

Self-Derogation, Peer Factors, and Drug Dependence Among a Multiethnic Sample of Young Adults

John Taylor
Donald A. Lloyd
George J. Warheit

ABSTRACT. Previous research suggests that self-derogation/rejection and peer factors are strongly related to adolescent substance use. However, much less is known about the role and significance of these risk factors in the escalation of drug use over time. In the current study, we examined whether early reports of self-derogation and peer approval prospectively predicted drug dependence. Data from three waves of a nine-year prospective study were employed to examine these relationships among a multiethnic sample of young adult males (N = 872). Analysis confirmed that self-derogation and peer approval of substance use independently predicted drug dependence even when early substance use was controlled. These findings underscore the utility of these factors in identifying high-risk individuals for prevention and early intervention efforts. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2005 by The Haworth Press, Inc. All rights reserved.]

John Taylor, PhD, and Donald A. Lloyd, PhD, are affiliated with the Department of Sociology and The Center for Demography and Population Health at Florida State University.

George J. Warheit, PhD, is Professor Emeritus at the University of Miami, FL.

Address correspondence to: John Taylor, Department of Sociology, Florida State University, 526 Bellamy Building, Tallahassee, FL 32306-2270; (E-mail: jrtaylor@garnet.acns.fsu.edu).

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Researchers have developed a variety of theoretical perspectives and models as frameworks for understanding the etiology of substance use among adolescents. One position has focused on the negative personal and social consequences of low self-esteem including self-rejection and derogation (Jessor & Jessor 1977; Kandel 1975; Kaplan 1986, 1996; Kaplan & Johnson 2001; Kaplan, Johnson, & Bailey, 1986). A second perspective has focused on the role of peer influences on the initiation and course of substance use among adolescents (Huba & Bentler 1980; Jessor & Jessor 1977; Kaplan & Johnson 2001; Kaplan, Johnson, & Bailey 1987; Oetting & Beauvais 1987; Andrews, Hops, & Li 2002; Fergusson, Swain-Campbell, & Horwood 2002; Crosnoe, Erikson, & Dornbusch 2002). A third body of research has examined the role of substance use in early adolescence as a risk factor for psychosocial pathology in adulthood (Kandel 1975; Kandel 1982; Hansel & White 1991; Kandel & Jessor 2002).

The literature cited above is representative of a large body of evidence documenting relationships between self-derogation, affiliation with deviant peers and adolescent substance use. Although the research cited encompasses the work of many investigators, the research of Howard Kaplan and colleagues has been especially influential. Together, they have made substantial empirical and theoretical contributions to developments in the field (e.g., Kaplan 1986, 1995; Kaplan & Johnson 2001; Kaplan, Johnson, & Bailey 1987; Kaplan, Martin, & Robbins 1982), and the theoretical model that they have developed provides the foundation for the present investigation.

At a general level, they have hypothesized links between self-derogation, peer relationships and deviant behaviors. More specifically, they have posited that when individuals are rejected by a membership group, and/or when they are denied membership in a desired reference group, they experience feelings of rejection. These rejected individuals, in an effort to restore a positive sense of self, may seek membership in alternative groups, including some which may predispose him or her to engage in delinquent behaviors (Kaplan, Martin, & Robbins 1982; Kaplan 1986, 1995). More specifically, Kaplan and Johnson (2001, p. 179) have argued that affiliations with deviant peers provide the individual with: (1) a source of social support and social integration; (2) a resource "that attenuates the effectiveness of internal-

ized social control mechanisms; and (3) the rewards (or possible rewards) for engaging in deviant behaviors.” From this perspective, self-rejecting attitudes and the establishment of associations with deviant others can be viewed as early indicators of increased risk for social deviance in general and illicit substance use in particular.

Several questions remain regarding the interrelationships between derogation, peer influences and patterns of substance use. Few studies have assessed whether self-esteem and peer factors exert conditional or independent effects on adolescent substance use over time. In addition, very little is known about the role that these risk factors play in the progression of substance use from initiation to more serious problems. Adolescent surveys of substance use disorders are few in number (Young et al. 2002), resulting in a paucity of information on etiological factors. Thus, it remains unclear to what extent early versus later drug use contributes to subsequent drug dependence. Moreover, to our knowledge, no prior study has examined whether self-derogation and peer influences are linked to drug dependence independent of early use.

This paper extends analyses from an earlier investigation (Warheit et al. 1995) on these relationships among a multiethnic sample of adolescents who had attended public school in Dade County, Florida, utilizing an additional wave of longitudinal data. The initial study found that baseline measures of self-derogation/rejection, and peer drug use approval were significant predictors of T-2 cigarette and alcohol use (12 months later), but were not related to illicit drug use. However, given the relatively young age of the sample at follow-up (mean = 12.6 years), and the short time interval between waves of data collection, this conclusion may have been premature. The present study is a follow-up of a representative subset of the original sample. Analyses were extended to include a third and fourth wave of data. These new data were collected two and nine years after baseline. In contrast to the earlier investigation, which assessed drug use in terms of quantity and frequency, the present study examined the role of these early risk factors in predicting drug dependence which, we believe, provides a more compelling assessment of morbidity. Specifically, based on Kaplan’s theoretical model of self-derogation, this paper has two objectives: (1) to examine the extent to which self-derogation and peer influences, reported at age 11, predict drug dependence at age 20, and (2) to assess the role of early substance use for later drug dependence, net of previously mentioned factors.

METHOD

Sample

The study sample was drawn from a previous longitudinal investigation based in the Miami-Dade public school system (Vega & Gil 1998). All 48 of the county's public middle schools and all 25 public high schools participated, as did alternative schools. Time 1 data were obtained from students in grades 6 and 7, when the mean age of the sample was 11.6 years of age, Time 3 data were gathered again two years later during grades 8 and 9. Consent forms were sent to parents of the total population of 9,763 male students scheduled to enter grades 6 and 7, and to 669 female students from six schools selected to approximate the ethnic composition of all middle schools in the county. Completed questionnaires were obtained from 7,386 of the 10,432 prospective participants at wave 1, 6,646 at Time 2, and 5,924 at Time 3. Detailed analyses provided assurance that Time 1 participants were highly representative of the population from which they were drawn; this was also true for the Time 3 participants despite an attrition of nearly 20% across the three data points (Vega & Gil 1998).

Although a significant number of the target sample had left the area to attend college or for other reasons, we succeeded in interviewing 76.4% of subjects studied previously. At the time of the Time 4 follow-up interview, 93% of the sample were between 19 and 21 years old.

Comparisons of persons interviewed with the random sample drawn from the original study population revealed no statistically significant differences on a wide array of early adolescent behaviors and family characteristics that are likely to be relevant to mental health and substance use risks. The sample was drawn so as to achieve roughly equal representation of non-Hispanic whites, African Americans, persons of Cuban heritage, and "other Hispanics." In this paper, however, we consider only the 872 males who had participated in all four waves of interviews. The decision to limit the present analyses to males was made after analyses revealed low sample power with respect to females ($N = 332$). Important cultural variations obviously exist within ethnic statuses; in an effort to minimize the effects of such variations on results, we have excluded from the present analyses respondents who self-reported their ethnic status as African Haitian or African Caribbean. Thus, the subsample assessed in the present paper consisted of 240 (30.1%) white non-Hispanic, 182 (23.1%) African American, 199 (25.3%) Cuban, and 161 (20.5%) non-Cuban Hispanics.

The present study employs Time 1, 3, and 4 data. A full description of the context and design associated with the first three waves of the research has been reported elsewhere (Warheit 1998), and a summary of the findings has been published by Vega and Gil (1998). A detailed summary of fourth wave of data collection has also been published (Turner & Gil 2002). The items for each measure and internal reliabilities for each scale are presented in Appendix 1.

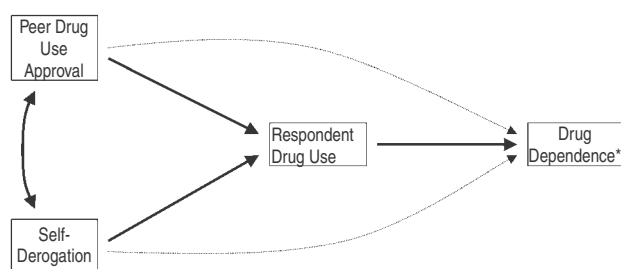
Our analyses focus on drug dependence as defined by Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV; American Psychiatric Association 1994, p. 176). These criteria require endorsement of three or more symptoms indicating that the individual continues to use a substance despite significant drug related problems including physical tolerance, withdrawal, and compulsive use. We did not include consideration of DSM-IV drug abuse because of uncertainty about how meaningful that diagnosis may be among late adolescents and young adults. The criteria for abuse are met by a single recurring problem associated with use and, in our view, qualifying for the diagnosis may be as much a function of one's social context, in terms of opportunities, demands and supports, as of the individual's behavior. Dependence reflects a more severe substance problem than abuse, and persons are classified with abuse of a particular substance only if they are not dependent on that substance. Though some have argued that the DSM-IV symptoms for dependence may be more typically experienced in adult populations, we view this outcome variable as appropriate for this study population. Given the age (mean = 20.1), and the high prevalence of lifetime use (63.9%) within this sample at T-4, assessing drug problems in terms of dependence provides a conservative estimate of psychosocial pathology and, therefore, a stringent test of Kaplan's self-derogation hypothesis. In each analysis presented, the drug dependence outcome variable is the DSM-IV dependence experienced during the prior 12 months involving sedatives, tranquilizers, stimulants, analgesics, inhalants, marijuana, cocaine, hallucinogens, or heroin. A full description of this and each of the other study variables is presented in Appendix 1.

RESULTS

Figure 1 provides an overview of this investigation. The bold arrows represent associations that are well-established by previous research, notwithstanding the failure to find associations in the earlier (Warheit et al. 1995) study based on the same sample, and the dashed lines represent hypothesized associations. It is important to note that, for the vast

FIGURE 1. Conceptual Model

	Time 1	Time 3	Time 4
Year of Interview:	1990/91	1992/93	1998/2000
Mean Sample Age:	11.6	13.6	20.1
Lifetime Prevalence of Drug Use	5.4%	18.8%	63.9%



*9.8% of the total sample (or 14.5% of those reporting any lifetime use) met criteria for 12 month substance dependence.

majority of this study population, measures of self-derogation and peer approval of drug use were collected prior to drug use initiation. At Time 1 just over 5% of the sample reported lifetime substance use. At Time 2, collected 12 months later when the mean sample age was 12 (not shown), lifetime drug use increased to 17.5%. By far the biggest increase in use occurred from Time 3 to Time 4, from 18.8% to 63.9%. In contrast to larger nationally representative surveys (e.g., Johnston, O'Malley, & Bachman 2001; Kessler et al. 1994), no significant drug dependence rate differences were observed (analyses not shown) with respect to ethnicity and socioeconomic status (SES). However, this result may be an artifact of low sample power rather than of actual variation in rates of disorder.

Table 1 displays the extent to which each of these factors elevates risk for drug dependence. Odds ratios for each variable are presented. In order to perform these computations, derogation and peer approval scores were dichotomized such that scores at or below the mean were categorized as "low" and responses above the mean were categorized as "high." As shown, all three risk factors were significantly associated with drug use dependence. Consistent with other research, we found that early drug use is an important risk factor in drug dependence. The

TABLE 1. Odds Ratios of 12 Month Substance Use Dependence by Predictor Variable (N = 872)

	T-4 Drug Dependence		Odds Ratio	p-value
	No	Yes		
T-1 Self Derogation				
Low	390	31	1.6	.036
High	401	50		
T-1 Peer Approval of Use				
No	434	31	2.0	.002
Yes	357	50		
T-3 Drug Use				
No	697	24	17.6	.001
Yes	94	57		

odds of drug dependence among early drug users were 17.6 times greater than among those who reported no lifetime use at T-3. Put differently, only 3.3% of respondents who reported no drug use at T-3 later met criteria for drug dependence compared to the 37.7% who reported T-3 use at age 13.

Collectively, the bivariate relationships reported above are consistent with previous studies. To evaluate these relationships in the context of other factors, we regressed T-4 drug dependence on T-1 peer use approval, T-1 self-derogation, and T-3 drug use, with controls for ethnicity and socioeconomic status (SES) (Table 2). Equations 2 through 5 confirmed that each of the hypothesized risk factors independently predicted drug dependence.

Equation 6 of Table 2 considers the possibility that self-rejection and early drug use are synergistically related to drug dependence. We examined this question by centering each independent variable on its mean and computing interaction terms which were added to model 5. The significant derogation by drug use coefficient reported in equation 6 confirms that the total combined explanatory power of self-derogation and early drug use is greater than the sum of their individual effects.¹ This allows two equally plausible interpretations: early drug users were more negatively affected by self-derogation than were later drug users, or individuals reporting higher levels of self-derogation were more nega-

TABLE 2. Peer Factors, Global Derogation, and 12-Month Drug Dependence at Time 4. Logistic Regression. N = 872, Reference Group for Ethnicity is Non-Hispanic White. T-1 = 1990; T-3 = 1992; T-4 = 1998-2000. 81 of 872 Met Criteria for Substance Use Dependence.

	(1)	(2)	(3)	(4)	(5)	(6)
	b	b	b	b	b	b
African American	-.484	-.496	-.532	-.336	-.401	
Cuban	-.091	-.024	-.039	-.026	.058	
Non-Cuban Hispanic	-.280	-.305	-.297	-.248	-.215	
SES	-.185	-.159	-.162	-.165	-.122	
T-1 Peer Approval		.131**			.100*	
T-1 Self-Derogation			.053**		.038*	.026
T-3 Drug Use				1.317***	1.097***	-.926
Drug Use*Self-Derogation						.087*
Constant	-1.968	-2.339	-3.196	-2.267	-3.417	-3.004

Notes: Unstandardized regression coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$

tively affected by early drug use. In additional analyses (not shown) drug dependence was regressed on derogation by peer approval of drug use and peer approval by T-3 drug use interaction terms. Neither interaction was significant.

Additional analyses (not shown)² were conducted to assess the plausibility of the competing hypothesis that problematic individuals tend to place themselves in circumstances that may increase rejection by self and others, on the one hand, and at elevated risk for drug dependence on the other hand. To address this issue we regressed drug dependence on self-derogation and childhood conduct disorder, which considers serious conduct problems up to age 15. Doing so reduced, but did not eliminate, the significant long-term self-derogation/drug dependence relationship presented above.

DISCUSSION

The primary objectives of this paper were to assess the extent to which high levels of early adolescent self-derogation and peer approval of drug use contributed to increased risk of drug dependence in young adulthood, and to examine the role of early drug use for later depen-

dence. The findings presented suggest that, individually, each of the early predictors was associated with later substance use problems: high levels of self-derogation and peer approval of drug use were positively related to drug dependence measured almost nine years later. When the T-1 data were gathered, only 5.4% of the sample reported previous drug use. This establishes that these factors not only preceded the onset of drug dependence, but also preceded the initiation of drug use for most of the sample.

Although data limitations prevented us from examining the issue of temporal ordering between self-derogation and peer approval of drug use, our findings generally support Kaplan's model. Self-derogation and peer approval of drug use each predicted drug dependence, even when the data were adjusted for the effects of subsequent drug use. However, the fact that the derogation by peer approval interaction term was not significantly related to drug dependence suggests that the effects of these factors are independent rather than synergistic. In contrast, the derogation by drug use interaction term was significantly associated with drug dependence, which indicates that high derogation individuals who use drugs at an early age may be especially prone to long-term substance related problems.

Our analyses emphasize the salience of examining these risk factors over the early life course from early adolescence and into young adulthood. This is because the functional impairment associated with drug use usually progresses over a time period of several years (Anthony & Helzer 2002). Thus, assessing the harmful effects of self-derogation and peer approval of drug use in terms of initiation or early drug use likely will underestimate the magnitude of these risk factors.

Two limitations of this study must be acknowledged. Because power constraints necessitated excluding females from the final sample, it is not possible to generalize results to female populations. Future research is needed to examine the extent to which the patterns of associations observed in the present study apply to females and to explore the possibility that self-derogation may be linked to other deviant behaviors. Another potential limitation is the applicability of the DSM-IV criteria for dependence among adolescents, particularly with respect to the development of tolerance (Winters, Latimer, & Stinchfield 2001). In our view this shortcoming is offset by the fact that drug dependence is the most socially disabling type of substance use disorder, and offers a more stringent test of Kaplan's theoretical model than more commonly employed indices of frequency and quantity of use.

The findings presented here underscore the utility of identifying self-derogating individuals for prevention and early intervention efforts, and that such intervention efforts could be undertaken before participants reach ages that are associated with drug use initiation. Finally, the present study suggests the usefulness of extending analyses to identify the socially modifiable contingencies of early adolescent self-derogation.

NOTES

1. The coefficient for the interaction term was reduced to marginal statistical significance ($p < .10$) when controls for ethnicity and SES were added to the model.
2. These and other results that have been discussed but not presented are available upon request.

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APPENDIX 1. STUDY MEASURES

Time 1 Peer Approval of Drug Use.

How do you think your close friends feel about people who . . .

1. Smoke cigarettes?
2. Smoke marijuana?
3. Use cocaine?
4. Drink beer, wine, or liquor?

Response categories to these items are: 1, Disapprove a lot; 2, Disapprove a little; 3, Approve a little; and 4, Approve a lot. Alpha = .85

Time 1 Self Derogation.

1. I don't like myself as much as I used to.
2. At times I think that I am no good at all.
3. I wish I could have more respect for myself.
4. On the whole, I am satisfied with myself.*
5. I am a better person now than I used to be.*
6. In general, I feel that I am a failure.
7. I certainly feel useless at times.
8. I used to be a better person than I am now.
9. I like myself a lot better than I used to.*
10. I feel I do not have much to be proud of.
11. I take a positive attitude toward myself

Response categories: 1, Not true at all; 2, Not very true; 3, Pretty true; and 4, Very True.

* Reverse coded. Alpha = .78

Time 2 Lifetime Drug Use. Have you ever . . .

1. smoked used marijuana?
2. used cocaine (other than crack)?
3. used crack cocaine?
4. used angel dust (PCP)?
5. How many times have you used uppers (amphetamines) or downers (barbiturates), without a doctor telling you to take them?
6. used LSD (acid)?
7. used tranquilizers, without a doctor telling you to take them?

Time 4 Substance Dependence, past 12 months. The DSM-IV defines dependence as the co-occurrence of three or more of the following symptoms during the prior twelve months for any of the following substances: sedatives, tranquilizers, stimulants, marijuana, cocaine, and hallucinogens.*

1. Did you ever continue to use X while taking medicine you knew was dangerous to mix with alcohol or drugs, or when you had a serious condition that could be made worse by taking alcohol or drugs?
2. Have you ever tried to stop or cut down on X but found you could not?
3. Have you ever tried to quit or cut down on X?
4. Did you ever have a period of a month or more when you spent a great deal of time using X, getting it, or getting over its effects?
5. Did you ever use much larger amounts of X than you intended to when you began, or did you use X for a longer period of time than you intended to?
6. Did you ever find that you had to use more of X than usual to get the same effect or that the same amount had less effect on you than before?
7. Did stopping or cutting down on X ever make you sick or cause other problems?
8. Have you ever given up or greatly reduced important activities in order to get, or use X, like sports, work, or seeing family or friends?

* Also included in the survey were items assessing stimulant, analgesic, inhalant, and heroin dependence. No respondents in this sample met criteria for these disorders.