

Prevalence of Adolescent Behavior Problems, Smoking, and Delinquency

Hyukjun Moon

Full-time Instructor, School of Human Ecology
The Catholic University of Korea

Abstract : Data from the National Longitudinal Study of Youth (NLSY) were used to examine factors related to adolescent behavior problems, smoking, and delinquency. This study focuses particularly on the factors in an adolescent's immediate environment such as family, school, peers, and neighborhood (i.e. the microsystems) for the identification, prevention, and early intervention of adolescent behavior problems, smoking, and delinquent behavior. Both African American and Caucasian American adolescents between the ages of 13 and 17 for whom data were available in the NLSY were included in this study (N=788). Results indicate that delinquent peer pressure and negative attitudes toward school are important determinants of behavior problems, smoking, and delinquency of American adolescents. Differences between African American and Caucasian American adolescents are highlighted.

Key Words : adolescent behavior problems, smoking, delinquency.

I. INTRODUCTION

Adolescent delinquent behavior has become a serious problem in the U.S. During 1991, youth under the age of 18 accounted for 17.2% of violent crime arrests (Federal Bureau of Investigation, 1992). Previous research indicates that predictors of general delinquent behavior are similar to predictors of violent behavior (Salts et al., 1995). Therefore, prevention and intervention programs, particularly designed for adolescents to address the multiple determinants of general delinquent behavior, are essential to reduce the number of adolescent violent behaviors. To develop these programs, it is assumed that a multifactor approach to adolescent behavior problems and delinquency is necessary because a variety

of factors determines the degree of adolescent behavior problems and delinquency.

In studies of delinquent behavior, most researchers either have not distinguished which factor is most crucial to predict adolescent behavior problems and delinquency among their immediate environments or they have tested general and repetitious predictors such as family cohesion and conflict, and school achievement and peer association. The result is that relatively few studies have examined the influence of the quality of parent-child relationship, adolescent attitudes toward school, the degree of susceptibility to peer pressure and neighborhood problems on adolescent behavior problems and delinquency simultaneously.

The lack of literature from an ecological perspective on adolescents' behavior problems and delinquency provided the impetus for this study. The central question this study addresses is: What factors contribute to adolescents' behavior problems and delinquency? In particular, what factors distinguish African American from Caucasian American adolescents' behavior problems and delinquency?

A review of previous research indicates that although self-report studies tend to consistently find no difference in delinquent behavior by race, studies using police and court repeatedly report significantly greater delinquent behavior among African American adolescents than among Caucasian American adolescents (Short, 1990). Various explanations, including historical conditions, bias within the juvenile justice system, and economic deprivation, have been offered to account for the overrepresentation of African American youth in the criminal justice system (Burchard & Burchard, 1983).

Analogously, it seems reasonable that delinquent behavior is associated with characteristics of the individual adolescent and of the family, peer, school, and neighborhood systems in which the adolescent is embedded (Henggeler, 1989).

Empirical findings indicate that family relationships are related to delinquent behavior during adolescence. Ainsworth (1989) believes parents continue to exert significant influence on adolescent well-being even though there are certain to be developmental changes in the nature of attachment during adolescence. In support of this notion, research has suggested that the association between an adolescent's perceived quality of attachment to parents and psychological well-being does not change across the adolescent years

(Greenberg et al., 1983; Ryan & Lynch, 1989). However, the effects of family structure on adolescent delinquency show inconsistent results with respect to race. One report using Caucasian American adolescents indicates that low family cohesion is related to delinquency (Tolan & Lorion, 1988). A different study, using predominantly African American males, found very high levels of family cohesion to be associated with delinquency (Rodick et al., 1986).

The influence of family is progressively superceded by peer influence as the youth develops through adolescence (Le Blanc, 1990), and delinquent peer association is an important determinant of antisocial and delinquent behavior. Similarly, Berndt (1979) and Steinberg and Silverg (1986) have found that the tendency to yield to peer pressure to engage in antisocial behavior is low in preadolescence, increases during early and middle adolescence, and then decreases again in late adolescence. Agnew (1991) demonstrated that the influence of an adolescent's delinquent peers on his/her own delinquent behavior is conditioned by: 1) his/her attachment to the delinquent peer group, 2) time spent with the peer group, 3) peer approval of delinquency, and 4) peer pressure for deviance.

During adolescence, relationships with peers assume more central importance, and they are more likely to become more intimate and to be based on sharing of thoughts, ideas, and opinions, as well as activities (Hartup, 1989). In addition, adolescents are far more likely than younger children to spend unsupervised time with peers. It is in such situations that important peer socialization occurs. However, it is also the case that these time periods involve heightened possibilities for risk-taking and problem behaviors. These pieces of evidence suggest that an increase in susceptibility and exposure to delinquent peers in unsupervised circumstances can all combine to amplify levels of deviance for adolescents.

Research regarding the direct effect of religion on delinquent behavior reports inconsistent findings (Albrecht et al., 1977; Higgings & Albrecht, 1977). For example, Higgins and Albrecht (1977) found a higher negative correlation between church attendance and delinquency for Caucasian American males than for African American males.

The influence of the school is related to delinquency. Poor performance in school is consistently associated with delinquency (Bachman, O' Malley, & Johnston, 1978). Several aspects of the school environment are negatively associated with delinquent behavior

including teacher accessibility and the inclusion of marginal youth from school sponsored activities such as clubs and sports (Hawkins & Lam, 1987).

Children who grow up in father-absent households are of particular concern. Growing up without a father present is consistently associated with poor school achievement, early childbearing, diminished involvement in the labor force, and increased levels of risk-taking behavior (Federal Interagency Forum on Child and Family Statistics, 1998).

The research literature on children born to teenage mothers has only recently begun to accrue (Chase-Lansdale & Brooks-Gunn, 1994). Because this study's sample is limited to adolescents born to teen mothers, the noteworthy effects of adolescent motherhood on the life of adolescents are noted. Adolescent childbearers are at higher medial risk due to diets, malnutrition, and less intensive and consistent prenatal care (Brooks-Gunn & Furstenberg, 1986). Teenage childbearing is strongly associated with lower educational attainment and diminished income and assets as well as poverty.

Furthermore, teenage marriages tend to be highly unstable as separation and/or divorce is two or three times as likely among adolescents as among women who are 20 years or older (Furstenberg et al., 1989). Fathers are also often adolescents and, as in the case of teen mothers, are often unprepared financially and emotionally to undertake parenting responsibilities (Lerman & Ooms, 1993). In addition, Lerman (1993) has stated that young unwed fathers are generally less educated, have lower academic abilities, start sex at earlier ages, and engage in more crime than do other young men. Consequently, a limited number of studies indicate that by adolescence, problem behaviors among the children of adolescent mothers are striking. School achievement is dramatically lower in children of teen mothers than children of older mothers and grade failure is extensive (Furstenberg, Brook-Gunn, & Morgan, 1987). Adolescents of young mothers are also more likely to have higher rates of behavior problems in school and higher delinquency rates than youth of older childbearers (Chase-Lansdale, Brooks-Gunn, & Paikoff, 1991). It is necessary to distinguish individual, familial, and contextual levels of analysis in assessing the determinants of behavior problems and delinquency of adolescents of young mothers.

The present study has two main goals. The first was to test the hypothesis that an adolescent's race, age, and gender contribute to behavior problems and delinquency. The

second goal is to assess the association of the child and parent's relationship, the neighborhood, peer pressure, child's cognitive competence, religion, attitudes toward school, and presence of spouse/partner in the home with behavior problems, use of cigarettes, and delinquency of African American and Caucasian American adolescents.

II. METHOD

1. Subjects

The data for this study comes from the mother-child data set (Baker & Mott, 1989) of the National Longitudinal Survey of Youth (NLSY). The NLSY includes a national sample of over 6,000 females who were between the ages of 14 and 21 in 1979. Minority group numbers and poor whites were oversampled. The NLSY respondents have been reinterviewed each year between 1979 and 1992. By 1986 more than half of the original NLSY women had born children and assessments of the children born to this cohort were completed in 1986 and were repeated in 1988, 1990, and 1992.

In 1992, over 73%(N=3326) of the female respondents were mothers. At this time, the mothers were 28-37 years of age. About 90% of the mothers who participated in 1979 were reinterviewed in 1992 and information was collected on over 90% of the children.

The sample for this study consists of all African and Caucasian American adolescents in the NLSY who were between the ages of 13 to 17 in 1992 and their families. <Table 1> presents demographic characteristics of the total sample (N=788), African American sample (N=467) and Caucasian American sample (N=321). Overall, average age of mothers at the birth of the child was 17.1 years, and the mean educational attainment of the mothers was 11.4 years. The average family income for the sample was more than \$23,000, but 39% of the sample lived below the poverty line. The children's mean age was 178.9 months, and 53% of the children were male. Fifty-nine percent of the children were African American, and forty percent were Caucasian American. Fifty four percent of the mothers had a spouse or partner in the home. The average number of adults in the household was 1.8.

<Table 1> Sample demographic characteristics

	%	M	SD
<u>Overall Sample (N=788)</u>			
*Maternal characteristics:			
Current age (years)		32.8	1.69
Age at first birth (years)		17.1	1.82
Education (years)		11.4	2.03
*Contextual factors:			
Number of adults in household		1.8	.74
Income (U.S. \$)		23,128	17,936
In poverty	39.0		
Spouse/partner	53.9		
*Child characteristics:			
Age (months)		178.9	15.9
Male	53.1		
Black	59.3		
White	40.7		
<u>African American Sample (N=467)</u>			
*Maternal characteristics:			
Current age (years)		32.6	1.73
Age at first birth (years)		16.0	1.80
Education (years)		11.4	1.94
*Contextual factors:			
Number of adults in household		1.7	.84
Income (U.S. \$)		18,036	15,420
In poverty	53.3		
Spouse/partner	38.1		
*Child characteristics:			
Age (months)		180.1	16.3
Male	53.3		
<u>Caucasian American Sample (N=321)</u>			
*Maternal characteristics:			
Current age (years)		33.0	1.61
Age at first birth (years)		17.7	1.72
Education (years)		11.3	2.15

<Table 1> continued

	%	M	SD
*Contextual factors:			
Number of adults in household		1.93	.56
Income (U.S. \$)		30,337	18,784
In poverty	19.0		
Spouse/partner	76.9		
*Child characteristics:			
Age (months)		177.2	15.3
Male	53.1		
Black	59.3		
White	40.7		

2. Measures

The measures used to assess the behavior problems and delinquency of the adolescent are described first. These are followed by a description of the predictor variables.

The three outcome measures examined in this study are overall behavior problems, smoking, and delinquency. The behavior problem variable was reported by the mothers, while smoking and delinquency was self-reported by the adolescents.

1) Behavior problems. Behavior problems were assessed with the Behavior Problem Index (BPI) which is drawn primarily from the larger Child Behavior Checklist (CBCL) developed by Thomas Achenbach and Craig Edelbrock (1981, 1983). This measure includes 28 items each describing a potential problem such as antisocial, anxious/depressed, headstrong, hyperactive, dependent, and peer conflict/withdrawal behavior. Mothers responded to each of the items on a 3-point scale (often true, sometimes true, not true). The scores of the 28 items were summed for the BPI total score. Higher scores on this measure indicate a higher level of behavior problems. The mean scores for the sample used for this study were 108.45(SD=14.4). Cronbach's alpha for this measure was .80.

2) Smoking. The smoking measure was based on the adolescent's response to one yes/no question in the 1992 Child Self-Administered Supplement (CSAS): Have you ever smoked?

Responses were coded yes as 1 or no as 0.

3) Delinquency. Adolescent participation in various delinquent activities was assessed with a delinquency measure. This measure was included in the 1992 CSAS. It was based on the adolescent's response to the following nine items: (a) stayed out later than your parent(s) said you should, (b) hurt someone badly enough to need bandaged or a doctor, (c) lied to your parent(s) about something important, (d) taken something from a store without paying for it, (e) damaged school property on purpose, (f) gotten drunk, (g) had to bring your parent(s) to school because of something you did wrong, (h) skipped a day of school without permission, (I) stayed out at least one night without permission. Adolescents responded to each of the items on a 4-point scale (never, once, twice, more than twice), and the delinquency score is the sum of the adolescent's responses to the nine items. Higher scores on this measure indicate a higher level of delinquency. The mean score for this sample used was 5.31 with a standard deviation of 4.94. Cronbach's alpha for this measure was .75.

Nine predictor variables are utilized in this study, including child-parent interactions, mother-child closeness, father-child closeness, neighborhood problems, peer pressure, child's cognitive competence, attendance at religion services, positive attitudes toward school, and presence of spouse/partner in the home.

4) Child's cognitive competence. A child's score on cognitive competence is the sum of four measures: (a) Peabody Vocabulary Test-Revised (PPVT-R), (b) Peabody Individual Achievement Test Reading Comprehension Assessment (PPVT-RC), (c) Peabody Individual Achievement Test Reading Recognition Assessment (PPVT-RR), and (d) Peabody Individual Achievement Test Mathematics Assessment (PIAT Math). Cronbach's alpha for this measure was .88. The mean score for this sample is 373.74 and the standard deviation is 52.96.

5) Child-parent interactions. This measure of child-parent interactions includes the following six items: (a) gone out to dinner last month, (b) gone shopping to get something for you last month? (c) gone out an outing together, like to a museum or sporting event last month?, (d) gone to church or religious services together last week?, (e) worked on schoolwork together last week?, (f) played game or sport last week?. The measure was

based on the adolescents' response of either yes or no. This measure was obtained in the Child Self-Administered Supplement (CSAS). Cronbach's alpha for this measure was .63. Higher scores on this measure indicate more frequent child-parent interactions. The mean score for this sample was 3.26(SD=1.81).

6) Mother-child closeness. This measure is based on the following question which was added to the Child Self-Administered Supplement (CSAS) in 1992: How close do you feel to your mother? Adolescents responded to the item on a 4-point scale (extremely close, quite close, fairly close, not very close). Higher scores on this measure indicate closer mother-child relationships.

7) Father-child closeness. The measure is based on the adolescent's response to the following question: How close do you feel to your father? Adolescents responded to the item on a 4-point scale (extremely close, quite close, fairly close, not very close). Higher scores on this measure indicate closer father-child relationships.

8) Neighborhood problem. The measure of neighborhood problems is based on the mother's responses to each of eight items on a 3-point scale. The scores of the items were summed for total score of neighborhood problems. Cronbach's alpha for this measure was .75. Higher scores on this measure indicate a higher level of neighborhood problems. The mean score for this sample was 13.23 and the standard deviation was 4.38.

9) Peer pressure. In 1992, the items of peer pressure were added to the Child Self-Administered Supplement (CSAS). The measure of peer pressure includes five items: (a) try a cigarette, (b) try marijuana or other drugs, (c) drink beer, wine or liquor, (d) skip school, (e) commit crime, or do something violent. It is based on the adolescent's response of yes or no. Yes is coded 1 and no was coded 0. As a result, higher scores on this measure indicate more susceptibility and exposure to peer pressure. The mean score for this sample is 2.67(SD=.14). Cronbach's alpha for this measure was .73.

10) Attendance at religious services. Religiosity is based on the adolescent's response to the following question from the Child Self-Administered Supplement (CSAS): In the past year, about how often have you attended religious services? Higher scores on this measure indicate more frequent attendance at religion services.

11) Positive attitudes toward school. The measure of positive attitudes toward school

includes six items: (a) most of the teachers are willing to help with personal problems, (b) most of my classes are not boring, (c) I feel safe at this school, (d) most of my teachers know their subjects well, (e) you can not get away almost anything at this school, (f) my schoolwork requires me to think to the best of my abilities. These questions were included in the Child Self-Administered Supplement (CSAS). The measure is based on the adolescent's responses on a 4-point scale (very true, somewhat true, not too true, not at all true). Cronbach's alpha for this measure was .56. Higher scores on this measure indicate more positive attitudes toward school. The mean score for this sample is 17.8, and the standard deviation is 3.1.

III. RESULTS

1. Descriptive Findings

A t-test was performed to compare the three mean outcome measures for African Americans and Caucasian Americans. With one exception, the results were consistent with previous research in that there are no significant differences in behavior problems and delinquency between African American and Caucasian American adolescents. However, with respect to the smoking, Caucasian American adolescents have higher scores than adolescents from the African American group, $t = -5.03$, $p < .001$. Second, the mean scores of younger adolescents (155-179 mos.) and older adolescents (185-215 mos.) were compared by an independent t-test for the three outcome measures. As expected, older adolescents had higher scores on the delinquency measure than younger adolescents, $t = -2.93$, $p < .01$. However, the two other outcome measures (behavior problems and smoking) were not statistically significant. Third, the mean scores of male and female adolescents were compared. As expected, male adolescents had higher scores on the delinquency outcome than female adolescents, $t = 3.00$, $p < .01$. However, the two other measures (behavior problems and smoking) were not statistically significant. The results of these analyses are presented in <Table 2>.

<Table 2> T-test comparing behavior problems, smoking, and delinquency by race, age, and sex

Measure	Behavior problems	Smoking	Delinquency
African American (mean)	108.67	.231	5.65
Caucasian American (mean)	108.12	.440	4.82
t - value	.45	-5.03***	.187
Younger adolescents (mean)	108.75	.286	4.75
Older adolescents (mean)	108.07	.352	6.04
t - value	.58	-1.62	-2.93**
Male (mean)	108.08	.292	5.94
Female (mean)	108.05	.340	4.64
t - value	-.65	-1.18	3.00**

** p< .01, ***p< .001

The relations between the predictor variables were assessed, and the results of these analyses are reported in <Table 3>. The correlations among these factors are generally small

<Table 3> Zero-order correlations: Relations among the predictor variables

	1	2	3	4	5	6	7	8
1								
2	.26***							
3	.19**	.24**						
4	.02	.06	-.04					
5	-.08	-.11*	-.03	.07				
6	-.05	-.13*	.02	-.41***	-.14			
7	-.27***	.00	.00	.03	.02	-.01		
8	.10	.15*	.05	.03	-.16*	.00	-.02	
9	.13*	-.07	.24**	-.31***	-.01	.24**	-.04	-.03

*p< .05, **p< .01, ***p< .001

- | | |
|--|-------------------------------------|
| 1. child-parent interactions | 2. mother-child closeness |
| 3. father-child closeness | 4. neighborhood problems |
| 5. peer pressure | 6. child's cognitive competence |
| 7. attendance at religious services | 8. positive attitudes toward school |
| 9. spouse/partner (1 for present and 0 for absent) | |

to moderate in magnitude, and the signs of the coefficients were in the expected direction, with a few exceptions.

Contrary to expectations, adolescents who had more child-parent interactions were less likely than other adolescents to have high cognitive competence, although it was not significant. Adolescents who had a closer relationship with their mothers were also less likely than other adolescents to have higher cognitive competence, $r=-.13$, $p<.05$. There was essentially no correlation between child's cognitive competence and attitudes toward school.

Next, the relations between the predictor variables and the three outcome measures were examined. The correlations between these factors were generally low to moderate in magnitude, and the signs of the coefficients were in the expected direction. For example, adolescents who had more child-parent interactions tended to have a fewer number of delinquent behaviors for all groups. Delinquent peer pressure increased the likelihood that adolescents had a higher number of behavior problems, smoking, and had higher scores on the delinquency measure for all groups. The correlation between each of the predictor variables and the child outcome measures are presented in <Table 4>.

2. Multiple regression analyses

Multiple regression analyses were run to determine the combined effect of independent variables on the dependent variables, to examine which of the independent variables contributes uniquely to the dependent variables, and to compute the percentage of variance explained by the model. The regression analyses were employed using three dependent variables: behavior problems, smoking, and delinquency; and nine independent variables: child-parent interaction, mother-child closeness, father-child closeness, neighborhood problems, peer pressure, child's cognitive competence, attendance at religious services, attitudes toward school, and presence of spouse/partner in the home. Separate regressions were conducted for African American and Caucasian American adolescents.

<Table 4> Relations between the predictor variables and outcomes

Independent Variables	Behavior problems	smoking	Delinquency
<u>Overall Sample</u>			
Child-parent interactions	-.08	-.01	-.15*
Mother-child closeness	-.09	-.15*	-.13*
Father-child closeness	-.10	-.01	-.09
Neighborhood problems	.26***	-.02	.17**
Peer pressure	.18**	.20**	.34***
Child's cognitive competence	.14*	.06	-.17**
Attendance at religious services	-.07	-.10*	.16*
Positive attitudes toward school	-.10*	-.15*	-.24**
Spouse/partner	.01	.07	-.01
<u>African American Sample</u>			
Child-parent interactions	-.07	-.13*	-.13*
Mother-child closeness	-.09	-.14*	-.13*
Father-child closeness	-.07	-.05	-.02
Neighborhood problems	.23**	.05	.14*
Peer pressure	.22**	.14*	.32***
Child's cognitive competence	-.09	.04	-.11*
Attendance at religious services	-.10*	-.08	-.21**
Positive attitudes toward school	-.09	-.07	-.22**
Spouse/partner	.09	.01	.08
<u>Caucasian American Sample</u>			
Child-parent interactions	-.11*	-.13*	-.19**
Mother-child closeness	-.08	-.17**	-.14*
Father-child closeness	-.15*	-.20**	-.17**
Neighborhood problems	.35***	.07	.18**
Peer pressure	.11*	.31***	.38***
Child's cognitive competence	-.20**	-.10*	-.20**
Attendance at religious services	-.06	-.03	-.14*
Positive attitudes toward school	-.12*	-.24**	-.28***
Spouse/partner	-.11*	-.07	-.07

*p<.05, **p<.01, ***p<.001

3. Overall sample

<Table 5> presents the multiple regression models for the overall sample.

Four variables were found to be predictive of BPI scores: neighborhood problems, peer pressure, child's cognitive competence, and attitudes toward school. Eleven percent of the variance in BPI scores is accounted for by these variables.

Peer pressure and attitudes toward school were found to be predictive of the smoking. Eleven percent of the variance on the smoking scores was accounted for by these variables.

Five variables were found to be predictors of delinquency scores: neighborhood problems, peer pressure, child's cognitive competence, attendance at religious services, and attitudes toward school. Twenty four percent of the variance in delinquency scores is accounted for by these variables.

4. African American Sample

<Table 5> presents the results of the multiple regression models for African American adolescents.

Neighborhood problems and peer pressure are predictive of BPI scores. Twelve percent of the variance in BPI scores was accounted by these variables.

The predictor variables accounted for little of the variance in the use of a cigarette. None of the predictor variable is related to use of a cigarette.

Only two variables were found to be predictive of delinquency scores: peer pressure and attitudes toward school. Twenty two percent of the variance in delinquency scores was accounted for by these variables.

5. Caucasian American Sample

<Table 5> presents the results of the multiple regression models for Caucasian American adolescents.

Only one variable was found to be predictive of BPI scores: neighborhood problems.

<Table 5> Multiple regression analysis

Independent Variables	Behavior problems	Smoking	Delinquency
<u>Overall Sample</u>			
Child-parent interactions	...	...	...
Mother-child closeness	...	...	...
Father-child closeness	...	...	...
Neighborhood problems	.22**	...	...
Peer pressure	.15*	.19**	.37***
Child's cognitive competence	-.13*	...	-.11*
Attendance at religious services	...	...	-.10*
Positive attitudes toward school	-.12*	-.13*	-.14*
Spouse/partner	...	...	...
R ²	.11	.11	.24
F values	4.83*	4.8*	12.3***
df	9,353	9,359	9,367
<u>African American Sample</u>			
Child-parent interactions	...	...	...
Mother-child closeness	...	...	...
Father-child closeness	...	...	...
Neighborhood problems	.21**	...	...
Peer pressure	.23**	...	.38***
Child's cognitive competence	...	...	...
Attendance at religious services	...	...	...
Positive attitudes toward school	...	...	-.17**
Spouse/partner	...	...	...
R ²	.12	.08	.22
F values	3.04*	1.9	6.32**
df	9,198	9,207	9,197
<u>Caucasian American Sample</u>			
Child-parent interactions	...	...	...
Mother-child closeness	...	...	...
Father-child closeness	...	-.18**	...
Neighborhood problems	.26***	...	...
Peer pressure	...	.28***	.36***
Child's cognitive competence	...	...	-.21**
Attendance at religion services	...	...	...
Positive attitudes toward school	...	...	...
Spouse/partner	...	...	...
R ²	.15	.19	.29
F values	2.95**	3.91**	6.58***
df	9,145	9,150	9,146

*p< .05, **p<. 01, ***p<. 001

Fifteen percent of the variance in BPI scores was accounted for by these variables.

Father-child closeness and peer pressure were found to be predictive of the use of cigarette. Nineteen percent of the variance of the use of a cigarette scores was accounted for by these variables.

Peer pressure and child's cognitive competence were found to be predictive of delinquency scores. Twenty nine percent of the variance in delinquency scores was accounted for by these variables.

IV. DISCUSSION

One purpose of this study is to determine if an adolescent's demographic characteristics such as race, age, and sex contribute to behavior problems, smoking, and delinquency. The findings show that significantly more Caucasian American adolescents smoked cigarettes than African American adolescents. However, consistent with past research (Short, 1990), there are no significant differences in behavior problems and delinquency by race.

For this sample, surprisingly, there are no differences between younger adolescents (155-179 mos.) and older adolescents (179-215 mos.) in terms of behavior problems and smoking, although findings show that older and male adolescents had a significantly higher number of delinquent behaviors than the younger and female group as expected.

The second purpose of this study is to compare the predictors of behavior problems and delinquency for African American and Caucasian American adolescents. Although similar variables are significant for African American and Caucasian American adolescents in the regression model, the variance accounted for differs. First, for Caucasian American adolescents, 15% of the variance in behavior problems was accounted for by variables in the regression model, compared to 12% for African American adolescents. Second, for Caucasian American adolescents, 19% of the variance in smoking was accounted for by variables in the regression model, compared to 8% for African American adolescents. Third, for the Caucasian group, 29% of the variance in delinquency was accounted for by variables in the regression model, compared to 22% for African American adolescents. As suggested

by Burchard and Burchard (1987), historical influences and various environmental conditions may be the source of the difference. Exploration of the differences in the predictors of behavior problems and delinquency by race in the regression model offers further clarification of the findings.

For African American adolescents, both neighborhood problems and peer pressure are significant predictors for behavior problems, although for Caucasians, an only neighborhood problem was significant. This finding indicates that the quality of neighborhood cannot be overestimated for an adolescent's behavior problems regardless of race. If most members of a neighborhood drop out of school and use drugs and alcohol, then younger children are likely to adopt similar behavior patterns and values as they grow. Consequently, the importance of the neighborhood on development increases, as children get older and is especially influential during adolescence (Brooks-Gunn, 1997).

Second, for African American adolescents, no predictors were significant for smoking, although for Caucasian American adolescents, both peer pressure and father-child closeness are significant. Interestingly, cigarette smoking decreased with a close father-child relationship. Furstenberg and Harris (1993) reported the pattern of contact between adolescent fathers and their offspring. By late adolescence, 14 percent were living with him, and only 15 percent were seeing him as often as once a week, while 46 percent had no contact, but 25 percent saw him occasionally in the previous year. Particularly, White-American adolescent fathers (30 percent) are more likely to have no contact with their offspring than African-American adolescent fathers (12 percent), and fathers who rarely or never visit are less likely to pay child support (Lerman, 1993). This adds to a mother's financial burden and may indirectly have negative effects on the children. For example, high involvement and closeness between fathers and adolescents protect adolescents from engaging in delinquent behavior (Harris et al., 1998), and adolescents who reported a strong bond or attachment with their father during adolescence had higher educational attainment, were less likely to be imprisoned, and were less depressed (Furstenberg & Harris, 1993).

Third, for delinquency, both the predictors of peer pressure and attitudes toward school were significant for African American adolescents, although for Caucasian American adolescents, peer pressure and child's cognitive competence were significant predictors.

Both African American adolescents and Caucasian American adolescents who had stronger peer pressure report more delinquent behaviors. As earlier studies have shown, peers play an important role during adolescence. For example, adolescents are more aware of, and concerned about, peer group acceptance and spend much more unsupervised time with peer groups in social, sports, and other extracurricular activities than younger children (Brown, 1990). Adolescents may tend to cluster together in peer groups that share the same motivational orientations and activity preferences, and clustering serves to reinforce existing motivational orientation and activity preferences, leading to a strengthening of these individual differences over time (Berndt & Keefe, 1995; Kindermann et al., 1996). As a result, peer groups can either support or undermine positive development through their impact on school engagement and involvement in other positive activities.

Although several previous studies suggest that religion is related to delinquent behavior, this hypothesis was not supported for either the African American or the Caucasian American sample. But it does not necessarily mean religion is unimportant. Instead, the effect of religion on adolescents' behavior problems and delinquency may be indirect. Also, neither mother-child closeness nor parent-child interaction was significantly correlated with either behavior problems or delinquency in this study. This finding tends to not support the importance of the parent-child relationship in protecting against behavior problems and delinquency. The reasons for this are not clear, but as children begin to rely heavily on the influence of peers rather than parents, it leads to increases in emotional distance between parents and children during adolescence (Brooks-Gunn, Samelson, Warren, & Fox, 1986).

In sum, consistent with past research, delinquent peer pressure, negative attitudes toward school, the child's cognitive competence, and neighborhood problems proved to be important determinants of behavior problems and delinquency of African American and Caucasian American adolescents.

Given the results of this study, there are five major recommendations for replications or extensions of the research.

First, a final result of the regression model indicates that the amount of variance in all three outcome variables accounted for by each independent variable set was greater for Caucasian American adolescents than for African American adolescents. Thus, further

research is needed to better explain problem behaviors, smoking and delinquency among African American adolescents.

Second, although the variables used in this address some of the variation in behavior problems, a large disparity exists between that explained for the Caucasian American sample and that explained for the African American sample. Therefore, development of measures that better capture the adolescent behavior problems should be addressed in future research.

Third, as noted earlier, the sample for this study was limited to adolescents born to teenage mothers. Additional research will be needed to see whether the results of this study can be replicated with samples where adolescents were born to older mothers.

Fourth, it is clear that an adolescent's immediate environment are important predictors for behavior problems and delinquency; however, adolescents are not only influenced by factors in their immediate environment such as the family, school, and peers (i.e. the microsystems), but also by the aspects of the environment in which they do not participate, such as their parents' workplaces or support network (i.e. the exosystem). Therefore, measures of adolescent behavior problems and delinquency in a broader ecological context that better capture the influences of the dynamics and history of the larger family/social system on adolescent delinquent behavior should be addressed in future research.

Lastly, it should be noted that more attention to adolescent's behavior problems and delinquency must be directed toward understanding the processes of adolescent's behavior problems and delinquency. Research that sheds light on these processes is likely to provide useful information to family, school, community, and society.

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