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AUTHOR Tortu, Stephanie; And Others
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ABSTRACT

This study was conducted to determine whether gender differences exist on a number of psychosocial variables that are correlated with the use of tobacco, alcohol, and marijuana. Subjects were 1,465 students from 22 schools in three regions of New York State who were in the seventh grade during the 1985-1986 school year. Students completed questionnaires in September 1985, January 1986, and May 1987. Data were obtained on these factors: basic demographic information; self-reported use of tobacco, alcohol, and marijuana; and various measures of cognitive, attitudinal, and personality variables believed to be correlated with the use of tobacco, alcohol, and marijuana. Data from Time 1 and Time 3 suggest substantial and interesting gender differences in the correlates of substance use. Differences were especially apparent when examining alcohol use as compared to the use of tobacco and marijuana, suggesting that the roots of the difficulties men have with alcohol are probably to be found in adolescence. Decision-making skill was negatively correlated with the use of tobacco and alcohol for boys only. Self-esteem, problem-solving confidence, and academic esteem were related to the use of all three substances for girls only. Risk-taking, a lack of self-control, and an inability to refuse requests from peers were related to substance use for both genders. These findings have implications for prevention efforts with this age group. (NB)

Gender Differences in Correlates of Substance Use: Implications for Prevention

Stephanie Tortu, Ph.D.*, Barbara A. Bettes, Ph.D.**
Eli Baker, Ph.D. and Gilbert J. Botvin, Ph.D.

Laboratory of Health Behavior Research
Cornell University Medical College

*Now at Narcotic & Drug Research, Inc., 11 Beach St., N.Y., N.Y. 10013

**Now at New York State Psychiatric Institute, 722 W. 168th St., N.Y., N.Y.

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Introduction

Over the past few years, increasing attention has been paid to gender differences that exist in the area of substance use and abuse. For example, the sexes exhibit different patterns of use. Women use more psychoactive prescription drugs, and men use more alcohol (Gomberg, 1982). Among adolescents and young adults, there are proportionally more female than male regular smokers (Johnston, O'Malley, and Bachman, 1987). Gender differences have also been reported in the antecedents and correlates of substance use. Alcohol and marijuana use in adolescence is related to early aggressiveness and early shyness in males but not females (Ensminger, Brown, and Kellam, 1982). Young female smokers are generally reported to be socially adept and confident, whereas young male smokers are described as socially unsure of themselves and less confident (Gritz, 1984; U.S. Public Health Service, 1980). Finally, school-based drug education programs have reported differential effects for boys and girls. Substance use by girls, but not boys, was positively affected by a values-oriented prevention approach (Moskowitz, 1983). Girls deemed to be at high risk for smoking were more resistant to a generic skills building smoking prevention program than similar high-risk boys (Gilchrist, Personal Communication).

The purpose of this paper is to present data from junior high school students which indicate that gender differences exist on a number of psychosocial variables that are correlated with the use of tobacco, alcohol, and marijuana. Because this age

group is a primary target for drug abuse prevention programs, the implications of these gender differences for prevention programs will be discussed.

Method

Sample

A total of 56 schools from three regions of New York State were recruited for participation in a study designed to test the effectiveness of a generic skills oriented approach to drug abuse prevention. For this report, the sample consisted of 1465 students from 22 schools in the randomly assigned control condition. The sample was 53% male and 47% female, and it was 90% White, 1.43% Black, 1.37% Hispanic, and 1.57% Oriental. All students were seventh graders during the 1985-1986 school year. Parents of the students were notified of their child's participation and given the opportunity to withdraw their child from the study if they so desired.

Testing Procedure

The students in the study completed questionnaires in September, 1985; January, 1986; and, May, 1987. This study examines data from Time 1 and Time 3, that is at baseline and at an 18-month follow-up.

Questionnaires were administered during each testing phase by trained project staff during one class period. Students within classrooms were randomly selected to receive one of three

questionnaire forms. Carbon monoxide samples were also obtained each time from the students in order to enhance the validity of the self-reports.

Questionnaire

All forms of the questionnaire (with approximately 185 items) contained the same core of questions concerning basic demographic information. The rest of the questionnaire consisted of items measuring self-reported use of tobacco, alcohol and marijuana and various measures of cognitive, attitudinal, and personality variables believed to be correlated with the use of tobacco, alcohol, and marijuana.

Each of the cognitive, attitudinal and personality measures was included on two of three forms of the questionnaire in order to maximize the coverage of these variables while at the same time maintaining a questionnaire length consistent with the time available for data collection. (A full description of the questionnaires is available from the first author).

For this report, two sets of variables were examined. The first were measures of the respondents' current use of tobacco, alcohol and marijuana, and the second were various psychosocial measures believed to be related to the use of tobacco, alcohol and marijuana. The psychosocial variables included measures of: esteem, coping strategies, decision-making skills, assertiveness skills, social anxiety, risk-taking, somatic symptoms, and general well-being. A full list of the specific measures used is

contained in Tables 2 and 3.

The measures of substance use included the following: (1.) "How much do you currently smoke?", with responses ranging on a 10-point scale from "I have never smoked" (1) to a "A pack or more a day" (10); (2.) "How often (if ever) do you drink alcoholic beverages?", with responses ranging on a 9-point scale from "Never tried them" (1) to "More than once a day" (9); and (3.) "How often (if ever) do you smoke marijuana?", with responses ranging on a 9-point scale from "Never tried it" (1) to "More than once a day" (9).

Data Analysis

A correlation matrix was constructed with measures of the Time 1 psychosocial variables and measures of tobacco, alcohol and marijuana use at Time 3.

A repeated measures analysis was also performed on the substance use variables, with sex as a grouping factor. This analysis enabled us to determine whether there were different patterns of change in substance use over the 18 month follow-up period according to gender.

Results

By inspecting Table 1, it can be seen that at Time 1, boys reported more alcohol and marijuana use, with tobacco use being equivalent for both sexes. At Time 3, boys again reported

greater use of alcohol and marijuana, while girls reported more tobacco use than boys. For both extent of smoking and frequency of marijuana use, the time by sex interaction was also significant. For smoking, girls had increased their use to a greater degree than boys, while the opposite was true of marijuana use.

By inspecting Tables 2 and 3, it can be seen that eight Time 1 psychosocial variables predict tobacco use at Time 3 for both boys and girls. Negative academic esteem, somatic symptoms, and risk-taking are positively correlated with tobacco use at Time 3, while refusal skill, self-reinforcement (1), self-control, self-reinforcement (2), and parental support-seeking are negatively correlated with tobacco use at Time 3. For girls only, social concern is positively correlated with tobacco use, while problem-solving confidence, positive self-esteem, ability to make requests, social assertiveness, and self-efficacy are negatively correlated with tobacco use. For boys only, decision-making skill is negatively correlated with tobacco use.

Further inspection of Tables 2 and 3 indicates that only five Time 1 psychosocial variables predict alcohol use at Time 3 for both boys and girls. These are risk-taking (positive correlation), and refusal skill, self-reinforcement (1), self-control, and parental support-seeking (all negatively correlated). Unique predictors for girls include negative academic esteem, somatic symptoms, negative self-esteem, and eating to cope with problems (all positively correlated), and

positive self-esteem (negatively correlated). Unique predictors for boys include confrontation anxiety (positively correlated), and decision-making skill, relaxation ability, self-reinforcement (2), and self-efficacy (all negatively correlated).

Finally, Tables 2 and 3 also indicate that nine Time 1 psychosocial variables predict marijuana use at Time 3 for both sexes. These are: somatic symptoms, risk-taking, negative self-esteem, and eating as a coping strategy (all positively correlated), self-reinforcement (1), refusal skill, self-control, self-efficacy, parental support-seeking (all negatively correlated). For girls only, negative academic esteem and positive self-esteem are positively correlated with marijuana use at Time 3, while positive self-esteem is negatively correlated with marijuana use. For boys only, decision-making skill and social assertiveness are negatively correlated with marijuana use at Time 3.

Discussion

These exploratory analyses suggest that there are substantial and interesting gender differences in the correlates of substance use. The differences are especially apparent when examining alcohol use as compared to the use of tobacco and marijuana. Results presented here regarding alcohol use suggest that the roots of the difficulties men have with alcohol are probably to be found in adolescence. Prevention efforts that

target these areas may result not only in diminished alcohol use but diminished alcohol abuse as well. Future research efforts concerning the developmental paths leading to tobacco, alcohol, and marijuana use should seek to explore these gender differences in more detail.

Several of the gender differences reported here have implications for prevention efforts that seek to impact on several substances. For example, decision-making skill is negatively correlated with the use of tobacco and alcohol for boys only. A recent, informal review of health curricula being used in the schools in this project indicates that most health teachers have incorporated teaching decision-making skills into the classroom agenda as a health promotion/disease prevention strategy. However, if prevention efforts rely primarily on teaching decision-making strategies, they may impact on substance use in boys, but not girls.

Self-esteem and problem-solving confidence are related to the use of all three substances in girls, but not boys. Prevention efforts that consider the needs of girls may want to incorporate esteem building exercises or projects into their agenda.

Also interesting is the fact that negative academic esteem is related to the use of all three substances in girls but not boys. Girls who lack confidence in their academic abilities and feel negatively about their performance in school probably lack strong bonds to the school. This supports Ensminger, et al.'s

(1982) finding that school and family attachment were important in predicting substance use for girls, while both peer attachment and school bonds were important for boys. To our knowledge, few prevention efforts consider the importance of students' attachment to school. Effort should be directed to studying this issue as it may be important for prevention efforts aimed at adolescents.

A brief mention should also be made of the variables which are related to substance use for both boys and girls. These include risk-taking, a lack of self-control, and an inability to refuse requests from peers. Thus, prevention programs that teach refusal skills and attempt to impact on risk-taking behaviors have the potential to be equally useful for both sexes.

References

Ensminger, M.E., Brown, C.H., and Kellam, S.G. (1982). Sex differences in antecendents of substance use among adolescents. Journal of Social Issues, 38, 25-42.

Gomberg, E.S. (1982). Historical and political perspective: Women and drug use. Journal of Social Issues, 38, 9-24.

Gritz, E.R. (1982). The female smoker: Research and intervention targets. In J. Cohen, J.W. Cullen, and L.R. Martin (Eds.), Psychosocial aspect of cancer (pp.39-49). New York: Raven.

Johnston, L.D., O'Malley, P.M., and Bachman, J.G. (1987). National trends in drug use and related factors among American high school students and young adults, 1975-1986. (DHHS Publication #ADM 87-1535). Wash., D.C.: U.S. Govt. Printing Office.

Moskowitz, J.M. (1983). Preventing adolescent substance abuse through drug education. In T.J. Glynn, C.G., Leukefeld, J.P. Ludford (Eds.), Preventing Adolescent Drug Abuse: Intervention Strategies. NIDA Monograph #47. (DHHS Publication #ADM83-1280). Wash., D.C.: U.S. Govt. Printing Office.

U.S. Public Health Service (1980). The health consequences of smoking for women: A report of the surgeon general. (Publication #0-326-003). Wash., D.C.: U.S. Govt. Printing Office.

Table 1

Substance Use Variables: Repeated Measures Effect

Variables	Time 1	Time 3	Time Effect
Extent of Current Smoking			138.19****
Girls	1.63	2.53*	
Boys	1.61	2.23	
Frequency of Drinking			310.76***
Girls	1.70	2.47	
Boys	2.10****	2.83****	
Frequency of Marijuana Use			90.33****
Girls	1.05	1.28	
Boys	1.13*	1.54****	

* p <.05
** p <.01
*** p <.001
**** p <.0001

Table 2

Correlation Coefficients of Time 3 Substance Use Variables with Time 1 Psychosocial Variables

Girls Only

Psychosocial Variables	Current Tobacco Use	Often Use Alcohol	Often Use Pot
Social Concern	-0.13591*	-0.00659	0.00952
Negative Academic Esteem	0.19638**	0.12868**	0.09341*
Somatic Symptoms	0.16683**	0.20047***	0.15842**
Risk-Taking	0.23762****	0.28867****	0.17865***
Problem Solving Confidence	-0.17021**	-0.13900*	0.13941*
Confrontation Anxiety	0.01399	-0.05484	0.09008
Well-Being	0.00541	-0.03187	-0.02805
Psychological Distress	0.05830	0.08849	0.06467
Positive Self-Esteem	-0.13581*	-0.16343***	-0.12759
Negative Self-Esteem	0.02007	0.09843*	0.11372*
Refusal Skill	-0.40354****	-0.15152**	-0.11770*
Ability to Make Requests	-0.14081*	-0.07469	-0.13734*
Social Assertiveness	-0.16205*	0.04875	-0.01969
Self-Reinforcement (1)	-0.14261*	-0.07068	0.12661**
Decision-Making Skill	-0.11170	-0.07663	-0.08182

Table 2

Correlation Coefficients of Time 3 Substance Use Variables with Time 1 Psychosocial Variables

Girls Only (cont'd)

Psychosocial Variables	Current Tobacco Use	Often Use Alcohol	Often Use Pot
Relaxation Ability	-0.03548	-0.07983	-0.02543
Self-Reinforcement (2)	-0.14355**	-0.08957*	-0.15311***
Social Comfort	-0.08265	-0.07895	-0.08859
Self-Control	-0.30421****	-0.30864****	-0.23938****
Self-Efficacy	0.08434	0.14239**	0.08801*
Eating as Coping Mechanism	-0.15409*	-0.13853**	-0.12434*
Parental Support Seeking	-0.15409*	-0.13853**	-0.12434*

* $p \leq .07$
** $p \leq .01$
*** $p \leq .001$
**** $p \leq .0001$

Note. N's range from 142 to 489 due to the distribution pattern of items across three forms of the questionnaire and missing values.

Table 3

Correlation Coefficients of Time 3 Substance Use Variables with Time 1 Psychosocial Variables

Boys Only

Psychosocial Variables	Current Tobacco Use	Often Use Alcohol	Often Use Pot
Social Concern	0.08331	-0.02514	0.02501
Negative Academic Esteem	0.13939*	0.06458	0.05903
Somatic Symptoms	0.11083*	0.05875	0.12887*
Risk-Taking	0.25084****	0.31768****	0.023781****
Problem Solving Confidence	-0.06139	-0.06397	-0.02472
Confrontation Anxiety	-0.07081	-0.24410**	-0.02657
Well-Being	-0.10674	-0.01173	-0.06699
Psychological Distress	-0.00231	0.02729	0.01898
Positive Self-Esteem	-0.04382	-0.05153	-0.08638
Negative Self-Esteem	0.01705	0.03799	0.00656
Refusal Skill	-0.23110****	-0.28804****	-0.18412***
Ability to Make Requests	-0.11651	-0.04555	-0.06132
Social Assertiveness	-0.13369	0.02691	-0.10848*
Self-Reinforcement (1)	-0.21285**	-0.18171****	-0.19862****
Decision-Making Skill	-0.18835**	-0.22026****	-0.07706

Table 3

Correlation Coefficients of Time 3 Substance Use Variables with Time 1 Psychosocial Variables

Boys Only (cont'd)

Psychosocial Variables	Current Tobacco Use	Often Use Alcohol	Often Use Pot
Relaxation Ability	-0.02164	-0.09927*	-0.06550
Self-Reinforcement (2)	-0.13569**	-0.19836****	-0.18538****
Social Comfort	-0.07704	-0.07563	-0.02725
Self-Control	-0.22996***	-0.28412****	-0.19586****
Self-Efficacy	-0.07365	-0.15183***	-0.11773**
Eating as Coping Mechanism	0.09888*	0.08007*	0.09609*
Parental Support Seeking	-0.19272**	-0.20053***	0.14254*

* $p \leq .07$
** $p \leq .01$
*** $p \leq .001$
**** $p \leq .0001$

Note. N's range from 132 to 511 due to the distribution pattern of items across three forms of the quesionnnaire and missing values.