Published in final edited form as:

J Child Fam Stud. 2006 April ; 15(2): 153–164.

The Effects of Parental Tobacco and Marijuana Use and Personality Attributes on Child Rearing in African-American and Puerto Rican Young Adults

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Abstract

This study assessed the effect of the interrelationship of mothers' and fathers' tobacco and marijuana use with their personality attributes on some of their child rearing behaviors. We used a longitudinal design to analyze the data of 258 males and females who were seen four times over a 13-year period from early adolescence through young adult parenthood. Thirty-one percent of the multiple regression analyses revealed significant interactions between the effect of tobacco or marijuana use and a personality attribute on child rearing. The majority of these significant interactions suggested that protective personality characteristics were offset by substance use risks resulting in less adequate child rearing. If these results are substantiated in an experimental intervention, it suggests that having resilient personality attributes does not protect against the negative effects of tobacco or marijuana use on child rearing.

Keywords

Tobacco use; marijuana use; personality; parenting

Parental illicit drug use presents significant risks for children's physical, psychological, and social development. For example, studies show that children of illicit drug users are more likely to develop antisocial behaviors, especially drug use behavior (Fawzy, Coombs, & Gerger, 1983; Gfroerer, 1987; Jacob & Johnson, 1997). According to Wills, Sandy, Yaeger, and Shinar (2001), parental substance use is associated with lower levels of parental support and with higher levels of parent-child conflict. A study by Tarter, Blackson, Martin, Loeber, and Moss (1993) revealed that the overall quality of parental discipline provided in families of substance abusers was poorer than that in a control group. Bauman and Dougherty (1983) reported that substance-abusing mothers were found to have a higher frequency of aversive behaviors, and to engage more in commanding, disapproving, provoking, and threatening behaviors than non-substance users. However, other studies of the parenting behavior of illicit drug users have yielded mixed findings (Hogan 1998). For example, using a community sample, Locke and

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Newcomb (2004) found that among mothers, but not fathers, having problems due to the use of alcohol, marijuana, and/or cocaine in the past year was related to the exercise of poor parenting skills. This occurred despite the fathers having higher levels of alcohol and cocaine problems. Relatively few investigators have assessed the relationship of parental smoking and child rearing. The findings of Kodl and Mermelstein (2004) are representative; smoking status was related to warmth, but not to monitoring. These differing findings indicate the complexity of this issue and call for further studies.

In this study, we examine the relation between a history of parental smoking and drug use and parent personality attributes as they relate to parental affection and parental rules, using prospective, longitudinal data. Building on previous research, which assessed the main effects of parental drug use, this study focuses on the interactions of parental tobacco and drug use and parental personality and behavioral attributes as they relate to parenting behaviors (Brook, Richter, & Whiteman, 2000).

The majority of research on the antecedents of the parent-child relationship seems to support the notion that parental personality characteristics are important predictors of parenting styles and the quality of the parent-child relationship (Kendler, Sham, & MacLean, 1997; Small, 1988; White, 1985). The strongest and most consistent set of results suggests that parents who experience intrapersonal distress are less likely to provide a nurturing family environment and a structured and organized home. For example, in one cross-sectional study, personality attributes, such as low levels of anxiety, strongly predicted the parenting characteristics of warmth and protectiveness in parents of female twins (Kendler et al., 1997). In another cross-sectional study, White (1985) found that women with more integrated ego development were more nurturing and derived more pleasure and satisfaction from their interactions with their children and from seeing their children grow and develop than did mothers whose ego development was less integrated. In our own research, we have found that in addition to a low level of parental psychopathology, parental personality characteristics reflecting conventionality and ego integration are strongly related to a positive parent-child bond (e.g., Brook, Whiteman, Balka, & Cohen, 1995). This study adds to the literature by examining these relationships in inner-city, African-American and Puerto Rican parents. Minorities living in inner cities are exposed to numerous stresses. Therefore, it is important to examine these relations in such a sample.

An important concept in our Family Interactional Theory (FIT) concerns the buffering effects of protective factors (Brook, Brook, Gordon, Whiteman, & Cohen, 1990). However, it is apparent that individuals do not all experience the same outcome from the presence of protective factors. In some instances risk factors may offset the beneficial impact of protective factors rather than vice versa (protective/risk mechanism). While there have been increasing numbers of studies demonstrating that protective family factors serve to offset risk factors (risk/protective mechanism) (Hawkins, Catalano, & Miller, 1992; Rutter, 1985), we are not aware of research focusing on protective factors that are offset by risk factors (e.g., tobacco and illegal drug use) (protective/risk mechanism).

Although the existing research suggests important relationships between parental personality, substance use, and parents' relationships with their children, few studies have examined the relationship among these domains in the context of a longitudinal design (Brook et al., 1995; Brook et al., 2000). Also, even fewer investigators study these parenting relationships among fathers, mothers, or ethnic minority groups. This study examines the relation of a history of parental tobacco and marijuana use and personality attributes on the parents' affection for their children, and on rules regulating their children's behavior, using a longitudinal sample of African-Americans and Puerto Ricans from New York City. Research with this sample extends the cross-ethnic and cross-cultural work we have done in Colombia and South Africa (Brook,

Brook, De La Rosa, Whiteman, & Montoya, 1999). The study also assesses the effect of demographic characteristics, including parental gender, age, ethnicity, socioeconomic status, and whether or not the parent lives with the child on these relationships. Parental gender is included since mothers and fathers may have differing responsibilities for, and relationships with, their children. In addition, a few investigators have suggested that ethnic groups vary in their socialization goals for their children (Harwood, Schodmerch, Ventura-Cook, Schulze, & Wilson, 1996; Wasserman, Brunelli, Rauh, & Alivarado, 1994). Variations in these goals might affect their parenting practices. To our knowledge, this is the first study that addresses the extent to which parental tobacco and drug use are capable of minimizing the protective effect of parent personality characteristics on aspects of child rearing.

METHOD

Sample

The sample consisted of 258 male and female young adults who reported having children in an ongoing study of tobacco use. This sample is a subset of a larger sample of individuals who participated in our longitudinal study of African-Americans and Puerto Ricans in New York City. Data was collected at Time 1 (T1) in 1990 (N=1,332), Time 2 (T2) from 1994–1996 (N=1190), Time 3 (T3) from 2000–2001 (N=662), and for the tobacco study at Time 4 (T4) from 2001–2003 (N=452). The Institutional Review Board of the Mount Sinai School of Medicine (our prior affiliation) approved the study's procedures for each data collection, as did the Institutional Board of Research Associates at the New York University School of Medicine (our current affiliation) for T4.

For this analysis, we selected only those participants who reported having children at T4, in the 2001–2003 data collection. At T3, there was only one significant difference between those who later reported having children and those who did not. The former were slightly older ($t=24$; $p<.05$). At the most recent data collection, there were no statistically significant differences between parents and non-parents in age, gender, ethnicity, socioeconomic status, personality characteristics, and tobacco and marijuana use. The mean age of this parent sample at T4 was 26.28 years ($SD=1.44$). There were 152 females (59%) and 106 males (41%). One hundred twenty-four (48%) parents were African-American, and 134 (52%) parents were Puerto Rican. The sample's marital status was as follows: married and living together, 21%; married but separated, 4%; cohabiting, 27%; single, 48%. The respondents' education varied as follows: did not finish high school, 24%; completed high school, 31%; obtained a business or technical school degree, 4%; attended or finished college, 41%. The participants' self-reported occupational status was as follows: semi-skilled or less, 19%; skilled, 13%; clerical or sales, 34%; professionals or store owners, 10%; unemployed, 24%. The average age of the participants' oldest or only child was 6.3 years ($SD=3.22$). Seventy-eight percent of the sample's parents lived with this child. However, there were significant gender (97% female and 52% male: $\chi^2 = 73.83$, $p<.0001$) and ethnic differences (84% Puerto Rican and 73% African-American; $\chi^2 = 4.59$, $p<.05$) among parents who lived with their children.

Procedure

At T1 respondents completed questionnaires administered in class (in the teachers' absence) via personal tape players. The respondents listened to the questions as they read and answered them. The remaining data collections were conducted via individual interviews, the majority of which were conducted in person. The balance was collected by phone primarily with respondents who lived too far from New York City for it to be financially feasible to see them in person. Details concerning this longitudinal sample appear in Brook, Pahl, Balka, & Fei (2004).

Measures

For each of the following measures, we standardized participants' scores at each time point before, when possible, obtaining an average standardized score reflecting the history of the measure across the three time points. For measures which were only available at T3, the T3 standardized score was used. The history of current tobacco use was measured with the same question at T1–T3. Specifically, participants were asked, "How many cigarettes do you smoke?" The response options were "None" (1), "A few cigarettes or less a week" (2), "1–5 cigarettes a day" (3), "About half a pack a day" (4), "About one pack a day" (5), "More than one pack a day" (6). At T1–T3 respectively the following proportions of the sample smoked cigarettes: 26.7%, 25.6%, and 35.7%. The correlation between T1 and T2 tobacco use was .15 ($p \leq .016$) and between T2 and T3 use was .60 ($p \leq .0001$). For the history of parent marijuana use at T1 they were asked, "How often have you ever used marijuana or hashish (pot, grass)?" At T2 and T3 the question was, "In the past year, how often have you used marijuana or hashish (pot, grass)?" At T1–T3 the response options and their related scores were "Never" (1), "A few times a year or less" (2), "About once a month" (3), "Several times a month" (4), and "Once a week or more" (5). At T1–T3 respectively, the following proportions of the sample used marijuana: 13.6%, 40.3%, and 34.1%. The correlation between T1 and T2 marijuana use was .26 ($p \leq .0001$) and between T2 and T3 marijuana use was .43 ($p \leq .0001$).

The personality variables described in Table 1 were based on self-report measures and were designed to assess individual differences in the degree of psychosocial adjustment (achievement, ego integration), unconventionality (deviancy, rebelliousness), poor emotional control (impulsivity), and psychopathology (anxiety, depression, physical depression, and interpersonal difficulty). This study includes T1–T3 measures of achievement, ego integration, deviancy, rebelliousness and depression, but the impulsivity, anxiety, physical depression and interpersonal difficulty measures were only available at T3. These measures have been found to predict drug use and delinquency in past research (Brook et al., 1990; Brook, Whiteman, Balka, Win, & Gursen, 1998).

The most recent data collection (tobacco study/T4) included measures of the participants' child rearing behavior with their only or oldest child. Respondents rated the extent to which they were affectionate toward their children, and the extent to which they established specific rules to structure their children's lives. Table 1 shows the source, Cronbach's alpha, and a sample item for each parent personality and child rearing scale.

The demographic factors include ethnicity, gender, T3 age, and whether or not the parent lived with the child, all of which were self-reported. We used the participant's T3 educational level as an indicator of socioeconomic status (SES).

Statistical Analysis

We standardized the scores for all of the measures, since some multi-item scales varied in length over the different time points, and since certain measures were administered at only one time point. Next, we tested for interactions between the demographic factors (ethnicity, gender, age, SES, and whether or not the parent lived with the child) and the personality and drug use variables on the dependent variables, affection and rules. Since less than 10% of these interactions were significant and no discernable patterns emerged, we used the entire sample for the remaining analyses. Pearson correlation coefficients were used to examine the relationship of the demographic and the independent variables with the child rearing variables. Multiple regression models were then used to examine the interaction effects of tobacco and marijuana use and the personality attributes on the child rearing behaviors. Given the two substance use variables, nine personality variables, and two outcome variables, there were 36

possible interactions. Each analysis included two main effects (tobacco or marijuana use, and one personality variable), and the interaction term of these two variables.

RESULTS

The bivariate analyses showed that none of the demographic variables were significantly associated with affection. However, females and Puerto Ricans both established significantly more rules to regulate their children's everyday lives than did males and African-Americans (gender and rules: $t = 2.31$, $p < 0.05$; ethnicity and rules: $t = 2.13$, $p < 0.05$).

We then examined the relationship between tobacco use, marijuana use, the five T1–T3 personality attributes (achievement, rebelliousness, deviancy, ego integration, and depression), the four T3 personality scales (impulsivity, physical depression, anxiety, and interpersonal difficulty), and parental affection and rules. Tobacco use was not correlated with either affection or rules. However, marijuana use had a significant, negative association with affection ($\chi^2 = 6.68$, $p < 0.01$), but was not correlated with establishing rules. Table 2 presents the correlations of the personality predictors with the two child rearing outcomes.

As noted in Table 2, T1–T3 rebelliousness, depression, and deviancy and T3 physical depression, anxiety and interpersonal difficulty were negatively associated with affection. Ego integration was positively related to affection. Higher achieving parents set more rules for their children than lower achieving parents. Deviancy was negatively related to parents having rules for their children.

Where there was no significant linear relationship between the independent and dependent variables we tested for curvilinear relationships. Only that between achievement and affection was significant ($F = 4.54$, $p < .05$). Low and high parental achievement were associated with less affection. Moderate achievement was associated with more affection.

As noted earlier, multiple regression analysis was used to explore the interactions among the independent variables of personality and drug use on child rearing. We determined the significance of the interaction term after partialling out the main effects of the two independent variables from the regression equation. Thirty-one percent of the interactions were significant, which suggested that the findings were not due to chance.

Table 3 presents the protective/risk and risk/protective interactions. A protective/risk interaction refers to a situation in which a protective factor in the parent personality domain (e.g., low level of depression) is offset by a risk factor in the substance use domain (e.g., high tobacco use), resulting in less adequate child rearing (e.g., less affection). A risk/protective interaction refers to an instance in which a risk factor in the drug use domain (e.g., more marijuana use) is offset by a protective factor in the parent personality domain (e.g., high achievement), resulting in more adequate child rearing (e.g., more rules).

Overall, there were more significant protective/risk interactions than risk/protective interactions. Each of the protective/risk interactions involved the interaction between a protective personality factor (i.e., low levels each of physical depression, impulsivity, rebelliousness, and interpersonal difficulty), and the risk inherent in tobacco or marijuana use. Each of these interactions was associated with a decrease in the quality of the parent-child relationship (i.e., low affection or fewer rules). There was only one significant risk/protective interaction. Parental achievement buffered the risk presented by their marijuana use, thereby increasing the number of parental rules. While there was only one direct association between substance use and the child rearing variables, and few associations between the personality variables and rules, there were numerous interactive associations when examining parental drug use by parental personality characteristics.

DISCUSSION

The key concern of this study was tracing the association of aspects of parenting behavior with (a) parental tobacco and marijuana use and (b) parental personality characteristics measured from early adolescence to young adulthood. This analysis reports findings from a 13-year longitudinal study beginning when the participants were adolescents and continuing into their adulthood. The findings provide support for the hypothesis that parental drug use and parental personality/behavioral processes, both covering the period from adolescence to young adulthood, are related to child rearing practices (Brook et al., 2000).

The results indicate that the positive effects of some protective personality/behavioral factors can be offset by the effects of parental tobacco and marijuana use, leading to less parental nurturing and inadequate structure for the child. The findings show that parental personality attributes predict the parenting environment. More specifically, parents with symptoms of depression and anxiety, as well as those who seem unconventional (rebellious and deviant), are less likely to report subsequently being affectionate towards their children. Those with higher scores on ego integration from early adolescence to young adulthood later report being more loving. These findings are in accord with the results from a previous study in which the participants were mainly white (Brook et al., 2000). The finding that females and Puerto Ricans establish more rules for their children than males and African-Americans is consistent with the finding that in this sample, the former groups more often live with their children and are responsible for their daily welfare. In addition, achieving parents and less delinquent parents establish more rules for their children. In view of this achievement result, the null finding regarding parental level of education and rules seems puzzling. This may be a consequence of achievement tapping attitudes as well as behaviors and being the average of multiple assessments from adolescence through young adulthood, while level of education is a single measure of accomplishment in young adulthood.

This study's results only partially confirm those of other investigators. Our null finding regarding the correlation of tobacco use and establishing rules is comparable to similar results regarding monitoring. However, our analyses also show that while there is no direct relationship, tobacco use does have an interactive relationship with some personality attributes that predicts rules. While Kodl and Mermelstein (2004) found a correlation between smoking and affection, in our study there is an association only under certain interactive conditions. This study substantiates the inverse relationship between parental marijuana use and affection noted by Wills et al. (2001). However, in contrast to Tarter et al.'s (1993) finding of a direct relationship between marijuana use and rules, our data indicates an association based on interactions with some personality characteristics.

The findings of this study suggest that research concerning the family environment needs to consider the interplay of protective factors and negating processes in order to obtain a more complete understanding of why some parents who appear resilient exhibit less adequate parenting skills. For example, parental tobacco use is associated with less rule-setting, despite the fact that the parent has control over his/her emotions and relates well to others. Parental marijuana use also has deleterious effects on rule-setting and for establishing an affectionate relationship, even if the parent is conventional (less rebellious, less deviancy). Overall, our results are in accord with contemporary research that suggests taking an interactional approach (e.g., Rutter, 1985). Future research should focus on careful elaboration of the important intervening processes between these interactions and parental nurturance and family management.

Consistent with previous research, the relatively high stability coefficients found for tobacco and marijuana between T2 and T3 (a five-year interval) indicate that tobacco and marijuana

use at a given time are not simply isolated incidents, nor transient states (Bachman, Wadsworth, O'Malley, Johnston, & Schulenberg, 1997). Tobacco and marijuana use are relatively stable phenomena in which the individual is vulnerable to frequent use of tobacco and marijuana in the future. It is interesting that this stability transcends two distinct developmental stages from late adolescence to young adulthood. Future research is needed to improve our understanding of factors that support the stability of marijuana use, as well as their theoretical and practical significance.

This study has some limitations. All of the data are self-reported. However, others have found that such measures of tobacco and marijuana use are reliable and valid (Bachman et al., 1997). In addition, wherever possible, for each variable we combined measures from multiple time points; this enhanced the reliability of these measures. This study bears replication with families whose children are older to ascertain if the pattern of findings is similar across developmental periods. Since, to our knowledge, this is the first study reporting risks minimizing the effects of protective factors, it requires considerable confirmation with diverse samples before generalizing the findings to other ethnic groups.

Despite these limitations, the study does add to the literature in a number of ways. Our study differs from previous research in that parenting practices and parent smoking are based on parental reports rather than on those of their children (Henriksen & Jackson, 1998; Jackson & Henriksen, 1997). Second, most research only focuses on parent smoking or drug use at one time point, during the prenatal period or close to the time of data collection, whereas we assess smoking and drug use over a long period of time. Third, we examine the relationship of parental tobacco use and marijuana use with parental personality characteristics using an interactional approach.

The present findings are potentially important for social, educational, and health policy. Before preventive interventions aimed at improving the effectiveness of parenting can be developed, it is essential to identify specific risks and buffers that jeopardize and promote optimal parenting practices. These risks and buffers, if they can be implemented, may be keys to designing effective parental prevention strategies. Hypotheses suggested by the findings of this study could be tested in a controlled, experimental intervention targeting parental personality attributes and tobacco and drug use. The design should include an evaluation component. For example, our study suggests that smoking and drug use are key risk elements that minimize protective personality traits. Following upon these results, an experimental intervention might attempt to decrease tobacco and drug use and see if this decrease, in the presence of protective personality traits, is associated with increased parental affection and the establishment of effective rules for the child.

Acknowledgements

This research was supported by NIH Research Scientist Award DA00244 from the National Institute on Drug Abuse, NIH grant DA05702 from the National Institute on Drug Abuse, and NIH grant CA84063 from the National Cancer Institute, all awarded to Dr. Judith S. Brook.

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Table 1**Sources and Reliabilities of Scales**

Scales/Number of Items	Source	Alpha	Sample Item
Adolescent/Young Adult Personality			
Ego integration (3)	Brook et al., 1990	0.55	You often lose your temper at people.
Rebelliousness (3)	Smith & Fogg, 1979	0.66	You do things you shouldn't just for the fun of it.
Impulsivity (3)	Gough, 1957	0.64	You often act on the spur of the moment without stopping to think.
Interpersonal difficulty (4)	Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974	0.76	Over the last few years, on average, how much were you bothered by being easily annoyed or irritated?
Achievement (6–10)	Jackson, 1974	0.80	How many years of school do you hope to complete?
Depression (2–8)	Derogatis et al., 1974	0.70	You sometimes feel unhappy, sad, or depressed.
Physical depression (6)	Costello, Edelbrock, Kalas, Kessler, & Claric, 1982	0.75	Over the last few years, on average, how much were you bothered by loss of appetite?
Anxiety (3)	Derogatis et al., 1974	0.77	Over the last few years, on average, how much were you bothered by feeling fearful?
Deviancy (9–10)	Gold, 1966	0.80	How often have you broken into a house or building when you were not supposed to be there?
Child Rearing			
Affection (4)	Schaefer, 1965	0.85	You frequently show your love for your child.
Rules (12)	Original	0.67	Do you have definite rules about bedtime?

Note: For ego integration, rebelliousness, achievement, depression and deviancy, the alpha is the median of the alphas at T1–T3. For the remaining scales the alpha is for a single time point. The number in parentheses following each scale indicates the number of items in the scale. When there is more than one number, the number of items varied across time points.

Table 2
Pearson Correlation Coefficients Between Parent Personality and Child Rearing (N=258)

Parent Personality	Affection	Rules (More Structure)
Achievement	0.12 [†]	0.15 [*]
Rebellion	-0.12 [*]	-0.04
Ego integration	0.19 ^{**}	0.09
Depression	-0.18 ^{**}	0.07
Impulsivity ^I	-0.05	-0.00
Physical depression ^I	-0.17 ^{**}	-0.00
Anxiety ^I	-0.16 ^{**}	0.00
Interpersonal difficulty ^I	-0.14 [*]	-0.08
Deviancy	-0.14 [*]	-0.15 [*]

[†]
p<.10

^{*}
p<0.05

^{**}
p<0.01

^I These measures were included at T3 only.

Table 3
Interactions of Parent Personality Variables by Relation to Child Rearing

Personality Protective Variables	Drug Risk Variables	Protective/Risk Interactions Child Rearing Dependent Variables	F-Value
Low physical depression	High tobacco use	Low affection	4.45 [*]
Low psychological depression		Low affection	4.54 [*]
Low rebelliousness		Less rules	4.54 [*]
Low impulsivity		Less rules	7.73 [*]
Low anxiety		Less rules	4.12 [*]
Low interpersonal difficulty		Less rules	5.81 [*]
Low rebelliousness	High marijuana use	Low affection	6.20 [*]
Low deviancy		Low affection	5.29 [*]
Low psychological depression		Less rules	4.84 [*]
Low interpersonal difficulty		Less rules	4.75 [*]
Personality Protective Variables	Drug Risk Variables	Risk/Protective Interactions Parent-Child Relationship Dependent Variables	F-Value
High achievement	High marijuana use	More rules	6.71 ^{**}

*
p<0.05;

**
p<0.01