. Participants were provided with a take-home handbook which reviewed the coping skills and specific staff behaviors that would encourage use of coping skills in students. As an additional cueing device, wall posters, illustrating each coping skill in comic type format, were provided to school staff for classroom and school corridor display.

School Plus Parent Intervention. Subjects in this condition participated in the student training, and school staff training was provided as described above. In addition, parents of the subjects were invited to participate in a training program consisting of five weekly, two hour sessions. The parent training component had three objectives: to teach parents about the coping skills their children were learning in the student groups; to teach the parents some behavior management skills, because a number of studies have indicated family management problems to be a correlate of adolescent substance use (Hawkins, Lishner & Catalano, 1985); and to develop a small group support system for the parents so that they could encourage

each other to take positive, constructive action regarding their adolescents. Each parent received $5 for attendance at each session, plus a bonus of $25 if all five sessions were attended, for a possible total of $50 for gr up attendance.

Some of the parents elected not to participate in this condition. Since this introduced the possibility of differences between these groups due to self-selection, the students whose parents had declined (SPNR) and those whose parents had agreed to take part in SCCOPE (SPR) were treated as separate groups in the data analyses.

Comparison Control. Students in this condition also participated in ten small group sessions conducted once a week, two hours per day as well as two, two hour booster sessions, during the school day, in the school setting. The session content was adapted from a school-based substance abuse prevention program that was provided in schools by the state alcohol and drug abuse commission. During the sessions the students took part in exercises and activities focused on building a cohesive support group, improving self-awareness, and self-understanding and increasing substance knowledge. Participants also received a student manual which consisted mainly of worksheets used as part of the

various group exercises and activities.

## Results

Effectiveness was examined using 4 x 3 (condition x time) repeated measures Analyses of Variance (ANOVA's) and Multivariate Analyses of Variance (MANOVA's).

### Personality measures

Positive changes were found for all conditions on each of the personality measures. Significant increases over time were found for social assertiveness ($F(2,360) = 7.94$, $p < .001$), self-esteem ($F(2,360) = 4.23$, $p < .02$), self-confidence ($F(2,360) = 6.88$, $p < .002$), self-satisfaction ($F(2,362) = 3.63$, $p < .03$) and smoking influenceability ($F(2,362) = 5.21$, $p < .007$). Influenceability on the other hand, decreased significantly ($F(2,362) = 11.13$, $p < .001$). A positive change was also found for social anxiety ($F(2,360) = 6.54$, $p < .003$). A high score on this variable indicated that the subjects reported feeling more comfortable in social interactions.

A main effect for condition was found for the degree to which the students felt they were influenced by external sources ($F(2,358) = 2.45$, $p < .03$). Post hoc tests showed the students in the SPNR group to be significantly less comfortable than students in the SI, SPR, or CC conditions ($F(1,450) = 6.30$, $p < .02$); and

the CC condition to be less comfortable than those in the SI and SPR conditions ($F(1,450) = 9.22$, $p < .003$).

Attitudes toward substance use and substance knowledge

All groups showed a significant increase over time in their knowledge of the effects of using cigarettes ($F(2,368) = 13.33$, $p < .001$), alcohol ($F(2,368) = 12.13$, $p < .001$), and marijuana ($F(2,368) = 3.63$, $p < .03$). Condition main effects and interaction effects for these variables were not significant. In addition, no changes were noted in attitudes towards use of alcohol, cigarettes, or marijuana.

Attitudes towards school, teachers, and school performance

The value which the students placed on school increased over time ($F(2,362) = 7.59$, $p < .002$) and the number of tardies ($F(2.332) = 7.93$, $p < .001$) decreased significantly for all conditions over time. No changes were noted in teacher-student affinity.

Effect on substance use

The conditions did not differ on the monthly and weekly measures of cigarette use nor the frequency of smoking. Neither did frequency of smoking change significantly from pretest to follow-up. However, very small but significant increases in the frequency of drinking alcohol ($F(2,352) = 3.20$, $p < .05$), the

amount of alcohol drunk per drinking episode ($F(2,176) = 3.59$, $p < .04$), the frequency of getting drunk ($F(2,182) = 6.09$, $p < .004$), and the frequency of marijuana use ($F(2,340) = 7.96$, $p < .001$) were noted for all conditions over time. Further analysis indicated that the increase in use was probably due to a small number of students who at pretest had reported "never" using the substances but at post or follow-up reported that their level of use had increased to the next highest category of "a few times a year."

Child Behavior Checklist Results

Since, the Child Behavior Checklist consists of separate forms for males and females, the data were analyzed separately by sex. The females in the SPR condition were found to be significantly higher on delinquency ($F(2,54) = 4.01$, $p < .04$) and aggression ($F(2,27) = 4.01$, $p < .04$) than the CC and SI groups. This difference does not appear to be attributable to the intervention, however, as the difference was already in evidence at pretest and thus was probably an artifact of the assignment procedure. No differences were noted in levels of delinquency or aggression over time. The males in all conditions showed significant decreases over time in self-destructiveness ($F(2,140) = 4.13$, $p < .02$), immaturity ($F(2,140) = 4.36$, $p < .02$),

attentiveness, and aggression ($F(2,144) = 5.00$, $p < .009$).

Coping skills

The raters overall scores of the effectiveness of the subjects responses to the vignettes for each coping skill were analyzed by means of a 3 x 3 (condition x time) repeated measures MANOVA. Since preliminary analyses had shown the SPNR and SPR groups to be no different on relevant variables, these groups were combined to increase the n in the analysis. Significant effects were found for condition (Wilks' = .835, $F(10,626) = 5.90$, $p < .0001$), time (Wilks' = .888, $F(10,624) = 3.81$, $p < .0001$), and the condition by time interaction (Wilks' = .898, $F(20,1036) = 1.71$, $p < .03$).

To determine which variables were contributing to the group differences, significant effects from the MANOVA runs were further analyzed using a Discriminant Function analysis (DFA) the results of which are listed in Table 1. The classification means for condition indicate that the single significant function ($F(10,624) = 5.90$, $p < .001$) for this effect separated the SI condition from the CC and SPR conditions. From the structure matrices in Table 1 it can be seen that while all of the variables contributed to the main

effect for condition, anxiety and assertiveness contributed most strongly. The SI condition scored higher than the CC and SPR conditions on all coping skills.

Two functions were significant for time. The first ($F(10, 624) = 3.81$, $p < .001$) distinguished between the pretest and posttest and the second ($F(4,313) = 3.82$, $p < .005$) the follow-up measure from pre and post. Referring to the structure matrices, it can be seen that subjects at pre were rated lower in anxiety and decision making and higher in social skills than at posttest. The structure matrix for the second function indicates that at follow-up, the scores on the discriminant function were higher than at pre and post on all coping skills.

The classification means and structure matrix for the single significant function for the interaction effect ($F(20, 1036) = 1.71$, $p < .03$) show the SI and SPR conditions to improve from pre to post and again from post to follow-up but the CC condition to decrease slightly on all coping skills over the three time periods.

## Discussion

These data suggest that preventive intervention can have a positive effect on high risk youth. All

students improved with respect to personality variables and some school behavior variables. In addition, the lack of large increases in substance use over a one year period can be viewed as a positive outcome given the increases that would be expected for adolescents over a year according to national statistics.

Unfortunately, the role of coping skills training in preventing substance abuse in high risk adolescents remains unclear and is in need of further investigation. As stated above, significant changes over the one year period were typically present for all three conditions. Significant differences in the effects of the three interventions were not found with exception of effects on coping skills acquisition. It is possible that the coping skills groups were not effective, as changes in these groups did not differ significantly from the comparison control. Improvements in all three groups may have been due to expectancy for change or attention. Alternatively, the comparison control may have actually been a more powerful intervention than was originally anticipated. In addition to establishing expectancy for change and providing attention, this condition entailed building a cohesive peer support group, improving self-awareness and self-understanding, and provision of substance

information. Thus, this condition was substantially more powerful than a traditional placebo control. Unfortunately the design of this project did not include a no treatment control. Therefore, definitive conclusions cannot be drawn concerning the effects of the treatment conditions, and the role of coping skills training remains clouded.

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Table 1
Structure matrices and Classification means for the DFA.

Structure matrices all effects

| Coping skill | Condition | Time DF1 | Time DF2 | Cond by Time |
|---|---|---|---|---|
| Assertiveness | .79 | .13 | .51 | .38 |
| Social skills | .47 | -.40 | .72 | .37 |
| Decision making | .49 | .28 | .29 | .29 |
| Communication | .44 | -.16 | .42 | .23 |
| Anxiety | .88 | .60 | .88 | .99 |

Main effect
Classification Means

| Condition | DF1 | Time | DF1 | DF2 |
|---|---|---|---|---|
| CC | 5.23 | Pretest | .22 | 4.23 |
| SI | 5.91 | Posttest | .78 | 4.22 |
| SPR | 5.24 | Follow-up | .56 | 4.61 |

Condition by time
Classification means

| Group | Time Pre | Post | Follow-up |
|---|---|---|---|
| Condition 1 | 3.28 | 2.86 | 3.14 |
| Condition 2 | 3.09 | 3.85 | 3.97 |
| Condition 3 | 2.79 | 3.22 | 3.44 |

M Condition = 5.51, M Time DF1 = .52, M Time DF2 = 4.36, M Condition by Time =3.33.