DOES DRUG USE CAUSE POVERTY?

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ABSTRACT

In this study, I examine the effect of drug use on poverty. The main objective of the paper is to provide descriptive empirical information about the relationship between drug use and poverty, and to explore, in a preliminary fashion, the question of whether drug use causes poverty. Toward this end, I present the results of both descriptive and multivariate analyses of the relationship between drug use and poverty for two national samples of young adults. One sample is drawn from the National Household Survey of Drug Abuse (NHSDA), and the other from the National Longitudinal Survey of Youth (NLSY). The results of the analysis indicate that for both samples, drug use is associated with greater poverty.

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I. Introduction

To a majority of Americans, illicit drug use and poverty go hand-in-hand. Poverty is concentrated in inner-city neighborhoods that are also characterized by high rates of drug use and drug dealing activity. Similarly, the homeless population primarily found in cities consists of a high proportion of drug users. On a more personal level, drug use of acquaintances, friends and family members often becomes known only at a time of crisis when the drug using individual has experienced some type of significant personal setback, often characterized by a worsening economic position. Thus, the public has a significant amount of empirical evidence, some anecdotal and some systematic, that links drug use and poverty. Furthermore, based on the public's support and willingness to pay for anti-drug programs, it would appear that there is a widespread belief that drug use causes many negative social and economic outcomes, including poverty.

An important contribution of social science is to validate or refute conventional wisdom. In this case, the relevant question is whether drug use really does cause poverty. There has been a substantial amount of prior research on this issue, although not always directly focused on poverty.[1] For example, there have been several studies of the effects of drug use on various determinants of poverty: wages, labor supply, marital status, out-of-wedlock birth, and welfare participation. Surprisingly, these studies have presented only limited evidence suggesting that drug use is a cause of poverty. For example, past research has shown that drug use has relatively few adverse effects on wages and employment, two major determinants of poverty.[2] In contrast, studies examining the effect of drug use on family composition and fertility document strong positive associations between drug use and marital delay, marital dissolution, and out-of-wedlock birth.[3] Thus, the question of whether drug use causes poverty is unresolved, and it remains an important public policy issue. Indeed, the government spends considerable sums of money to eradicate drug use, and part of the justification for that spending is the supposedly adverse effects of drug use on economic well being.[4]

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[1] Only one previous paper that I am aware of directly examines the effect of drug use on poverty. Kaestner (1996a) examines the effect of drug use on AFDC receipt.

[2] See for example Kaestner (1991, 1994a, 1994b), Gill and Michaels (1992), Register and Williams (1992), Kandel and Davies (1990), and Kandel, Chen and Gill (1995).

[3] See Kaestner (1996b, 1997), Yamaguchi and Kandel (1985, 1987), Mensch and Kandel (1992), and Elliot and Morse (1989).

[4] For example, in 1995, the federal government spent $13.2 billion on drug control programs (National Criminal Justice Reference Service 1997). The most recent data on state government spending is 1991, and in that year state governments

The purpose of this paper is to directly examine the effect of drug use on poverty, as opposed to the effect of drug use on the determinants of poverty. The main objective of the paper is to provide descriptive empirical information about the relationship between drug use and poverty, and to explore, in a preliminary fashion, the question of whether drug use causes poverty. Toward this end, I present the results of both descriptive and multivariate analyses of the relationship between drug use and poverty for two national samples of young adults. One sample is drawn from the National Household Survey of Drug Abuse (NHSDA), and the other from the National Longitudinal Survey of Youth (NLSY). The results of the analysis indicate that for both samples, drug use is associated with greater poverty.

II. Pathways of Influence

Figure 1 provides a simple overview of the various ways that drug use may affect poverty. In Figure 1, poverty is primarily determined by labor market outcomes, but is also affected by family composition. Family composition affects poverty by altering family size, and sources and quantity of non-earned income. Labor market outcomes are determined by a person's human capital, which in this case is summarized by a person's level of education and other human capital investments (e.g., training and health). Labor market outcomes may also be affected by family composition. For example, single-parents may not be able to work as many hours as childless individuals.[5] Drug use and poverty are related because drug use affects the determinants of poverty: education, human capital investments, marriage and fertility. Finally, person specific factors such as ability, preferences and family background affect drug use as well as educational achievement, skill accumulation, marriage and fertility.

For the most part, the implied relationships in Figure 1 are obvious and consistent with intuition. The prime example of this statement being the effect of drug use on human capital. The physiological effects of drug use, particularly those related to chronic drug use, suggest that drugs reduce physical and cognitive abilities. Consequently, drug use is expected to lower productivity, reduce earnings, and result in an increased likelihood

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spent $15.9 billion on drug control programs. Approximately half of all federal spending, and 75 percent of all state spending, on drug control is related to the criminal justice system.

of poverty. Similarly, drug use may adversely affect educational achievement, or attainment, and hence lower earnings and increase poverty. Somewhat less obvious, however, are the ways in which drug use may affect poverty through its effect on marriage and fertility.[6] There are, however, several reasons why drug use may affect marriage and fertility. Drug use may affect a person's ability to use contraception, or their judgment related to contraception use, and lead to more out-of-wedlock births. Or drug use may cause more marital strife and lead to marital dissolution. Finally, drug use may affect the likelihood of finding a spouse because of preferences (e.g., stigma) regarding persons who use drugs. All of these potential consequences of drug use would tend to increase poverty.

The relationship between drug use and poverty portrayed in Figure 1 provides a simple guide for an empirical analysis of this issue. For example, most prior research on the effects of drug use on economic well being has focused on the link between drug use and labor market outcomes (e.g., wages and employment). In most cases, these studies have held family composition, education and other observed components of human capital constant, and as a result, obtained estimates of the effect of drug use on labor market outcomes that work through unobserved determinants of human capital.[7] Since many of these analyses incorporate a relatively extensive set of human capital determinants, there may be little role left for drug use to play once these factors have been held constant. An alternative strategy that is currently pursued is to estimate the reduced form effect of drug use on poverty. The reduced form estimate of the effect of drug use is obtained by omitting education and the other determinants of poverty from the multivariate empirical analysis. The reduced form estimate measures the total effect of drug use on poverty that works through all of the determinants of poverty.

Figure 1 also illustrates the important part that ability, preferences and family background may have in determining both poverty and drug use. For example, a person with a high rate of time preference is more likely to use drugs, make fewer human capital investments, and experience more poverty than an otherwise similar

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[5] In addition to constraints on labor supply, family composition may affect wage rates. See Korenman and Neumark (1991, 1992) for an analysis of this issue.

[6] For a more thorough discussion of the effects of drug use on marriage and fertility, see Kaestner (1995, 1996b, 1997), and Yamaguchi and Kandel (1985).

[7] Kaestner (1991) and Gill and Michaels (1992) estimate switching regression models. In these models, the drug use may affect the return to a given level of human capital, or to marriage, but this specification still ignores the effect of drug on the level of human capital determinants (e.g., education).

person with a lower rate of time preference. Thus, it is important to control for these factors if the objective is to estimate a causal effect of drug use on poverty.

There are two issues that Figure 1 ignores. The first is that poverty may cause drug use. This possibility is most relevant if poverty is primarily a demand-determined phenomenon where opportunities for work and pay are limited.[8] In these circumstances, drug use may be encouraged by the absence of significant positive returns on human capital investments. Drug use may adversely affect human capital development and as a result, income. Therefore, in addition to the direct monetary cost of drugs, there is another cost of drug use that is associated with a diminished level of human capital and lower earnings. In areas where there is limited economic opportunity and relatively low returns on human capital investment, the full price of drugs is low, and drug use is more likely to occur. In this case, a lack of economic opportunity has caused both poverty and drug use. One way to address this issue is to include measures of economic opportunity (demand side factors) in the multivariate empirical analysis.

A second issue obscured by Figure 1 is the possible reverse causality among the determinants of labor market outcomes (e.g., education) and drug use. As presented, Figure 1 implies that drug use affects education, human capital investments, marriage, and fertility. It is possible, however, that these factors affect drug use. This point is important, because it affects the specification of the reduced form model and the interpretation of the reduced form estimate of the effect of drug use on poverty. For example, if marital status causes drug use and poverty, then the reduced form model should include marital status. If marital status is incorrectly omitted from the reduced form model, the estimated effect of drug use is capturing not only the effect of drug use, but also some of the effect of marital status on poverty.

One piece of evidence supporting the causal model of Figure 1, is that initiation of drug use usually occurs prior to marriage, child bearing, and many human capital investments. For example, among those who report some prior marijuana use, 75 percent had first used marijuana by age 18, and 95 percent had first used marijuana by age 21. For cocaine, the age of initiation is somewhat higher, but even in this case, 50 percent of

[8] This previous discussion ignores the effect of income on drug consumption. Depending on whether drug use is a normal or inferior good, income will either be positively or negatively correlated with drug use. In either case, the direction of causality is from income (poverty) to drug use. I assume that the income effect is small.

all individuals reporting some prior use, also report that they had first used cocaine by age 19; and 75 percent of this group report first using cocaine by age 22. All of these figures come from the 1994 NHSDA and pertain to a sample of adults between the ages of 18 and 40. These relatively early ages of initiation are consistent with the specification of the causal model in Figure 1. Patterns of drug use and risk of drug use are established at relatively early ages, prior to the time of most investments in human capital and before marriage. Moreover, models of rational addiction such as that of Becker and Murphy (1988) would suggest that drug users are forward looking, and that these early consumption choices establish a pattern of use that should be little affected by planned investments in education and human capital. Indeed, early consumption choices are made with full knowledge regarding expected future choices of drug use, education, marriage, fertility and other human capital investments.

There is also some prior empirical evidence that is consistent with the specification of the causal model in Figure 1. In earlier work (Kaestner 1995), I explicitly test for the endogeneity of drug use in an analysis of the effect of drug use on family formation and dissolution. I found little evidence that marital choices significantly affect drug use, but strong evidence that drug use affects marital choices. For other variables of interest, there is relatively little past empirical work investigating the causal relationships specified in Figure 1.[9]

In summary, past research examining the relationship between drug use and poverty has focused on the effect of drug use on the determinants of poverty as opposed to poverty itself. In econometric terms, these studies have attempted to estimate the structural parameters associated with Figure 1. One problem with this approach is that any individual link, or structural relationship, between drug use and poverty may be relatively weak. Therefore, estimates of individual structural parameters may not be significant, and lead to the potentially misleading conclusion that drug use does not affect poverty. The effect of drug use on poverty may be diffuse, however, and apparent only when it's total effect is examined. Accordingly, I focus on estimating the reduced form model, and on obtaining the reduced form estimate of the effect of drug use on poverty. The reduced form estimate measures the total effect of drug use on poverty.

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[9] The causality issue has been examined in regard to drug use and labor market outcomes, in particular wages and labor supply (Kaetner 1991, 1994; Gill and Michaels 1992; Register and Williams 1992). Currently, however, interest is focused on the causal relationships between drug use and the determinants of labor market outcomes.

III. Econometric Strategy

The objective of the empirical analysis is to estimate the reduced form model of poverty. Based on the assumptions underlying Figure 1, the reduced form model may be written as

(1) $POVERTY_{it} = \alpha_0 + \alpha_1 AGE_{it} + \alpha_2 RACE_i + \alpha_3 FAMILY_i + \alpha_4 DEMAND_{it} + \alpha_5 DRUGS_{it} + \varepsilon_{it}$.

In equation (1), person i's poverty status in year t is a function of their age, race, and family background, local economic conditions (i.e., demand factors), and drug use. If the causal relationships in Figure 1 are correct, the coefficient on drug use measures the total effect of drug use on poverty. It is the sum of the indirect effects of drug use on poverty that works through education, marriage and fertility, and investments in human capital.

To gain insight into the particular ways that drug use affects poverty, equation (1) can be expanded to include some of the determinants of labor market outcomes and poverty. For example, education could be added to the model. In this case, the coefficient on drug use measures the total effect of drug use on poverty net of any indirect effect of drug use on poverty that works through education. Taking the difference of the two estimates yields an estimate of the effect of drug use on poverty that works through education. A similar methodology may be used for other determinants of poverty. The end result of this process is the identification of several of the structural parameters plus the reduced form estimate.

IV. Empirical Results

A. Data and Descriptive Analysis

1. The National Household Survey of Drug Abuse

I use two data sets in the empirical analysis: the 1994 National Household Survey of Drug Abuse (NHSDA), and the National Longitudinal Survey of Youth (NLSY). The first survey I will discuss is the 1994 NHSDA. The 1994 NHSDA is the 14th of a series of surveys intended to measure the prevalence and correlates of drug use in the United States. It is a national sample of the non-institutionalized population, and it contains extensive information on drug use, as well as economic and demographic information about the respondents.[10] For the purposes of this study, I limit the sample to adults between the ages of 18 and 40. This subset of the

adult population has had the most exposure to drug use during their lives and they have the highest rates of drug use. Older adults grew up during periods when drug use was less widespread, and have relatively low rates of use. I also limit the focus of the study to two drugs: marijuana and cocaine. These two drugs are the most frequently used illicit substances, and rates of use of other illicit drugs are so low that they result in sample sizes that prevent meaningful analysis.

Tables 1 and 2 present sample means by drug use for the 1994 NHSDA. Table 1 presents data for the female sample, and Table 2 contains information related to males. Focusing first on drug use, the figures in Table 1 show that among females, 15 percent report some prior cocaine use, but only three percent report past year use. The prevalence of marijuana use among females is much higher than the prevalence of cocaine use: 43 percent of females report some prior marijuana use, and 12 percent report past year use. In general, males have higher rates of drug use than females, as can be seen in Table 2. Among males, 23 percent of the sample report prior use of cocaine, and 52 percent report prior use of marijuana. In regard to past year use, seven percent of the male sample reports past year cocaine use, and 21 percent report past year marijuana use.

One point to note about the drug use figures is the systematic, almost mechanical, relationship between age and drug use. Past-year drug users tend to be younger than persons who did not use drugs in the past year. This fact reflects the pattern of initiation of drug use since young adults are the persons most likely to be starting drug use and be observed to have used drugs in the past year. Thus, the group of past-year drug users contains a mixture of new users and chronic users, and this heterogeneity among users needs to be addressed in the multivariate analysis that is presented later. Similarly, heavy drug users, as measured by lifetime frequency of use, tend to be older than non-users and moderate users. Again, there is somewhat of mechanical relationship between age and a lifetime measure of drug use. It is not necessarily the case, that respondents who report heavy drug use are more involved in drugs than those who report less drug use. Given the crudeness with which drug use is measured, there is much heterogeneity among users in a given category of drug use. For example, a 40 year old respondent may have used marijuana once a month for five years when they were in their twenties, but may not have used marijuana since that time. They would still be classified as a moderate marijuana user, as

[10] The NHSDA over samples both blacks and Hispanics. Sampling weights have not been used in any of the analyses in this

would a 25 year old that used marijuana weekly for the past year. Empirically, it is important to consider the respondent's age and their timing of use, as well as the total frequency of use when examining the effects of drug use on poverty.

Tables 1 and 2 also present indicators of poverty by drug use. Three indicators of poverty are examined: whether the respondent's family income in the past 12 months was less than $12,000, whether anyone in the respondent's household received food stamps in the past 12 months, and whether anyone in the respondent's household received public assistance in the past 12 months. The $12,000 family income figure was chosen because that was approximately the federal poverty threshold for a family of three in 1994, and it corresponded to one of the income intervals reported in the 1994 NHSDA. The figures in Tables 1 and 2 do indicate a systematic relationship between drug use and poverty. In general, greater involvement in drug use is positively correlated with poverty. In regard to measures of lifetime drug use, there appears to be a U-shaped relationship between drug use and poverty. Those who have never used drugs tend to have higher rates of poverty than those with relatively moderate drug use, but those with relatively heavy use have the highest rates of poverty. For past year use, the relationship between drug use and poverty is more linear: past year users have higher rates of poverty than non-users, and greater levels of past year use are associated with higher poverty rates.

The descriptive figures in Tables 1 and 2 provide preliminary evidence that drug use and poverty are significantly related. However, it is important to note that there are other differences among drug users (e.g., users v. non-users) besides rates of poverty. As shown in Tables 1 and 2, drug users differ from non-users along several dimensions. For example, past year drug users are much more likely to be never married and tend to be younger than non-users. Similarly, black and Hispanic respondents have lower levels of lifetime drug use than other racial/ethnic groups. Finally, drug users tend to be in worse health and consume more alcohol than non-users. All of these noted differences along with other differences between drug users and non-users illustrated in Tables 1 and 2 may confound or mediate the simple relationship between drug use and poverty. This suggests the need for a multivariate analysis that can control in a systematic way for the effects of confounding and mediating influences.

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paper since I control for race and ethnicity in the multivariate analyses.

2. The National Longitudinal Survey of Youth

The second data source is the National Longitudinal Survey of Youth (NLSY). The NLSY is a national sample of youths that were 14 to 21 years of age in 1979.[11] Each year, beginning in 1979, these individuals have been interviewed about a variety of subjects including their employment experiences, marital and fertility decisions and educational attainment. In addition to this information, a variety of family background data was obtained about each respondent, and several psychological and cognitive achievement tests were administered. The retention rate is extremely high for surveys of this type, and was approximately 90 percent as of 1993 (Center for Human Resource Research 1994).

Most important to the current study is the information contained in the NLSY about drug use. In 1984, 1988 and 1992, the NLSY gathered information about a respondent's lifetime and current use of marijuana and cocaine. The NLSY also contains detailed information about a person's personal and family income and participation in the AFDC and food stamps program. Thus, the NLSY is well suited to study the issue of drug use and poverty. In 1988, the year that I focus the empirical analysis around, respondents are between the ages of 23 and 32.

Tables 3 and 4 present descriptive statistics for the NLSY sample by drug use. Its presentation is similar to that in Tables 1 and 2. Drug use in Tables 3 and 4 refers to past drug use at the time of the 1988 interview. I chose 1988 as the year to center the analysis around, because I wanted to exploit the longitudinal data available in the NLSY. In particular, I wanted to examine the effect of past drug use on future poverty. This empirical strategy reduces potential problems associated with the direction of causality between drug use and poverty.

Reported drug use in the NLSY is similar, but somewhat lower than that reported in the 1994 NHSDA. This may reflect three things, differences in the age and other characteristics of the samples, differences in the years of analysis, and differences in the accuracy of drug use reporting in the two surveys. Differences in the years of analysis are probably not the reason for the reported differences in drug use. If anything, the use of 1988 as opposed to a later year would lead to greater reported drug use in the NLSY than in the NHSDA

[11] The NLSY over samples blacks, Hispanics and low-income whites. Sampling weights have not been used in the analysis. The multivariate analysis controls for race and ethnicity, and the low-income sub-sample was not used in the analysis.

because the overall prevalence of drug use was higher in 1988 than in 1994.[12] Therefore, the differences must be do to other reasons. To examine whether the differences in reported drug use was due to the different age of the samples, I recalculated the means for the variables in Tables 1 and 2 using a sample of adults between the ages of 23 and 32 from the 1994 NHSDA. Mean drug use for the comparably aged 1994 NHSDA sample was still higher than that reported in the NLSY. Besides age, however, there are other differences between the samples that may explain the different levels of drug use. For example, the 1994 NHSDA contains more Hispanic and fewer black, respondents than the NLSY. In addition, the NLSY sample has higher levels of education and fewer average children than the 1994 NHSDA sample. These differences may explain the differences in drug use, as may differences in the accuracy of reported drug use.

Another difference between Tables 1 and 2, and Tables 3 and 4 relates to the poverty indicators. Instead of the total family income measure used in the 1994 NHSDA, I use the wage and salary income of the respondent and spouse (if present) to define poverty in the NLSY. If the family wage and salary income is below the federal poverty threshold for that family, I assign that person to be in poverty. I chose to use the wage and salary income instead of total family income because the latter was missing in many cases (e.g., 15 to 20 percent of the time). In addition, for the NLSY sample, I measure poverty over a four-year period between 1988 and 1991.[13] For example, instead of a simple indicator that the respondent and/or their spouse received food stamps in a given year, I measure receipt of food stamps as the proportion of years that the respondent and/or their spouse received food stamps between 1988 and 1991. Similarly, I measure the proportion of years that the respondent and/or their spouse received public assistance. Measuring poverty over a four-year period reduces measurement error and focuses on a more permanent state of poverty. As a result of these differences in measuring poverty, the incidence of poverty is lower in the NLSY than in the 1994 NHSDA. There are at least three reasons why this is not surprising. First, the use of a four-year average to measure poverty would tend to lower the incidence of poverty. Second, the 1994 NHSDA questions about public assistance refer to receipt by

[12] Higher rates of drug use in 1988 as compared to 1994 are found in all time series surveys of drug use. See Johnston, Bachman and O'Malley (1994) and NIDA (1995).

[13] Note that use of income information from 1988 results in some overlap between the period used to measure drug use, and the period used to measure poverty. The 1988 NLSY interviews were centered around August of 1988, and income and

any member of the respondent's household, whereas in the NLSY, the public assistance questions refer only to the respondent and respondent's spouse. Finally, the NLSY asks about specific public assistance programs, and I have chosen to use only two: food stamps and Aid to Families with Dependent Children (AFDC). In contrast, the 1994 NHSDA question I used asks respondents about receipt of any public assistance, and does not specify one particular program.

The figures in Tables 3 and 4 do not indicate as clear of a relationship between drug use and poverty as those in Tables 1 and 2. Past-year drug use and poverty do seem to be positively related, but the strength of the relationship in Tables 3 and 4 is weaker than it was in Tables 1 and 2. In the case of lifetime drug use, there does not appear to be any systematic relationship between drug use and poverty. For example, among females, respondents with the greatest amount of past marijuana and cocaine use have the lowest levels of poverty. For males, the figures in Table 4 indicate that drug use and poverty are basically unrelated.

What factors may explain the different relationship between drug use and poverty between the NLSY and the 1994 NHSDA? It is not the different ages of the samples. When the NHSDA sample is restricted to respondents between the ages of 23 and 32, the newly calculated means indicate the same positive relationship between drug use and poverty observed in Tables 1 and 2. It is also not the difference in the length of period during which poverty was measured. I recalculated the means in Tables 3 and 4 using one-year indicators of poverty and the results were basically unchanged. Thus, similar to the findings with regard to the prevalence of drug use, the differences between the NLSY and the 1994 NHSDA are due to differences in the mean characteristics other than age of the samples, and/or to differences in the accuracy of reporting drug use.

B. Multivariate Analysis

As the results in Tables 1 through 4 demonstrate, drug users and non-users differ by a variety of characteristics besides poverty. Some of these characteristics are what I refer to as confounding factors, and other are what I refer to as medicating factors. For example, age and race may be correlated with both drug use and poverty. Since drug use cannot possibly affect age and race, these are confounding variables. On the other

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receipt of public assistance was measured during the 1988 calendar year. For the most part, however, the NLSY analyses

hand, marital status may be correlated with both drug use and poverty, but since I assume that drug use affects marital status, this is a mediating variable. The primary purpose of this study is to estimate the reduced form effect of drug use on poverty. Thus, it is critical that I control for confounding factors. A secondary goal of the analysis is to provide information about the structural parameters of the model. Toward this end, I add mediating factors to the model and measure the change in the estimated effect of drug use. The change in the estimate of the effect of drug use can be interpreted as an estimate of the structural parameter related to the mediating factor.

1. The National Household Survey of Drug Abuse

I begin the multivariate analysis with the 1994 NHSDA sample. A limitation of this data set is that it contains few measures of what I consider to be confounding variables. For example, it has no family background measures. Given this limitation, even the reduced form estimates of the effect of drug use on poverty need to be interpreted with caution since there may be significant unobserved person effects that cause both drug use and poverty. As noted previously, the empirical strategy is to estimate the basic reduced form model, and then to add mediating variables sequentially.

Tables 5 and 6 contain the estimates of the multivariate regression models: Table 5 pertains to the female sample, and Table 6 lists the results for males. The organization of Table 5 and 6 is as follows. For each of the three dependent variables, nine separate models were estimated. Models differed according to the measures of drug use and the set of other explanatory variables included in the model. Drug use was measured in three basic ways: lifetime frequency of use, frequency of past year use, and a combined measure of past-year and lifetime use. The combined measure of past-year and lifetime drug use distinguishes between persons who have initiated use in the past year from those who are chronic users. Past-year users with very little lifetime use are most likely to have initiated use. Three sets of explanatory variables were specified. In the first model, what I refer to as the basic reduced form, only age, race and geographic location (e.g., census division, MSA) was included in the regression. The geographic measures control for differences in economic opportunities that may affect

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examine the effect of past drug use on future poverty.

poverty. In the second model, education and health are added to the regression, and finally, marital status, the number of children, and alcohol are included in a third specification.

I begin with the female sample, and the results in Table 5. The estimates of the effect of drug use listed in Table 5 present strong evidence that drug use is positively related to poverty. This conclusion applies to each of the dependent variables. In the case of family income, past-year use of marijuana or cocaine increases the likelihood that family income will be less than $12,000. The magnitudes of the effects are substantial. For example, the estimate associated with past-year cocaine use in column 1 indicates that past-year cocaine use raises the probability of having a family income below $12,000 by 14 percentage points, which represents a 63 percent increase over the mean. This effect is reduced to approximately 7 percentage points (column 3) when the full set of mediating variables is included in the regression. The most important mediating variables are marital status and children as shown by the size of the reduction in the estimates between columns 2 and 3. Greater frequency of lifetime cocaine use also increases the probability of having a family income below $12,000, and heavy lifetime use combined with past-year use has the greatest effect on family income. The only measure of drug use that is not significantly related to family income and poverty is lifetime marijuana use.

For the two other measures of poverty, receipt of food stamps or public assistance payments, drug use has similar effects. In both cases, lifetime and past-year use of both marijuana and cocaine increase the probability of participating in one of these public assistance programs. The sizes of the effects are significant. For example, using marijuana 100 or more times increases the probability of participating in one of the two public assistance programs by between two and eleven percentage points. As was the case with family income, the most important mediating factors are marriage and children.

Estimates of the effect of drug use on poverty for the male sample are found in Table 6. In general, males have a lower incidence of poverty than females. Whereas 24 percent of households in the female sample received food stamps, only 12 percent of households in the male sample received food stamps. Similar differences are observed for the other two poverty measures. Even though poverty rates are relatively low for males, drug use does significantly increase male poverty rates. Past-year and frequent lifetime use of marijuana increase the probability that family income will be below $12,000. One particularly interesting result is related

to the different effects of past-year cocaine use on family income. Respondents who report past-year cocaine use and only moderate lifetime cocaine use are less likely to have family incomes below $12,000 than non-users, but past-year users who also report heavy lifetime use are more likely to have family incomes below $12,000. These estimates illustrate the importance of distinguishing among types of past-year drug users. Finally, note that education plays a more important mediating role in the male sample than it did in the female sample.

Drug use also significantly affects participation in public assistance programs among males. Lifetime and past-year use of cocaine increases the probability of receiving food stamps, as does frequent lifetime use of marijuana. In regard to receipt of public assistance cash payments, past-year cocaine use and frequent lifetime use of marijuana increase the probability of receiving such payments.

In summary, the results presented in Tables 5 and 6 indicate that drug use does increase poverty for both the female and male samples. Indeed, some of the reduced form estimates are quite large. Moreover, the sensitivity of the estimated effects of drug use on poverty to the addition of mediating variables provides evidence about the ways in which drug use affects poverty. Among females, the indirect effect of drug use on poverty that works through marriage and fertility is in most cases larger than any other effects of drug use. On the other hand, the indirect marriage and fertility effect is not that large for males. Education plays a larger mediating role in the male sample, as do other factors that were not directly observable as evidenced by the size of the residual effect of drug use on poverty.

2. The National Longitudinal Survey of Youth

The second sets of estimates of the effect of drug use on poverty were obtained using the NLSY. There are three advantages of using this data. First, it contains an extensive set of family background measures that can be used to control for possibly confounding effects. This point is particularly important given the intergenerational nature of a substantial proportion of poverty. Second, the longitudinal nature of the data enables me to measure poverty over a longer time period, and examine the effect of drug use on what may be considered measures of permanent or long-term poverty. Finally, the longitudinal nature of the data reduces the empirical problems associated with the potential structural endogeneity of drug use. The NLSY can be used to

examine the effect of past drug use on future poverty. The temporal ordering of the events diminishes the potential endogeneity of drug use.

Tables 7 and 8 contain the estimates of the effect of drug use on poverty for the NLSY samples. The organization of Tables 7 and 8 is similar to Tables 5 and 6. For this sample, however, I have added an extra regression model for each of the three dependent variables. The extra model is similar to the basic reduced form model, but includes family background measures in addition to age, race, and local area measures.[14] In general, the addition of family background measures had little impact on the estimates of the effect of drug use on poverty. This result implies that family background has only a minor role in determining who uses drugs since many of the family characteristics were significantly related to poverty.

Estimates of the effect of drug use on poverty for the female sample are listed in Table 7. In general, the estimates of the effects of drug use in Table 7 are not as uniform as the estimates in Table 5, but nevertheless indicate that drug use is positively related to poverty. More consistent estimates of the effect of drug use on poverty are found for the public assistance measures of poverty. This result is somewhat surprising because in contrast to the income measure used in the 1994 NHSDA samples, the income measure used here is adjusted for family size. There is some measurement error in this variable, however, because family income consists of the respondent's earnings and their spouse's earnings if present, but family size refers to the size of the household. Similar to previous findings, drug use has a sizable impact on poverty. For example, past year marijuana use increases the probability of participating in a public assistance program by between four and eight percentage points. This represents between a 25 and 80 percent increase in the probability of participating in these programs.

In addition, estimates in Table 7 indicate that past-year and lifetime measures of both marijuana and cocaine use are related to poverty, although past-year use appears to have larger and more consistent effects. This result is in line with the notion that past-year use is a better indicator of chronic use, and is more likely to be related to poverty. Indeed, with respect to past-year cocaine use, those with little lifetime use are less likely

[14] To control for local economic opportunities and demand conditions, I include the median family income of the respondent's county of residence, the percentage of families below poverty level in the county of residence, and the local unemployment rate.

to be in poverty. Finally, the estimates in Table 7 indicate that marriage and children are again playing an important mediating role in the relationship between drug use and poverty.

The last set of estimates to be reviewed is those pertaining to the male NLSY sample. Drug use does not have as consistent impact on poverty for the male sample as it did for the female sample. This finding is similar to that for the 1994 NHSDA samples. Frequent lifetime and past-year cocaine use increase the likelihood of having family earnings below the poverty level, and past-year marijuana use is positively related to public assistance program participation.

V. Conclusions

In this paper, I have obtained a variety of estimates of the effect of marijuana and cocaine use on poverty using two national samples of young adults. A large preponderance of the estimates indicated that marijuana and cocaine use significantly increase the probability of being poor. Drug users had lower family incomes, and were more likely to participate in public assistance programs than non-users. In some cases, estimates were quite large implying 50 percent or more increases in the rate of poverty, as measured in this paper. These results indicate that drug use is a serious problem, and suggest that public policies focusing on reducing drug use would have some positive economic effects on people's lives.

The study provided other information about the relationship between drug use and poverty that can help inform policy. Surprisingly, an extensive set of family background measures had little influence on the estimates of the effect of drug use on poverty even though they were significant predictors of poverty. This result is surprising because drug use is often associated with disadvantaged family backgrounds, as is poverty. Thus, one would expect that family background would be a significant confounding factor in the relationship between drug use and poverty. This turns out not to be the case.

In terms of mediating factors, marriage and fertility played very important mediating roles for the female sample, but not for the males. Indeed, the most important effect of drug use on female poverty was the effect of drug use that works through marriage and fertility. Once these factors were controlled for in the analysis, the residual effect of drug use was often insignificant, and smaller than the structural effect that worked through

marriage and fertility. Among males, however, marriage and fertility had only a small mediating effect. For this sample, education played a more important mediating role, but the residual effect of drug use was still larger than the structural effects estimated. For example, after controlling for education, marital status, number of children, and confounding factors, the estimated effect of drug use remained relatively large in the male sample. In all cases, it was larger than the implied structural effects estimated.

I will end with a note of caution. While the results of this study strongly suggest that drug use is positively associated with poverty, and may even be a causal factor of poverty, there were several empirical limitations that make this a less than definitive analysis. First, there may be person specific factors that account for both drug use and poverty. The analysis of the NLSY sample included a somewhat extensive number of family background measures, and even some psycho-social measures, but there remains considerable heterogeneity in the sample, and this may account for the relationship between drug use and poverty. It would be helpful if future work could address this problem in a more definitive way than did this paper. Second, the causal model of Figure 1 relied on many assumptions that may not be valid. For example, educational achievement and attainment may significantly affect drug use. As individuals receive more education, their preferences may change, or as Becker and Mulligan (1995) suggest, education may change a person's rate of time preference. These consequences of education make it a cause of drug use, and the reduced form model should reflect that by including education. More generally, what does cause drug use? In this paper, I have assumed that it is only the consumption value of drug use that causes individuals to use drugs, but this may be incorrect. Drug use may play a role in the production of other goods (e.g., rebellion) whose consumption is caused by a variety of environmental factors that may also cause poverty. Thus, future work should explore the validity of other causal models than that used here in more detail. Finally, the measures of drug use in this paper were relatively crude, and based on potentially biased self-reports. Thus, measurement error and unobserved heterogeneity among user categories may have confounded estimates of the effect of drug use on poverty.

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Figure 1

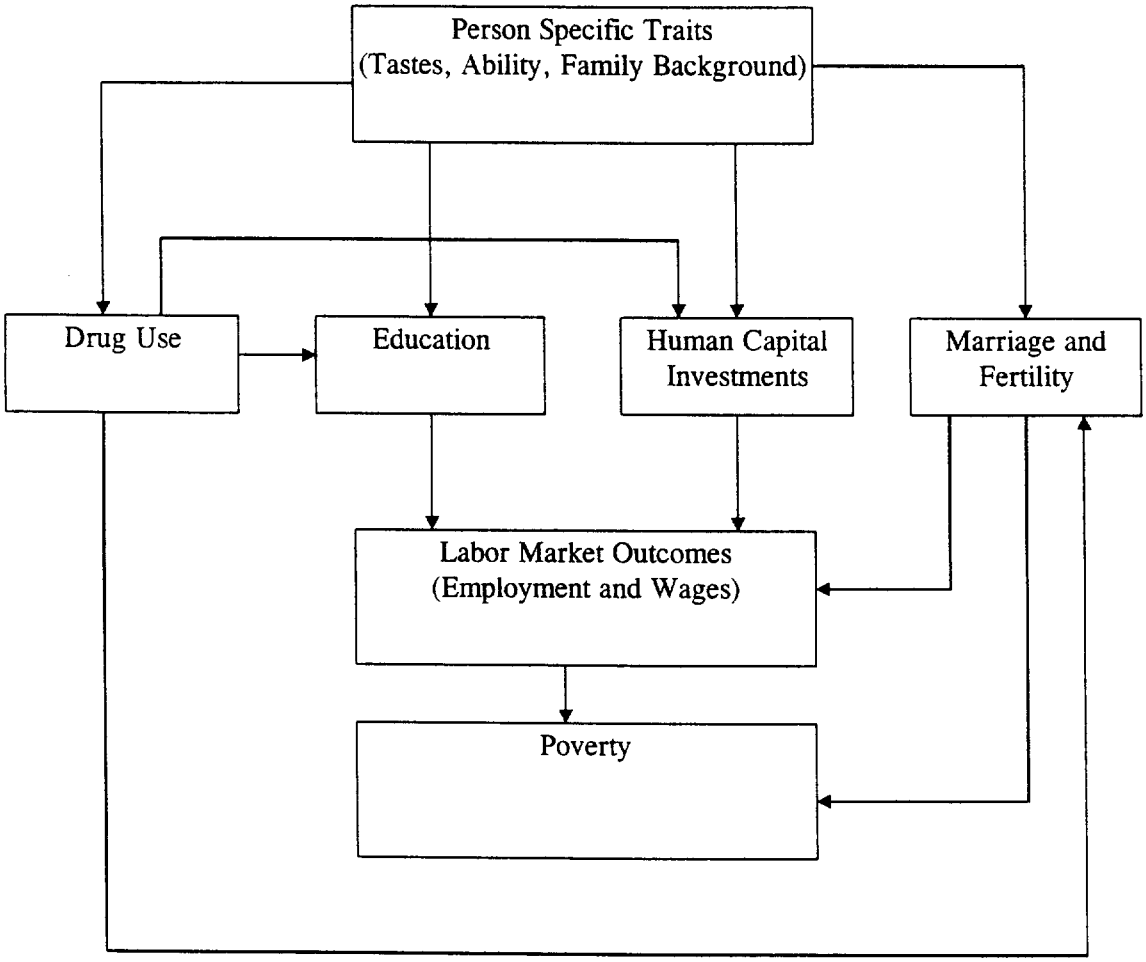
Person Specific Traits
(Tastes, Ability, Family Background)
Drug Use
Education
Human Capital Investments
Marriage and Fertility
Labor Market Outcomes
(Employment and Wages)
Poverty

Table 1
Incidence of Poverty and Receipt of Public Assistance by Drug Use
Females Age 18-40, 1994 National Household Survey on Drug Abuse

Drug Use	N (%)	Family Income < $12,000	Receive Food Stamps	Receive Public Assistance	Age	Black	Hispanic	Education	Married	Never Married	Children < 12	Poor Health	Drinks Per Month
Lifetime Cocaine Use													
None	4924 (85)	0.22	0.24	0.16	28.17	0.26	0.27	12.43	0.46	0.41	1.20	0.08	6.43
1-11 Times	518 (9)	0.15	0.23	0.16	29.05	0.16	0.14	13.07	0.45	0.37	1.08	0.09	16.25
12 or More Times	365 (6)	0.24	0.32	0.22	30.36	0.22	0.15	12.48	0.43	0.32	1.27	0.14	26.20
Past Year Cocaine Use													
None	5651 (97)	0.21	0.24	0.16	28.38	0.25	0.25	12.50	0.46	0.40	1.20	0.08	7.78
1 or More Times	156 (3)	0.38	0.44	0.31	28.44	0.32	0.20	12.22	0.21	0.51	1.14	0.19	39.04
Lifetime Marijuana Use													
None	3315 (57)	0.24	0.25	0.16	28.10	0.28	0.33	12.24	0.45	0.42	1.23	0.09	4.15
1-11 Times	1312 (23)	0.19	0.24	0.16	28.21	0.22	0.16	12.90	0.46	0.39	1.15	0.08	11.24
12-99 Times	592 (10)	0.16	0.21	0.14	29.14	0.20	0.13	13.08	0.48	0.38	1.08	0.08	14.84
100 or More	588 (10)	0.22	0.31	0.21	29.63	0.21	0.12	12.42	0.42	0.37	1.23	0.12	21.10
Past Year Marijuana Use													
None	5129 (88)	0.21	0.24	0.15	28.71	0.25	0.26	12.49	0.48	0.38	1.23	0.08	6.41
1-5 Times	290 (5)	0.27	0.24	0.19	25.58	0.22	0.20	12.86	0.29	0.58	0.83	0.11	17.90
6 or More Times	388 (7)	0.30	0.38	0.27	26.23	0.30	0.14	12.26	0.25	0.58	1.04	0.11	31.11

Table 2
Incidence of Poverty and Receipt of Public Assistance by Drug Use
Males Age 18-40, 1994 National Household Survey on Drug Abuse

Drug Use	N (%)	Family Income < $12,000	Receive Food Stamps	Receive Public Assistance	Age	Black	Hispanic	Education	Married	Never Married	Children < 12	Poor Health	Drinks Per Month
Lifetime Cocaine Use													
None	3464 (77)	0.16	0.11	0.03	27.53	0.20	0.31	12.32	0.41	0.52	0.81	0.06	22.55
1-11 Times	543 (12)	0.13	0.12	0.03	28.53	0.12	0.25	12.75	0.39	0.48	0.72	0.09	46.75
12 or More Times	503 (11)	0.16	0.17	0.04	30.10	0.17	0.24	12.16	0.41	0.45	0.78	0.10	50.40
Past Year Cocaine Use													
None	4209 (93)	0.15	0.11	0.03	27.97	0.18	0.29	12.40	0.42	0.50	0.80	0.06	26.07
1 or More Times	301 (7)	0.22	0.23	0.06	27.38	0.25	0.32	11.62	0.25	0.63	0.69	0.14	65.96
Lifetime Marijuana Use													
None	2150 (48)	0.16	0.12	0.03	27.39	0.20	0.38	12.10	0.42	0.52	0.83	0.06	18.19
1-11 Times	891 (20)	0.14	0.11	0.02	27.83	0.18	0.24	12.61	0.42	0.50	0.79	0.06	31.21
12-99 Times	567 (13)	0.12	0.09	0.03	28.57	0.18	0.18	13.06	0.42	0.48	0.74	0.05	32.53
100 or More	902 (20)	0.18	0.15	0.05	28.93	0.19	0.21	12.25	0.38	0.49	0.74	0.09	48.04
Past Year Marijuana Use													
None	3559 (79)	0.14	0.11	0.03	28.40	0.18	0.32	12.36	0.46	0.46	0.86	0.06	20.94
1-5 Times	293 (6)	0.19	0.12	0.01	26.28	0.21	0.23	12.60	0.22	0.65	0.58	0.07	48.88
6 or More Times	658 (15)	0.21	0.15	0.04	26.14	0.25	0.20	12.20	0.23	0.68	0.55	0.09	61.80

Table 3
Incidence of Poverty and Receipt of Public Assistance by Drug Use
Females Age 23-32, 1988 National Longitudinal Survey of Youth

Drug Use	N (%)	Family Earnings < Poverty	Food Stamp Receipt	AFDC Receipt	Age	Black	Hispanic	Education	Married	Never Married	Number of Children	Poor Health	Drinks Per Month
Lifetime Cocaine Use													
None	3100 (86)	0.27	0.16	0.10	27.54	0.33	0.20	12.75	0.53	0.32	1.30	0.06	5.72
1-9 Times	400 (11)	0.19	0.13	0.10	27.37	0.20	0.18	13.14	0.41	0.40	0.97	0.06	15.09
10 or More Times	127 (4)	0.22	0.13	0.10	28.35	0.11	0.19	13.19	0.44	0.34	0.85	0.06	14.02
Past Year Cocaine Use													
None	3567 (98)	0.26	0.15	0.10	27.56	0.31	0.13	12.81	0.52	0.32	1.25	0.06	6.68
1 or More Times	60 (2)	0.27	0.18	0.11	26.74	0.31	0.20	12.28	0.23	0.58	0.92	0.03	28.65
Lifetime Marijuana Use													
None	2161 (60)	0.27	0.16	0.11	27.49	0.33	0.22	12.77	0.53	0.32	1.25	0.05	5.96
1-9 Times	1106 (31)	0.22	0.13	0.09	27.55	0.28	0.17	12.92	0.51	0.33	1.24	0.07	7.97
10-99 Times	235 (7)	0.31	0.19	0.14	27.88	0.31	0.14	12.60	0.47	0.33	1.18	0.07	11.40
100 or More	125 (3)	0.21	0.14	0.10	28.08	0.12	0.15	12.84	0.50	0.33	1.29	0.06	9.39
Past Year Marijuana Use													
None	3357 (93)	0.26	0.15	0.10	27.01	0.31	0.20	12.80	0.53	0.32	1.26	0.06	6.18
1 or More Times	270 (7)	0.28	0.21	0.16	27.55	0.33	0.12	12.86	0.30	0.46	1.07	0.05	17.82

Table 4
Incidence of Poverty and Receipt of Public Assistance by Drug Use
Males Age 23-32, 1988 National Longitudinal Survey of Youth

Drug Use	N (%)	Family Earnings < Poverty	Food Stamp Receipt	AFDC Receipt	Age	Black	Hispanic	Education	Married	Never Married	Number of Children	Poor Health	Drinks Per Month
Lifetime Cocaine Use													
None	2418 (80)	0.22	0.05	0.01	27.44	0.33	0.19	12.71	0.48	0.44	0.85	0.04	19.45
1-9 Times	486 (16)	0.22	0.05	0.02	27.45	0.29	0.21	12.81	0.39	0.48	0.80	0.04	23.54
10 or More Times	144 (5)	0.16	0.06	0.03	27.94	0.22	0.24	12.53	0.44	0.43	0.82	0.06	24.75
Past Year Cocaine Use													
None	2967 (97)	0.21	0.05	0.01	27.49	0.32	0.19	12.73	0.47	0.59	0.85	0.04	20.19
1 or More Times	81 (3)	0.30	0.04	0.02	26.79	0.32	0.31	12.16	0.22	0.44	0.73	0.02	25.95
Lifetime Marijuana Use													
None	1631 (54)	0.22	0.05	0.01	27.37	0.31	0.20	12.80	0.46	0.47	0.78	0.04	17.99
1-9 Times	917 (30)	0.20	0.05	0.02	27.43	0.32	0.21	12.69	0.46	0.44	0.88	0.04	21.55
10-99 Times	272 (9)	0.25	0.07	0.02	27.74	0.34	0.18	12.51	0.47	0.37	0.93	0.04	28.49
100 or More	228 (8)	0.26	0.06	0.01	27.98	0.27	0.16	12.46	0.50	0.39	1.00	0.05	22.50
Past Year Marijuana Use													
None	2716 (89)	0.21	0.05	0.01	27.55	0.31	0.20	12.77	0.48	0.43	0.86	0.04	18.74
or More Times	332 (11)	0.26	0.07	0.03	26.77	0.38	0.19	12.31	0.30	0.58	0.74	0.04	33.47

Table 5. OLS Estimates of the Effect of Drug Use on Poverty and Receipt of Public Assistance
Females Age 18-40, 1994 National Household Survey on Drug Abuse

Variable	Family Income < $12,000 (Mean=0.22, N=4951)			Receive Food Stamps (Mean=0.24, N=5301)			Receive Public Assistance (Mean=0.16, N=5310)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lifetime Cocaine Use									
1-11 Times	0.003	0.005	-0.008	0.012	0.017	0.005	0.018	0.022	0.009
	(0.022)	(0.022)	(0.021)	(0.022)	(0.021)	(0.019)	(0.019)	(0.018)	(0.016)
12 or More Times	0.083**	0.065*	0.043	0.065*	0.040	0.015	0.056*	0.037	0.014
	(0.028)	(0.027)	(0.027)	(0.028)	(0.026)	(0.024)	(0.024)	(0.023)	(0.021)
Lifetime Marijuana Use									
1 -11 Times	-0.008	-0.003	-0.016	0.047**	0.054**	0.041**	0.030*	0.035**	0.022*
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.013)	(0.012)	(0.011)
12-99 Times	-0.032	-0.028	-0.037+	0.015	0.022	0.017	0.002	0.007	0.002
	(0.021)	(0.020)	(0.020)	(0.021)	(0.020)	(0.018)	(0.018)	(0.017)	(0.016)
100 or More Times	0.016	-0.000	-0.024	0.109**	0.086**	0.060**	0.064**	0.047*	0.024
	(0.024)	(0.024)	(0.023)	(0.024)	(0.023)	(0.021)	(0.021)	(0.020)	(0.018)
Past Year Cocaine Use	0.143**	0.118**	0.067+	0.148**	0.116**	0.058+	0.108**	0.084**	0.029
	(0.039)	(0.038)	(0.037)	(0.037)	(0.035)	(0.033)	(0.032)	(0.031)	(0.028)
Past Year Marijuana Use									
1-5 Times	0.046+	0.057*	0.034	-0.007	0.010	0.013	0.022	0.034	0.035+
	(0.026)	(0.025)	(0.025)	(0.026)	(0.025)	(0.023)	(0.022)	(0.022)	(0.020)
6 or More Times	0.037	0.025	-0.008	0.107**	0.088**	0.062**	0.078**	0.065**	0.039*
	(0.026)	(0.025)	(0.024)	(0.025)	(0.024)	(0.022)	(0.021)	(0.021)	(0.019)
Past Year/Lifetime Cocaine Use									
Past Year / 1-11 Times	0.036	0.015	-0.038	0.125*	0.103+	0.045	0.057	0.042	-0.014
	(0.059)	(0.057)	(0.056)	(0.057)	(0.055)	(0.050)	(0.050)	(0.048)	(0.043)
Past Year / 12 or More	0.211**	0.177**	0.126**	0.181**	0.134**	0.071+	0.157**	0.122**	0.063+
	(0.049)	(0.048)	(0.047)	(0.045)	(0.043)	(0.040)	(0.039)	(0.038)	(0.034)
Past Year/Lifetime Marijuana Use									
Past Year / 1-11 Times	0.065*	0.070*	0.044	0.033	0.039	0.034	0.079**	0.084**	0.078**
	(0.031)	(0.030)	(0.029)	(0.030)	(0.029)	(0.026)	(0.026)	(0.025)	(0.023)
Past Year / 12-99 Times	0.003	-0.000	-0.025	-0.004	-0.005	-0.012	-0.004	-0.004	-0.012
	(0.034)	(0.033)	(0.032)	(0.034)	(0.032)	(0.029)	(0.029)	(0.028)	(0.025)
Past Year / 100 or More	0.048+	0.042	0.011	0.107**	0.097**	0.076**	0.065**	0.057*	0.035+
	(0.029)	(0.028)	(0.028)	(0.028)	(0.026)	(0.024)	(0.024)	(0.023)	(0.021)
Additional Explanatory Variables	(1) Age, Race, Area (2) Age, Race, Area, Education, Health (3) Age, Race, Area, Education, Health, Marital Status, Number of Children, Alcohol			(1) Age, Race, Area (2) Age, Race, Area, Education, Health (3) Age, Race, Area, Education, Health, Marital Status, Number of Children, Alcohol			(1) Age, Race, Area (2) Age, Race, Area, Education, Health (3) Age, Race, Area, Education, Health, Marital Status, Number of Children, Alcohol		

+ p≤.10, * p≤.05, ** p≤.01

Table 6. OLS Estimates of the Effect of Drug Use on Poverty and Receipt of Public Assistance
Males Age 18-40, 1994 National Household Survey on Drug Abuse

Variable	Family Income < $12,000 (Mean=0.15, N=3986) (1)	(2)	(3)	Receive Food Stamps (Mean=0.12, N=4109) (4)	(5)	(6)	Receive Public Assistance (Mean=0.03, N=4123) (7)	(8)	(9)
Lifetime Cocaine Use									
1-11 Times	-0.021	-0.023	-0.028	0.026	0.027	0.028+	0.004	0.004	0.004
	(0.019)	(0.019)	(0.019)	(0.017)	(0.017)	(0.016)	(0.009)	(0.009)	(0.009)
12 or More Times	-0.006	-0.019	-0.026	0.054**	0.036+	0.037*	-0.007	-0.012	-0.012
	(0.023)	(0.022)	(0.022)	(0.020)	(0.019)	(0.019)	(0.011)	(0.011)	(0.011)
Lifetime Marijuana Use									
1 -11 Times	-0.014	-0.012	-0.013	0.012	0.015	0.012	-0.007	-0.006	-0.006
	(0.015)	(0.015)	(0.015)	(0.014)	(0.013)	(0.013)	(0.007)	(0.007)	(0.007)
12-99 Times	-0.001	0.004	0.002	-0.003	0.003	-0.003	-0.000	0.001	0.002
	(0.019)	(0.019)	(0.019)	(0.017)	(0.016)	(0.016)	(0.009)	(0.009)	(0.009)
100 or More Times	0.058**	0.051**	0.046*	0.037*	0.025	0.026	0.024**	0.022*	0.022*
	(0.020)	(0.019)	(0.019)	(0.017)	(0.017)	(0.016)	(0.009)	(0.009)	(0.009)
Past Year Cocaine Use	0.034	0.016	0.011	0.108**	0.081**	0.078**	0.024*	0.018	0.017
	(0.025)	(0.025)	(0.025)	(0.022)	(0.021)	(0.021)	(0.012)	(0.012)	(0.012)
Past Year Marijuana Use									
1-5 Times	0.028	0.029	0.018	-0.006	-0.000	-0.001	-0.018+	-0.017	-0.017
	(0.023)	(0.023)	(0.023)	(0.021)	(0.020)	(0.019)	(0.011)	(0.011)	(0.011)
6 or More Times	0.055**	0.049**	0.035*	0.018	0.008	0.011	0.007	0.004	0.005
	(0.018)	(0.018)	(0.018)	(0.016)	(0.015)	(0.015)	(0.008)	(0.008)	(0.008)
Past Year/Lifetime Cocaine Use									
Past Year / 1-11 Times	-0.061+	-0.069+	-0.071*	0.087**	0.076*	0.070*	0.057**	0.054**	0.054**
	(0.037)	(0.036)	(0.036)	(0.033)	(0.032)	(0.031)	(0.017)	(0.017)	(0.017)
Past Year / 12 or More	0.084**	0.061*	0.054+	0.112**	0.076**	0.078**	-0.000	-0.010	-0.009
	(0.031)	(0.031)	(0.031)	(0.027)	(0.027)	(0.026)	(0.015)	(0.015)	(0.014)
Past Year/Lifetime Marijuana Use									
Past Year / 1-11 Times	0.023	0.018	0.010	0.003	0.000	0.006	-0.020	-0.022+	-0.020
	(0.028)	(0.027)	(0.027)	(0.024)	(0.024)	(0.023)	(0.013)	(0.013)	(0.013)
Past Year / 12-99 Times	-0.000	0.006	-0.006	-0.049*	-0.037	-0.034	-0.014	-0.011	-0.012
	(0.026)	(0.026)	(0.026)	(0.023)	(0.023)	(0.022)	(0.012)	(0.012)	(0.012)
Past Year / 100 or More	0.079**	0.071**	0.057**	0.042*	0.029+	0.028+	0.013	0.010	0.010
	(0.020)	(0.019)	(0.020)	(0.017)	(0.017)	(0.017)	(0.009)	(0.009)	(0.009)
Additional Explanatory Variables	(1) Age, Race, Area (2) Age, Race, Area, Education, Health (3) Age, Race, Area, Education, Health, Marital Status, Number of Children, Alcohol			(1) Age, Race, Area (2) Age, Race, Area, Education, Health (3) Age, Race, Area, Education, Health, Marital Status, Number of Children, Alcohol			(1) Age, Race, Area (2) Age, Race, Area, Education, Health (3) Age, Race, Area, Education, Health, Marital Status, Number of Children, Alcohol		

+ p≤.10, * p≤.05, ** p≤.01

Table 7. OLS Estimates of the Effect of Drug Use on Poverty and Receipt of Public Assistance
Females Age 23-32, 1988 National Longitudinal Survey of Youth

	Family Earnings Below Poverty (Mean=0.23, N=2824)				Average Food Stamp Receipt (Mean=0.15, N=3299)				Average Public Assistance Receipt (Mean=0.10, N=3295)			
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Lifetime Cocaine Use												
1-9 Times	-0.027	-0.019	-0.016	-0.029	-0.000	0.014	0.018	0.008	0.012	0.019	0.022	0.011
	(0.023)	(0.023)	(0.022)	(0.021)	(0.017)	(0.016)	(0.015)	(0.013)	(0.014)	(0.014)	(0.013)	(0.012)
10 or More Times	0.019	0.037	0.027	0.003	0.038+	0.056**	0.049*	0.043*	0.047**	0.057**	0.051**	0.044**
	(0.023)	(0.031)	(0.030)	(0.029)	(0.021)	(0.021)	(0.020)	(0.018)	(0.180)	(0.018)	(0.018)	(0.016)
Lifetime Marijuana Use												
1 -9 Times	-0.011	-0.006	-0.018	0.028+	-0.002	0.003	-0.005	-0.012	-0.005	-0.004	-0.009	-0.015+
	(0.017)	(0.016)	(0.016)	(0.015)	(0.012)	(0.011)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)	(0.008)
10-99 Times	0.045+	0.052*	0.039+	0.033	0.017	0.020	0.012	0.003	0.013	0.015	0.009	0.000
	(0.025)	(0.024)	(0.023)	(0.022)	(0.017)	(0.017)	(0.016)	(0.014)	(0.015)	(0.014)	(0.014)	(0.012)
100 or More Times	0.011	0.0004	-0.005	-0.034	0.015*	0.041*	0.033+	0.000	0.041*	0.038*	0.031+	0.004
	(0.030)	(0.029)	(0.028)	(0.027)	(0.021)	(0.020)	(0.019)	(0.017)	(0.018)	(0.018)	(0.017)	(0.015)
Past Year Cocaine Use	0.004	0.013	0.007	-0.007	0.009	0.014	0.014	0.007	0.008	0.011	0.011	0.003
	(0.033)	(0.033)	(0.031)	(0.030)	(0.023)	(0.022)	(0.021)	(0.019)	(0.020)	(0.019)	(0.019)	(0.017)
Past Year Marijuana Use	0.046*	0.044+	0.030	-0.012	0.080**	0.085**	0.072**	0.039**	0.076**	0.078**	0.069**	0.038**
	(0.023)	(0.023)	(0.022)	(0.021)	(0.016)	(0.015)	(0.015)	(0.013)	(0.014)	(0.13)	(0.013)	(0.012)
Past Year/Lifetime Cocaine Use												
Past Year / 1-9 Times	-0.028	-0.021	-0.021	-0.044	-0.009	-0.005	-0.006	-0.026	-0.013	-0.010	-0.011	-0.032
	(0.050)	(0.048)	(0.046)	(0.044)	(0.034)	(0.033)	(0.032)	(0.028)	(0.030)	(0.029)	(0.028)	(0.025)
Past Year / 10 or More	0.029	0.046	0.029	0.002	0.037	0.047+	0.041	0.031	0.045+	0.051*	0.046*	0.036+
	(0.040)	(0.039)	(0.037)	(0.036)	(0.027)	(0.026)	(0.025)	(0.022)	(0.023)	(0.023)	(0.022)	(0.020)
Past Year/Lifetime Marijuana Use												
Past Year / 1-9 Times	0.109*	0.098*	0.064	0.024	0.122**	0.108**	0.095**	0.074**	0.073**	0.069**	0.052*	0.033
	(0.043)	(0.042)	(0.041)	(0.038)	(0.030)	(0.029)	(0.028)	(0.025)	(0.026)	(0.026)	(0.025)	(0.022)
Past Year / 10-99 Times	0.035	0.041	0.041	0.034	0.025	0.032	0.036	0.025	0.005	0.009	0.012	0.000
	(0.039)	(0.038)	(0.037)	(0.035)	(0.026)	(0.026)	(0.024)	(0.022)	(0.023)	(0.023)	(0.022)	(0.019)
Past Year / 100 or More	0.030	0.012	0.001	-0.030	0.081**	0.075**	0.061**	0.033	0.083**	0.077**	0.067**	0.041*
	(0.037)	(0.036)	(0.035)	(0.033)	(0.025)	(0.025)	(0.023)	(0.021)	(0.022)	(0.022)	(0.021)	(0.018)
Additional Explanatory Variables	(1) Age, Race, Area (2) Age, Race, Area, Family Background (3) Age, Race, Area, Family Background, Education, Health (4) Age, Race, Area, Family Background, Education, Health, Marital Status, Number of Children, Alcohol				(1) Age, Race, Area (2) Age, Race, Area, Family Background (3) Age, Race, Area, Family Background, Education, Health (4) Age, Race, Area, Family Background, Education, Health, Marital Status, Number of Children, Alcohol				(1) Age, Race, Area (2) Age, Race, Area, Family Background (3) Age, Race, Area, Family Background, Education, Health (4) Age, Race, Area, Family Background, Education, Health, Marital Status, Number of Children, Alcohol			

+ p≤.10, * p≤.05, ** p≤.01

Table 8. OLS Estimates of the Effect of Drug Use on Poverty and Receipt of Public Assistance
Males Age 23-32, 1988 National Longitudinal Survey of Youth

Variable	Family Earnings Below Poverty (Mean=0.17, N=2641)				Average Food Stamp Receipt (Mean=0.05, N=3023)				Average Public Assistance Receipt (Mean=0.01, N=3023)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Lifetime Cocaine Use												
1-9 Times	-0.005	0.006	0.006	-0.001	0.002	0.005	0.005	0.005	0.002	0.003	0.003	0.004
	(0.019)	(0.019)	(0.019)	(0.018)	(0.008)	(0.008)	(0.008)	(0.008)	(0.004)	(0.004)	(0.004)	(0.004)
10 or More Times	0.039	0.053*	0.043+	0.021	0.001	0.006	0.003	0.005	0.005	0.005	0.004	0.006
	(0.025)	(0.025)	(0.024)	(0.024)	(0.010)	(0.010)	(0.010)	(0.010)	(0.005)	(0.005)	(0.005)	(0.005)
Lifetime Marijuana Use												
1 -9 Times	-0.001	-0.004	-0.007	-0.005	0.006	0.005	0.004	0.003	0.007+	0.006+	0.006+	0.006
	(0.017)	(0.017)	(0.016)	(0.016)	(0.007)	(0.007)	(0.007)	(0.007)	(0.004)	(0.004)	(0.004)	(0.004)
10-99 Times	-0.005	0.001	0.001	0.003	0.003	0.006	0.007	0.006	0.006	0.007+	0.007+	0.007+
	(0.019)	(0.019)	(0.018)	(0.018)	(0.008)	(0.008)	(0.008)	(0.008)	(0.006)	(0.004)	(0.004)	(0.004)
100 or More Times	0.029	0.023	0.007	0.009	0.014	0.010	0.005	0.002	-0.001	-0.003	-0.004	-0.005
	(0.022)	(0.022)	(0.021)	(0.021)	(0.009)	(0.009)	(0.009)	(0.009)	(0.005)	(0.005)	(0.005)	(0.005)
Past Year Cocaine Use	0.052*	0.054*	0.052*	0.039+	-0.005	-0.005	-0.005	-0.002	-0.006	-0.006	-0.006	-0.004
	(0.023)	(0.023)	(0.022)	(0.022)	(0.010)	(0.010)	(0.009)	(0.009)	(0.005)	(0.005)	(0.005)	(0.005)
Past Year Marijuana Use	0.019	0.018	0.009	-0.009	0.020**	0.020**	0.016*	0.014+	0.011**	0.011**	0.010**	0.010*
	(0.018)	(0.017)	(0.017)	(0.017)	(0.007)	(0.007)	(0.007)	(0.007)	(0.004)	(0.004)	(0.004)	(0.004)
Past Year/Lifetime Cocaine Use												
Past Year / 1-9 Times	0.040	0.035	0.042	0.027	0.007	0.005	0.008	0.008	-0.003	-0.005	-0.003	-0.002
	(0.033)	(0.033)	(0.032)	(0.031)	(0.014)	(0.014)	(0.014)	(0.014)	(0.007)	(0.007)	(0.007)	(0.007)
Past Year / 10 or More	0.085**	0.086**	0.078**	0.057*	-0.003	-0.002	-0.004	-0.000	-0.001	-0.001	-0.002	-0.001
	(0.029)	(0.028)	(0.027)	(0.027)	(0.012)	(0.012)	(0.011)	(0.012)	(0.006)	(0.006)	(0.006)	(0.006)
Past Year/Lifetime Marijuana Use												
Past Year / 1-9 Times	0.095*	0.084*	0.052	0.026	0.040*	0.037*	0.027+	0.028+	0.031**	0.030**	0.028**	0.030**
	(0.039)	(0.038)	(0.037)	(0.036)	(0.016)	(0.016)	(0.016)	(0.016)	(0.008)	(0.008)	(0.008)	(0.008)
Past Year / 10-99 Times	-0.038	-0.026	-0.016	-0.026	-0.013	-0.008	-0.005	-0.006	0.009+	0.011*	0.012*	0.012*
	(0.026)	(0.025)	(0.025)	(0.024)	(0.011)	(0.011)	(0.011)	(0.010)	(0.006)	(0.006)	(0.006)	(0.006)
Past Year / 100 or More	0.014	0.012	-0.006	-0.009	0.022*	0.018+	0.013	0.009	-0.000	-0.002	-0.003	-0.004
	(0.025)	(0.024)	(0.024)	(0.023)	(0.010)	(0.010)	(0.010)	(0.010)	(0.005)	(0.005)	(0.005)	(0.005)
Additional Explanatory Variables	(1) Age, Race, Area (2) Age, Race, Area, Family Background (3) Age, Race, Area, Family Background, Education, Health (4) Age, Race, Area, Family Background, Education, Health, Marital Status, Number of Children, Alcohol				(1) Age, Race, Area (2) Age, Race, Area, Family Background (3) Age, Race, Area, Family Background, Education, Health (4) Age, Race, Area, Family Background, Education, Health, Marital Status, Number of Children, Alcohol				(1) Age, Race, Area (2) Age, Race, Area, Family Background (3) Age, Race, Area, Family Background, Education, Health (4) Age, Race, Area, Family Background, Education, Health, Marital Status, Number of Children, Alcohol			

+ p≤.10, * p≤.05, ** p≤.01