

Involvement in Multiple Problem Behaviors of Young Urban Adolescents

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This paper examines four areas of "problem behavior" (i.e., delinquency, high-risk sexual behavior, school failure, and substance abuse) in a sample of urban sixth and seventh grade students. We report descriptive statistics regarding rates of problem behaviors in each of the four categories and examine their interrelationships. The results suggest that the prevalence of problem behaviors in this sample is substantial. Data show a high degree of co-occurrence among problem behaviors in different areas, although many individuals also exhibit more limited involvement. These results underscore the importance of studying younger adolescents in poor, urban communities who may have different patterns and rates of problem behavior involvement than older youth from other contexts. The data also suggest that efforts to prevent high-risk involvements for youth in poor, urban communities should be broad-ranging and be implemented prior to middle school.

KEY WORDS: Urban adolescents; high-risk behavior; co-occurrence.

Adolescence is a period of increased risk for problems such as delinquency, high-risk sexual behavior, school failure, and substance abuse (Gans, Blyth, Elster, & Gaveras, 1990; Hechinger, 1992; National Commission on the Role of School and Community in Improving Adolescent Health, 1990). According to the Task Force on the Education of Early Adolescents (1989), approximately 25% of children between the ages of 10 and 17 are at high risk for the negative consequences of involvement in

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these "problem behaviors,"² while another 25% are at moderate risk. Both in terms of prevalence and the seriousness of potential consequences, such figures suggest that the risk for adolescents is disproportionately high relative to other age groups (Dryfoos, 1990).

In response to the personal, social, and economic consequences of such behaviors, many authors have emphasized the need to develop comprehensive preventive interventions (Dryfoos, 1990; Weissberg, Caplan, & Harwood, 1991). Two key issues in the design of such interventions are the age at which these problems are manifested, and the extent to which these problems cluster or co-occur for individuals. Information on the age at which problem behaviors are initiated by young people can guide the timing of interventions so as to maximize their preventive impact. Identification of patterns of co-occurrence can inform our conception of problem behaviors as distinct and independent or as related and coincident. This information can be used to guide decisions as to whether different problem behaviors should be addressed by general, comprehensive programs or by specialized, problem-centered intervention approaches (e.g., Zaslów & Takanishi, 1993).

The current paper describes initial work by our research team to study multiple problem behaviors for an ethnically diverse sample of sixth and seventh grade students from a poor, urban community. The bulk of literature on the co-occurrence of problem behaviors has focused on older adolescents and/or youth from suburban areas or middle class backgrounds. Furthermore, national surveys tend to focus on single problem areas and on older adolescent samples; when included, data from younger adolescents are often pooled with those from older age groups (Dryfoos, 1990). Thus, there is a distinct need for research that focuses specifically on the multiple problem behavior involvements of early adolescents who reside in poor, inner-city communities.

PROBLEM BEHAVIOR INVOLVEMENT IN YOUNG ADOLESCENTS

There are several reasons for focusing specifically on the risk behaviors of young adolescents. First, this age marks a critical developmental stage in terms of physiological changes (onset of puberty), cognitive advances (move to formal operational thinking), and psychosocial development (establishment of identity, independence from family, increasing

²Based on conventional usage, the term "problem behaviors" will be used as a general term to describe problems in the four areas cited.

importance of relationships with peers) (Allen, Aber, & Leadbeater, 1991; Hamburg & Takanishi, 1989). Young adolescents also face important environmental changes such as the transitions to middle and high school (e.g., Barone, Aguirre-Deandreis, & Trickett, 1991; Jackson & Hornbeck, 1989). Third, while for older adolescents some experimentation with sex, intoxicants, and minor acting-out is considered developmentally normative (Newcomb & Bentler, 1988; Shedler & Block, 1990), for younger adolescents even limited involvement in these behaviors might constitute high risk due both to immediate health effects and the negative impact of early initiation on subsequent involvement (Farrington et al., 1990; Hawkins, Catalano, & Miller, 1992; Kandel, 1989; Kandel & Logan, 1984; Newcomb & Bentler, 1988).

Youth from poor, urban areas confront developmental challenges in a context that presents different types of stressors and available resources than those encountered by youth who reside in other environments. These include: high rates of poverty, unsafe neighborhood environments, inadequate housing, societal attitudes and behaviors that are detrimental to ethnic minorities, and households headed by young, single parents who may be overburdened with wage earning and child-care responsibilities (Cherlin, 1988; Weissberg et al., 1991). As such, these young people may have more exposure to opportunities for problem behavior involvement, fewer protective factors (e.g., meaningful and supportive contacts with positive adult role models), and fewer alternatives for positive involvements.

There are several ways in which the problem behavior involvements of youth from poor, urban areas may differ from those of other groups. First, these youth may initiate behaviors at different ages than youth in other contexts. For example, two recent studies on multiple problem behaviors did not examine sexual intercourse for younger adolescents because it was assumed that rates would be low (Gillmore et al., 1991; McGee & Newcomb, 1992). However, in a study of inner-city seventh graders, Farrell, Danish, and Howard (1992) found significant rates of sexual intercourse (58.8% for boys, 30.5% for girls). These data suggest that researchers may need to examine the incidence of sexual behavior for younger age groups than those typically studied.

Second, certain problems may be more predominant in inner-city communities. For example, while violence and physical aggression are important issues to consider in studying adolescents in general, these behaviors are most prevalent in inner-city areas. The 1989 homicide rate for 15-19 year olds in urban areas was about five times the rate in non-urban areas, making homicide the leading cause of death for urban adolescents in this age-group (Fingerhut, Ingram, & Feldman, 1992). This high level of violence seriously jeopardizes the safety and psychological development of

children in these contexts (Garbarino, 1992). Thus, it seems essential to include violence and aggression in any examination of multiple high-risk behaviors of urban youth.

Third, *patterns of problem behavior involvement* may differ as a function of both age and community characteristics. For example, some authors (Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988; Elliot, Huizinga, & Ageton, 1985) assert that behaviors such as delinquency, substance abuse, and sexual precocity actually represent interrelated aspects of a single underlying latent construct (see also Akers, 1977; Hirschi, 1969; Kaplan, 1975). However, some authors suggest that patterns of involvement may be more differentiated for younger adolescents (e.g., Gillmore et al., 1991) or that patterns of co-occurrence may differ as a function of community and cultural factors (Ensminger, 1990; Nettles & Pleck, 1993; Zimmerman & Maton, 1992). Thus, it seems important to study different patterns of involvement across samples that differ in key personal and environmental characteristics (e.g., age, community of residence, race/ethnicity, socioeconomic status).

The above examples are illustrative rather than exhaustive. Other adolescent problem behaviors (e.g., drop-out, substance abuse, and delinquency) also differ as a function of age and community characteristics; space does not allow thorough examination here. However, it should be noted that not all problems are more prevalent in inner-city areas, and that there may be considerable variation according to the exact characteristics of the particular urban area under study (e.g., Rutter et al., 1975). Furthermore, even in these high-risk environments, many youths manage to survive and even thrive despite many adversities (Cowen & Work, 1988; Luthar & Zigler, 1991; Masten, Best, & Garmezy, 1990). Thus, while the specific focus of this study is to document problem behavior involvement, no monolithic conception of inner-city youth is intended.

OVERVIEW OF CURRENT STUDY

The present study focuses on rates and patterns of co-occurrence for problems in four areas (delinquency, high-risk sexual behavior, school failure, and substance abuse) in a sample of urban sixth- and seventh-grade students. We believe this group to be at a critical point with regard to problem behavior initiation. Previous studies (see Dryfoos, 1990) with adolescents suggest that approximately 50% are engaged in one or more forms of high-risk behavior. The purpose of this study is to explore levels of risk for a young, urban sample using a single, comprehensive measure. The

study is a precursor to a large-scale study of risk and protective factors in adolescent adjustment. The results are thus particularly useful for heuristic purposes to gauge levels of high-risk behavior in this population and to outline areas which warrant further investigation. This paper emphasizes the relevance of these data to the development of effective and appropriately timed preventive interventions and to the study of multiple problem behaviors.

METHOD

Sample

The sample was comprised of 119 sixth and seventh grade students drawn from four schools in an inner-city school system in Southern New England. Demographic and school performance data for the sample are provided in Table 1, along with corresponding data for the entire population of sixth- and seventh-grade students in the school system. Student-reported ages ranged from 11 to 14. The reported ages for sixth and seventh graders respectively were: 11 (31.3% and 0%), 12 (41.7% and 30.4%), 13 (25% and 52.1%), and 14 (2.1% and 17.4%). The sample was approximately 92% minority; Hispanics were slightly over-represented in the present sample while white, non-Hispanics were under-represented. Approximately 71% of the sample were low SES with a greater number of students, relative to the total population of sixth and seventh grade students, qualifying for Chapter I educational programs and Free Lunch subsidies.³ Mean achievement test scores for the sample were in the low average range relative to national norms and were slightly below the system-wide average, while GPA and attendance were slightly higher. Some of these data (e.g., higher percentage of low SES students, based on Free Lunch subsidies; slightly lower achievement test scores) would predict that the current sample might have higher rates of problem behavior involvement than district students in general, whereas other data (e.g., lower absenteeism, slightly better grades) would suggest the opposite.

³Chapter I funds are awarded to schools in which a high proportion of students perform below minimum standards on standardized achievement tests (exact criteria vary); the state also provides such funds to each school based on the *number* of students who show poor achievement. Free Lunch subsidies are provided for those students from families that fall below federal income guidelines (\$16,510 annual income for family of four in 1990-91 year).

Table 1. Sample and Population Demographic and School Performance Data

Variable	Sample	Population
Female	53.8%	51.1%
Male	46.2	48.9
Black	61.3%	61.1%
Hispanic	31.1	23.4
Caucasian	7.6	14.7
Other	0	.7
Sixth Grade	52.9%	51.4%
Seventh Grade	47.1	48.6
Chapter 1	71.4%	51.4%
No Chapter 1	28.6	48.6
Free Lunch	71.3%	59.9%
Reduced	4.2	8.9
No Free Lunch	24.5	31.2
Absences (per year)	15.9	20.0
GPA (full year)	2.56	2.46
Metropolitan Achievement Tests		
Reading Comprehension	36.0	42.6
Math Problem Solving	40.3	43.7

Note: There were 119 sixth and seventh grade students in the sample, and 2,715 sixth and seventh grade students in the total school district population.

Procedures

The current assessment was carried out in response to requests by educators, school administrators, and parents in an inner-city school system. Thus, all research procedures and survey contents were informed by consultation and collaboration among the authors and various school personnel, community members, and parents.

Participants were recruited from four schools (three middle schools and one K-8 elementary school) in seven selected classrooms (four sixth grade and three seventh grade) whose teachers agreed to be part of the study.⁴ Letters were sent home to parents describing the rationale for the

⁴Students were surveyed in their "Social Development" classes. These classes were mandatory for all students and were designed at these grades to promote social competence and prevent substance abuse, aggression, and high-risk sexual behavior.

study, the types of questions to be asked, and the amount of requested involvement. The letter also explained the voluntary nature of the study, the anonymity of participants' responses, and their freedom to withdraw at any time they desired. Students ($n = 3$) whose parents objected to their participation were excused from the study.

The survey was administered to each of the seven classrooms, in two class periods, on successive days. Trained research staff read each question aloud while students followed. In each classroom, at least one additional research staff person was available to pass out materials and answer questions. Teachers remained present in each classroom for management purposes but were not involved in any aspect of the administration. Time was allotted at the end of each administration for debriefing and for eliciting student feedback on how to improve the survey.

Out of a total of 150 possible participants, 136 students (90.6%) completed surveys. The remaining 14 students were excluded due to being absent both days of survey administration. One hundred and nine students completed Part 1 (first day) of the survey, 114 completed Part 2 (second day); 87 students completed both parts. Of the 136 students who completed surveys, 17 were excluded from the final sample because they did not meet the honesty criterion established by our research team; only students who had rated their honesty on the highest two points of a 5-point Likert scale ("very honest" or "honest pretty much of the time") were retained. This resulted in the current sample of 119 (79.3% of the original sample). Maximum sample size varies as a function of whether data is drawn from Part 1 ($n = 95$), Part 2 ($n = 99$), or both parts ($n = 75$) of the survey.

Measures

This pilot version of the Social and Health Assessment (SAHA; Weissberg, Joyce, Kaspro, Arthur, & Shriver, 1991) comprises 248 items which represent a variety of different scales and indices. The scales reported in this section related to problem behaviors in each of the four areas of interest (delinquency, high-risk sexual behavior, school failure, and substance abuse). All internal reliability coefficients indicate values obtained for the current sample. In addition, computerized school records were obtained to provide the following data on school performance: achievement test scores (Metropolitan Achievement Test: Reading Comprehension and Math Problem Solving subtests), overall grade point average, and attendance.

Delinquency

The main instrument used to assess delinquency was a ten-item scale (Jessor, Donovan, & Costa, 1989) on which students reported the frequency (5-point scale; possible responses: never, once, twice, three or four times, five or more times), in the past year, of ten different delinquent behaviors (i.e., starting a fight, shoplifting, vandalism, lying to teacher(s), stealing, staying out all night, damaging school property, lying to parents about whereabouts, skipping school, hitting someone because of not liking something they said or did). Standardized Cronbach's alphas: Males = .87; Females = .76.

Students also were asked six additional delinquency-related questions. These questions used the same 5-point response format as for the Jessor et al. (1989) scale and referred to the same one-year time frame. First, students were asked to report how many times in the past year they had "carried a gun" (adapted from the National Adolescent Student Health Survey, American School Health Association et al., 1990). Second, students were asked if they "had been arrested by the police." Finally, four questions (adapted from Hawkins & Catalano, 1990) were used to assess other types of school misconduct (being suspended, cheating on school tests, being sent from class for misbehavior, hitting a teacher) not assessed on Jessor et al.'s (1989) scale.

Given a high degree of conceptual overlap, we explored the relationship between the items on the Jessor et al. (1989) scale and the additional items added from other sources. These items were found to be highly correlated. Thus, for purposes of parsimony, the items were combined to form one omnibus 16-item scale. Standardized Cronbach's alphas: Males = .89; Females = .85.

High-Risk Sexual Behavior

Sexual behavior was assessed through three separate questions: (a) whether the respondent had ever had sexual intercourse (Jessor et al., 1989); possible response: yes, no, not sure; (b) whether they had used some form of birth control the first time they had sexual intercourse (Jessor et al., 1989); and, (c) if they had had sexual intercourse in the past year, how often they had used condoms (Centers for Disease Control, 1991). This question was rated on a 5-point Likert scale ranging from "never" to "almost always." Feedback sessions with students indicated that they understood these terms; further, most students had already taken sexual education classes which were given in sixth grade.

School Achievement and School Failure

Archival data were derived from computerized school records to assess school achievement and school failure. Grade point averages (GPA) were calculated by assigning numeric values to class grades for the current school year (where A = 4 and F = 0) and then averaging these values across all academic classes. Absenteeism was measured as a count of days absent for the school year. Achievement test scores, from the Metropolitan Achievement Tests (MAT; Psychological Corporation, 1990), represent a third index of academic performance. Scores were obtained for two MAT subscales: Reading Comprehension and Math Problem Solving. Scores presented here represent national Normal Curve Equivalents (NCE; Mean = 50, Range = 1-99). Also, in order to gauge student histories of academic failure, students were asked if they "had ever been held back a grade in school" (yes/no).

Substance Abuse

Items here referred to cigarette smoking and use of alcohol, marijuana, and other substances. Lifetime use of cigarettes was assessed through a single item (Jessor et al., 1989) on which students rated their smoking on a 4-point Likert scale (possible answers ranged from "never" to "more than a few times"). Lifetime use of alcohol was assessed through a single item (Jessor et al., 1989) that asked whether the participant had ever used alcohol, and if so whether use took place in or outside the home. The use of alcohol during the previous six months was measured using four items (adapted from Johnston, Bachman, & O'Malley, 1990) that tapped frequency of use, frequency of five or more drinks in a single session, quantities consumed on average, and frequency of intoxication (Standardized Cronbach's alphas: Males = .93; Females = .85).

Lifetime marijuana use (adapted from Johnston et al., 1990) was assessed on a 3-point scale ("none," "one," "more than once"). Seven additional items (Jessor et al., 1989) assessed lifetime use of hard drugs (cocaine, crack, hallucinogens, heroin, pills, PCP, and inhalants) on a two-point (yes/no) scale.

RESULTS

Results are presented in three subsections: (a) frequency information for individual items, (b) analyses of grade and gender differences, and (c)

analyses of the interrelationships among problem behaviors, including both bivariate correlations and cross-tabulations.

Frequency Information for Problem Behaviors

Table 2 presents frequency data (by gender) on individual delinquency items. For ease of reference, items are separated into three categories: general delinquency, aggressive behavior, and school misconduct. In the general delinquency category, on individual items, between 62% and 88% reported no problem behaviors; across *all* items, 35.7% (35.3% of females, 36.2% of males) of the sample reported no occurrences of delinquent behavior. The most frequently reported delinquent behavior is staying out all night without permission; about one-third of the sample reported having done so at least once during the past six months. About 12% of the sample reported having been arrested one or more times; 10% of boys reported being arrested three or more times.

In the category of violent and aggressive behavior, 67.7% of the students reported having hit someone because they did not like what they said or did; 28.1% of the sample reported having done so three or more times in the past six months. About half the sample (49%) reported having started at least one physical fight in the past six months; 18.4% of the sample reported having started three or more. Twenty percent of the sample reported having carried a gun on one or more occasions; 21% of boys carried a gun on three or more occasions. Twenty-six percent of the sample (33.3% of females, 18.8% of males) reported no aggressive behavior in the past six months.

Most youth reported some school misconduct. Overall, only 14% of the sample (19.6% of females, 8.5% of males) reported no occurrences of school misconduct in the past six months. Forty percent of youth reported having been suspended at least once during the past six months,⁵ and 25% reported having been truant. Archival school achievement data show that 33.6% (not tabled) of the sample fell at or below the 10th percentile (NCE score of 23 or lower) on either the Reading Comprehension or Math Problem Solving sections of the Metropolitan Achievement Tests.⁶ With regard

⁵These figures are similar to, albeit slightly higher than, those for the total student population; school district records indicate that approximately 31% of all sixth graders and 34% of all seventh graders were suspended at least once during the academic year in which the survey was administered.

⁶6.7% fell below the cut-off on Math Problem Solving only, 14.3% on Reading Comprehension only and 12.6% fell below the cut-off on both tests.

Table 2. Frequency (by Sex) of Delinquency, Aggression, and School Misconduct (Previous Six Months)

Item	Gender	Never	Once	Twice	Three or More	Chi Square
<i>Delinquency</i>						
Shoplifting	Male	70.2%	4.2%	8.5%	17.0%	11.6*
	Female	94.1	2.0	3.9	0	
Vandalism	Male	72.3	12.8	4.2	10.1	N.S.
	Female	82.4	15.7	2.0	0	
Lied to parents regarding whereabouts	Male	70.2	4.3	8.5	17.0	N.S.
	Female	62.8	13.7	11.8	11.8	
Stealing	Male	57.5	23.4	10.6	8.5	N.S.
	Female	74.0	12.0	10.0	4.0	
Stayed out all night without permission	Male	58.7	19.6	4.4	17.4	N.S.
	Female	68.6	13.7	11.8	5.3	
Been arrested	Male	81.3	4.2	4.2	10.1	N.S.
	Female	94.1	3.9	2.0	0.0	
<i>Aggressive Behavior</i>						
Hit someone because you didn't like what they said or did	Male	25.5	27.7	14.9	31.9	N.S.
	Female	38.8	24.5	12.2	24.5	
Started a fist fight or shoving match	Male	44.7	19.2	14.9	21.3	N.S.
	Female	56.9	11.8	15.7	15.7	
Hit a teacher	Male	91.5	0.0	2.1	6.4	N.S.
	Female	82.4	7.8	3.9	5.8	
Carried a gun	Male	66.7	10.4	2.1	20.8	17.1**
	Female	94.0	0.0	4.0	2.0	
<i>School Misconduct</i>						
Cheated on tests	Male	82.6	15.2	2.1	0.0	N.S.
	Female	68.0	16.0	10.0	6.0	
Lied to a teacher	Male	74.5	12.8	6.4	6.4	N.S.
	Female	66.7	13.7	15.7	3.0	
Vandalized school property	Male	85.1	4.3	2.2	8.5	N.S.
	Female	86.3	3.9	5.9	3.9	
Skipped school	Male	74.5	10.6	8.5	6.4	N.S.
	Female	74.5	13.7	9.8	1.1	
Sent out of classroom for misbehavior	Male	29.8	23.4	17.0	29.8	12.4*
	Female	56.9	15.7	9.8	17.6	
Been suspended	Male	46.8	25.5	12.7	12.7	N.S.
	Female	72.9	10.4	4.2	14.9	

Note: Sample size ranges between 85 and 99 depending on available data.

* $p < .05$.

** $p < .01$.

Table 3. Frequency (by Sex) of Smoking, Alcohol Use, and Marijuana Use

Item	Gender	Never	Once	A Few Times	More Than a Few Times	Chi Square
Ever Smoked	Male	67.4%	14.0%	9.3%	9.3%	N.S.
	Female	54.9	29.4	7.8	7.8	
Have Tried Alcohol	Male	43.2	25.0	31.8		N.S.
	Female	54.1	25.0	20.9		
Had a Drink of Alcohol in the Past 6 Months	Male	52.1	25.0	14.5	8.3	N.S.
	Female	58.8	27.5	9.8	3.9	
Number of Times Had 5 or More Drinks (6 Months)	Male	60.4	25.0	10.4	4.2	N.S.
	Female	64.0	24.0	8.0	4.0	
Ever Tried Marijuana	Male	73.6	17.0	6.4		N.S.
	Female	90.2	9.8	0.0		

Note: Sample size ranges between 85 and 99 depending on available data.

to past academic difficulties, 34% (not tabled) reported having repeated a grade at least once.

The data on substance abuse (Table 3) suggest that, generally, many youth have begun to experiment with substances, and that a smaller group exhibits more extensive involvement. Forty-percent of the sample had tried cigarettes, while 8.5% had smoked more than a few times. Fifty-one percent of the sample had tried alcohol, about half of those only with their family. However, 37.8% indicated having had five or more drinks at least once in the past 6 months. Sixteen percent of the sample had tried marijuana, with 3% smoking more than once. Only 1 or 2 students reported use of hard drugs (cocaine, LSD, PCP, pills) and no youth reported use of crack cocaine; 7 youths reported use of inhalants. Overall, 72% of the sample (76% of females, 68% of males) reported some experience with tobacco, alcohol, or other substances.

With regard to high-risk sexual behavior (not tabled), 35.2% (50% of males, 19.5% of females; $X^2 = 8.8, p < .05$) of those who responded

reported having had sexual intercourse.⁷ Of those who reported having had sexual intercourse ($n = 30$), 46% reported using some method of birth control the first time they had intercourse; 38% reported using condoms “almost always,” and 62% reported using condoms only “some of the time” or less.⁸

Gender Differences

Chi-square values are presented in the far right column of each table to assess gender differences on frequencies of problem behavior involvement for each item. These analyses reveal both similarities and differences between males and females. On all analyses that reveal statistically significant differences, males reported higher rates of problem behavior involvement; specifically, males reported higher rates of shoplifting, carrying a gun, and being sent out of the classroom for misbehavior, as well as higher rates of sexual intercourse. With regard to school achievement, t-tests indicate that males and females did not differ significantly on GPA, absenteeism, or MAT scores. Thus, these analyses suggest that the risk attributable to gender differs across content areas.

Grade Differences

Grade differences were analyzed through chi-square tests (for frequencies on individual items) and t-tests (for scale mean differences).⁹ The results suggest a trend toward more likely use of substances and higher rates of sexual intercourse for seventh graders compared to sixth graders, although none of these differences reached statistical significance; the lack of significant differences should be interpreted with caution due to relatively low power. Means for problem behavior scales (delinquency, fighting, alcohol use in the previous six months) as well as those for academic indicators (GPA, attendance, MAT scores) also showed no significant differences. Based on these results, data for sixth and seventh graders were aggregated for all other analyses.

⁷Of the 99 students present, 14 (14.1%) did not respond to this item. Of the 85 who responded, 9 (10.6%) students (3 males, 6 females), answered “not sure.” Those responding “not sure” were excluded from further analyses.

⁸Gender differences were not analyzed for questions related to use of birth control and use of condoms due to the limited sample size.

⁹Age differences were not analyzed due to limitations of sample size.

Relationships Among Problem Behaviors

*Bivariate Correlations*¹⁰

Table 4 presents intercorrelations among seven indices of problem behaviors and school performance including: 1 delinquency scale, 2 substance abuse indices (smoking and alcohol abuse), 1 item on the occurrence of sexual intercourse, and 3 school achievement indices. Here, composite scale values, as described in the Measures section, were employed in the areas of self-reported delinquency and abuse of alcohol. Single-time indices were employed for smoking and sexual intercourse. School archive data (GPA, attendance, and an composite achievement test scores) were included to provide complementary data on academic performance.

As can be seen, there is a moderate degree of correspondence between different problem behaviors, with specific values ranging widely. Generally, moderate to high correlations were observed between delinquency, substance abuse, and sexual behavior (range: .28 to .63). Grades

Table 4. Intercorrelations Among Problem Behaviors and School Achievement Indices

Variable	1	2	3	4	5	6
1. Delinquency						
2. Sexual Intercourse	.63**					
3. Smoking	.36**	.28*				
4. Use of Alcohol	.61**	.57**	.34**			
5. GPA	-.47**	-.28*	-.13	-.23*		
6. Absences	.40**	.27*	.06	.36**	-.51**	
7. Achievement Test Scores ¹	-.17	-.29*	-.03	-.10	.50**	-.15

Note: Sample sizes for all correlations, except those with sexual intercourse, range between 74 and 112 depending on available data. The sample sizes for correlations with sexual intercourse range between 58 and 76 given missing data and exclusion of those answering "not sure." Numbers for sexual intercourse and smoking items represent Spearman rho coefficients.

* $p < .05$.

** $p < .01$.

¹Represents average of Reading Comprehension and Math Problem Solving sub-tests.

¹⁰Confirmatory factor analysis was not employed due to inadequate sample size. Sample size also precluded conducting bivariate correlational analyses by gender.

Table 5. Cross-Tabulation of Involvement in Single and Multiple Problem Behaviors

Number of Problems Areas	Frequency	Overall Percentage for Category
No Problems	27	35.5%
One Problem Area	18	23.7%
Achievement	7	
Delinquency	2	
Substance Use	5	
Sexual Intercourse	4	
Two Problem Areas	8	10.5%
Achievement and Delinquency	1	
Achievement and Substance Use	1	
Achievement and Sex	1	
Delinquency and Substance Use	1	
Delinquency and Sex	0	
Substance Use and Sex	5	
Three Problem Areas	13	17.1%
Achievement, Delinquency, and Substance Use	2	
Achievement, Substance Use, and Sex	3	
Achievement, Delinquency, and Sex	2	
Delinquency, Substance Use, and Sex	6	
All Four Areas	10	13.2%

N = 76 due to missing data for some participants.

and attendance generally showed a variable pattern of low to moderate correlations (range: .06 to .47) with problem behaviors. The composite achievement test score showed low to moderate correlations (range: .03 to .29) with self-reported involvement in problem behaviors.

Cross-Tabulations

A second method was employed to examine the occurrence of single and multiple problems for youth in this sample. Specifically, percentages were calculated for involvement in no, single, or multiple categories of problem behaviors. The following categorization criteria were employed based on a prior decision of what might reflect "serious" problem behavior involvement in a particular domain: (a) **delinquency**—average scores across

all delinquency items which indicated some involvement in all delinquent behaviors, or intense involvement in a few. The criterion here was an *average* item score of 2 (behavior occurred at least once in the past six months) or greater; 33.3% of the sample met this criterion¹¹ (b) **high-risk sexual behavior**—whether or not the respondent had engaged in intercourse; 35.3% of the sample met this criterion; (c) **school failure**—in order to establish a distinct focus on academic difficulties, we identified those students with Normal Curve Equivalent scores of 23 or below (10th percentile based on national norms) on the MAT for either Reading Comprehension or Math Problem Solving; 33.6% of the sample met this criterion; and (d) **substance abuse** (having drunk outside the home, having had 5 or more drinks at least once in the previous six months, or having used marijuana in the previous six months); 55.5% of the sample met this criterion.

Table 5 presents data on the occurrence of single and multiple problem behaviors.¹² Using the above criteria, 35.5% of the sample reported no problem behaviors; 23.7% reported involvement in 1 area, 10.5% reported involvement in 2 areas, 17.1% in 3 areas, and 13.2% in all four areas. None of the behaviors appeared significantly more often in isolation from or in combination with the other behaviors.

DISCUSSION

This paper presents results from a pilot study to investigate multiple problem behaviors in a sample of young, urban adolescents. The results indicate that about 64% of the sample is experiencing problems in the areas of delinquency, high-risk sexual behavior, school failure, or substance abuse: 34% report involvement in one or two areas, and an additional 30% report multiple involvements (3-4 areas). It is important to emphasize that the current results are for sixth- and seventh-grade students. Thus, the data present significant concerns both in terms of the immediate risks to health and safety and the potential negative long-term impact of early initiation on subsequent development (Dryfoos, 1990; Farrington et al., 1990; Hawkins et al., 1992; Kandel, 1989).

We are concerned here primarily with the implications of these results in two areas: (a) the development of effective, appropriately timed preventive interventions, and (b) the design of future research on multiple problem behaviors. The discussion will address each of these points in turn.

¹¹This number includes four additional students who reported carrying a gun and being arrested but did not meet the cut-off criteria.

¹²Note that the sample size for these analyses drops to 76 due to missing data across items.

Implications for Intervention

The results argue strongly for the need to implement comprehensive preventive interventions before the adolescent years. Efforts occurring later are likely to be less useful with this population given that a significant proportion of youth already will be engaged in high-risk behaviors. Furthermore, youth in this context who are not exhibiting problems at any given time will require deliberate and sustained attention to assist them in avoiding such involvements in the future (Weissberg et al., 1991).

For example, over one-third of the youth in this sample who responded reported having engaged in sexual intercourse; furthermore, the majority of those who reported engaging in sexual intercourse also reported infrequent use of condoms to prevent pregnancy and disease. Unprotected intercourse puts these youth at risk for infection with HIV and other sexually-transmitted diseases, and early childbearing (Brooks-Gunn & Furstenberg, 1989; Zabin, 1989). Furthermore, initiation of any sexual behavior at this age raises serious developmental concerns with regard to sexuality and interpersonal relationships. Thus, these data suggest that truly preventive efforts must occur earlier. At the same time, it should be noted that while some programs have demonstrated success in increasing use of contraceptives and delaying first intercourse, and while there is no data to support assertions that such programs may encourage sexual behavior (see Dryfoos, 1990), existing programs generally have not been subject to thorough evaluation. Thus, there is also a need for better evaluation to maximize the effectiveness of such programs, and to monitor possible unintended consequences.

In addition to informing the timing of preventive efforts, the data also suggest that prevention programs should be broad-based. The fact that problem behaviors co-occur for many individuals underscores the need for a comprehensive approach to prevention that targets underlying causes for problem behavior involvements and addresses the possible causal relationships between different problem behaviors. At the same time, the presence of a large proportion of youth with more specialized involvements suggests the complementary need for problem-specific approaches that focus on the circumstances unique to each content area. Further, the high prevalence of these behaviors in inner-city communities suggests that such behaviors may also reflect environmental pressures and demands related to poverty and the perceived unavailability of alternative opportunities. Thus, prevention efforts at the individual level will likely be maximally successful if coupled with efforts to create social environments (e.g., families, peer groups, schools, and communities) that foster and reinforce adaptive and health promoting-behaviors. As Weissberg et al. (1991) state:

Prevention programs will be most effective when they attempt both (a) to enhance children's capacities to coordinate skills, prosocial values, and information in order to cope adaptively with society's social tasks, demands, and stresses and (b) to create environmental settings and resources that support the development of young people's positive personal, social, and health behavior (pp. 832-833).

For example, our collaborators in the local school system have developed a multi-component Social Development Project to promote competence and prevent problem behavior. This effort includes: (a) K-12 classroom-based curricula to help students develop a range of health-protective skills and attitudes through instruction in problem-solving, decision-making, anger management, and interpersonal communication (Elias et al., 1986; Ford, 1985; Weissberg & Caplan, 1993); (b) classroom instruction aimed at preventing specific problem behaviors such as substance abuse and high-risk sexual behavior (Caplan et al., 1992; Weissberg, Jackson, & Shriver, 1993); (c) school- and community-based activities to extend and reinforce the concepts and skills taught in the classroom (e.g., a mentoring program in which positive adult role models are paired with students); and (d) reorganization of school structure and decision-making in order to involve all members of the school community (e.g., parents, educators, and community leaders) in establishing a positive academic climate (Comer, 1988).

While this discussion has highlighted areas of concern, the data also offer some hope with regard to current and future prevention efforts. Despite many adversities, a significant portion of these inner-city youth appear to be functioning fairly adaptively. Clearly, research that examines factors that predict resilience of children who grow up in high-stress environments is an important area of investigation to pursue (Cowen & Work, 1988; Luthar & Zigler, 1991; Masten et al., 1990). In addition, results for use of "hard drugs," such as cocaine and crack, are significantly below those for national samples (see Johnston, O'Malley, & Bachman, 1989; Oetting & Beauvais, 1990), suggesting that recent multi-year school- and community-based efforts to prevent use of these substances may have paid off. However, further investigation is needed to confirm these findings and, if they are replicated, to determine the underlying reasons for such trends.

Overall, these data indicate that young adolescents in poor, urban areas are at a critical age with regard to the initiation of problem behaviors. In terms of single and multiple high-risk involvements, the figures presented for the current sample suggest higher rates than those estimated for national samples. In comparison to the findings of the Task Force on the Education of Early Adolescents (1989) that estimate that 25% of American 10 to 17 year olds are at high risk, and another 25% are at moderate risk for the negative consequence of involvement in problem behav-

iors, the results for the current younger sample indicate that for inner-city adolescents the rates may be higher in each of these categories. These findings highlight the need to focus greater attention on young adolescents in high-risk urban environments. They argue strongly for the implementation of prevention efforts that are comprehensive in scope and that begin early enough to prevent initiation of involvement.

Implications for Research on Multiple Problem Behaviors

A second area of focus is the implications of these findings for future research on multiple problem behaviors. First, although a large proportion of the sample is engaged in high-risk behaviors, it is not clear at what ages these behaviors were initiated. Thus, the data suggest the need to study younger age groups in order to contribute to knowledge about the initiation of these problem behaviors. Second, there is a need for longitudinal studies that examine pathways to problem behavior involvement in order to differentiate between short-term, transient involvements and those that form a foundation for future, long-lasting maladjustment.

The data also point to the need for continued research on problem behavior co-occurrence, particularly for youth from poor, urban areas. Consistent with some studies, the correlational analyses presented here support the notion that problem behavior involvements co-occur in many adolescents (Donovan et al., 1988; Elliot et al., 1985), even at younger ages (Farrell et al., 1992). Based on the current data, it is clear that a large proportion of these young students (i.e., 30%): have engaged in high-risk behaviors across three or more domains, perhaps reflecting a problem behavior syndrome (Donovan et al., 1988). On the other hand, other students are experiencing problems in one or two areas, reflecting a more limited range of involvements. These results are consistent with those of other researchers (Ensminger, 1990; Gillmore et al., 1991; McGee & Newcomb, 1992) and are important in that they suggest the development of more differentiated models of co-occurrence.

Research efforts should focus more closely on the nature, degree, and specificity of such interrelationships. Two major issues here are the developmental sequence of involvement and the specific linkages between different problem areas (Ensminger, 1991; Gillmore et al., 1991; Kandel, 1989; Zimmerman & Maton, 1992). For example, the relatively even spread of involvements across the cross-tabulated categories presented here on single and multiple problem behaviors make it difficult to extrapolate a discernable pattern of sequencing, while the comparison of bivariate correlations and cross-tabulations suggest both co-occurrence and distinctiveness

across problem behavior categories. One important contribution to be made by more comprehensive studies is the development of models which plausibly explain such complex phenomenon. These include factor analytic models (e.g., Gillmore et al., 1991), as well as other models which attempt to incorporate the influence of collateral risk and protective factors on problem behavior co-occurrence (e.g., Zimmerman & Maton, 1992).

The gender differences observed here also require comment. While many delinquent activities are perceived as more frequent among males, the current data indicate relatively small differences between males and females in many problem areas. These findings are consistent with past studies that indicate less frequent or smaller differences in problem behavior involvements between males and females in low SES samples (Farnworth, 1984; Hagan, Gillis, & Simpson, 1985). While these studies have suggested some preliminary hypotheses for such results, there is clearly a need for further examination of the interaction between gender and SES in relation to problem behavior involvement.

The current study has at least four limitations. First, while the sample in many ways resembles the larger population from which it was drawn, sampling of individuals and schools was not strictly random and thus the sample may not be representative of the total population. Further, given the high rates of retention, the sample may be slightly older than sixth and seventh grade populations from districts with lower retention rates. A second limitation is sample size. Small sample size limits the reliability of the correlation and prevented the use of confirmatory factor analysis. Also, decreased statistical power due to sample size may have prevented detection of some extant grade and gender differences. Third, while this study makes use of school record data, most of the data presented here is self-report; research knowledge in this area would benefit from greater use of corroborating data from other sources (e.g., parent and teacher reports, police records). Fourth, this study is cross-sectional, rather than longitudinal, thus preventing examination of the development of high-risk behavior over time and differentiation of time-limited experimentation from sustained behavioral involvements predictive of long-term maladjustment.

The authors are utilizing the present results to design a long-term study with a large, representative sample of urban adolescents. In general we feel the important components of work in this area to be: (a) a prospective research design, (b) the inclusion of a broad range of behaviors and attitudes, and (c) the examination of risk and protective factors stemming from various spheres of influence. Work in this area should play an important role in contributing to a better understanding of adolescent adjustment, and in informing the development of effective preventive interventions.

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