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SUBSTANCE REFUSAL SKILLS IN A POPULATION OF ADOLESCENTS DIAGNOSED WITH CONDUCT DISORDER AND SUBSTANCE ABUSE

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Abstract — The present study examined substance refusal skills of 44 conduct-disordered male adolescents. Fifty percent of these adolescents were dually diagnosed with substance abuse/dependence. Substance refusal skills were assessed utilizing a role-play test that consisted of four interpersonal scenarios in which a confederate prompted youths to engage in illicit drug and alcohol activity. The test demonstrated adequate interrater agreement and validity. Overall skill in refusing alcohol was positively related to adolescents' perceptions of belonging and attention, and overall skill in refusing illicit drugs was positively related to school performance and social competence. Contrary to expectations, substance refusal skills of dually diagnosed adolescents were comparable to their non-substance-abusing counterparts. Clinical implications of this study are discussed. © 1998 Elsevier Science Ltd

In recent years, drug abuse has ranked as the number-one problem facing America in most public opinion surveys (Botvin & Botvin, 1992), and problems associated with conduct disorder have created a need for service that far exceeds available resources and personnel (see Webster-Stratton & Dahl, 1995). Given the high comorbidity rate of adolescent substance abuse and delinquency (Bell & Champion, 1979; Donovan, Jessor, & Costa, 1988; Elliot, Huizinga, & Menard, 1989), it is not surprising that social skill interventions for these populations are largely the same. Indeed, both populations appear to be deficient in their social skills relative to nonclinical adolescent populations (e.g., Gaffney, 1984; Gaffney & McFall, 1981; Hansen, St. Lawrence, & Christoff, 1988; Hansen, St. Lawrence, & Christoff, 1989; Lindquist, Lindsay, & White, 1979; Ralph & Morgan, 1991; Spence, 1981a; Ward & McFall, 1986). Yet no studies have systematically examined social skill functioning of conduct-disordered youths who abuse illicit substances with those who do not. As Hansen et al. (1988) assert, "The likelihood of social-skill deficits and the importance of increasing prosocial behaviors of conduct-disordered youths has been emphasized; yet little empirical evidence is available regarding the social skills of these youth" (p. 425). Of particular relevance to this study, there is a dearth of information regarding substance refusal skills of conduct-disordered adolescents utilizing controlled trials and behavioral indices. Indeed, investigators have argued for inclusion of substance refusal skills training with conduct-disordered youths (see Hawkins, Jenson, Catalano, & Wells, 1991). However, behavioral evaluation of substance refusal skills in this population is conspicuously absent (see Botvin & Botvin, 1992).

In the present study, we conducted a comprehensive assessment of substance refusal skills of conduct-disordered adolescents. Half of these conduct-disordered youth

were additionally diagnosed with substance abuse/dependence. The purpose of this investigation was threefold: (1) to develop a behavioral role-play instrument to assess substance refusal skills in a population of conduct-disordered adolescents with adequate interrater reliability and validity; (2) to identify social adjustment correlates of substance refusal skills; and (3) to determine if conduct-disordered adolescents demonstrate greater skill in refusing substances than do adolescents who are dually diagnosed with conduct disorder and substance abuse/dependence.

M E T H O D O L O G Y

Subjects

The sample consisted of 44 male adolescents, ages 16 through 17 years. Subjects were selected from a university-based psychiatric hospital. Half the sample was diagnosed with conduct disorder (CD), and the other half of the sample was diagnosed with conduct disorder and substance abuse/dependence (CD+SA), according to their responses to the Structured Clinical Interview of the *DSM-III-R* (SCID-R; Spitzer, Gibbon, & First, 1988). Thirty-nine percent of the adolescents were Caucasian, 57% were African-American, and the remaining 4% were of other minority descent. Mean Full Scale IQ for this sample was 90.6 (range = 70–115), according to the Wechsler Intelligence Scale for Children-Revised (WISC-R; Weschler, 1974) or Wechsler Adult Intelligence Scale for Children-Revised (WAIS-R; Weschler, 1981). Subjects were excluded from the study if they were diagnosed with a psychotic disorder.

Measures

Social Support Scale. The Social Support Scale (Cohen & Hoberman, 1983) is a 48-item, self-report inventory that is completed by adolescents. Although scores may be derived from four subscales, only the Belonging and Appraisal subscales were utilized in this study. The Belonging subscale measures perceived availability of someone in which to share social activity. Subscale scores range from 0 to 12, and lower scores indicate greater perceived feelings of belonging. The Appraisal subscale measures perceived availability of someone in the environment to talk with about problems. Subscale scores range from 0 to 12, and lower scores indicate greater perceived social support relevant to solving problems. Internal reliability and concurrent validity are adequate for both subscales (Cohen & Hoberman, 1983).

Revised Child Behavior Problem Checklist (CBCL) (Youth Version). The youth version of the CBCL (Achenbach & Edelbrock, 1983) is a 112-item self-report problem behavior checklist for adolescents that can be utilized to assess social and emotional adjustment. In addition to a total score, the CBCL yields scores for several problem and social domains. Reliability and validity for all scales are good and are reported elsewhere (see Achenbach & Edelbrock, 1983).

Role-play test. To assess level of substance refusal (SR), four situations were employed (see Appendix). Two scenes involved a confederate offering drugs to the subject, and two scenes involved a confederate offering alcohol. Two scenes involved a male confederate, and two scenes involved a female confederate. The narrator read each situation once, waited 10 sec, and then read the scene again. Immediately after the second reading, the confederate read a prompt and waited for the subject to re-

spond. After the subject responded, the confederate read a second prompt and then ended the interaction after the subject finished talking for 10 sec.

SR role-play performance was videotaped and retrospectively rated on several behavioral components, utilizing a 7-point scale (i.e., 1 = extremely unskilled; 4 = somewhat skilled; 7 = extremely skilled). Specific component behaviors include: (1) denies first offer to use substance, (2) avoids going to a place where the substance is present, (3) states why he cannot or will not use substance, (4) makes a derogatory statement about substance use/involvement, (5) suggests an alternative activity, (6) denies second offer to use substance, (7) does not make a plan to engage in substance use/activity at a later time, (8) concerned/neutral affect, and (9) speech fluency.

In addition to component behavior ratings, all scenes were assessed with global ratings of physical attractiveness and overall skill. A 7-point rating scale was utilized to rate component behaviors, overall skill (1 = extremely unskilled; 4 = somewhat skilled; 7 = extremely skilled), and physical attractiveness (1 = extremely unattractive; 4 = somewhat attractive; 7 = extremely attractive). One graduate student conducted ratings of component behaviors, and another graduate student rated physical attractiveness and overall skill.

Procedure

Subjects were recruited from the chemical dependency unit of St. Francis Hospital in Pittsburgh, Pennsylvania, a residential psychiatric hospital, and the juvenile court system. All subjects were offered a \$150.00 gift certificate to several retail stores in a local shopping mall to participate in the study. Once identified, legal guardians were contacted through permission letters that fully described study intent. Informed written consent was obtained from subjects and their legal guardians prior to study participation.

A battery of psychological assessment instruments was administered to subjects by advanced graduate students of clinical psychology during a 2-day period of time at St. Francis Hospital. During the first day, subjects were diagnosed utilizing the SCID-R, and during the second day subjects were administered the WISC-R (or WAIS-R), CBCL, Social Support Scale, and role-play assessment procedures.

R E S U L T S

Analyses of group differences on race, age, physical attractiveness, and IQ

The *t*-tests showed no significant differences between CD and CD+SA groups on age ($t(1,41) = -0.49, ns$) or physical attractiveness ($t(1,42) = -.34, ns$). However, the groups were significantly different on Full Scale IQ ($t(1,42) = -2.41, p < .05$) and the delinquency factor of CBCL ($t(1,42) = -3.15, p < .01$), with CD+SA youths demonstrating higher IQ and delinquency scores. Chi-square analyses were conducted to determine if CD and CD+SA groups differed on race (white, nonwhite) and referral status (court, noncourt). Results of these analyses indicated that there were significantly more court-ordered referrals in the CD group ($\chi^2(1) = 26.77, p < .005$). No significant differences were found between CD and CD+SA groups on race ($\chi^2(1) = 2.4, ns$).

Reliability of role-play assessment

Interrater agreement was assessed for all behavioral components coded from videotapes of role-play tests. Reliability of each measure was determined by comparing the scores of two raters for 27% of the subjects (randomly selected) on each task. Two

graduate students of clinical psychology served as primary reliability raters. One of these students rated overall skill and physical attractiveness, and the other student rated the component behaviors. A third graduate student served as the reliability rater. For each skill, agreement was computed by dividing the total number of agreements by the sum of total agreements and disagreements. Agreement was scored if the raters were within 1 point on the 7-point scales. This ratio was then multiplied by 100 to obtain a percentage agreement value. Mean interrater agreements for drug refusal was .84 (range = .71 to .96) and alcohol refusal was .83 (range = .75 to .96).

Analyses of group differences (CD, CD+SA) on role-play tests

Multivariate analyses of covariance (MANCOVA) were conducted to assess differences among groups (CD, CD+SA) on role-play performance. Court referral status, Full Scale IQ, and delinquency factor of CBCL were utilized as covariates for these analyses because the groups differed significantly on these factors. Variables (component behaviors, overall skill ratings) from SR role-plays (drug, alcohol) were examined separately. For drug refusal, a MANCOVA between CD and CD+SA subjects was completed for component behaviors and overall skill. Although the MANCOVA revealed that the CD and CD+SA youths differed significantly in their use of these social skills, ($F(1,40) = 2.38, p < .05$), post hoc univariate analyses comparing the groups for each of these skills were all nonsignificant ($p < .05$), and are presented in Table 1. The MANCOVA that was performed for SR (alcohol refusal) was not significant ($p < .05$).

Correlations of overall skill with component social skill behaviors

To examine the relationship of overall skill and component skills, correlational analyses were conducted. For each social skill domain (drug refusal, alcohol refusal), Pearson product-moment correlation coefficients were computed between overall

Table 1. Comparison of groups (CD, CD+SA) on social skill components of drug refusal

Components		Group		<i>p</i> <
		CD	CD+SA	
Denies first offer to use drugs	Mean	5.88	5.41	<i>ns</i>
	<i>SD</i>	1.52	1.91	
Avoids going where drugs are present	Mean	5.28	5.64	<i>ns</i>
	<i>SD</i>	2.10	1.91	
Explains why he can't /won't use drugs	Mean	2.48	4.41	<i>ns</i>
	<i>SD</i>	2.03	2.27	
Derogatory statement about substance use	Mean	2.00	2.66	<i>ns</i>
	<i>SD</i>	1.93	1.94	
Suggests alternative activity	Mean	1.55	1.50	<i>ns</i>
	<i>SD</i>	1.46	1.31	
Denies second offer to use	Mean	5.40	5.18	<i>ns</i>
	<i>SD</i>	1.94	2.17	
Doesn't state that he may use at a later time	Mean	5.40	5.11	<i>ns</i>
	<i>SD</i>	1.90	2.00	
Concerned/neutral affect	Mean	6.23	5.96	<i>ns</i>
	<i>SD</i>	1.41	1.67	
Speech fluency	Mean	6.65	6.64	<i>ns</i>
	<i>SD</i>	1.23	.51	
Overall skill	Mean	4.02	4.84	<i>ns</i>
	<i>SD</i>	1.37	1.30	

skill and component behaviors. In the domain of drug refusal, overall skill was significantly related to denial of first offer to use drugs ($r = .62, p < .01$), avoids going to a place where drugs are present ($r = .76, p < .01$), states why he can't/won't use drugs ($r = .58, p < .01$), denies second offer to use drugs ($r = .68, p < .01$), does not plan drug use/activity at a later time ($r = .66, p < .01$), and concerned/neutral affect ($r = .47, p < .01$). A complete listing of correlations is presented in Table 2.

In the domain of alcohol refusal, overall skill was significantly related to denial of first offer to use alcohol ($r = .68, p < .01$), statement that he will go to place where alcohol is present ($r = .67, p < .01$), states why he can't/won't use alcohol ($r = .54, p < .01$), suggests an alternative activity ($r = .38, p < .01$), denies second offer to use alcohol ($r = .70, p < .01$), does not state that he may perform alcohol use/activity at a later time ($r = .75, p < .01$), and concerned/neutral affect ($r = .76, p < .01$). A complete listing of correlations is presented in Table 3.

Correlations of overall skill with subscales of the Youth Self-Report and Social Support scale

To examine the relationship of overall competence in substance refusal skills and perceptions of social support and conduct, correlational analyses were conducted. An intercorrelational matrix is presented in Table 4. For the Youth Self-Report, results show significant correlations between Mean School Performance and overall skill in drug refusal ($r = .38, p < .01$), Attention and overall skill in alcohol refusal ($r = -.26, p < .05$), and Total Competence and overall skill in drug refusal ($r = .27, p < .05$). For the Social Support scale, results show significant correlations between Belonging and overall skill in alcohol refusal ($r = -.28, p < .05$).

Component behaviors predicting overall social skill

Stepwise multiple regression analyses were employed to ascertain which component behaviors were able to significantly predict overall skill for drug refusal and alcohol refusal. Component behaviors were entered simultaneously as predictors of overall skill for both groups of subjects combined (CD, CD+SA). Results of these analyses are presented in Table 5.

Table 2. Pearson product-moment correlations between behavioral skill components and overall skill for drug refusal

Overall Skill	
All subjects ($N = 43$)	
Denies first offer to use drugs	.62*
Avoids going where drugs are present	.76*
States why he can't/won't use drugs	.58*
Derogatory statement about drug use or involvement	.23
Suggests alternative activity	.06
Denies second offer to use drugs	.68*
Doesn't state that he may engage in drug use/activity at a later time	.66*
Concerned/neutral affect	.47*
Speech fluency	.00

* $p < .01$.

Table 3. Pearson product-moment correlations between behavioral skill components and overall skill for alcohol refusal

Overall Skill	
All subjects ($N = 43$)	
Denies first offer to use alcohol	.68**
Does not state that he will go to place where alcohol is present	.67**
States why he can't/won't use alcohol	.54**
Derogatory statement about alcohol use or involvement	.10
Suggests alternative activity	.38**
Denies second offer to use alcohol	.70**
Doesn't state that he may perform alcohol use/activity at a later time	.75**
Concerned/neutral affect	.76**
Speech fluency	.25

* $p < .05$. ** $p < .01$.

In the first analysis, drug refusal component behaviors were entered simultaneously as predictors of overall skill in drug refusal. Refusing to go to a place where drugs were present, providing a brief explanation of why the subject cannot use drugs, and refusing the second offer to use drugs were all found to significantly contribute to the regression equation. Indeed, these variables accounted for 83% of the variance in the measure of overall skill for drug refusal. In the last analysis, not planning to engage in alcohol use/activity at a later date and neutral/concerned affect significantly predicted overall skill in alcohol refusal, accounting for 79% of the variance in the measure of alcohol refusal.

DISCUSSION

The present study was the first to compare social skill functioning of conduct-disordered adolescents with, and without, a diagnosis of substance abuse utilizing a behav-

Table 4. Pearson product-moment correlations between overall skill and subscales associated with social competence

Subscales associated with social competence	SR Drug refusal	SR Alcohol refusal
Social Support Scale		
Belonging Scale	-.22	-.28*
Appraisal Scale	-.11	-.12
Youth Self-Report		
Mean School Performance	.38**	.16
Total Competence	.27*	.10
Activities Scale	.15	.00
Social Scale	.22	.07
Anxious/Depressed	-.10	-.06
Social Problems	-.08	.06
Attention Problems	-.25	-.26*
Delinquent Behavior	-.06	-.05
Aggressive Behavior	-.09	-.16
Withdrawn Scale	-.10	-.03

* $p < .05$. ** $p < .01$.

Table 5. Stepwise multiple regression analyses of component behaviors predicting overall skill

Social skill	Cum. R sq.	R sq.	Δ in R	<i>df</i>	<i>F</i>	<i>p</i>
SR (drug refusal)						
Refuses to go where drugs are present	.7532	.5674	—	1,42	55.08	<.0001
Brief explanation of why don't use drugs	.7963	.6341	.0667	1,42	35.53	<.0001
Refuses second offer to use drugs	.8320	.6923	.0582	1,42	29.99	<.0001
SR (alcohol refusal)						
Does not state that alcohol use will occur in future	.7490	.5610	—	1,42	53.67	<.0001
Neutral/concerned affect	.7851	.6164	.0554	1,42	32.94	<.0001

ioral role-play instrument. A standardized role-play instrument was developed to examine substance refusal skills of 44 conduct-disordered inpatient adolescents. The resulting instrument demonstrated adequate interrater agreement for both drug refusal (mean percentage agreement = .84) and alcohol refusal (mean percentage agreement = .83). Validity of this role-play instrument was supported, as most component skills were related to overall skill ratings of substance refusal conducted by an independent rater. The latter finding is particularly noteworthy, as Spence (1981b) alluded to the necessity of identifying behavioral components in the assessment of social skills for delinquent males.

One of the primary purposes of this study was to determine whether substance-abusing conduct-disordered male adolescents were deficient in their use of substance refusal skills relative to their nonabusing counterparts. The present results suggest that these populations demonstrate similar substance refusal skills. This finding is consistent with the results of Jenson, Wells, Plotnick, Hawkins, and Catalano (1993). In their study, severity and frequency of posttreatment drug use were unrelated to alcohol and drug refusal skills in a population of male delinquents, thus supporting the contention that substance refusal skills are not directly related to substance abuse in the conduct-disordered male population. Rather, mitigating factors interact with refusal skills to influence abstinence from drugs. Given the success of comprehensive substance abuse programs that include skills training components in their intervention (e.g., Azrin, 1976; Azrin et al., 1996; Azrin et al., 1994a, 1994b; Azrin, Sisson, Meyers, & Godley, 1982), substance refusal skills training procedures may influence youth to abstain from substances in ways other than improved social skills per se (e.g., praise and encouragement given to youths for performance of substance refusal skills during role-play interactions).

Although 6 of the 9 component drug refusal behaviors were significantly related to overall skill in this domain, only 3 were found to significantly predict overall skill (i.e., refuses to go where drugs are present, brief explanation of why drugs are not used, refuses second offer to use drugs). These results suggest that social skill training programs with conduct-disordered adolescents should emphasize multiple offers to use drugs in training scenarios, including opportunities to teach youth to be decisive and brief in their explanations regarding why they do not use drugs. If drug refusal scenarios in this study were too short in duration, or if the second prompt to use drugs was not provided, a significant proportion of the variance in overall drug refusal skill would not have been explained. Interestingly, the component skill of refusing to go where drugs are present is consistent with stimulus control strategies that attempt to restrict youth from situations in which drug use is present. In the related domain of al-

cohol refusal, 7 of the 9 component behaviors were significantly related to overall skill, but only 2 were found to significantly predict overall alcohol refusal skill (i.e., not stating that alcohol use will occur in the future, neutral/concerned affect).

Drug and alcohol refusal skills appear to interact with social functioning differently. Indeed, overall skill in refusing alcohol was positively related to lower levels of Attention Problems and perceived availability of friends in which to share activities, whereas drug refusal was positively related to School Performance and Total Competence. However, it should be mentioned that only a small percentage of the variance in social functioning was accounted for by these overall substance refusal skills. Indeed, given the weak correlations and small number of subjects, results from these correlational analyses must be interpreted with caution.

The present study provides empirical support for inclusion of the following component behaviors in the assessment and treatment of drug refusal skills in a population of conduct-disordered youths: (1) denies first offer to use drugs, (2) does not state that he will go to place where drugs are present, (3) states why he cannot or will not use drugs, (4) denies second offer to use drugs, (5) does not state that he may perform drug use/activity at a later time, and (6) concerned/neutral affect. In the related domain of alcohol refusal skills, we recommend inclusion of the following component behaviors: (1) denies first offer to use alcohol, (2) avoids going to a place where alcohol is present, (3) states by he cannot or will not use alcohol, (4) suggests an alternative activity in which alcohol is not present, (5) denies second offer to use alcohol, (6) avoids plans to perform alcohol use/activity at a later time, and (7) concerned/neutral affect.

Several limitations of the present study deserve comment. Most notably, interpretation of results is limited to male conduct-disordered adolescents. Furthermore, behavioral indices (e.g., behavioral observation of social competence in naturalistic environments) were not utilized to corroborate self-reports of social competence. Thus, significant relationships found to exist between social competence and overall role-play performance must be interpreted with caution. Finally, it should be mentioned that although the *DSM-III-R* version of the SCID (Spitzer et al., 1988) was utilized to diagnose the youths in this study, the *DSM-IV* version is similar with respect to the criteria for this population. For instance, the latest version of the *DSM-IV* (American Psychiatric Association, 1994) requires at least three symptoms as having occurred sometime during the last 12 months, whereas the *DSM-III-R* version (American Psychiatric Association, 1987) requires roughly the same symptoms as having occurred for at least 1 month.

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A P P E N D I X

Narrator: You've been talking to one of your classmates about all of the drug use in your school. Your classmate looks at you, smiles, reaches into his pocket and silently pulls out a joint. She says:

Prompt 1: I've got some good stuff here; let's go try it out.

(Subject's response 1)

Prompt 2: (But) just about everybody's smoking it.

(Subject's response 2)

Narrator: You tell one of your classmates at school that you are on your way to see Jim, a good friend of yours. This classmate tells you that he is also planning to see Jim to drop off some dope to him. He says:

Prompt 1: As long as you're going to over there anyway, how about dropping off this bag to Jim. I'll give you some stuff for doing it as well.

(Subject's response 1)

Prompt 2: You'll be doing me a favor, and you'll get some good stuff too.

(Subject's response 2)

Narrator: You and a couple of your co-workers have just put in a long hard day on your weekend job. All of you are getting ready to go home. One of your friends tells everyone that his folks are gone for the weekend. She says:

Prompt 1: Let's go over to my house. I have a couple of six packs over there.

(Subject's response 1)

Prompt 2: (It's O.K.) Nobody's there; we'll have a good time.

(Subject's response 2)

Narrator: You are at party with several of your friends. Although you really like being with them, you notice that they all seem to be drinking. You also notice that some of them are doing drugs in the bathroom. One of them comes over to you and he says:

Prompt 1: Have a drink of something and loosen up a little.

(Subject's response 1)

Prompt 2: Everybody's doing something. We'll have a real good time.

(Subject's response 2)