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Family Structure and Adolescent Drug Use: An Exploration of Single-Parent Families

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Abstract

Data from the 2004 Monitoring the Future survey examined a nationally representative cross-sectional sample of 8th to 12th grade adolescents in rural and urban schools from across the United States ($N = 37,507$). Results found that drug use among daughters living with single fathers significantly exceeded that of daughters living with single mothers, while gender of parent was not associated with sons' usage. This distinction in adolescent drug use between mother-only versus father-only households is largely overlooked in contemporary studies. Factors responsible for variations in sons' and daughters' usage in single-parent families have important implications for future drug prevention efforts.

Keywords

marijuana; amphetamine; inhalant abuse; divorce; father–child relations; family relations

Introduction

Despite recent ameliorating trends, illicit drug use among adolescents continues to persist at relatively high levels (Substance Abuse and Mental Health Services Administration [SAMHSA], 2006). Health consequences notwithstanding, early inhalant, marijuana, or amphetamine use often heralds more dangerous deviant behavior and drug involvement with the passage of time (Fergusson and Horwood, 1997; Haggard-Grann, Hallqvist, Langstrom, and Moller, 2006; Johnson, Schutz, Anthony, and Ensminger, 1995; Johnston, O'Malley, and Bachman, and Schulenberg, 2005). In some studies, amphetamine and other drug use has been linked to increases in violent behavior (Haggard-Grann et al., 2006). Even after controlling for age, education, and ethnicity, research suggests that chronic inhalant users demonstrate greater levels of cognitive impairment and less effective working memories than chronic cocaine users (Rosenberg, Grigsby, Dreisbach, Busenbark, and Grigsby, 2002). It has also been established that early-onset cigarette and alcohol use among adolescents strongly predicts later marijuana use (Griffin, Botvin, Scheier, and Nichols, 2002). Johnson et al. (1995) found that early-onset inhalant users were nine times more likely than inhalant nonusers to adopt heroin use later in life. Although the contribution of various individual and contextual factors including family dynamics, academic motivation, perceptions of harm associated with use, delinquency, and peer affiliation directly influence substance initiation and use, more frequent drug use during early periods of adolescence appears to lead to increased dependency in adulthood (Becker and Grilo, 2007; Fisher, Miles, Austin,

Camargo, and Colditz, 2007; Hu, Davies, and Kandel, 2006; Miller and Miller, 1997; Oetting and Webb, 1992; Pagare, Meena, Singh, and Saha, 2004).

Current trends suggest that overall drug use is on the decline, but the proportion of youth continuing to initiate illicit substance use remains troubling. According to a recent survey, youth perception of harm associated with illicit substance use (e.g., marijuana) remains low, whereas abuse of inhalants is at a recent all-time high (Johnston et al., 2005). In 2004, approximately 1.4 million adolescents reported past year methamphetamine use (SAMHSA, 2005), and nearly 2.1 million youth across the United States engaged in marijuana use for the first time (Johnston et al., 2005). As a result of these trends, researchers increasingly have targeted adolescent substance users.

Research has shown that adolescents from single-parent households are more prone to delinquent behaviors, including drug and alcohol use (Amato and Keith, 1991; Amey and Albrecht, 1998; Barrett and Turner, 2006; Bjarnason et al., 2003a; Eitle, 2006; Hoffman, 2002; Selnow, 1987). Although some researchers maintain that household composition has relatively little predictive utility with regard to adolescent problem behavior (Gfroerer and de la Rosa, 1993; Ford-Gilboe, 2000; Robins and Przybeck, 1987), their observations conflict sharply with findings from many other studies, which indicate that children who live with only one parent are more prone to emotional distress, negative behavior, delinquency, and drug use (Booth and Amato, 2001; Cairney, Boyle, Offord, and Racine, 2003; Chilcoat and Anthony, 1996; Cummings, Keller, and Davies, 2005; Demo and Acock, 1988; Flewelling and Bauman, 1990; Florsheim, Tolan, and Gorman-Smith, 1998; Griffin, Botvin, Scheier, Diaz, and Miller, 2000; Murray, Kiryluk, and Swan, 1985; Newcomb and Bentler, 1988; Wells and Rankin, 1991; Zill, 1988). Relative to intact families, children of single-parent families generally are more likely to be resource deprived (Amato and Keith, 1991), especially in female-headed households (Amato, 2000), and receive less intense and less consistent monitoring, all of which have been associated with adolescent drug use (McLanahan and Sandefur, 1994).

It bears mentioning that although research has focused primarily on negative youth outcomes associated with single-parent status, positive outcomes also may be associated with such family structures. Following the dissolution of high-conflict or volatile marriages, children often report feelings of relief and lower levels of stress, depression, and anxiety (Amato, 1987; Amato, Loomis, and Booth, 1995; Davies and Cummings, 1994; Emery, 1999; Jekielek, 1998; Kelley, 2003). In such post-divorce circumstances, the resulting single-parent dynamic may be a preferable environment for children's well-being and may place them at less risk for developing emotional or other dysfunctional problems.

A central focus of this study serves to highlight important differences among family structures, and single-parent families in particular. Within each category of family structure—mother-only, father-only, and dual-parent households—heterogeneity among groups is considerable and varies with the addition of factors such as marital conflict, history of divorce, presence of a nonbiological parent or extended family members, ethnicity, political affiliation, socioeconomic status, and other cultural variables.

Although empirical investigations have explored such differences among dual-parent households, researchers have only begun to challenge general assumptions that mother-only and father-only families are relatively homogeneous with respect to children's behaviors and subsequent outcomes. Certain theoretical models designed to come to terms with the single-parent family structure relationship have focused on the gender (mis)match of parent and child. Whereas some studies suggest that neither parent is advantaged (Downey, 1994; Robins and Przybeck, 1987), others find that mothers (Ambert, 1982; Demuth and Brown,

2004; McArdle et al., 2002)—or fathers (Amato, 2000; McLanahan and Booth, 1989)—may be more effective in protecting children from drug use. Considerable evidence has emerged indicating that adolescents who live in mother-only households are less likely to engage in deviant behavior and drug use than children from father-only households (Demuth and Brown, 2004; Lee, Burkam, Zimiles, and Ladewski, 1994; Needle, Su, and Doherty, 1990). Compared to single mothers, single fathers have been shown to communicate less often with their children (Ambert, 1982). This result, in combination with studies suggesting that mothers provide better overall supervision than fathers and stronger affective and interpersonal bonds with their children, gave rise to what is known as the *maternal hypothesis* which holds that youth living with only their mothers are less likely to become involved in delinquent behavior than those living with only their fathers (Downey, Ainsworth-Darnell, and Dufur, 1998; Eitle, 2006; Hoffman, 1994; Hoffman and Johnson, 1998; McLanahan and Sandefur, 1994).

Conversely, some researchers maintain that same-sex parent-child pairings have the best chance of shielding children from drug use (Powell and Downey, 1997). Building upon this assumption, Eitle (2006) found that girls living in father-only households were more prone to deviant behavior than boys. These results are largely explained by what is known as the *same-sex hypothesis*, which holds that children of the same sex as their single parent are less likely to experience socioemotional disadvantage than children raised by a parent of the opposite sex (Santrock and Warshak, 1979; Warshak, 1992). Such research may explain the results of Camara and Resnick (1989), who found that boys in mother-only homes and girls in father-only homes exhibited more aggressiveness and lower overall self-esteem. On the whole, research has largely failed to support one position over the other, possibly owing to various shortcomings of earlier studies, which were variously undermined by small samples, inadequate statistical analyses, not distinguishing father-only from mother-only single-parent households, or failing to investigate the potentially critical relationships between the child's age, sex, family status, and substance usage (Florsheim et al., 1998; Hetherington and Stanley-Hagan, 1999; Hoffman, 1993, 1995; Mason, Cauce, Gonzalez, and Hiraga, 1994; O'Connor, Thorpe, Dunn, and Golding, 1999).

To offset these problems, our research made use of the 2004 Monitoring the Future data set, which included nearly 50,000 respondents (Johnston et al., 2005). Two central issues were investigated in the analysis: the first was concerned with differences in illicit drug use in youth from intact versus single-parent households. This analysis expands the usual single-drug examination by including usage measures of inhalants, marijuana, and amphetamines, the illicit drugs most commonly used by adolescents. We expect results will replicate earlier findings, which demonstrated greater drug usage in single-parent households. Our research extends previous studies by searching for interactions of respondents' age, sex, and family structure with usage of the various illicit substances. The second issue addressed in the analysis is concerned with male and female adolescents' usage in same-sex versus opposite-sex single-parent households; it also considers the interactive association of the child's age with the other predictors of drug use. This approach was designed to resolve earlier shortcomings: it makes use of a large youth sample; it differentiates single-father from single-mother households; it crosses this differentiation with the sex and (approximate) age of the child; and it uses powerful statistical models to investigate usage differences of drugs most commonly used by adolescents.

On the basis of considerable research, we expect that the analysis will reveal that older youth (H_1) and youth living in mother-only and father-only households will report higher lifetime levels of drug use than peers living in dual-parent households across all three drugs (H_2). Further, drawing upon the maternal hypothesis, which holds that because mothers are more effective than fathers in building and maintaining close interpersonal bonds with their

children, they are more effective than fathers at precluding drug use (Downey et al., 1998; Eitle, 2006; Hoffman and Johnson, 1998), we predict that youth from father-only households will exhibit more extensive substance use than those from mother-only or dual-parent households (H_3). As an extension of the same-sex hypothesis (Santrock and Warshak, 1979; Warshak, 1992), which holds that children will be more receptive to parents of the same sex, we expect that female adolescents in mother-only households will report lower levels of substance use than those living with their fathers (H_4). However, we do not expect males to show this oppositional pattern of greater drug use when living with their mothers (H_5). This divergence from the same-sex hypothesis is based on the premise derived from the maternal hypothesis that mothers cultivate closer relationships and monitor their children more closely than fathers (Downey et al., 1998; Eitle, 2006). As such, drug usage of males in single-mother households will be attenuated, contrary to expectations of the same-sex hypothesis, and this reduction will tend to diminish the advantage derived of same-sex pairings in father-only households.

Method

Sample Design

In the Monitoring the Future surveys, data are collected annually in surveys administered in schools across the United States. The 2004 survey includes data on 8th, 10th, and 12th graders ($N = 49,474$). Among others, the comprehensive measures administered involve reports of respondents' grade in school, sex, and household composition (mother-only, father-only, or dual-parent household) (Table 1). Respondents reported their frequency of lifetime inhalant, marijuana, and amphetamine use. Due to casewise deletion in the multivariate analysis to be reported, the actual number of usable participants was reduced to 37,507. Of these adolescents, approximately 78% reported living in a dual-parent household. This is comparable to the percentage of youth living in dual-parent households found in the full sample. For each substance, lifetime use ranged from 0 (*no usage*) to 6 (*40 or more occasions*). Lifetime use is more appropriate than the commonly employed past 30-day use indicator, as irregular or infrequent use escapes detection with truncated (30-day) time frames (Ramirez et al., 2004).

Results

A multivariate analysis of variance (MANOVA) was conducted to investigate the association of family structure (dual-parent, mother-only, father-only), respondent's sex, and grade in school (8th, 10th, 12th). Dependent variables were lifetime use of marijuana, inhalants, and amphetamines. Of the 37,507 children with complete data in the study, approximately 78% reported living in a dual-parent household. Of the 8,334 children living with only one parent, 82.5% resided in mother-only households.

The MANOVA revealed statistically significant multivariate main effects for child's sex, Wilks' $\lambda = 1.00$, $F(3, 37487) = 26.69$, grade, Wilks' $\lambda = .97$, $F(6, 74947) = 179.08$, and family structure, Wilks' $\lambda = .99$, $F(6, 74947) = 69.45$ (all $p < .001$). It also disclosed a statistically significant sex $\times$ grade interaction effect, Wilks' $\lambda = 1.00$, $F(6, 74947) = 3.25$, $p < .05$; a statistically significant grade $\times$ family structure interaction, Wilks' $\lambda = 1.00$, $F(12, 99181) = 4.93$, $p < .001$; and a statistically significant sex $\times$ family structure interaction effect, Wilks' $\lambda = 1.00$, $F(6, 74947) = 3.95$, $p < .001$.

Univariate Main Effects

Sex—Inspection of statistically significant multivariate effects by drug-specific univariate ANOVA revealed a variable pattern of usage. Boys ($M = 2.07$, $SD = 1.96$) reported

significantly greater marijuana use than girls ($M = 1.82$, $SD = 1.69$), $F(1, 37489) = 24.55$, $p < .001$, but girls ($M = 1.26$, $SD = .91$) used significantly more amphetamines than boys ($M = 1.22$, $SD = .85$), $F(1, 37489) = 23.39$, $p < .001$. No differences were found on inhalant use.

Grade—A main effect of grade emerged in the univariate analyses of each of the drugs. For marijuana and amphetamines, each successive grade reported significantly greater usage (Table 2). For these two substances, all between-grade comparisons were significantly different ($p < .001$). A different pattern emerged in the inhalant analysis, where 8th graders reported significantly greater lifetime inhalant usage than either the 10th or 12th grade students (both $p < .001$), who did not differ.

Family structure—Univariate analyses revealed significant differences associated with family structure on marijuana, inhalants, and amphetamines, $F(2, 37489) = 202.02$, 6.56 , 14.86 , respectively (all $p < .001$). Examination of mean differences (Table 3) revealed that substance use of respondents in father-only family structures significantly exceeded that of children in either dual-parent or mother-only families on all three of the substances under study. In addition, children from dual-parent families used significantly less marijuana or amphetamines than respondents from mother-only families. These two groups did not differ on inhalant use.

Univariate Interaction Effects

Sex of respondent $\times$ Grade—All of the statistically significant main effects were moderated by interactions. The significant multivariate sex $\times$ grade interaction effect was the result of mounting sex differences in marijuana use as adolescents grew older (Table 4, top). Univariate ANOVA indicated that boys used significantly more marijuana than girls in 8th grade, $F(1, 15634) = 26.51$, 10th grade, $F(1, 15328) = 89.39$, and 12th grade, $F(1, 6539) = 76.17$ (all $p < .001$). For inhalants and amphetamines, the grade $\times$ sex interaction effects were not statistically significant.

Family structure $\times$ Grade—For marijuana, the univariate family structure $\times$ grade interaction also proved statistically significant. Within each year, average marijuana use differed significantly as a function of family structure, $F(2, 15633) = 126.40$, $F(2, 15327) = 129.24$, $F(2, 6538) = 16.89$ (all $p < .001$), for 8th, 10th, and 12th grades, respectively (see Table 4, bottom). Results of simple effects analyses revealed that children of father-only single-parent families were significantly more prone to marijuana use than children from mother-only single-parent family structures, whose marijuana usage, in turn, significantly exceeded that of children of dual-parent families (all $p < .001$). The grade $\times$ family structure was not statistically significant in the analyses of inhalant or amphetamine use.

Family structure $\times$ Sex of respondent—Across each substance, univariate analyses of the statistically significant multivariate family structure $\times$ sex of child interaction revealed a similar pattern. For marijuana, the simple univariate family structure $\times$ sex interaction was statistically significant, $F(2, 37501) = 8.40$, $p < .001$. Marijuana usage of boys in single-father family structures exceeded that of boys from dual-parent families, but did not differ from that of boys in mother-only family structures (Table 5). The picture was different for girls, however. Simple effects analyses revealed that girls living in father-only family structures used significantly more marijuana than girls living in single-mother families or in dual-parent households. Marijuana usage of girls in single-father households was comparable to that of boys in the same family structure.

For inhalants, the simple univariate family structure $\times$ sex interaction also was statistically significant, $F(2, 37501) = 4.75$, $p < .05$. As illustrated in Table 5, family structure was not

associated with variations in boys' usage. As with marijuana, however, girls living in father-only family structures used significantly more inhalants than those in mother-only or dual-parent households. In addition, average inhalant use of girls from single-father households significantly exceeded that of boys from single-father households.

This same pattern was found in the analysis of the statistically significant family structure $\times$ sex interaction on amphetamine use, $F(2, 37501) = 4.51, p < .05$. As with inhalants, family structure was not associated with usage variations for boys. Amphetamine usage of girls living in single-father households, however, significantly exceeded that of girls in mother-only or dual-parent households and of boys in single-father households as well.

Discussion

The pattern of results reinforced and extended earlier findings. Our analyses indicated that children from intact families used significantly less inhalants, marijuana, and amphetamines than children from single-parent families. As hypothesized (H_1), older children reported greater lifetime marijuana and amphetamine use. This inequality was reversed for inhalants, where the youngest group reported the greatest usage. Two different lines of research anticipated this result. The first holds that a cohort difference distinguishes the youngest from the two older groups of students, with the youngest students being more prone to inhalant use than the two older groups. This possibility is consistent with cyclical trends found in the Monitoring the Future survey which suggests a recent upsurge in 8th graders', but not older students', inhalant usage (Johnston, O'Malley, Bachman, and Schulenberg, 2004). A second possibility is suggested in recent research indicating that older respondents are reluctant to admit to using inhalants, as inhalants are regarded as being a "kid's drug" (Crano, Siegel, Alvaro, and Patel, 2007; Siegel, Alvaro, Patel, and Crano, 2009). Consistent with expectations, analysis also showed that children in single-parent families used significantly more inhalants, marijuana, and amphetamines than peers from intact (dual-parent families) (H_2). This finding points to the desirability of simultaneous inclusion of more than a single drug in research. Children from single-parent families were at substantially greater risk of drug involvement than children of dual-parent families, and this generalization held across multiple substances.

Also as predicted (H_3), children in father-only households reported substantially more inhalant, marijuana, and amphetamine use than children in either mother-only or dual-parent households. Close examination of the interaction of child's and single-parent's sex demonstrated that this difference was largely attributable to the usage behavior of girls living with their fathers. As expected (H_4), this subset of girls engaged in significantly more illicit drug use than girls living with their mothers or in dual-parent households. Perhaps even more noteworthy was the finding that inhalant and amphetamine use of girls living in father-only households exceeded that of boys in similar living contexts, and matched marijuana usage of boys living in father-only family structures. As predicted (H_5), boys' illicit drug usage was unrelated to the sex of the custodial parent in single-parent households.

Findings from this study may supply a useful addition to the literature. A large national sample of adolescents was surveyed, and a lifetime drug use measure was used to offset potential insensitivity of shorter duration indicators. The usage data involved the three most common illicit drugs used by youth, and the analytic methodology was both standard and powerful. Although a large sample enhanced the likelihood of statistically significant results, it did not dictate the pattern of predicted differences that were confirmed almost without exception.

On the basis of our findings, it is evident that 8th through 12th graders in single-parent families are at considerably greater risk for use of inhalants, marijuana, and amphetamines. Although the sex of custodial parent for boys in single-parent families is relatively uninformative with regard to drug use, a key finding from the data indicates that girls living with only their fathers are at significantly greater risk for illicit drug use than girls living with only their mothers. Across every category—inhalants, marijuana, and amphetamines—girls in father-only households used significantly more illicit substances than girls in mother-only or dual-parent households. Although prior research has found that youth from nonintact families might be more prone to deviant behavior such as drug use (Amey, and Albrecht, 1998; Barrett and Turner, 2006; Bjarnason et al., 2003b; Flewelling and Bauman, 1990; Hoffman, 2002), the refinement of the single-parent category is a novel approach not common to other studies of this nature. Considerable research is available to help answer the question how dual-parent families differ from one another by collapsing such a category into never-divorced/traditional, step-parent/remarried, and foster dual-parent families, yet the same scrutiny has failed to cross over into the single-parent domain. As such, little research is available that highlights how mother-only, father-only, neither-parent, widowed single-parent, sole-custody parent, and never-married single-parent households may differ. Just as not all dual-parent households are the same, it can be argued as well that not all single-parent households are the same. As data from the current study suggest, important variations do in fact emerge among different single-parent families. Despite long-standing interest in family structure, research continues to overlook the diverse nature of single-parent families.

Limitations

Although it is reasonable to underscore the importance of these findings, caution is required in their interpretation. As this study is a secondary data analysis and makes use of an existing data set, the survey items were not designed specifically to serve the current study's research questions. With this limitation in mind, it was not possible for the current study to include items such as parental attachment and warmth, sibling relationships, or other potentially influential social and demographic features into the analyses. For example, some researchers have expressed the need for future study on adolescent development within the context of single-parent environments that differ by race or ethnic status (Eitle, 2006; Thomas, Farrell, and Barnes, 1996), but owing to limitations in the data set this was not feasible. Further, as this study makes use of existing data, it is uncertain how participants from the original study will benefit directly from their participation in this subsequent research, an important ethical concern raised in earlier commentaries (e.g., Kleinig and Einstein, 2006). This concern was taken into consideration in the design of the present analysis, and we believe the benefits of this study will foster a greater understanding of the relatively unacknowledged differences between single-parent households and their possible association with differences in their effects on youth.

It also should be emphasized that results from this study do not support the interpretation that fathers' actions in single-parent families are the cause of their daughters' usage problems, any more than they suggest that fathers are more likely to be assigned custody of troublesome, drug-using daughters. Either of these causal possibilities would produce the pattern of results found here, and neither is supported unequivocally by the analyses.

Although the causal operator in these results cannot be specified, this ambiguity does not diminish the importance of the differences found in the patterns of illicit drug use among mother-only, father-only, and dual-parent households. Indeed, such causal ambiguity may have a positive outcome, as a goad for further research. Previous investigations established that children from intact families engage in less illicit substance use than children from single-parent homes (Amato and Keith, 1991; Amey and Albrecht, 1998; Barrett and Turner, 2006; Bjarnason et al., 2003a; Hoffman, 2002), but differences between the usage patterns

of boys and girls in single-parent homes, across the range of popular illicit substances, have largely been overlooked. Understanding the causes of adolescent differences in drug use associated with family structure could greatly facilitate efforts of drug prevention and cessation. Despite increases in the surveillance of substance use trajectories and continued interest in the role of family structure on youth development, research specifically exploring the impact of single-parent households on adolescent substance use is lacking. If it were determined that a dearth of effective communication or overly lenient parental monitoring were associated with heightened drug use of girls in father-only households, then steps could be taken to help educate single fathers about potential pitfalls they faced and behaviors that might mitigate these dangers. Conversely, if it were established that single fathers are assigned custody only of the most troubled of daughters, this information, too, could be used to develop preventive parental actions. This research points to the potential risks inherent in the single father–daughter association and may hopefully serve as a springboard for future research across a multitude of domains and diverse populations.

RÉSUMÉ

Structure familiale et consommation de drogues chez les adolescents: Une étude des familles monoparentales

La “2004 Monitoring the Future Survey” examine un échantillon d’adolescents scolarisés, âgés entre 13 et 18 ans, en ville ou en milieu rural ($N = 37\,507$). Cet échantillon est représentatif de la population américaine. La consommation de drogues chez les filles vivant avec un père célibataire est significativement plus élevée que celle des filles vivant avec une mère célibataire. En revanche, le sexe du parent célibataire n’impacte pas l’usage de drogues pour les garçons. Cette différence concernant la consommation de drogues chez les adolescents issus de familles monoparentales (mère célibataire vs. père célibataire) n’a pas encore été traitée intensivement. Les facteurs responsables de ces variations dans l’usage de drogues chez les filles et garçons issus de familles monoparentales ont d’importantes implications pour les efforts de prévention. Le financement de cette recherche a été possible grâce au “National Institute on Drug Abuse” (5R01DA020879-02).

RESUMEN

Estructura de la familia y el consumo de drogas: Un estudio de familias monoparentales

Datos de la encuesta “2004 para monitorear el futuro” se examinó una muestra de adolescentes de escuelas rurales y urbanas de los grados 8th a 12th en representación nacional de los EEUU ($N = 37,507$). Los resultados indicaron que las hijas que viven solo con su padre, usan más drogas ilegales que las hijas que viven solo con su madre. No hay una diferencia para los hijos que viven solos con su padre o solo con su madre. La diferencia entre el uso de drogas durante la adolescencia en las casa donde se vive solo con un padre o una madre se ha descuidado en todos los estudios actuales. Los factores responsables en las variaciones del uso de las drogas entre los hijos e hijas tienen implicaciones muy importantes y se deben tomar en cuenta para reducir los usos de drogas en el futuro. El financiamiento para esta investigación es apoyada por el Instituto Nacional de Abuso de las Drogas (5R01DA020879-02).

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Biographies

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William D. Crano, A.B., M.S., Ph.D., is Professor of Psychology at Claremont Graduate University. His research interests include social influence, the impact of minorities on the beliefs and actions of the majority, and the development of persuasive and instructional information to prevent drug abuse in children and adolescents. He is a fellow of the APA and APS, has been a NATO Senior Scientist, a Fulbright Senior Fellow to Brazil, and a liaison scientist in the behavioral sciences for the Office of Naval Research, London. He has also served as the Chair of the Executive Committee for the Society of Experimental Social Psychology and as Director of the Program in Social Psychology at National Science Foundation.

Glossary

Early-onset use	Engaging in illicit drug use in early adolescence (i.e., before 16 years of age).
Inhalant use	The use of harmful but legal products to achieve an intoxicating high, including aerosols, glue, paint thinner, and other common household products.
Intact families	Families or households that have never been disrupted by divorce, death of a parent, or other parental absence.
Nonuser	An individual who has never engaged in illicit substance use.
Perceptions of harm	An individual's subjective assessment regarding the likelihood of potential risks concerning harmful behavior such as illicit substance use.
User	An individual who has engaged in illicit substance use one or more times.

References

- Amato PR. Children's reactions to parental separation and divorce: the views of children and custodial mothers. *Australian Journal of Social Issues*. 1987; 22:610–623.
- Amato PR. The consequences of divorce for children and adults. *Journal of Marriage and Family*. 2000; 62:1269–1287.
- Amato PR, Keith B. Parental divorce and the well-being of children: a meta-analysis. *Psychological Bulletin*. 1991; 110:26–46. [PubMed: 1832495]
- Amato PR, Loomis L, Booth A. Parental divorce, marital conflict, and offspring well-being during early adulthood. *Social Forces*. 1995; 73:895–915.
- Ambert AM. Differences in children's behavior toward custodial mothers and custodial fathers. *Journal of Marriage and the Family*. 1982; 44:73–86.
- Amey CH, Albrecht SL. Race and ethnic differences in adolescent drug use: the impact of family structure and quantity and quality of parental interaction. *Journal of Drug Issues*. 1998; 28:283–298.
- Barrett AE, Turner RJ. Family structure and substance use in adolescence and early adulthood: examining explanations for the relationship. *Addiction*. 2006; 101:109–120. [PubMed: 16393197]
- Becker DF, Grilo CM. Ethnic differences in the predictors of drug and alcohol abuse in hospitalized adolescents. *American Journal on Addictions*. 2007; 16:389–396. [PubMed: 17882610]
- Bjarnason T, Andersson B, Choquet M, Elekes Z, Morgan M, Rapinett G. Culture, family structure and adolescent alcohol use: multilevel modeling of frequency of heavy drinking among 15–16 year old students in 11 European countries. *Journal of Studies on Alcohol*. 2003; 64:200–208. [PubMed: 12713193]
- Bjarnason T, Davidaviciene AG, Miller P, Nociar A, Pavlakis A, Stergar E. Family structure and adolescent cigarette smoking in eleven European countries. *Addiction*. 2003; 98:815–824. [PubMed: 12780370]
- Booth A, Amato PR. Parental predivorce relations and offspring postdivorce well-being. *Journal of Marriage & the Family*. 2001; 63:197–212.
- Cairney J, Boyle M, Offord DR, Racine Y. Stress, social support, and depression in single and married mothers. *Social Psychiatry and Psychiatric Epidemiology*. 2003; 38:442–449. [PubMed: 12910340]
- Camara KA, Resnick G. Styles of conflict resolution and cooperation between divorced parents: effects on child behavior and adjustment. *American Journal of Orthopsychiatry*. 1989; 59:560–575. [PubMed: 2817095]
- Chilcoat HD, Anthony JC. Impact of parent monitoring on initiation of drug use through late childhood. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1996; 35:91–100. [PubMed: 8567618]
- Crano WD, Siegel JT, Alvaro EM, Patel NM. Overcoming adolescents' resistance to anti-inhalant appeals. *Psychology of Addictive Behaviors*. 2007; 21:516–524. [PubMed: 18072834]
- Cummings EM, Keller PS, Davies P. Towards a family process model of maternal and parental depressive symptoms: exploring multiple relations with child and family functioning. *Journal of Child Psychology and Psychiatry*. 2005; 46:479–489. [PubMed: 15845128]
- Davies PT, Cummings EM. Marital conflict and child adjustment: an emotional security hypothesis. *Psychological Bulletin*. 1994; 116:387–411. [PubMed: 7809306]
- Demo DH, Acock AC. The impact of divorce on children. *Journal of Marriage and the Family*. 1988; 50:619–648.
- Demuth S, Brown SL. Family structure, family processes, and adolescent delinquency: the significance of parental absence versus parental gender. *Journal of Research in Crime and Delinquency*. 2004; 41:58–81.
- Downey DB. The school performance of children from single-mother and single-father families: economic or interpersonal deprivation? *Journal of Family Issues*. 1994; 15:129–147.
- Downey DB, Ainsworth-Darnell JW, Dufur MJ. Sex of parent and children's well-being in single-parent households. *Journal of Marriage and the Family*. 1998; 60:878–893.
- Eitle D. Parental gender, single-parent families, and delinquency: exploring the moderating influence of race/ethnicity. *Social Science Research*. 2006; 35:727–748.

- Emery, RE. Marriage, divorce, and children's adjustment. 2nd ed.. Thousand Oaks, CA: Sage; 1999.
- Fergusson DM, Horwood LJ. Early onset cannabis use and psychosocial adjustment in young adults. *Addiction*. 1997; 92:279–296. [PubMed: 9219390]
- Fisher LB, Miles IW, Austin SB, Camargo CA, Colditz GA. Predictors of initiation of alcohol use among US adolescents: findings from a prospective cohort study. *Archives of Pediatrics & Adolescent Medicine*. 2007; 161:959–966. [PubMed: 17909139]
- Flewelling RL, Bauman KE. Family structure as a predictor of initial substance use and sexual intercourse in early adolescence. *Journal of Marriage and the Family*. 1990; 52:171–181.
- Florsheim P, Tolan P, Gorman-Smith D. Family relationships, parenting practices, the availability of male family members, and the behavior of inner-city boys in single-mother and two-parent families. *Child Development*. 1998; 69:1437–1447. [PubMed: 9839426]
- Ford-Gilboe M. Dispelling myths and creating opportunity: a comparison of the strengths of single-parent and two-parent families. *Advances in Nursing Science*. 2000; 23:41–58. [PubMed: 10970038]
- Gfroerer J, de la Rosa M. Protective and risk factors associated with drug use among Hispanic youth. *Journal of Addictive Diseases*. 1993; 12:87–107. [PubMed: 8476945]
- Griffin KW, Botvin GJ, Scheier LM, Diaz T, Miller NL. Parenting practices as predictors of substance use, delinquency, and aggression among urban minority youth: moderating effects of family structure and gender. *Psychology of Addictive Behaviors*. 2000; 14:174–184. [PubMed: 10860116]
- Griffin KW, Botvin GJ, Scheier LM, Nichols TR. Factors associated with regular marijuana use among high school students: a long-term follow-up study. *Substance Use and Misuse*. 2002; 37:225–238. [PubMed: 11863277]
- Haggard-Grann U, Hallqvist J, Langstrom N, Moller J. The role of alcohol and drugs in triggering criminal violence: a case-crossover study. *Addiction*. 2006; 101:100–108. [PubMed: 16393196]
- Hetherington E, Stanley-Hagan M. The adjustment of children with divorce parents: a risk and resiliency perspective. *Journal of Child Psychology and Psychiatry*. 1999; 40:129–140. [PubMed: 10102729]
- Hoffman JP. Exploring the direct and indirect family effects on adolescent drug use. *Journal of Drug Issues*. 1993; 23:535–557.
- Hoffman JP. Investigating the age effects of family structure on adolescent marijuana use. *Journal of Youth and Adolescence*. 1994; 23:215–235.
- Hoffman JP. The effects of family structure and family relations on adolescent marijuana use. *Journal of the Addictions*. 1995; 30:1207–1241.
- Hoffman JP. The community context of family structure and adolescent drug use. *Journal of Marriage and Family*. 2002; 64:314–330.
- Hoffman JP, Johnson RA. A national portrait of family structure and adolescent drug use. *Journal of Marriage and the Family*. 1998; 60:633–645.
- Hu MC, Davies M, Kandel DB. Epidemiology and correlates of daily smoking and nicotine dependence among young adults in the United States. *American Journal of Public Health*. 2006; 96:299–308. [PubMed: 16380569]
- Jekielek S. Parental conflict, marital disruption and children's emotional well-being. *Social Forces*. 1998; 76:905–936.
- Johnson EO, Schutz CG, Anthony JC, Ensminger ME. Inhalants to heroin: a prospective analysis from adolescence to adulthood. *Drug and Alcohol Dependence*. 1995; 40:159–164. [PubMed: 8745138]
- Johnston, LD.; O'Malley, PM.; Bachman, JG.; Schulenberg, JE. Overall teen drug use continues gradual decline: but use of inhalants rises. 2004. from www.monitoringthefuture.org
- Johnston, LD.; O'Malley, PM.; Bachman, JG.; Schulenberg, JE. Monitoring the Future national results on adolescent drug use: overview of key findings, 2004. Bethesda, MD: National Institute on Drug Abuse; 2005. (NIH Publication No. 05-5726)
- Kelley JB. Changing perspectives on children's adjustment following divorce: a view from the United States. *Childhood*. 2003; 10:237–254.

- Kleinig, J.; Einstein, S. Ethical considerations for intervening in drug use: policy, research, and treatment issues. Huntsville, TX: Office of International Criminal Justice; 2006.
- Lee VE, Burkam DT, Zimiles H, Ladewski B. Family structure and its effect on behavioral and emotional problems in young adults. *Journal of Research on Adolescence*. 1994; 4:405–437.
- McArdle P, Wieggersma A, Gilvarry E, Kolte B, McCarthy S, Fitzgerald M, et al. European adolescent substance use: the roles of family structure, function and gender. *Addiction*. 2002; 97:329–336. [PubMed: 11964109]
- McLanahan SS, Booth K. Mother-only families: problems, prospects, and politics. *Journal of Marriage and the Family*. 1989; 51:557–580.
- McLanahan, SS.; Sandefur, GD. Growing up with a single-parent: what helps, what hurts. Cambridge, MA: Harvard University Press; 1994.
- Mason CA, Cauce AM, Gonzalez N, Hiraga Y. Adolescent problem behavior: the effect of peers and the moderating role of father absence and the mother–child relationship. *American Journal of Community Psychology*. 1994; 22:723–743. [PubMed: 7639200]
- Miller DS, Miller TQ. A test of socioeconomic status as a predictor of initial marijuana use. *Addictive Behaviors*. 1997; 22:479–489. [PubMed: 9290858]
- Murray MS, Kiryluk S, Swan AV. Relation between parents' and children's smoking behavior and attitudes. *Journal of Epidemiology and Community Health*. 1985; 39:169–174. [PubMed: 4009101]
- Needle RH, Su S, Doherty WJ. Divorce, remarriage, and adolescent substance use: a prospective longitudinal study. *Journal of Marriage and the Family*. 1990; 52:157–169.
- Newcomb MD, Bentler PM. The impact of family context, deviant attitudes, and emotional distress on adolescent drug use: longitudinal latent-variable analyses of mothers and their children. *Journal of Research in Personality*. 1988; 22:154–176.
- O'Connor T, Thorpe K, Dunn J, Golding J. Parental divorce and adjustment in adulthood: findings from a community sample. *Journal of Child Psychology and Psychiatry*. 1999; 40:777–790. [PubMed: 10433411]
- Oetting, E.; Webb, J. Psychosocial characteristics and their links with inhalants: a research agenda. Washington, DC: U.S. Government Printing Office; 1992. (National Institute on Drug Abuse [NIDA] Research Monograph 129)
- Pagare D, Meena G, Singh M, Saha R. Risk factors of substance use among street children from Delhi. *Indian Pediatrics*. 2004; 41:221–225. [PubMed: 15064508]
- Powell B, Downey DB. Living in single-parent households: an investigation of the same-sex hypothesis. *American Sociological Review*. 1997; 62:521–539.
- Ramirez JR, Crano WD, Quist R, Burgoon M, Alvaro E, Grandpre J. Acculturation, familism, parental monitoring, and knowledge as predictors of marijuana and inhalant use in adolescents. *Psychology of Addictive Behavior*. 2004; 18:3–11.
- Robins, LN.; Przybeck, TR. Age of onset of drug use as a factor in drug and other disorders. In: Jones, CL.; Battjes, RJ., editors. *Etiology of drug abuse: implications for prevention*. Washington, DC: U.S. Government Printing Office; 1987. (NIDA Research Monograph No. 56, DHHS Publication No. ADM 85-1335)
- Rosenberg NL, Grigsby J, Dreisbach J, Busenbark D, Grigsby P. Neuropsychologic impairment and MRI abnormalities associated with chronic solvent abuse. *Journal of Toxicology: Clinical Toxicology*. 2002; 40:21–34. [PubMed: 11990201]
- Santrock JW, Warshak RA. Father custody and social development in boys and girls. *Journal of Social Issues*. 1979; 35:112–125.
- Selnow GW. Parent–child relationships and single and two parent families: implications for substance usage. *Journal of Drug Education*. 1987; 17:315–326. [PubMed: 3430279]
- Siegel JT, Alvaro EM, Patel N, Crano WD. "... you would probably want to do it. Cause that's what made them popular": Exploring perceptions of inhalant utility among young adolescent non-users and occasional users. *Substance Use and Misuse*. 2009; 44:597–615. [PubMed: 19360535]
- Substance Abuse and Mental Health Services Administration [SAMHSA]. Rockville, MD: 2005. Results from the 2004 National Survey on Drug Use and Health: national findings. (Office of Applied Studies, NSDUH Series H-25, DHHS Publication No. SMA 05-4062)

- Substance Abuse and Mental Health Services Administration [SAMHSA]. Rockville, MD: 2006. Results from the 2005 National Survey on Drug Use and Health: national findings. (Office of Applied Studies, NSDUH Series H-30, DHHS Publication No. SMA 06-4194)
- Thomas G, Farrell M, Barnes G. The effects of single-mother families and nonresidential fathers on delinquency and substance abuse in Black and White adolescents. *Journal of Marriage and the Family*. 1996; 58:884–894.
- Warshak, RA. *The custody revolution: the father factor and the motherhood mystique*. New York: Poseidon; 1992.
- Wells LE, Rankin JH. Families and delinquency: a meta-analysis of the impact of broken homes. *Social Problems*. 1991; 38:71–93.
- Zill, N. Behavior, achievement, and health problems among children in stepfamilies: findings from a national survey of child health. In: Hetherington, EM.; Arasteh, JD., editors. *Impact of divorce, single parenting, and stepparenting on children*. Hillsdale, NJ: Erlbaum; 1988. p. 325-368.

Table 1
Demographic breakdown of sample categorized by sex, grade, and parent status ($N = 49,474$)

Sex	Grade	Family structure		
		Mother-only	Father-only	Dual-parent
Male	8th	1,260	359	6,192
	10th	1,278	342	6,054
	12th	1,268	336	4,825
Female	8th	1,619	267	6,468
	10th	1,553	251	6,195
	12th	1,599	269	5,058

Table 2

Mean (standard deviation) usage by drug, across grade

	Academic grade		
	8th	10th	12th
Marijuana	1.43 _a (1.24)	2.16 _b (1.99)	2.65 _c (2.25)
Inhalants	1.32 _a (0.92)	1.24 _b (0.81)	1.21 _b (0.76)
Amphetamines	1.15 _a (0.67)	1.27 _b (0.94)	1.38 _c (1.14)

Note. Means with different subscripts within rows are significantly different at $p < .001$.

Table 3

Drug use differences across family structure

Drug	Family structure		
	Mother-only	Father-only	Dual-parent
Marijuana	2.26 _a (2.04)	2.59 _b (2.26)	1.83 _c (1.74)
Inhalants	1.28 _a (0.89)	1.35 _b (1.02)	1.26 _a (0.83)
Amphetamines	1.28 _a (0.95)	1.35 _b (1.05)	1.24 _c (0.86)

Note. Within drug categories, row means with different subscripts are significantly different at $p < .05$.

Table 4

Mean marijuana use differences as a function of the interaction of grade $\times$ sex of respondent (top section) and grade $\times$ family structure (bottom section)

	Academic grade		
	8th	10th	12th
<i>Sex</i>			
Boys	1.48 _a (1.32)	2.32 _b (2.11)	2.89 _c (2.40)
Girls	1.38 _d (1.16)	2.01 _e (1.85)	2.41 _f (2.08)
<i>Family structure</i>			
Mother-only	1.67 _a (1.55)	2.56 _b (2.19)	2.82 _c (2.31)
Father-only	1.92 _d (1.81)	2.96 _e (2.39)	3.19 _e (2.48)
Dual-parent	1.35 _f (1.11)	2.03 _g (1.89)	2.56 _h (2.21)

Note. All contiguous row and column means sharing different subscripts are significantly different at $p < .001$ by simple effects analysis.

Table 5Mean usage differences associated with the interaction of respondent sex $\times$ family structure

Drug	Sex	Family structure		
		Mother-only	Father-only	Dual-parent
Marijuana	Male	2.42 _a (2.19)	2.54 _a (2.26)	1.97 _b (1.88)
	Female	2.13 _c (1.91)	2.66 _a (2.26)	1.70 _d (1.58)
Inhalants	Male	1.28 _a (0.91)	1.30 _a (0.94)	1.27 _a (.86)
	Female	1.29 _a (0.86)	1.42 _b (1.11)	1.25 _a (.80)
Amphetamines	Male	1.24 _a (0.90)	1.28 _a (0.96)	1.21 _a (0.83)
	Female	1.30 _b (0.99)	1.45 _c (1.16)	1.24 _d (0.88)

Note. Within drug categories, row means with different subscripts are significantly different at $p < .05$.