Cocaine Use and Educational Achievement: Understanding a Changing Association Over the Past 2 Decades

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Trends in cocaine use over the past 2 decades were compared across levels of education in a population-based US sample of adults. Significant inverse associations between educational achievement and cocaine use after 1990 were driven by dramatic decreases in persistent cocaine use among more highly educated adults, whereas persistent cocaine use remained relatively unchanged among those who did not finish high school. This emerging health disparity highlights the need for improved interventions that target persistent cocaine users with low educational achievement. (*Am J Public Health.* 2007;97:1790–1793. doi:10.2105/AJPH.2006.091108)

There has been a dramatic decrease in the prevalence of cocaine use over the past 2 decades.[1–5] Few studies have examined changing disparities in cocaine use among individuals of varying educational achievement. Associations with lower individual educational achievement[6] and lower parental educational achievement have been reported in recent cross-sectional studies of cocaine use.[7] Miech et al. report an inverse association between current cocaine use and individual educational achievement over time,[8] but the nature of this changing association remains relatively unexplored.

Current disparities in cocaine use may be attributable to increased use by those with lower educational achievement or decreased use by those with higher educational achievement, or both. The high price of powder cocaine in the early 1980s restricted its use,[9] but after 1985, there was an epidemic-like growth in the prevalence of the cheaper alternative, crack,[10–13] mostly in impoverished urban areas.[14–16] Soon after, highly publicized cocaine-related deaths increased the perception of risk associated with cocaine use,[9,14,17] and the perception of risk was inversely related to cocaine use.[18] We examined the emergence of this inverse association between cocaine use and educational achievement over time through analyses of the past 2 decades of the National Survey on Drug Use and Health (NSDUH).

METHODS

We used data from the 1979–2002 NSDUH (formerly known as the National Household Survey on Drug Abuse) to investigate cocaine use and educational achievement among adults aged 19–50 years. Educational achievement was stratified into 3 categories: non–high school graduate, high school graduate, and college graduate. Past-year cocaine use (powder, crack, free base, and coca paste), was divided into recent-onset[19–24] and persistent[23] use. Recent-onset users reported first usage within 24 months of the interview; persistent users reported use in the past year and first usage more than 24 months before the interview.

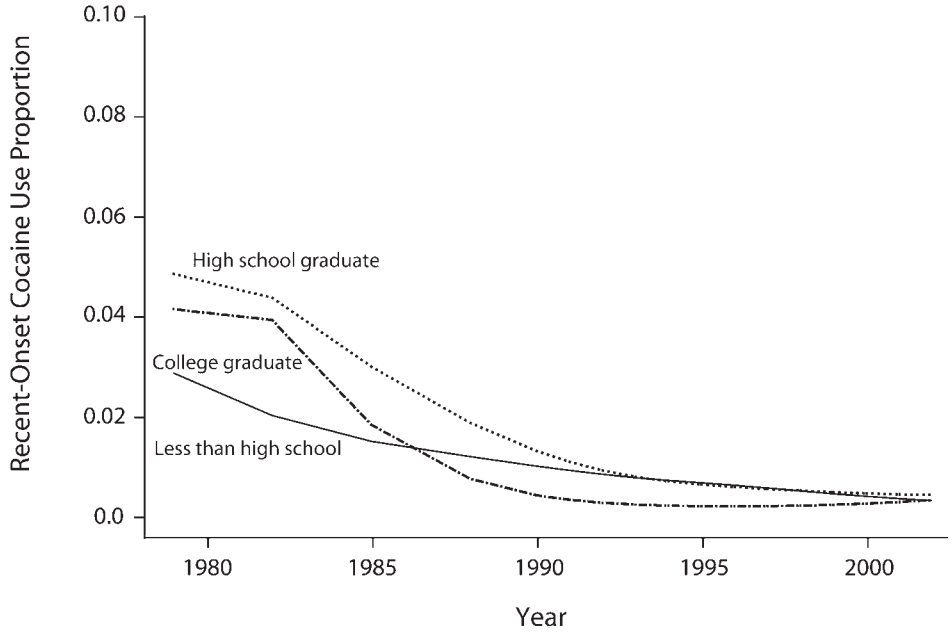

FIGURE 1—Weighted proportion of US adults aged 19–50 years who reported recent-onset (i.e., within the past 24 months) cocaine use between 1979 and 2002, by educational attainment level: National Survey on Drug Use and Health.

We estimated smoothed functions of cocaine use over time using application of generalized additive models, which are graphical scatter plot smoothers that allow for non-linearities in the data and the sharing of data between neighboring data points.[25,26] Multivariable logistic regression analyses were conducted within, not between, survey years to provide the relative odds of cocaine use among adults with higher educational achievement as compared with adults with lower educational achievement. We used models to control for the potential confounding effects of demographics (gender, race, and age). Inverse probability survey weights and variance adjustments[27–43] were applied to regression models with Stata version 8.0 (StataCorp, College Station, Tex).

RESULTS

The proportion of recent-onset cocaine use diminished steadily for all levels of educational achievement (Figure 1). From 1979 to 1982, the relative odds of recent-onset cocaine use were significantly greater for college and high school graduates versus non–high school graduates (odds ratio [OR] range = 1.8–2.6; $P < .05$). These differences narrowed significantly, and throughout the 1990s the proportion of recent-onset cocaine use was rare within each level of educational achievement (range = 0.2%–0.5%).

Non–high school graduates had a relatively constant proportion of persistent cocaine use over all survey years (Figure 2). By contrast, the proportion of persistent cocaine use among college graduates peaked in 1982 (OR = 1.9; 95% confidence interval [CI] = 0.8, 4.4) and then dramatically decreased and fell below that of non–high school graduates from 1990 to 2002 (OR range = 0.2–0.5; $P < .05$). High school graduates behaved similarly to college graduates in terms of persistence of cocaine use.

DISCUSSION

Our findings indicated an inverse association between cocaine use and educational achievement. This association was attributable to both dramatic decreases in the persistence of use among adults with high educational achievement and the relatively constant persistence of use among adults with low educational achievement. It is of interest that recent-onset cocaine use steadily decreased over time and remained relatively rare among adults regardless of their level of educational achievement. These results could not be explained by changes in the demographic (race or gender) distribution within levels of education over time. Potential biases in results include misclassification of some college students as being only high school graduates as well as potential measurement error associated with self-reported drug use.[44,45]

Our results are consistent with Link and Phelan's "fundamental causes of disease" framework, which suggests that as unhealthy behaviors are identified, people of higher educational achievement better understand the risks and have more resources to engage in protective efforts and modify behavior.[46] This framework is supported by studies on smoking behavior that were conducted after the 1960s when individuals of high socioeconomic status were more likely to quit smoking

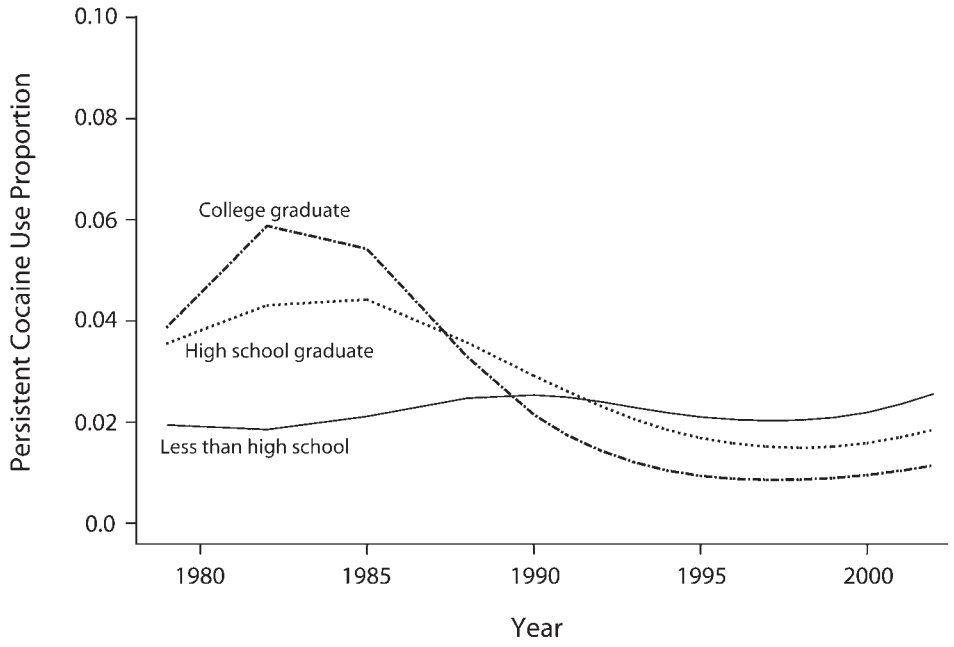

FIGURE 2—Weighted proportion of US adults aged 19–50 years who reported persistent cocaine use between 1979 and 2002, by educational attainment level: National Survey on Drug Use and Health.

because of known risks[47,48] and less likely to suffer coronary heart disease[49] than were those of low socioeconomic status. The persistent use of cocaine among non–high school graduates may reflect a lower perception of risks or, more likely, a difference in trends of adopting new behaviors to benefit their health compared with those with higher education. In relation to health disparities and public health, these results highlight the need for improved intervention programs that target adults with lower levels of educational achievement who persist in their cocaine use, not just the prevention of first use. ■

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Contributors

V.S. Harder was the lead researcher on this study, conducted all analyses, and wrote all drafts of the article. H.D. Chilcoat was research adviser during the conception of the research questions, assisted with the study as it progressed, and offered critiques on all article drafts.

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Human Participant Protection

No protocol approval was needed for this research. The National Survey on Drug Use and Health is a publicly available data set with no personal identifiers.

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