

Illicit Drug Use and Criminal Behavior

A Literature Review

Prepared for:

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Illicit Drug Use and Criminal Behavior: A Literature Review

Speculation and case histories about the role of illegal drug use and crime abounds. Turf wars between rival gangs, desperate users seeking resources to supply their habits, injuries resulting from a person high on PCP—are all examples of crimes that occurred as a result of illegal drug use. Look at almost any newspaper and you will find articles discussing these crimes in detail. These accounts rarely apply an empirical framework, and in reality, estimating the proportion of crime attributable to illegal drug use is an area of research where little agreement exists. The purpose of this literature review is to examine evidence-based approaches that have been tested in research and then determine whether defensible methodologies exist for calculating a drug use-attributable fraction for crimes committed in the United States.

ANALYTICAL CONSIDERATIONS

The precise nature and relationship of these factors is complex. Drugs can produce a variety of symptoms and side effects, depending on the individual. Do mental health problems precede or are they caused by the drug use? Does the criminal behavior occur because the individual is taking drugs or is it a cause of substance use? The answers to these questions differ based on who is taking the drug, the drug being taken, and the environment in which it is taken. A person with schizophrenia may abuse drugs to quell the symptoms of the disease. A woman may abuse drugs to alleviate feelings of inadequacy caused by spousal abuse. A teenager may engage in risky sexual behaviors due to lowered inhibitions caused by using drugs. A heroin addict may commit a burglary to obtain the funds to support his habit. In some cases, the crime would not occur but for the drug use.

This paper attempts to tease out the causal relationship between illicit drug use and other forms of criminal behavior. Complicating any examination of the link between illicit drug use and criminal behavior is the tendency to include tobacco use and alcohol in this equation. While these products all may involve some significant risk of criminal behavior, they are outside the scope of this report. To the extent possible, numbers attributed to the use and abuse of tobacco and alcohol will be removed from the analysis. The abuse of prescription drugs as a cause of criminal behavior was not excluded but few studies focused solely on this exposure.

METHODOLOGY

The major search engines used to identify articles are referenced below:

- ▶ Criminal Justice Periodicals
- ▶ National Criminal Justice Reference Service (NCJRS)
- ▶ Project Cork
- ▶ PsychInfo
- ▶ PubMed

Search terms used were broad and consisted of:

- ▶ "Crime" [MeSH] AND ("Street Drugs" [MeSH] OR "Designer Drugs" [MeSH])

Note that MeSH (Medical Subject Heading) refers to the medical coding system. (MeSH is the National Library of Medicine's controlled vocabulary thesaurus) All references identified this way were further reviewed to determine whether they actually tied the two concepts together. Frequently, the time-order sequence of the events was incorrect, or the article dealt with issues surrounding treatment, a subject deemed out of scope.

In addition to these systematic searches, Google Scholar was searched for the terms "drug use"; "attributable"; and "crime." Abstracts identified by either search were reviewed and categorized as to whether they were in scope or not. Articles identified as "potential hits" were obtained and read thoroughly to determine whether they actually captured some aspect of causation, and, more specifically, attributable risk. While a large number of articles were identified initially, this list was narrowed considerably when the study was examined in detail. After a second review, additional articles were eliminated due to lack of specific focus on the topic under study and several from the Google search were added. (See Table 1)

Table 1. Results of Literature Review

	Articles Identified in Electronic Search with Preliminary Manual Screen	Articles Identified from Initial Set as Quantitative	Articles in Final Set for Literature Review
Number of Articles	427	170	188

Articles in the final set for the literature review can be categorized in a number of ways. First, the distinction between those that discuss the causal connection between drugs and crime were identified. These articles typically had an odds ratio or relative risk as the main outcome type. For example, Martin and colleagues (Martin and Bryant 2001) used Arrestee Drug Abuse Monitoring (ADAM) data to test the hypothesis that gender differences existed between users of alcohol and illicit drugs who committed violent crimes. Although men were more likely than women to commit violent crimes after consuming alcohol and/or illicit drugs (OR= 1.58, $p < 0.001$), women were more likely to have consumed alcohol as opposed to other drugs before committing violent acts—5.59 compared with 1.61 for men. This suggests a stronger effect of alcohol on women than men. Gender was not a predictor of committing property crimes. (See also Harrison and Gfroerer 1992.)

In addition, articles that describe the drug–crime nexus analyzed using regression methods and that yielded regression parameters as estimates of the measure of association were grouped. Valdez and colleagues (Valdez, Kaplan et al. 2007) used 1992 Drug Use Forecasting (DUF) data from 24 major U.S. metropolitan areas to estimate the relationship between illegal drug use and violent crime. Those authors also included individual risk factors—including gender, race, and ethnicity; and community-level factors, including high school dropout rates, unemployment, households receiving welfare, and female head of household—as covariates in their model. Their results revealed a statistically significant *negative* relationship between drug use and violent crime (-0.544, $p < .001$). They concluded that structural conditions rather than individual characteristics (i.e., community factors) played a greater role in whether a person engaged in aggressive or violent behavior. Alcohol

use, on the other hand, was positively and significantly associated with violent crime, controlling for all other factors (0.174, $p < .001$) (see also Farabee, Joshi et al. 2001; and Vaughn, Fu et al. 2010).

Additionally, articles were categorized by type of substance being abused. Because of the high prevalence of *dual abusers*—i.e., people who abused both alcohol and drugs or who used multiple drugs—these articles frequently listed multiple drug use or drug and alcohol use as exposures. To the extent possible, alcohol as a sole cause of the criminal activity has been excluded as a subject of this literature review.

Articles often are categorized by the type of crime committed or type of drug abused. Because there are so few articles that discuss attributable risks, for the most part, all articles were included and categorized as "violent"; "property"; and "subjective" crimes concomitant with all drugs reported.

Articles were further subdivided into those that described youth behavior and the consequences of drug use for those individuals as adults and risk-taking behaviors most commonly associated with young drug users. For example, drug users are more likely to engage in unprotected sex or carry a weapon (whether or not it was used). These results may or may not be crimes in themselves, but they are treated separately for the purposes of this review. Where applicable, these articles are included in the literature review.

Finally, several articles discussed the use of drugs by the victim rather than by the perpetrator. Typically, these reflected a context involving date rape drugs, e.g., flunitrazepam (also known as Rohypnol or "ruphies"). Drug use by victims may place them in a situation—physically or emotionally—where they are more likely to be the target of a crime. Such situations occur, for example, when a person feels invulnerable and visits an area of town where violence predominates. These articles, unless they discussed drug use and crime in a more comprehensive way, were treated as out of scope.

Articles in scope can be further subdivided into those that treat the attributable risk as an *economic risk* or as a *person-level risk*. For example, the cost of all crime-related expenses, such as police staffing, loss of property, insurance premiums, lost wages of the perpetrator, and so on, can be summed. The numerator would be the proportion of these costs that are attributable to illicit drug use. Thus:

$$\text{Proportion of economic costs due to illicit drug use} = \frac{\Sigma (\text{all costs due to illicit drug crimes})}{\Sigma (\text{costs of all criminal activity})}$$

Alternately, the attributable risk of crime may be expressed as a proportion of all criminals. For example:

$$\frac{\Sigma (\text{all prisoners who attribute their crime to illicit drug use})}{\Sigma (\text{all prisoners(or arrestees).})}$$

These also may be derived for individual crimes, where both numerator and denominator are restricted to individuals who have committed a specific crime.

Articles that treat the attributable risk as an economic risk as well as those that treat it as a person-level risk are both clearly within the scope of this review and will be discussed separately. The intent of this literature review is to include all crimes committed after having consumed any illicit drug or after having abused a legal prescription drug. This

latter abuse could occur by taking more than the recommended dosage or by a non-prescription holder taking someone else's medication. These articles were not excluded, but there were few, if any, reports focusing on this type of illicit drug use. Alcohol, a major covariate of illicit drug use was difficult, if not impossible, to identify as a separate cause. Where separate analyses were conducted, the results of the illicit drug use were used. Many of these articles are included in the bibliography but are not the focus of this literature review.

REVIEW OF THE LITERATURE

In 1985, Goldstein (1985) wrote a seminal paper on drug use and crime referred to as "(o)ne of the most influential explanations of the causal connection between drug use and crime..." (Bennett and Holloway 2009). A great deal of the literature at that time focused on violent crime and the nexus with illegal drug use. In Philadelphia, for example, approximately 31 percent of all homicides committed by individuals under age 30 were attributed to illicit drug use (Friedman, Glassman et al. 2001). A study that followed heroin users in New York City for 15 years concluded that 40 percent died from homicide during that time period (Goldstein, Brownstein et al. 1992). Goldstein also cited anecdotal data, in the form of newspaper headlines, to bolster his argument that homicides are a proximal result of certain types of drug use.

Goldstein's Tripartite Model

From these examples and more, Goldstein posits the first arm of his tripartite model: *pharmacological aspects of intoxication*. In this part of the model, he suggests that the drugs which are primarily to blame are alcohol, stimulants, barbiturates, and PCP.

Goldstein's framework, while still "universally respected and widely considered the accepted means of explaining the connection between drug use and crime" (Bennett and Holloway 2009), has acknowledged shortcomings. Included among these are a lack of testable hypotheses, categories that may not be mutually exclusive, and a framework that does not account for social and individual characteristics separate from the drug use (Bennett and Holloway 2009).

Bennett and Holloway illustrated several ways in which the drug use may be peripheral to the crime itself. If a woman needed to support a drug habit, for example, and engaged in prostitution to obtain the funds to do so, that would demonstrate a direct relationship between illicit drug use and criminal behavior. However, if a woman used crack cocaine to reduce her inhibitions while engaging in prostitution, an activity she was already conducting, this relationship is considered a distal or peripheral cause. Similarly, if a man committed a robbery to obtain money to purchase drugs such as cocaine, that would illustrate a primary or proximal cause. If, however, he had already decided to commit the robbery but consumed drugs to give himself the courage to conduct the act, that would be a peripheral or proximal result. The key difference between the two scenarios is the motivation for committing the criminal act. In the first instance, the need to obtain the drug itself is the motivating factor, while in the second, the drug use is only peripheral to the criminal behavior.

Attempts to link opiates and marijuana usage to violent behaviors has been "largely discredited," according to Goldberg. In recognizing this trend, he also observed that, while ingestion of opiates is unlikely to lead to violence, irritability due to withdrawal from opiates may very well lead to violence. He cited the case of prostitutes who rob or assault their clients, attributing this behavior to withdrawal symptoms from heroin. Drugs also may act in the reverse direction, actually ameliorating feelings of violence; such drugs include tranquilizers and heroin (Goldstein 1985). The drug use also may affect either the perpetrator or the victim. A victim who is intoxicated may appear to be an easy mark, making him or her more susceptible to robbery or mugging (Goldstein 1985).

The second arm of the Goldstein model is the *economic compulsive model*. This arm emphasizes *economic crimes*—i.e., crimes committed by a drug user to obtain the resources to purchase drugs. Violence may be a side effect of the criminal activity, but it is not the main motivation for the crime. Such crimes may include shoplifting, prostitution, selling drugs, robbery, larceny, and theft.

The third arm of the categorization, referred to as *systemic*, includes the violence intrinsic to the act of engaging in illicit drug activity. Such crimes may include disputes over territory by rival gangs, robberies of drug dealers, elimination of informers, disputes over drugs and/or paraphernalia, and punishment for selling drugs that have been adulterated or tampered with.

In addition to this third model, some researchers have suggested adding a fourth: those crimes that result directly from drug commerce. These would include drug crimes such as manufacture, trafficking, direct sales, and so on (e.g., Collins, Lapsley et al. 2006).

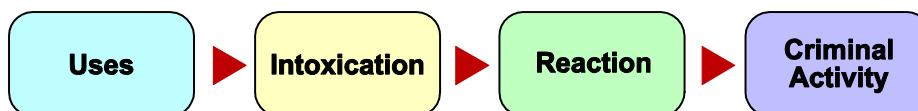
Collins and Colleagues in Australia

In reviewing the literature, it is clear that three countries are much further along in their empirical estimates of drug use than the United States. In Australia, Collins and colleagues (Collins and Lapsley 2008) have written several treatises taking Goldstein's initial framework and expanding it. They propose the following categories:

1. *Crimes Related to Intoxication*. Collins and Lapsley (2008) describe crimes associated with intoxication, such as violent crimes that may occur as the result of the psychopharmacological alteration in personality and inhibition. The authors explain:

In the first version of this model [referred to as the pharmacological model], intoxication leads to crimes that would not have taken place without the influence of PAS (psychoactive substances). In the second version [see Figure 2], PAS are a tool (in the same way as a weapon or disguise) to achieve a premeditated goal.

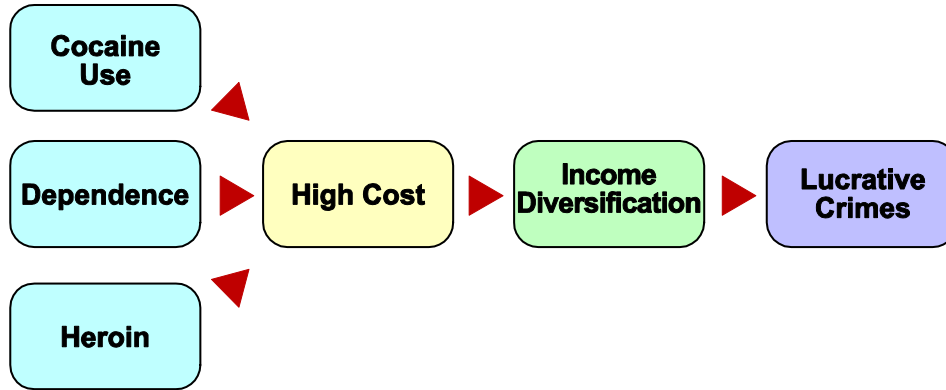
Figure 1. Illustration of Psychopharmacological Model



Source: Collins, Lapsley et al. 2006.

2. *Crimes Related to Dependency*. These links incorporate the economic aspects of illicit drug use. The authors report: "The crimes committed by some users who are no longer able to control their consumption can be explained, at least in part, by their need to obtain money to buy the drugs to which they have become addicted." (see Figure 2)

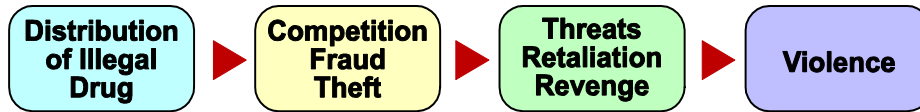
Figure 2. Illustration of Dependency Model



Source: Collins, Lapsley et al. 2006.

3. *Crimes Related to the Distribution System for Illegal PAS (referred to as the Systemic Model)*. Crimes in this category are related to the distribution of illegal drugs, such as "turf wars." Also in this category are threats, retaliation, and revenge. (see Figure 3)

Figure 3. Illustration of Systemic Model



Source: Collins, Lapsley et al. 2006.

4. *Drug Related Crimes as Defined by Law*. The fourth model added by these authors is the area referred to as "defined by law." This group of crimes includes possession, consumption, growing or manufacturing, smuggling, and trafficking. Because these are defined as "drug crimes," 100 percent of each is considered "drug attributable" and therefore will not be reviewed further.

In expanding on the discussion of the systemic model (Figure 3), Collins and Lapsley describe two main components:

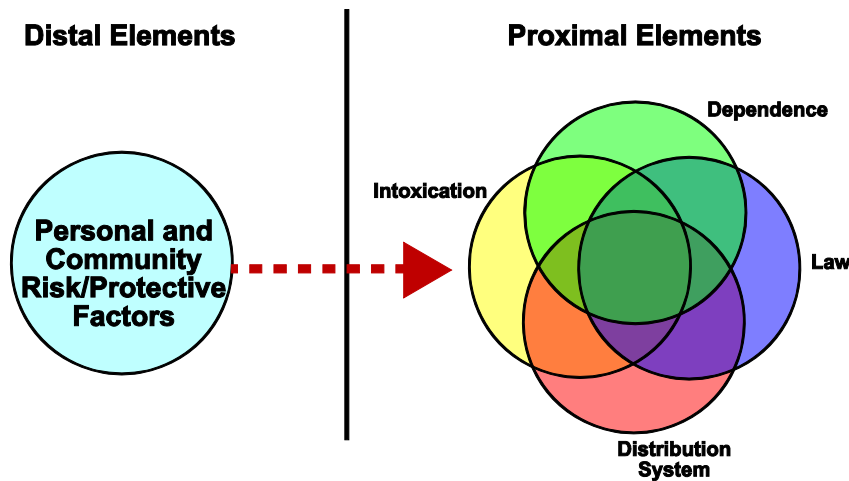
- ▶ Offending behavior associated with a drug market; and
- ▶ Drug-defined crimes.

The former is not relevant to estimating attributable fractions as this requires a *causal* component. For the latter, drug defined crimes fraction theoretically can be attributed on the basis that the crime would not have occurred if the activity had been defined as legal.

Collins and Lapsley suggest that attributable crimes are crimes that occur because of the drug use and not because the drug use is illegal. In addition to these categories of crimes, the authors draw the distinction between proximal and distal links. They argue that

Goldstein's model essentially establishes a framework for the proximal links. The more distant or distal links are those in which drug use permits a change in behavior which allows the user to commit acts of crime that he or she would otherwise not commit. They refer to this as the *biopsychosocial model* and include crimes such as deviant behavior, sexual experimentation, dangerous driving, and other risk-taking behaviors. Figure 4 illustrates the biopsychosocial model, essentially integrating aspects of all models.

Figure 4. Integration of All Models



Source: Collins, Lapsley et al. 2006.

Attributable risk is a mathematical calculation that attempts to answer the question, "How much of a known causal agent is responsible for a given outcome, or how much of a given outcome (e.g., homicide) is due to illicit drug use?" The literature reviewed is concerned with identifying the proportion of crimes that are due to or attributable to drug use. Because drug use is commonly associated with other risk-taking behaviors and other risks, such as poverty, these associations are not easy to isolate.

Calculating Attributable Risks: Canadian and Australian Studies

Two main studies have applied a methodology for calculating attributable risks on a large scale, one conducted in Canada (Pernanon, Cousineau et al. 2002; Pérez-Gómez 2004) and the other in Australia (Collins and Lapsley, 2008). Both utilized questionnaires given to inmates to obtain their opinion of the relatedness of alcohol or drug use in the commission of their crimes. The Australian study also included an economic analysis. It is important to note that these studies have not calculated population denominators, i.e., the denominators are based on the total crimes committed and not the total population. As a result, inferences about community risks of illicit drug use and crime impossible to estimate from these studies alone.

Pérez-Gómez, in a report written for the Inter-American Drug Abuse Control Commission (CICAD), details a methodology for calculating attributable fractions for crimes related to drug abuse (Pérez-Gómez 2004). Pérez-Gómez discusses the Goldstein (1985) model and describes the first three levels (those originally described by Goldstein) as "causal." In reviewing the description of attributable risk as calculated by Pernanon et al. using

Canadian data (Pernanen, Cousineau et al. 2002), Pérez-Goméz describes the following steps:

1. The proportion of crimes attributable to drugs or alcohol requires:
 - a. That the detainee declare that (s)he was intoxicated while committing the crime.
 - b. That (s)he declare that (s)he would not have committed the crime if (s)he had not been intoxicated.
2. The proportion also requires:
 - a. That (s)he declare that (s)he committed the crime to obtain drugs or alcohol.
 - b. That (s)he be assessed as a "dependent" on a graduated scale.

These two items are added together, taking into account the possibility of double counts. Outcomes are grouped in multiples of five (5) to "avoid giving a false idea of accuracy." Using these methods, the author comes to the following conclusions:

- ▶ 40–50 percent of crimes committed in Canada are related to drugs and alcohol;
- ▶ 10–15 percent are associated solely with psychoactive substances (PAS);
- ▶ 15–20 percent are associated solely with alcohol;
- ▶ 50 percent of violent crimes are attributable to alcohol and drugs, with 5 percent due to drugs alone, 28 percent to alcohol alone, and the remainder to a combination of the two;
- ▶ 50 percent of property crimes are due to drug and alcohol abuse, 11 percent to alcohol alone, 20 percent to drugs alone, and 19 percent to a combination of the two.

When minor crimes are included, the authors estimate that 64 percent of crimes are due to alcohol and/or drug abuse. They also discuss the obvious potential shortcomings of this methodology—especially recall bias, lack of longitudinal data, and outright lying.

Collins and colleagues (Collins, Lapsley et al. 2006) rely on self-reported survey data from inmates in Australia, similar to Pernanen et al. Collins's model is based on two primary sources of data: Drug Use Monitoring in Australia (DUMA) and Drug Use of Career Offenders (DUCO).

In the DUMA survey, detainees were asked to indicate whether they felt their offenses were drug related and to indicate the proportion of the crime which they felt was related to their drug use: all of it, most of it, about half of it, some of it, or none of it. DUMA data are reported quarterly for adult perpetrators who have been taken to the police station because of an arrest. One part of DUMA requires urinalysis testing for illicit drugs and other substances (e.g., alcohol). The DUMA questionnaire asks perpetrators whether they had been using drugs at the time of their arrest.

DUCO was a one-time survey of adult offenders (males were surveyed in 2002; females in 2003). One question in this study asked whether they were intoxicated when they committed their most serious offense.

For the DUMA calculations, numerators were calculated by taking the total number of crimes of a certain type (committed while a person was using illicit substances) and dividing it by the total number of such offenses. Crimes were ranked, and an offender could be placed in multiple crime categories, depending on the nature of the person's offenses. This is not a person-based estimate.

$$\text{The drug-attributable fraction} = \frac{\Sigma(\text{all crimes reported as attributable to drug use})}{\Sigma(\text{all reported crimes})}$$

For DUCO data, rates were adjusted using census data as estimators of the population in order to obtain population-based estimates. Crimes were categorized into eight main categories:

1. Violent offenses
2. Property offenses
3. Drug offenses
4. Drink [drunk] driving
5. Traffic offenses
6. Disorder¹
7. Breaches²
8. Other crimes

$$\text{The drug-attributable fraction} = \frac{\Sigma(\text{population based estimate of drug attributable crimes})}{\Sigma(\text{all reported crimes})}$$

For females, estimates for "less serious" offenses were not possible, due to small numbers.

Moreover, Collins and colleagues also present the attributable fractions for a variety of crimes by whether the criminal was a convicted prisoner or detainee. A follow-up report provides more information on these statistics, including upper and lower bounds on these numbers (Collins and Lapsley, 2008). In an earlier publication, Collins and colleagues set forth their calculations of crimes attributable to drug use fractions based on these methods. Those results are presented in Table 2 on the following page (Collins, Lapsley et al. 2006).

It is important to note that by their very definitions, drug-related and drunk/drink driving offenses require a drug-use component and therefore are 100 percent attributable to either drug or alcohol use.

Stevens and colleagues conducted a study in Canada using essentially the same model as Collins and Lapsley. They also report attributable fractions of crime caused by drug use in Canada (Stevens, Trace et al. 2005). They initially quote an American study stating that "Statistics indicate that 60 percent to 80 percent of all crime is drug related" (Deitch, Koutsenok et al. 2000) and provide additional explanation as to why they believe that these estimates are too high. Essentially, they argue, that these statistics reflect the percentage of individuals who test positive for drugs upon arrest rather than examining the causal relationship. In contrast to the American estimates for drug attributable crime, the Canadian estimates range from 10 to 22 percent. (See also Degenhardt, Hallam et al. 2009).

¹ *Disorders* include public order offenses, such as public drunkenness.

² *Breaches* include offenses against justice procedures, offenses against government security, and offenses against governmental operations. Resisting arrest is one example of a breach.

Table 2. Crime-Attributable Percentages for Prisoners and Detainees, by Category of Crime, Australia, 2001

	Violent	Property	Drug Offenses	Traffic Offense	Breaches	Disorder	Drink Driving	Other
Prisoners								
Illicit Drugs	10.8	23.4	100	8.4	15.2	6.3	0	15.9
Alcohol	11.0	4.1	0	12.8	12.7	12.6	100	11.4
Both	12.6	9.4	0	6.8	10.8	6.3	0	17.4
Neither	65.5	63.1	0	72.0	61.4	74.8	0	55.3
Total	34.5	36.9	100	28.0	38.6	25.2	100	44.7
Police Detainees								
Illicit Drugs	27	43	100	17	16	9	0	8
Alcohol	7	2	0	2	5	15	100	4
Both	3	1	0	0	0	0	0	2
Neither	63	54	0	81	79	76	0	86
Total	37	46	100	19	21	24	100	14

Source: Collins, Lapsley et al. 2006.

Rehm and colleagues also describe in great detail the methodology for the Canadian study. They include attributable fractions for all possible outcomes of illicit drug use, including mortality, morbidity, disability, and crime (Rehm, Baliunas et al. 2006).

The Drug Harm Index (Great Britain)

The Drug Harm Index, created by MacDonald, Tinsley, et al. (2005), is based on a variety of "harms," including:

- ▶ Domestic burglaries
- ▶ Other thefts
- ▶ Bicycle theft
- ▶ Burglary
- ▶ Theft from vehicles
- ▶ New Hepatitis B Virus Cases (IVDU)
- ▶ Neonatal problems
- ▶ Hospital and mental health bed days (due to drugs)
- ▶ Theft of domestic vehicle
- ▶ Robbery
- ▶ Shoplifting
- ▶ Prescription drug problem
- ▶ New HIV/AIDS cases
- ▶ New Hepatitis C Virus Cases (IVDU)
- ▶ Hospital overdose episodes
- ▶ Drug dealing

One significant difference between this formulation and the Australian and Canadian examples is that it is a summary of all harms and not just crimes. It includes risks of sexually transmitted diseases; risks of diseases which are spread by intravenous drug use (IVDU); and more distal effects, such as birth defects which may be associated with a mother ingesting drugs while pregnant. A percentage of harm from each of these categories is calculated annually and then summed by year. The maximum value is 100, so that these

represent relative, not absolute, harms. This approach, while intriguing, does not answer the main question of interest here, which is: What proportion of crime is caused by (or attributable to) illicit drug use?

In addition to the above complexities, it is important to note that some of the reports on illicit drug use and crime discuss the relationship in economic terms, while others report the relationship in more epidemiologic or per-person terms.

Costs of Drug Use and Crime in Canada

In an economic analysis of the impact of alcohol and drug use on crimes, Single (1998) examined costs incurred in Canada from publicly available data. In this case, the attributable risk, perhaps more accurately called the attributable costs, is the costs incurred, both directly and indirectly, from crimes caused by illicit drug use divided by the costs incurred both directly and indirectly from all crimes.

So, attributable costs are calculated as:

$$\frac{\Sigma (\text{all costs incurred due to the commission of illicit drug crimes})}{\Sigma (\text{all costs incurred for all crimes committed})}$$

In adding costs from police, court, corrections, and customs, Single estimates that the cost to law enforcement for drug users is \$14,077 per 1,000 persons. Specifically excluded are costs due to:

- ▶ Health care, including treatment, morbidity, mortality, residential care, etc;
- ▶ Direct costs to the workplace, including drug testing;
- ▶ Social welfare costs such as workers compensation;
- ▶ Direct costs, including research, training, and averting drug use behaviors;
- ▶ Other direct costs, such as fire, traffic, and reduced property values; and
- ▶ Indirect costs such as lost workdays.

Single (1998) estimates that the law enforcement costs are 29 percent of the total of all costs incurred due to drug and alcohol abuse. Illicit drug use accounts for approximately 7.4 percent of this cost (40.8 percent due to alcohol and 51.8 percent due to tobacco).

As the author points out, these estimates include both avoidable costs and unavoidable costs. If law enforcement were to stop arresting individuals for cannabis possession, for example, it is likely that those costs would be redirected toward another means of law enforcement and would not result in a net savings.

U.S. Studies³

Few national studies have examined the proportion of crimes attributable to illicit drug use in the United States. Having acknowledged this, there is a long history of work that has attempted to calculate the cost of illicit drug use to society, including crime costs. Several analyses of economic costs of alcohol and drug abuse date back to the 1980s. In one of the first comprehensive U.S. studies, Harwood, Napolitano, and colleagues (1984) calculated

³ See also articles discussed on pages 3-4.

economic costs of alcohol and drug use. This study was updated in 1992, 1998, and 2004 (Harwood, et al. 1992; Harwood et al. 1998; ONDCP 2004).

Harwood borrowed and expanded the methodology of Rice (1991) in calculating drug-attributable costs to society. (Harwood et al. 1992) Rice's classic study estimated these costs for alcohol and drug users. (Rice et al. 1991)

In estimating the loss of income due to drug abuse, Rice uses the following equation:

$$\text{\$LOSS} = \sum \sum \sum (\text{POP}_{ij} * \text{PREV}_{ijk})(b_{ijk} * Y_{ij})$$

Where \$LOSS=the aggregate loss in income due to drug abuse

POP_{ij}-the size of the population by age and sex

PREV_{ijk}=the prevalence rate by age, sex and disorder

b_{ijk}=the percentage loss per individual with drug abuse by age, sex and race

Y_{ij}=the average income by age and sex for individuals without the disorders

Rice described her own methodology as a "human capital" approach, placing value on the activities that a person does, as opposed to a "willingness to pay" or demographic approach. Both compare dollar costs; the former on dollars attributed to activities in which a person may be engaged, such as keeping house, whereas the latter would apply a dollar figure only where services are available in the marketplace. Included in her costs calculations are amounts for treatment and support of a drug habit (Table 3); morbidity and mortality (Table 4) and "other costs" (Table 5). Included in these other costs are expenditures for police, lawyers and property destruction.

Table 3. Components of the Health Care Cost Estimate

Cost Components	
<i>I. Community-Based Specialty Treatment</i>	
<i>II. Federally-Provided Specialty Treatment</i>	
	Department of Defense
	Indian Health Services
	Bureau of Prisons
	Department of Veterans Affairs
<i>III. Health Infrastructure and Support</i>	
	Federal Prevention
	State and Local Prevention
	Training
	Prevention Research
	Treatment Research
<i>IV. Medical Consequences</i>	
	Hospital and Ambulatory Care Costs
	Drug-Exposed Infants
	Tuberculosis
	HIV/AIDS
	Hepatitis B and C
	Crime Victim Health Care Costs
	Health Insurance Information

Source: ONDCP, 2004

Table 4. Components of the Productivity Loss Estimate

Cost Components
<ul style="list-style-type: none"> • Premature Death • Drug-Abuse Related Illness • Institutionalization/Hospitalization • Productivity Loss of Victims of Crime • Incarceration • Crime Careers

Source: ONDCP, 2004

Table 5. Components of the Cost of Other Effects Estimate

Cost Components
<i>I. Criminal Justice System and Other Public Costs</i>
State and Local Police Protection
State and Local Legal Adjudication
State and Federal Corrections
Local Corrections
Federal Spending to Reduce Supply
<i>II. Private Costs</i>
Private Legal Defense
Property Damage for Victims of Crime
<i>III. Social Welfare</i>

Source: ONDCP, 2004.

Rice states that:

(f)or each component, the costs attributed to drug use are estimated employing the offense-specific methodology developed by Cruze and associates (1981) and Harwood and associates (1984) in which causal factors that represent the proportion of offenses or arrests considered to be due to drug abuse are applied to the number of known offenses and then multiplied by the cost per offense. (Rice et al. 1991, p. 14)

Rice herself, updates the dollar figures for costs through 1990, but not the risks themselves in her 1993 publication. (Rice, 1993). The 1998 study (Harwood et al. 1998) used the attributable risks based on those developed by Rice in 1990, and updated them to include risks that did not exist in the early 1980, such as risks due to HIV/AIDS. The Harwood study conducted in 2002 also updated certain risks for: federal government spending; justice statistics, premature death and costs of treating HIV/AIDS. (Harwood et al. 2002). In estimating each of these costs and totaling them over time, the authors estimated that the total societal costs of drug abuse were \$180.8 billion in 2002. Harwood et al. freely acknowledges the short-comings of the methodology. In the updated study, the authors "did not revisit" the issue of attributable risks developed in the 1998 study. (Harwood et al. 2002)

While there has been much debate over what costs should be included and the amount of those costs, little attention has been paid to the characterization of those costs as attributable. Cohen (1999), in his critique of the 1998 study, states that

...the authors do not have estimates of the relative risks of criminal activity for alcohol or drug use *controlling* for other factors. Instead, they have estimated the number of crimes in which alcohol or drug abuse is somehow implicated, generally using self-reported assessments by prisoners. Thus, instead of calculating a relative risk for each individual, drugs or alcohol are likely to be "implicated" in all offenses where a perpetrator has a serious alcohol/drug abuse problem. (*Emphasis in original.*)

Cohen goes on to state "(i)f we were to believe the Harwood *et al.* (1998) estimates, 30% of homicides are attributed to alcohol abuse and another 15.8% to drug abuse....Taken literally, one could conclude that if we do away with alcohol and drug abuse overnight, we would cut our murder rate in half."

Again, the primary criticism is the methodology for obtaining attributable fractions. Cohen, like Stevens above, believe that the attribution given to drug use and abuse is too high and is based on the mere presence of drugs in an offender and not proportion that the substance may have had in causing the criminal behavior. (Cohen, 1999; Stevens et al. 2005).

In a more recent study, the authors adopted the attributable fraction methodology from Harwood et al. (1998) "largely for consistency sake". (Miller et al. 2006). They chose not to revisit the methodological approach and merely applied it to a new set of crimes. While their primary focus was on violent crimes, they calculated costs of drug-attributable crime at \$37,536 (in millions) in 2002 U.S. dollars.

Smaller-Scale U.S. Studies

Aside from the articles referenced above, are variety of smaller-scale studies examining [the relationship of drugs to specific crimes and/or specific cities were identified. For example, a study published by Johnson and colleagues found a correlation of 0.53 between a drug use scale and a delinquency scale based on the National Youth Survey conducted in 1978. (Johnson et al. 1991) Other studies that did not directly establish causation reported that the absence of drug use (e.g., heroin use) leads to a decrease in criminal activity (Anglin and Speckart 1988). Similarly, in a later study conducted by the Drug Abuse Research Center (and based on narcotic use only), Anglin and Perrochet (1998) reported that crime days were 10 times more frequent when a person was addicted than when not addicted to drugs.

One study conducted in the United States (French, McGeary et al. 2000) examined data collected from the National Household Surveys on Drug Abuse (NHSDA, 1993, 1995), calculating drug-attributable fractions for both property crimes and "predatory" crimes. Property crimes included stealing (any property other than a car), damaging property, stealing a car, or breaking into a home or building. Predatory crimes included getting into a physical fight, hurting someone badly enough to require medical care, and armed robbery. Drug users were divided into chronic drug users (CDU) and non-chronic drug users (NCDU). Table 6 summarizes the authors findings, namely that there was a definitive

increase in both types of crimes for chronic and non-chronic drug users, with chronic drug users consistently more likely to commit both types of crimes.

Table 6. Drug-Attributable Fractions for Property Crimes and Predatory Crimes in the United States

	Measure	Property Crime	Predatory Crime
1993	MALES		
	CDU ^a	23.6%	12.1%
	NCDU	11.3%	7.7%
	FEMALES		
	CDU	30.6%	21.8%
	NCDU	9.9%	8.0%
1995	MALES		
	CDU	10.1%	15.4%
	NCDU	6.5%	8%
	FEMALES		
	CDU	19.1%	17.7%
	NCDU	5.2%	4.7%

^a CDU=chronic drug users; NDU=non-drug users; NCDU=non-chronic drug users.

Source: French, McGeary et al. 2000.

The authors conclude that chronic drug users were involved in crime 30 percent more often than non-drug users and two to three times more often than non-chronic drug users. These results were consistent across genders, age-groups, and year of survey, lending importance to the conclusions. Similarly to the Canadian and Australian studies, no population denominators are presented.

A study conducted using crime data in Florida estimated that chronic drug users (CDUs) were 1.7 times more likely to be a victim of a crime and 2.5 times more likely to be the perpetrator of a crime than a non-drug user (NDU). Again, these estimates are more akin to odds ratios than attributable risks. The authors conclude that "CDUs are 73.11 percent more likely to be associated with any crime relative to NDUs, and the total cost of crime is 3.46 times higher for the average CDU." (French, McCollister et al. 2004.)

All of the remaining studies conducted in the United States are summarized in Appendix B.

SUMMARY

Very few studies have tried to examine the issue of the fraction of crimes that are attributable to drug use. Those that have estimated drug-attributable fractions relied on surveys of arrestees, detainees, and prisoners who respond to questions about whether they attributed their own behavior to the drug or alcohol used prior to the crime. This review presents several theories of the causal relationship between illicit drug use and crime and discusses data from the surveys that do calculate attributable risks. Several of the authors cited, openly acknowledge the limitations of their calculation of attributable risk and many rely on the 1998 study conducted by Harwood, et al. Given the variety of methodologies and outcomes presented, a uniform approach is desirable and would benefit research aimed at

accurately estimating the proportion of crimes that can be attributed to drug use and abuse. Economic studies, too, can benefit from an accurate method for better estimating the proportion of crime that is attributable to drug use.

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Appendix A: Bibliography

APPENDIX A: BIBLIOGRAPHY

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Illicit Drug Use and Criminal Behavior

Appendix B: Summary of U.S. Drug Use and Crime



Appendix B. Summary of U.S. Studies on Drug Use and Crime

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Amos, C., Peters, R.J., Jr., et al. (2008). The link between recent sexual abuse and drug use among African American male college students: It's not just a female problem in and around campus. <i>Journal of Psychoactive Drugs</i> 40(2):161–166.					College students (18–24 yrs)	M	African American			181	Males who reported sexual abuse in or around campus were significantly more likely to have used any drug in the past 30 days (88% vs. 56% $p < .05$) and past year (100% vs. 71%, $p < .05$).
Anderson, T.L., Kavanaugh, P.R., et al. (2007). Exploring the Drugs–Crime Connection within the Electronic Dance Music and Hip-Hop Nightclub Scenes. Rockville, MD: National Institute of Justice:1–151	2007	General Info	General Info	Quantitative							Six major kinds of crime and victimization at electronic dance music and hip hop nightclub events were uncovered: illegal drug use (marijuana, ecstasy, cocaine, crystal methamphetamine, miscellaneous hallucinogens, and prescription drugs/narcotics), illegal drug sales (mostly club drugs but also cocaine and marijuana), property crime (theft of personal effects), vandalism (major and minor inside and outside the clubs), physical assault (minor and major), and sexual assault and harassment (both major and minor varieties).

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Anglin, M.D., and Speckhart, G. (1988). Narcotics use and crime: A multisample, multimethod analysis. <i>Criminology</i> 26(2):197–233.						M	370 Anglos, 301 Chicanos	methadone maintenance patients drawn from 7 CA counties		671	Involvement in property crime generally precedes the addiction career, but after addiction occurs, addicts' highly elevated level of property crime appears to be regulated by similarly high levels of narcotics use. During periods of curtailed narcotics use as a result of treatment, property crime is significantly reduced and levels become extremely low after the addiction career ends.
Ball, J., Shaffer, J.W., et al. (1983). The day to day criminality of heroin addicts in Baltimore: A study in the continuity of offense rates. <i>Drug and Alcohol Dependence</i> 12(1):19–142.						M	195 Black, 159 Whites	Heroin addicts living in Baltimore		354	It was found that the start of addiction was associated with a high level of criminality (255 composite crime-days per year) and that this high rate continued over numerous subsequent periods of addiction. Property theft was the most common type of crime, followed by drug sales, other offences, con games, and violent offences. In contrast to the addiction periods, criminality decreased over successive non-addiction periods. Thus, the composite crime rate (82 composite crime days per year) for the first non-addiction period was only 32% of the rate of the first addiction period, and this lower criminality rate decreased markedly thereafter.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Baumer, E. (1994). Poverty, crack, and crime: A cross-city analysis. <i>Journal of Research in Crime and Delinquency</i> 31(3):311.	1994	Violent Crime	Crack/Cocaine	Quantitative					Cities participating in the Drug Use Forecasting program	24 cities	Multivariate analyses reveal that arrestee cocaine use has a positive and significant effect on city robbery rates; its effect on homicide was more modest, and no effect was found for burglary.
Benson, B.L., and Rasmussen, D.W. (1991). Relationship between illicit drug enforcement policy and property crimes. <i>Contemporary Policy Issues</i> 9(4).								1986–1988		FL's 67 counties	The resource reallocations accompanying strong drug law enforcement lead to more property crime.
Benson, B.L., Kim, I., et al. (1992). Is property crime caused by drug use or by drug enforcement policy? <i>Applied Economics</i> 24(7): 679.								1986–1987		FL's 67 counties	Drug enforcement policies do appear to cause property crime; the population of drug offenders is not the same as that of property criminals.
Black, M.M., and Ricardo, I.B. (1994). Drug use, drug trafficking, and weapon carrying among low-income, African American, early adolescent boys. <i>Pediatrics</i> 93(6 Pt 2): 1065–1072.					9–15 yrs	M	African American	Low-income, urban		quant. phase: 192; qual. phase: 12	Boys involved in drug activities or weapon carrying often were involved in other high-risk activities (cigarette and alcohol use, school failure, and expulsion).

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Buss, T.F., Abdu, R., et al. (1995). Alcohol, drugs, and urban violence in a small city trauma center. <i>Journal of Substance Abuse Treatment</i> 12(2):75–83.					18+			Inpatients		131 phone interviews; 233 personal interviews	Half of trauma patients used alcohol or drugs when attacked. Victims said their attackers were abusing drugs and alcohol (60%). One-third (34.4%) reported that they and their attacker were on drugs or alcohol. One-fourth (24.5%) were not high but attackers were. Only 12.2% were drinking or on drugs while assaulted by a sober attacker.
Centers for Disease Control and Prevention (CDC) (2005). Anhydrous ammonia thefts and releases associated with illicit methamphetamine production, 16 states, January 2000–June 2004. <i>MMWR Morbidity and Mortality Weekly Report</i> 54(14):359–361.								Data about public health consequences (i.e., morbidity, mortality, and evacuations) of hazardous substance-release events	January 1, 2000–June 30, 2004	Data from 16 state health departments	Of the 40,349 events reported to the Hazardous Substances Emergency Surveillance system during January 1, 2000–June 30, 2004, 1,791 (4%) were associated with illicit meth production. Of the 1,791 meth events, at least 164 (9%) were known to have been caused by anhydrous ammonia theft with the intention of meth production.
Chilakapati, V.S., Duncan, D.F., et al. (2003). A case-control analysis of felony convictions among recreational drug users. <i>Psychological Reports</i> 93(2):365–370.	2003	Economic Analysis	Felony	Quantitative				Self-identified drug users	U.S. citizens	704	In all, 11% reported a drug-related felony conviction and 7% a non-drug-related felony conviction. Those with a drug-related felony reported using marijuana less often and depressants more often than did controls; those with non-drug-related felony reported less hallucinogen use, and more of them reported cocaine use in the past year.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Chong, J. (1998). Crime indicators for alcohol and drug abuse. <i>Criminal Justice and Behavior</i> 25(3): 283–305.	1998	General Info		Quantitative				Used UCR data from AZ; 1988–1993			When only higher (i.e., 0.5 or greater) correlations were examined, violent crimes (i.e., murder and assault) correlated with alcohol-related offenses, as well as with drug possession and sale offenses. A principal component analysis found that prostitution and commercialized vice, sale of drugs, possession of drugs, and theft offenses loaded heavily on the drug factor. Males showed an additional loading (albeit comparatively weak) on murder and nonnegligent manslaughter. A surprising finding was the absence of direct evidence linking drug use with violence for females.
Corman, H. and H.N. Mocan (2000). A time-series analysis of crime, deterrence, and drug abuse in New York City. <i>American Economic Review</i> 90(3):584–604.	2000	General Info	Focused on murder, felonious assault, robbery, burglary and motor-vehicle theft	Quantitative				Records from NYPD	Data from Jan 1970–Dec 1996		We find no significant relationships between our drug-use measures and the violent crimes of felonious assault and murder, or between drug use and motor-vehicle thefts. On the other hand, we find a positive relationship between drug use and robberies and burglaries.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Crimmins, S.M., Cleary, S.D., et al. (2000). Trauma, drugs and violence among Juvenile offenders. <i>Journal of Psychoactive Drugs</i> 32(1):43–54.	2000	Violent Crime	Juvenile	Quantitative	Ages 12–20 (M=16)	88% male	58% Black, 21% Hispanic, 8% White, 9% multi/biracial, 3% other, 1% unable to report			414	Marijuana use was most strongly associated with witnessing a shooting or stabbing outside the home and witnessing a killing; risks for experiencing a traumatic event were 3–4 times more likely among cocaine users than non-cocaine users.
Cross, J.C., Johnson, B.D., et al. (2001). Supporting the habit: Income generation activities of frequent crack users compared with frequent users of other hard drugs. <i>Drug and Alcohol Dependence</i> 64(2):191–201.	2001	General Info	Crack/Cocaine	Quantitative		58% M	African American	Current users of sellers of cocaine powder, crack, or heroin	Recruited from central Harlem, NYC	602	Frequent crack users and frequent users of multiple drugs were far more likely to have non-drug illegal income-generating activities than frequent users of cocaine or of heroin. There was a higher odds ratio for participation in non-drug illegal income-generating activities by both frequent crack users (11.89) and frequent multiple drug users (20.01).
Davis, N., Moss, H., et al. (1996). Neighborhood crime rates among drug abusing and non-drug abusing families. <i>Journal of Child & Adolescent Substance Abuse</i> 5(4):1–14.	1996	General Info		Quantitative						239 families	After controlling for SES, ethnicity, and domicile, drug use rates were not associated with neighborhood crime rates.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Dawkins, M.P. (1997). Drug use and violent crime among adolescents. <i>Adolescence</i> 32(126): 395–405.	1997	Juvenile		Quantitative		M			Offenders at a public juvenile facility	312	Strong associations were found between alcohol use and crimes involving violence. Marijuana use correlated with 12 of the 21 offenses studied; it also strongly associated with several minor, nonviolent offenses. Alcohol is a more important correlate of criminal offenses than other substances.
De La Rosa, M., Rugh, D., et al. (2006). An analysis of risk domains associated with drug transitions of active Latino gang members. <i>Journal of Addictive Diseases</i> 25(4):81–90.	2006	Gangs		Quantitative	Avg age of 27		Hispanic		Gang members in Lawrence, MA	76	Individual factors such as drug dealing, alcohol use, criminal activity, and aggressive or sexual behaviors were not found to be significantly related to the number of drug-type transitions experienced by the gang members in this study group.
Dembo, R., Williams, L., et al. (1990). Examination of the relationships among drug use, emotional/psychological problems, and crime among youth entering a Juvenile detention center. <i>International Journal of the Addictions</i> 25(11):1301–1340.	1990	Juvenile	Multi-Drug Misuse	Quantitative	10–18 yrs	72% M	51% White, 42% Black, 6% Hispanic		Youth entering juvenile detention facility in southeastern city	399	Recent users of marijuana/hashish and cocaine had higher rates of referral to Juvenile court for property and drug offenses than nonusers.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Dembo, R., Williams, L., et al. (1991). A longitudinal study of the relationships among marijuana/hashish use, cocaine use and delinquency in a cohort of high risk youth. <i>Journal of Drug Issues</i> 21(2):271–312.	1991	Juvenile		Quantitative	Avg age of 15	72% M	51% White, 42% Black	Youth from juvenile detention facility in FL		399	Youth more involved with marijuana at first interview reported significantly more participation in general theft crimes and drug sales in the previous year than youth not involved. Youth who were cocaine positive at first interview were more likely to be referred/arrested for property crimes in the 18-month follow-up period.
Dembo, R., Williams, L., et al. (1993). Recidivism in a cohort of Juvenile detainees: A 3 1/2-year follow-up. <i>International Journal of the Addictions</i> 28(7):631–658.	1993	Juvenile		Quantitative	10–18	283 M, 113 F	164 Black, 23 Hispanic, 202 White, 7 other	Florida residents, admitted to regional detention center		396	During the 42-month follow-up, 56% of youth had at least one referral/arrest for a property felony, 43% for a property misdemeanor offense, 26% for a drug felony charge, 13% for a drug misdemeanor charge, 34% for a violent felony, 31% for a violent misdemeanor, and 23% for a public disorder misdemeanor. Cocaine-positive youth had higher referral/arrest rates than cocaine-negative youth for property felony and property misdemeanor offenses.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Desimone, J. (2001). The effect of cocaine prices on crime. <i>Economic Inquiry</i> 39(4): 627–643.	2001	Economic Analysis	Crack/ Cocaine	Quantitative	16–24 & 25–34	M & F	Black, Hispanic, White	Married		342 (rape & arrest), 350 (other variables)	The primary conclusion of this analysis is that in the current regime of cocaine illegality, exogenous increases in cocaine prices will reduce crime. Results imply a causal relationship between cocaine use and crime. They also imply that the introduction of crack increased property crime in proportions comparable to those of the violent crime increases.
El-Bassel, N., Gilbert, L., et al. (2005). Relationship between drug abuse and intimate partner violence: A longitudinal study among women receiving methadone. <i>American Journal of Public Health</i> 95(3):465–470.					18–55 yrs	F	48% Latina, 31% Black, 21% White			416	Women who reported frequent crack use at wave 2 were more likely than non-drug-using women to report intimate partner violence (IPV) at wave 3 (odds ratio [OR]=4.4; 95% confidence interval [CI]=2.1, 9.1; P<.01), and frequent marijuana users at wave 2 were more likely than non-drug users to report IPV at wave 3 (OR=4.5; 95% CI=2.4, 8.4; P<.01). Also, women who reported IPV at wave 2 were more likely than women who did not to indicate frequent heroin use at wave 3 (OR=2.7; 95% CI=1.1, 6.5; P=.04). Our findings suggest that the relationship between frequent drug use and IPV is bidirectional and varies by type of drug.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Falck, R.S., Wang, J., et al. (2001). The epidemiology of physical attack and rape among crack-using women. <i>Violence and Victims</i> 16(1):79–89.					18+	F		Not in treatment, crack-cocaine users	Jul 1996–Aug 1997	171	Since initiating crack use, 62% of the women reported suffering a physical attack. The prevalence of rape since crack use began was 32%, and among these women, 83% reported being high on crack when the crime occurred, as were an estimated 57% of the perpetrators.
Farabee, D., Joshi, V., et al. (2001). Addiction careers and criminal specialization. <i>Crime & Delinquency</i> 47(2):196–220.	2001	General Info		Quantitative	32 yrs (male) & 31 yrs (female)	4,939 M, 2,250 F	47.3% African American, 38.8% White, 11.4% Hispanic, 2.6% Asian/ Other			7,189	Of the females, 89.2% were more likely to engage in regular drug use before criminal behavior; of the males, 85.9%.
Fendrich, M., Mackesy-Amiti, M.E., et al. (1995). Substance involvement among Juvenile murderers: Comparisons with older offenders based on interviews with prison inmates. <i>International Journal of the Addictions</i> 30(11): 1363–1382.	1995	Juvenile	Violent Crime	Quantitative	16–71	259 M, 9 F	125 Black non-Hispanic, 79 Hispanic, 63 White non-Hispanic, 1 Asian	Individuals incarcerated in NY for homicide		268	Those in the youngest and the oldest age-groups had the lowest levels of drug use in the 7 days prior to the homicide; close to half of all subjects interviewed reported being affected by any substance at the time of the crime. Cocaine effects were most prevalent among those aged 18–35.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Ford, J.M., and Beveridge, A.A. (2006). Neighborhood crime victimization, drug use and drug sales: Results from the "Fighting Back" evaluation. <i>Journal of Drug Issues</i> 36(2):393–416.	2006	General Info		Quantitative				Data from "Fighting Back" intervention evaluation	Respondents tended to be poor, urban, and African American	42,650 respondents aggregated into census tract-level data	For crime victimization rates by neighborhood, we find that for burglary, neighborhood disadvantage, the presence of visible drug sales, and drug use are related to victimization. For assault, only neighborhood disadvantage and visible drug sales are statistically significant, and for theft, only visible drug sales influence the rate of criminal activity.
Freisthler, B., Needell, B., et al. (2005). Is the physical availability of alcohol and illicit drugs related to neighborhood rates of child maltreatment? <i>Child Abuse & Neglect</i> 29(9): 1049–1060.	2005	Violent Crime		Quantitative	27% of were children under 18		48% of the residents where White, 17% Asian, 16% African American, 22% Hispanic	Data from substantiated report of child abuse in Northern CA		304 block groups	More incidents of drug possession (B = .53, p < .001) were positively related to rates of child maltreatment in neighborhoods when controlling for neighborhood demographic characteristics.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
French, M.T., McCollister, K.E., et al. (2004). Revolving roles in drug-related crime: The cost of chronic drug users as victims and perpetrators. <i>Journal of Quantitative Criminology</i> 20(3):217.	2004	Economic Analysis		Quantitative	Avg. age of 37	57% M	58% Black	Data analyzed from targeted sample of chronic drug users (CDUs) and matched sample of non-drug users (NDUs) in Miami-Dade County, Florida		1,480	During the 42-month follow-up, 56% of youth had at least one referral/arrest for a property felony and 43% for a property misdemeanor offense; 26% for a drug felony charge and 13% for a drug misdemeanor charge; and 34% for a violent felony and 31% for a violent misdemeanor.
Friedman, A.S., Terras, A., et al. (2003). The differential disinhibition effect of marijuana use on violent behavior: a comparison of this effect on a conventional, non-delinquent group versus a delinquent or deviant group. <i>Journal of Addictive Disease</i> 22(3): 63-78	2003	Violent Crime		Quantitative	Avg age of 26	50% M	African American			612	Among the low-delinquency group, marijuana use was associated with assault, weapons possession, and attempted homicide/reckless endangerment; among the high-delinquency group, marijuana use was associated with weapons possession, cocaine/crack use associated with homicide, and tranquilizer use associated with assault and weapons possession.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Friedman, A.S., Glassman, K., et al. (2001). Violent behavior as related to use of marijuana and other drugs. <i>Journal of Addictive Diseases</i> 20(1):49–72.	2001	Juvenile	Violent Crime	Quantitative	Up to age 24	306 M; 306 F	African American	Low SES, inner city		612	Cocaine/crack use was associated with gang drug-war fighting and homicide; marijuana use with weapons offenses and attempted homicide; and amphetamine use with robbery and gang drug-war fighting. Barbiturate use was negatively associated with robbery, assault, gang drug-war fighting, and attempted homicide. Tranquilizers use was associated with assault and negatively associated with gang drug-war fighting, and opiates use with robbery, assault, gang drug-war fighting, and attempted homicide.
Friedman, A.S., Kramer, S., et al. (1996). The relationships of substance abuse to illegal and violent behavior, in a community sample of young adult African American men and women (gender differences). <i>Journal of Substance Abuse</i> 8(4): 379–402.	1996	Violent Crime	Gender	Quantitative	Avg. age 25 for men and 26 for women	197 M 183 F	African American			380	Frequent earlier use of drugs predicted subsequent violent behavior for both men and women. Frequency of earlier use of alcohol predicted subsequent violent behavior for men but not for women.
Goldstein, P.J. (1979). <i>Ethnoeconomical Approach to the Relationship Between Crime and Drug Use: Preliminary Findings</i> , National Institute on Drug Abuse.	1979	Economic Analysis		Quantitative	24–39	M				8	Income from crime made up 40% of total income.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Goldstein, P.J., Brownstein, H.H., et al. (1992). Drug-related homicide in New York: 1984 and 1988. <i>Crime & Delinquency</i> 38(4): 459–476.	1992	Violent Crime		Quantitative				Reports findings from Drug Related Crime Analysis 1 (DRCA-H1) & 2 (DRCA-H2)		DRCA-H1: 1,768 DRCA-H2: 414	The two most common types of drug-related homicide were psychopharmacological and systemic. The former results from drug ingestion; the latter from the violence inherent in the illicit drug trade. Systemic cases were most often cocaine- (or crack) related. Heroin played a very small role in homicide.
Goldstein, P.J. (1979). <i>Ethnoeconomical Approach to the Relationship Between Crime and Drug Use: Preliminary Findings</i> . National Institute on Drug Abuse.					24–39		50% Hispanic, 25% Black, 25% White			8	Three subjects earned 40% or more of their cash income from criminal activity, but only one earned the majority of his income this way.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Goldstein, P.J., Bellucci, P.A., et al. (1991). <i>Frequency of Cocaine Use and Violence: A Comparison Between Men and Women</i> . National Institute on Drug Abuse.					18+	53% M	M: 43% Black, 34% White, 20% Hispanic; F: 53% Black, 26% White, 20% Hispanic				While frequency of cocaine use appeared to have little effect on the overall number of violent participations, it had a definite effect on the nature of those participations. Male nonusers of cocaine were the victims in 50% of the violent events they participated in, while male regular users were the victims in only 29% of their violent events. Conversely, male regular users were the perpetrators in 41% of their violent participations, compared with only 21% for nonusers. Female nonusers were the victims in 33% of their violent participations, compared with 59% for female regular users.
Gordon, M.S., Kinlock, T.W., et al. (2004). Correlates of early substance use and crime among adolescents entering outpatient substance abuse treatment. <i>American Journal of Drug and Alcohol Abuse</i> 30(1):39–60.	2004	Juvenile		Quantitative	14–18 yrs	85% M	72% White, 22% Black	Adolescents entering outpatient substance abuse treatment program in Baltimore, Jul 2000–Dec 2001		193	Of this sample, 36.3% were involved in minor crime, 35.8% in major crime, and 11.4% in violent crime. Early onset of substance use in this sample is associated with gender, family deviance, school status, substances used, being a bully and being cruel to people and animals, risky sexual behavior, and criminal activity. In contrast, early onset of crime was related to only gender, age of substance use onset, and being cruel to people.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Graham, N., and Wish, E.D. (1994). Drug use among female arrestees: Onset, patterns, and relationships to prostitution. <i>Journal of Drug Issues</i> 24(1/2): 315–329.	1994	Women	Prostitution	Quantitative		F		Arrestees in Manhattan 1984–85	Interviews and urine samples	164	Almost two-thirds (60%) of the female arrestees tested positive for cocaine use at arrest, and more than one-quarter (27%) tested positive for opiates. The median age of onset of alcohol and marijuana use was usually during the early teens. The median age of onset for other illicit drugs, such as heroin, pills, or cocaine, was 17 or beyond.
Guy, S.M., Smith, G.M., et al. (1994). The influence of adolescent substance use and socialization on deviant behavior in young adulthood. <i>Criminal Justice and Behavior</i> 21(2):236–255.	1994	Juvenile		Quantitative	14–16 at beginning of survey	58% F	Mostly White	Longitudinal study 1969–81	Subjects from Boston suburban school system	657	Results showed that a general drug use factor in adolescence significantly predicted adult illicit drug use, theft, and interpersonal aggression.
Hanlon, T.E., Nurco, D.N., et al. (1990). Trends in criminal activity and drug use over an addiction career. <i>American Journal of Drug and Alcohol Abuse</i> 16(3-4): 223–238.	1990	General Info		Quantitative	>25	M	100 White, 100 Black, 50 Hispanic	Narcotic addicts admitted to treatment programs in Baltimore and NY		132	There were significant reductions in theft, violence, drug distribution, and “other” crime over three addiction periods, a higher prevalence of “other” crime among Black addicts, and a consistently low level of criminal activity among Hispanics during the nonaddiction periods in relation to the criminal activity of Whites and Blacks during these same periods.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Harwood, H.J., Hubbard, R.L., et al. (1988). The Economic Costs of Alcohol and Drug Abuse Treatment: A Cost-Benefit Analysis Using TOPS Data. <i>Compulsory Treatment of Drug Abuse: Research and Clinical Practice</i> . Rockville, MD: eds: C.G. Leukenfeld and F.M. Time.								Economic Analysis	Treatment outcome prospective study data used		In the year before treatment admission, crime-related economic costs to society were an average of \$15,262 per client and fell to \$14,089 in the year after treatment discharge. Furthermore, it was found that before admission, drug abusers spent \$6,854 per year (about \$19 per day) on drugs; and in the year after treatment, \$2,687 (or about \$8 per day).
Inciardi, J.A. (1990). The crack-violence connection within a population of hard-core adolescent offenders. In: De La Rosa, M.; Lambert, E.Y.; Gropper, B., eds. <i>Drugs and Violence: Causes, Correlates, and Consequences</i> . NIDA Research Monograph 103. Rockville, MD.	1990	Violent Crime	Crack/Cocaine	Quantitative	12–17yrs	84% M	42% Black, 41% White, 16% Hispanic	Seriously delinquent youth		611	All of the youth in this population were daily users of at least one drug; marijuana was used three or more times a week by 95% of the sample, 64.2% used some form of cocaine daily, 91% used at least one coca product (powder cocaine, crack cocaine, or coca paste) three or more times a week, and respondents were responsible for 18,477 major felonies. Among these felonies were 6,269 robberies and 721 assaults. Those more involved in crack distribution had greater levels of crime commission; those more proximal to the crack distribution market were more involved in violent crime.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Inciardi, J.A., and Pottieger, A.E. (1994). Crack-cocaine use and street crime. <i>Journal of Drug Issues</i> 1/2(273–292).	1994	Street Crime	Crack/Cocaine	Quantitative	18–49 yrs	60% M	44% Black, 41% White, 15% Latino	Adult crack users from Miami; about half in treatment and half on the street	Apr 1988–Mar 1990	387	Use of more heroin is associated with commission of more crimes, increased levels of crack use also is clearly correlated with a greater level of crime involvement.
Inciardi, J.A., and Surratt, H.L. (2001). Drug use, street crime, and sex-trading among cocaine-dependent women: Implications for public health and criminal justice policy. <i>Journal of Psychoactive Drugs</i> 33(4):379–389.	2001	Street Crime	Crack/Cocaine	Quantitative	18+	All F	50% African American, 27% White, 19% Latina	Cocaine-dependent women in Miami		708	Of this sample, 100% reported prostitution, 24% shoplifting, 17% con games, 16% forgery/counterfeiting, and 9% robbery.
Jaudes, P.K., Ekwo, E., et al. (1995). Association of drug abuse and child abuse. <i>Child Abuse Neglect</i> 19(9):1065–1075.	1995	Women	Juvenile	Quantitative				Exposed to drugs in utero; born at U Chicago hospital		513	Infants exposed in utero to drugs have a higher than expected risk of subsequent abuse compared with children in the general population. Neglect was the most common form of maltreatment, affecting 73% of the children.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Johnson, B.D., Wish, E.D., et al. (1991). Concentration of delinquent offending: Serious drug involvement and high delinquency rates. <i>Journal of Drug Issues</i> 21(2):205–229.	1991	Juvenile		Quantitative	14–20			National Youth Survey data		1,539	Multiple index offenders were about three times more likely to use pills or cocaine (50%) than infrequent index offenders (17%) and minor offenders (12%). Within a given delinquency type, the more serious the drug user type, the higher the delinquency rate. Among the minor offenders, delinquency rates were over 3 times greater among cocaine users than among nondrug and alcohol users.
Kacanek, D., and Hemenway, D. (2006). Gun carrying and drug selling among young incarcerated men and women. <i>Journal of Urban Health</i> 83(2): 266–274.	2006	Juvenile	Gun Carrying	Quantitative	18–25	2/3 M	F: 49% White M: 28% White	Incarcerated men & women interviewed Jul 1999–Oct 2000		204	Respondents who sold crack cocaine or other drugs were more likely to have carried guns than those not selling drugs.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Kinlock, T.W., O'Grady, K.E., et al. (2003). Prediction of the criminal activity of incarcerated drug-abusing offenders. <i>Journal of Drug Issues</i> 33(4):897–920.	2003	General Info		Quantitative	20–54	71% M		Drug-abusing offenders in Baltimore		188	Major predictors of a greater frequency of crime were fewer months employed and greater cocaine use and drug distribution income. The use of marijuana in cases that did not involve opioid use was related to the commission of more violent crimes. Subsequent examination of this result revealed that violent activity was associated with the relatively high drug distribution income for those marijuana users who did not use opioids or cocaine.
Kinlock, T.W., Battjes, R.J., et al. (2004). Factors associated with criminal severity among adolescents entering substance abuse treatment. <i>Journal of Drug Issues</i> 34(2):293–318.	2004	Juvenile	Multi-Drug Misuse	Quantitative	14–18	84% M	72% White, 22% African American	Adolescents entering outpatient substance abuse treatment in Baltimore; Jul 2000–Dec 2001		178	Results indicated that Increased severity of crime was related to male gender, use of drugs other than alcohol and marijuana, bullying and being physically cruel to people, higher levels of deviant behavior among peers, school problems, and having sex without a barrier. 84% of the youth reported a history of criminal behavior and almost half reporting having committed major offenses.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Kouri, E.M., Pope, H.G., Jr., et al. (1997). Drug use history and criminal behavior among 133 incarcerated men. <i>American Journal of Drug and Alcohol Abuse</i> 23(3):413–419.	1997	Men	Violent Crime	Quantitative	17–47	M	50% White, 23% Black, 20% Hispanic	Adult male prisoners in MA facility		133	Of prisoners surveyed, 95% were determined to be dependant on one or more substances, 58% were acutely intoxicated at the time of the crime, and 6% were experiencing withdrawal. There was no significant correlation between those who reported being intoxicated at the time of the crime and the type of crime committed. Alcohol and cocaine were the two substances most commonly used at the time of the crime
Kuhns, J.B., 3rd (2005). The dynamic nature of the drug use/serious violence relationship: A multi-causal approach. <i>Violence and Victims</i> 20(4):433–454.	2005	Violent Crime		Quantitative				Data from first 2 waves of National Youth Survey (NYS), 1976–77		1,725	In Wave 2, youth who reported selling drugs, particularly hard drugs, were more likely to report serious violence. The Wave 2 relationship between drug use and violence was negative.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Kuziemko, I., and Levitt, S.D. (2004). An empirical analysis of imprisoning drug offenders. <i>Journal of Public Economics</i> 88: 2043–2066.									Economic Analysis		Our results suggest that the large increase in drug offender imprisonment increased cocaine prices 5–15%. On the margin, locking up drug offenders has roughly the same impact on violent and property crime as incarcerating other types of criminals. Overall, we estimate that the increase in drug incarceration between 1980 and 2000 is associated with a small reduction in violent and property crime of perhaps 1–3%.
Lee, H.Y., Ju, E., et al. (2010). Role of substance use by both perpetrators and victims in intimate partner violence outcomes. <i>Journal of Social Work Practice in the Addictions</i> 10(1):3–2004.	2010	Violent Crime	Multi-Drug Misuse	Quantitative		F	46% White, 33% African American	Victims of partner abuse in 4 metro areas		114	About 40% of perpetrators were reported to have used drugs or alcohol during an incident “very frequently,” with another 20% using “frequently.” 80% of victims said they “never” or “rarely” used a substance.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Leigey, M.E., and Bachman, R. (2007). Influence of crack cocaine on the likelihood of incarceration for a violent offense: An examination of a prison sample. <i>Criminal Justice Policy Review</i> 18(4): 335–352.	2007	Violent Crime	Crack/Cocaine	Quantitative	Avg age 32	80% M	49% White, 48% Black	Data extracted from Survey of Inmates of State Correctional Facilities (1991)		13,986	This research found that respondents under the influence of either crack or powder cocaine were less likely to be incarcerated for a violent offense than those under the influence of alcohol. Also, the probabilities of serving time for a violent offense were approximately equal for individuals under the influence of crack cocaine and of powder cocaine. This was true for both White and African-Americans offenders.
Lo, C.C., and Stephens, R.C. (2002). Role of drugs in crime: Insights from a group of incoming prisoners. <i>Substance Use & Misuse</i> 37(1):121–131.	2002	General Info		Quantitative	M = 30	24.1% F	21.1% White, 72.4% African American	Incoming prisoners in Cleveland, OH		199	In this sample, 50.8% were dependent on at least one illicit drug.65% believed drugs and alcohol were involved in the crime for which they were arrested, 72.7% of those who said their need to obtain drugs led to their crime were dependent, and only 35.7% of those who said drugs/alcohol weren't involved in their crime were substance dependent.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
MacCoun, R., Kilmer, B., et al. (2003). Research on drug-crime linkages: The next generation. <i>Toward a Drugs and Crime Research Agenda for the 21st Century</i> . Washington, D.C.: Department of Justice, National Institute of Justice, 2003. pp. 65-96.											Review Article
Mancuso, R.E., and Miller, B.A. (2001). Crime and Punishment in the Lives of Women Alcohol and Other Drug (AOD) Users: Exploring the Gender, Lifestyle, and Legal Issues. <i>Women, Crime, and Criminal Justice: Original Feminist Readings</i> . C. Renzetti and L. Goo	2001	Women	Multi-Drug Misuse	Quantitative							Review Article
Markowitz, S. (2000). An Economic Analysis of Alcohol, Drugs, and Violent Crime in the National Crime Victimization Survey. National Bureau of Economic Research Working Paper No. w7982.					NA	NA	NA			NA	Hypothesis: Whether increases in substance prices directly decrease incidence of criminal violence. Economic analysis of aggregate public statistics. Found that higher beer taxes lowers incidences of assault, and that decriminalizing marijuana will result in higher incidence of assault.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Markowitz, S. (2005). Alcohol, drugs and violent crime. <i>International Review of Law and Economics</i> 25(1):20–44.	2005	Violent Crime		Quantitative							Same basic article as 2000.
Mason, W.A., and Windle, M. (2002). Reciprocal relations between adolescent substance use and delinquency: A longitudinal latent variable analysis. <i>Journal of Abnormal Psychology</i> 111(1):63–76.	2002	Juvenile		Quantitative	At 1st measurement: M = 15.51	51% F	97% White	High school juniors and seniors from western NY state		1,218	Examines reciprocal relationship between changing patterns of substance use and delinquency over time. Results varied by gender. Suggests substance abuse and delinquency are mutually reinforcing. Delinquency has modest consequences on drug abuse throughout adolescence in boys while the reverse relationship diminishes. No crossover effects between two 1° variables for girls. Suggests causal relationship between 1° variables is spurious.
McBride, D.C., VanderWaal, C.J., et al. (2003). Andrews University, Department of Behavioral Sciences, Nethery Hall 203, Berrien Springs, MI 49104-0030. [E-mail: mcbride@andrews.edu]. (272 refs.).	2003	General Info		Quantitative							Review Article

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
McCoy, H.V., Messiah, S.E., et al. (2001). Perpetrators, victims, and observers of violence: Chronic and non-chronic drug users. <i>Journal of Interpersonal Violence</i> 16(9): 890.					18+	M and F	White, African-American, Hispanic	Chronic (cocaine + opiates) and nonchronic drug users in Miami-Dade County, FL		1,479	Chronic drug users more likely to perpetrate violent acts but also more likely to be victims or observers of violent acts.
McGinnis, J.M., and Foege, W.H. (1999). Mortality and Morbidity Attributable to Use of Addictive Substances in the United States. <i>Proceedings of the Association of American Physicians</i> 111(2): 109–118.											Review article
McLaughlin, C.R., Daniel, J., et al. (2000). The relationship between substance use, drug selling, and lethal violence in 25 Juvenile murderers. <i>Journal of Forensic Science</i> 45(2): 349–353.	2000	Juvenile	Violent Crime	Quantitative	13–17.7yrs	All M	84% African American, 16% White	Adolescent males incarcerated in Virginia for murder		25	39% of perpetrators reported some substance abuse; 35% reported daily drug use. 28% of the murders were considered drug-related—57% could be linked directly to a drug transaction (e.g., buyer robbed by seller, disputes over money or drug quality), while 43% involved accusations of stolen drugs and/or drug money.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Menard, S., Mihalic, S., et al. (2001). Drugs and Crime Revisited. <i>Justice Quarterly</i> 18(2): 269–299.					1st measurement = 11–17, last = 27–33	M and F				1,725 (mid-80% retention rate)	Aggregated longitudinal data from the National Youth Survey. Finds that drug-crime relationship is different for different ages and stages of involvement in drug use and crime. Initiation of substance abuse comes after crime. At later stages, serious drug use and serious crime are mutually reinforcing.
Miller, N.S., and Gold, M.S. (1994). Criminal activity and crack addiction. <i>International Journal of the Addictions</i> 29(8): 1069–1078.	1994	General Info	Crack/Cocaine	Quantitative		69% M		Crack addicts who made self-referred inquiries for themselves regarding a possible cocaine problem		200	24% admitted to committing a crime on crack, and 19% to being arrested; of those who committed a crime, 14% admitted to robbery, 3% to assault, 2% to spouse abuse, 1% to child abuse, 1% to rape, and 1% to murder. Daily crack users were more likely to commit a felony on crack and to be arrested on crack than non-daily users.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Miller, T.R., Levy, D.T., et al. (2006). Costs of alcohol and drug-involved crime. <i>Prevention Science</i> 7(4):333–342.	2006	Economic Analysis		Quantitative					Surveys of inmates		Among offender types, 20% of homicide, 12% assault, 18% rape, 14% robbery, 4% child sexual abuse, 5% larceny, 12% burglary/theft, and 16% motor vehicle theft reported being under the influence of drugs at time of the crime; 1% homicide, 5% robbery, 1% child physical abuse/neglect, 6% larceny, 5% burglary/theft, and 1% motor vehicle theft offenders reported committing the crime for drug money while not under the influence; 4% homicide, 1% assault, 20% robbery, 2% child physical abuse/physical neglect, 12% larceny, 19% burglary/theft, and 6% motor vehicle theft offenders reported committing the crime for drug money while under the influence.
Mocan, H.N., and Corman, H. (1998). An economic analysis of drug use and crime. <i>Journal of Drug Issues</i> 28(3): 613–629.	1998	Economic Analysis		Quantitative							Review article on various economic models pertaining to the relationship between drug use and crime rate.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Moore, T.M., Stuart, G.L., et al. (2008). Drug abuse and aggression between intimate partners: A meta-analytic review. <i>Clinical Psychology Review</i> 28(2): 247–274.	2008	Violent Crime		Quantitative					Meta-analysis	547 effect sizes from 96 studies	Increases in drug use and drug-related problems were significantly associated with increases in aggression between intimate partners. Cocaine emerged as illicit substance with strongest relationship to psychological, physical, and sexual aggression. Marijuana also identified as having significant association with partner aggression.
Mulvey, E.P., Odgers, C., et al. (2006). Substance use and community violence: A test of the relation at the daily level. <i>Journal of Consulting and Clinical Psychology</i> 74(4): 743–754.	2006	Violent Crime		Quantitative	14–30	52% F	49% White, 49% Black		Patients evaluated in emergency room of a psychiatric hospital	132	Of sample, 88.1% reported engaging in violent act in the community during the follow-up period. Number of days using marijuana and number using other drugs showed no significant overall relationship to frequency of serious violence. Participants were 3.4 to 7.1 times more likely to engage in serious violence on days when multiple substances used. Probability of substance use also increased significantly on days individuals were violent.
Nabors, E.L. (2010). Drug use and intimate partner violence among college students: An in-depth exploration. <i>Journal of Interpersonal Violence</i> 25(6): 1043–1063.	2010	Violent Crime		Quantitative	College	638 M, 997 F	70% White, Rest Hispanic + African American		Undergrad students from large FL university, selected from Soc and Anthro intro courses	1,635	Use of cannabis and depressants increased likelihood of intimate partner assault. Among males, anabolic steroid users were 65% less likely to engage in domestic abuse.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Nicosia, N., Ricardo, R., et al. (2009). <i>The Economic Cost of Methamphetamine Use in the United States, 2005</i> . Washington, D.C.: RAND Corporation.											Evaluated the economic cost of meth in 2005. Meth generated approximately \$4.2 billion in crime and criminal justice costs. Greatest share of costs due to arrests for meth possession and sales, at \$2.4 billion.
O'Grady, K.E., Kinlock, T.W., et al. (2007). Prediction of violence history in substance-abusing inmates. <i>Prison Journal</i> 87(4): 416–433.	2007	Violent Crime		Quantitative	M = 32.71, SD = 6.89	130 M, 53 F	90.7% African American			183	Drug abuse history wasn't related to use of violence (probably because this study lacked a non-drug-using control group). But there was a tendency among sample to begin crime before drug abuse. Neither drug choice nor variety of drugs abused related to development of a violent lifestyle.
Oser, C.B., Mooney, J.L., et al. (2009). The drugs–violence nexus among rural felony probationers. <i>Journal of Interpersonal Violence</i> 24(8): 1285–1303.	2009	Violent Crime	Felony	Quantitative				Probationers in rural KY		799	Rural probationers who had been both perpetrator and victim of a violent crime significantly more likely to have ever engaged in use of alcohol, marijuana, hallucinogens, sedatives, heroin, and other opiates; the lifetime prevalence of other stimulant use increased likelihood of having ever committed a violent crime (OR = 1.60; p < .05).

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Ousey, G.C., and Lee, M.R. (2007). Homicide trends and illicit drug markets: Exploring differences across time. <i>Justice Quarterly</i> 24(1): 48–79.	2007	Violent Crime	Economic Analysis	Quantitative				Socio-demographic data from 132 U.S. cities. DV = homicide rate according to FBI's <i>Crime in the United States</i>			Investigates hypothesis that the decline in homicide rate since early 1990s was partially attributable to declining levels of drug market activity. Specifically, the researchers argue that strength of the dynamic drug market–lethal activity relationship has weakened over time due to 1) a drop in drug market activity, 2) aging of drug market participants (less impulsive with age), 3) unmeasured factors which may have created a kinder drug market.
Pacula, R.L., and Kilmer, B. (2003). Marijuana and crime: Is there a connection beyond prohibition? <i>National Bureau of Economic Research Working Paper No. 10046</i> .								ADAM			When marijuana-using individuals arrested on drug charges were excluded from analysis, researchers found that those who engage in violent crime likely engage in marijuana, but marijuana use not necessarily related to their decision to engage in violent crime. Marijuana users also more likely to be arrested for property and income-producing crime.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Pihl, R.O., and Peterson, J. (1995). Drugs and aggression: Correlations, crime and human manipulative studies and some proposed mechanisms. <i>Journal of Psychiatry and Neuroscience</i> 20(2): 141–149.	1995	Women	Violent Crime	Quantitative							Lit review examining relationship between drugs (alcohol) and propensity for aggression. Researchers explore interrelationship of neurological systems and centrality of executive function in regulating aggressive behaviors— e.g., one such system is threat inhibition system. Alcohol inhibits normally inhibitory nature of threatening stimuli, which thus increases aggression. Also, alcohol decreases higher cognition/ reasoning/executive function, which authors argue is central to managing aggression.
Pottieger, A.E. and Tressell, P.A. (2000). Social relationships of crime-involved women cocaine users. <i>Journal of Psychoactive Drugs</i> 32(4): 445–460.	2000	Women	Crack/ Cocaine	Quantitative	18–40	F	60% African American, 21% White, 14% Latina	Cocaine-dependent in FL		851	Study aimed to examine barriers and incentives to treatment among crime-involved, cocaine-dependent women, with special emphasis on role of social support. Relatively few of crime-involved women lacked social support. But among women who had social support, help with legal and conventional activities was far more common than help with drug and criminal activities. Also, women seeking treatment had more social support than those not seeking it.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Romero-Daza, N., Weeks, M., et al. (2003). Nobody Gives a Damn if I Live or Die: Violence, Drugs, AND Street-Level Prostitution in Inner-City Hartford, Connecticut. <i>Medical Anthropology</i> 22(3): 233–259.	2003	Violent Crime		Quantitative		F		Impoverished women living in inner-city Hartford, CT. Interviews		35	Qualitative study that examined relationship between drug use, violence, prostitution, and HIV risk. Interviewers concluded that since prostitutes constantly exposed to violence, these emotionally traumatized women often turn to drugs to assuage their mental suffering.
Sacks, S., Cleland, C.M., et al. (2009). Violent offenses associated with co-occurring substance use and mental health problems: Evidence from CJDATS. <i>Behavioral Sciences & the Law</i> 27(1): 51–69.	2009	Violent Crime		Quantitative	18+			Parolees released & referred to substance abuse treatment		1349	Quantity of alcohol consumed and frequency of drug use were associated with greater probability of self-reported violence (OR ranged from 1.1 to 1.28).
Sheley, J.F. (1994). Drug activity and firearms possession and use by Juveniles. <i>Journal of Drug Issues</i> 24(3): 363–382.	1994	Juvenile	Gun Carrying	Quantitative	M = 17	M	46% African American, 29% Hispanic, 25% (White, Asian, other)	Incarcerated inmates in CA, NJ, IL, & LA. All were juveniles		835	Study aimed to assess gun use among young persons involved in use and distribution of drugs. Researchers found little relationship between hard drug use and gun activity. Tendency to have owned a regular shotgun increases with drug use. Drug selling clearly increases level of gun activity: 83% of those who had sold drugs had also fired a gun at someone.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Sheley, J.F. (1994). Drugs and guns among inner-city high school students. <i>Journal of Drug Education</i> 24(4): 303–321.	1994	Juvenile	Gun Carrying	Quantitative		M		Inner-city high school students		758	Findings offer no evidence of progressive, linear relationship between level of drug use and gun possession. But significant differences when non-users compared with users, and “heavy” users compared with those who did not use heavily.
Shepard, E.M., and Blackley, P.R. (2005). Drug enforcement and crime: Recent evidence from New York State. <i>Social Science Quarterly</i> 86(2): 323–342.	2005	General Info		Quantitative					62 counties in NY state, from 1996–2000		Researchers correlate degree of drug law enforcement with crime. All crimes examined positively correlated with drug-related arrests. Researchers suggest that significant social costs may arise from existing approaches to drug control.
Shepard, E.M., and Blackley, P.R. (2007). The impact of marijuana law enforcement in an economic model of crime. <i>Journal of Drug Issues</i> 37(2): 403–424.	2007								Pooled sample of 1,300+ U.S. counties. Economic analysis		Examines effect marijuana law enforcement has on prevalence of other crimes. Specifically, local rates of property crime, homicide, and nonmarijuana drug possession estimated as a function of economic conditions, enforcement effectiveness, and arrests for possession or sale of marijuana. Results suggest marijuana arrests are associated with increases in homicides, burglaries, motor vehicle thefts, and larcenies along with subsequent increases in hard drug arrests.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Siva, N. (2009). Heroin clinics reduce street drug use and crime, shows study. <i>BMJ</i> (Clinical Research ed.) 339: b3845.	2009	Heroin	Street Crime	Quantitative				Includes 5% of heroin users for whom oral methadone maintenance treatment not successful and who continued to inject street heroin almost every day		127	75% of addicts who received injectable heroin remained largely abstinent from street heroin during a 3-month period. Crime also fell, from average of 20–30 crimes in 30 days before trial to 4–13 after 6 months; number of participants committing crimes halved during this time.
Slade, E.P., Stuart, E.A., et al. (2008). Impacts of age of onset of substance use disorders on risk of adult incarceration among disadvantaged urban youth: A propensity score matching approach. <i>Drug and Alcohol Dependence</i> 95(1–2): 1–13.	2008	Juvenile		Quantitative	18–24	M	35% White	Baltimore		558	Those with one or more substance use disorders more likely to be incarcerated for drug-related and non-drug-related crimes, experienced more arrests, more likely to have experienced a conviction, more likely to have been arrested for drugs in past 12 months, and more likely to have been arrested for assault in past 12 months than those with no SUD.
Spunt, B.J., Goldstein, P.J., et al. (1990). Race/ethnicity and gender differences in the drugs-violence relationship. <i>Journal of Psychoactive Drugs</i> 22(3): 293–303.	1990	Violent Crime	Race	Quantitative						185	Violent events reported by White males were most likely to be not drug related, but violent events reported by White females least likely to be not drug related. Among Black and Hispanic females, violent events more likely than those reported by male counterparts to be not drug related.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Spunt, B., Brownstein, H.H., et al. (1996). Drugs and homicide by women. <i>Substance Use and Misuse</i> 31(7): 825–845.	1996	Women	Violent Crime	Quantitative		F	56% Black, 23% White, 15% Latina	Homicide offenders jailed or on parole in NY		215	70% had been regular users of some drug at some point in their lives before their incarceration, while over half had been addicted to a substance; Over one-third of respondents who were present at scene were “high” on a drug at the time, while about half of victims of these homicides used drugs before the homicide. Alcohol, crack, and powdered cocaine the drugs most likely to be related to these homicides.
Spunt, B., Goldstein, P., et al. (1994). The role of marijuana in homicide. <i>International Journal of the Addictions</i> 29(2): 195–213.	1994	Violent Crime	Cannabis	Quantitative	16–71	259 M, 9 F	125 Black non-Hispanic, 79 Hispanic, 63 White non-Hispanic, 1 Asian	Individuals jailed in NY for homicide		268	27% of respondents used marijuana in 24 hours before the homicide; of these, 71% said they were feeling some effects of the drug when homicide occurred, and 25% (7% of total respondents) said they thought the homicide was related to marijuana. Of those who said the homicide related to their marijuana use, 83% were high on another drug as well at time of homicide.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Spunt, B.J., Goldstein, P.J., et al. (1990). Drug relationships in violence among methadone maintenance treatment clients. <i>Advances in Alcohol and Substance Abuse</i> 9(3-4): 81–99.	1990				18+	M		Data derived from Drug Related Involvement in Violent Episodes (DRIVE) Project	Data collected Nov 1984–May 1986	118	While events reported by treatment group less likely than those reported by not-in-treatment group to be related to heroin, total alcohol- and cocaine-related dimensions of violence similar for the two groups. No difference between two groups in terms of proportion of events that were drug related.
Steinman, K.J., and Zimmerman, M.A. (2003). Episodic and persistent gun-carrying among urban African-American adolescents. <i>Journal of Adolescent Health</i> 32(5): 356–364.	2003	Juvenile	Gun Carrying	Quantitative	Avg age 14.6 at baseline	49% M	African American	Respondents interviewed annually throughout high school		705	Marijuana use associated with episodic gun carrying (OR=1.03)
Stenbacka, M., and Stattin, H. (2007). Adolescent use of illicit drugs and adult offending: A Swedish longitudinal study. <i>Drug and Alcohol Review</i> 26(4): 397–403.	2007	Juvenile		Quantitative	18	M		Conscripted for military service in Sweden		7,577	Subjects who used drugs as adolescents were convicted for adult offenses more often than were subjects who did not have drug experiences in adolescence, independently of whether they committed no, some, or many crimes in adolescence.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Sullivan, C.J., and Piquero, A.R. (2010). Investigating stability and change in substance use and criminal activity using a synthesized longitudinal modeling approach. <i>Journal of Drug Issues</i> 40(1): 63–91.	2010	General Info		Quantitative	M = 18.8, SD = 1.07	M	48% White, 33% Black, 17% Hispanic	Longitudinal data on California Youth Authority parolees		524	Researchers support new model for tracking, analyzing, and understanding longitudinal patterns of substance abuse and crime: autoregressive latent trajectory model (ALT). ALT analyzes both persistent and individual differences in behavioral trends and stage-specific direct relationships re criminal behavior and drug use. This model fit the data well.
Uggen, C., and Thompson, M. (2000). <i>Careers in Crime and Substance Use: Final Report</i> . U.S. Department of Justice.								Analyzed data gathered in 1970s as part of National Supported Work Demo Project. Information about addicts (ex and current), criminal offenders (ex and current), & youth dropouts	Tracked for 18 months	2,286 offenders, 1,394 addicts, 1,241 youth dropouts	Examined careers in crime and drug use by: 1) using event history analysis to evaluate experimental effects of employment on recidivism to drug use and criminal activity, and 2) using models of within-person change to examine how drug use and other changing life circumstances affect amount of money participants earn illegally each month. Employment increased likelihood that ex-addicts would remain free of arrest. However, supported employment among this sample didn't demonstrate same results. Secondly, after serious drug use (heroin, cocaine), Ss raise their illegal earnings by \$500.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Uggen, C., and Thompson, M. (2003). The socioeconomic determinants of ill-gotten gains: Within-person changes in drug use and illegal earnings. <i>American Journal of Sociology</i> 109(1): 146–185.								Analyzed data gathered in 1970s as part of National Supported Work Demo Project information about addicts (ex and current), criminal offenders (ex and current), and youth dropouts	Tracked for 18 months	2,286 offenders, 1,394 addicts, 1,241 youth dropouts	Found that heroin and cocaine use create a strong earnings imperative that is difficult to satisfy in the low-wage labor market, and offenders earn far more money illegally when they are using drugs than during periods of abstinence.
Valdez, A., Kaplan, C.D., et al. (1995). Illegal drug use, alcohol and aggressive crime among Mexican-American and white male arrestees in San Antonio. <i>Journal of Psychoactive Drugs</i> 27(2): 135–143.	1995	Violent Crime	Race	Quantitative		M	Mexican-American, White	Based on Drug Use Forecasting (DUF) sample of arrestees in San Antonio		534	Findings show complex but interpretable pattern between drug use, alcohol use patterns, and aggressive crimes. A surprising finding was that more aggressive crimes committed by all men testing negative for drugs. Mexican Americans with frequent alcohol use and testing + for drugs were twice as likely to commit an aggressive crime (associated with violence) as Whites in same subgroup.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Valdez, A., Kaplan, C.D., et al. (2007). Aggressive crime, alcohol and drug use, and concentrated poverty in 24 U.S. urban areas. <i>American Journal of Drug and Alcohol Abuse</i> 33(4): 595–603.	2007	Violent Crime		Quantitative	Avg age of 30	M	58% African American, 23% Euro-American, 19% Hispanic American	Arrestees in 24 U.S. urban areas		20602	Testing positive for illegal drug use is negatively associated with aggressive crime; exposure to structural conditions of concentrated poverty seems to be more salient than race in explaining violence and substance abuse nexus.
Valdez, A., Yin, Z., et al. (1997). A comparison of alcohol, drugs, and aggressive crime among Mexican-American, black, and white male arrestees in Texas. <i>American Journal of Drug and Alcohol Abuse</i> 23(2): 249–265.	1997	Violent Crime	Race	Quantitative	Avg age of 30	M	49% Black, 29% Mexican, 22% White	Arrestees in Houston, Dallas, San Antonio; majority have not completed high school	1992 Drug Use Forecasting data	2,364	Decreased risk of aggressive crime among those testing positive for drugs (multivariate OR 0.66).
Vanderschmidt, H.F., Lang, J.M., et al. (1993). Risks among inner-city young teens: The prevalence of sexual activity, violence, drugs, and smoking. <i>J Adolesc Health</i> 14(4): 282–288.	1993	Juvenile	Violent Crime	Quantitative		50.1 % M	65% Black, 24% Hispanic, 8% non-Hispanic White	Inner city public middle school students in grades 6–8		1,420	Among sample, 16% admitted to using marijuana, 7% cocaine, and 8% crack
Vaughn, M.G. (2009). Substance Abuse and Crime: Biosocial Foundations. In: Walsh, A., and Beaver, K.M., eds. <i>Biosocial Criminology: New Directions in Theory and Research</i> . New York, NY: Routledge. pp. 176–189.											Review Article

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Watts, W.D., and Wright, L.S. (1990). The relationship of alcohol, tobacco, marijuana, and other illegal drug use to delinquency among Mexican-American, black, and white adolescent males. <i>Adolescence</i> 25(97): 171–181.	1990	Juvenile	Race	Quantitative		M	HS: 154 Whites, 172 Mexican Americans, 22 Blacks; adjudicated: 37 Whites, 25 Mexican Americans, 27 Blacks			348 high school males, 89 adjudicated delinquent males	Frequency of use of alcohol, tobacco, marijuana, and other illegal drugs all significantly related to minor delinquency for all three ethnic-racial groups; best predictor of minor delinquency for Mexican Americans is frequent use of illegal drugs other than alcohol and marijuana. For Whites it is the frequent use of alcohol; the best predictor of violent delinquency among all three ethnic-racial groups is the frequent use of illegal drugs other than alcohol and marijuana.
Wells, K. (2009). Substance abuse and child maltreatment. <i>Pediatric Clinics of North America</i> 56(2): 345–362.	2009	Juvenile	Violent Crime	Quantitative				2007 NSDUH			Argument piece that ultimately concludes that the abuse of legal and illicit substances is detrimental to parental functioning. Also, compounded effects of the abuse by polysubstance users may be difficult to measure. Finally, author acknowledges the myriad social issues often comorbid with drug abuse.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Welte, J.W., Zhang, L., et al. (2001). The effects of substance use on specific types of criminal offending in young men. <i>Journal of Research in Crime and Delinquency</i> 38(4): 416.	2001	Juvenile	Men	Quantitative	16–19	M	49% White, 45% Black, 6% other	Buffalo Longitudinal Survey of Young Men. Over-sampling from high-crime areas.		596	Examined causal relationship between substance use and delinquency. Particularly, researchers interested in type of delinquency (minor, general, serious, property, and violent), and onset time (early, late). No causal relationship emerged between substance use and delinquency for early-onset delinquents. For late-onset delinquents, significant causal effects of emerged, and vice-versa. Specifically, minor and property delinquent acts promote future drug use, drug use has both a lagged and synchronous positive impact on general delinquency, and drinking has both a lagged and synchronous negative effect on property offenses.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
White, H.R., Tice, P.C., et al. (2002). Illegal acts committed by adolescents under the influence of alcohol and drugs. <i>Journal of Research in Crime and Delinquency</i> 39(2): 131–152.	2002	Juvenile		Quantitative	M = 16.33, SD = .8 at first assessment	M	57.5% Black, rest almost entirely White	Pittsburgh Youth Study		506	Offenses against persons, compared to general theft, more likely to be committed under influence of alcohol or drugs. Aggressive acts more often related to acute use of alcohol than marijuana. After controlling for levels of alcohol and drug use, both being more impulsive and having more deviant peers predicted committing personal offenses under the influence. However, found no interaction effects between drug/alcohol use and impulsivity/peer deviancy.
Wish, E.D. (1990). U.S. drug policy in the 1990s: Insights from new data from arrestees. <i>International Journal of the Addictions</i> 25(3A): 377–409.											Argument/analytical piece on U.S. Drug policy in 1990s. Author recognizes that there was dramatic drop in middle-class and casual drug use in U.S. But according to data from Drug Use Forecasting (DUF) program, remains a stubborn and solid core of drug use in criminals with multiple behavioral, vocational, and educational deficits. Author believes U.S. drug strategy needs to be reconsidered in future years so this minority doesn't become a national scapegoat to harsh societal regulations or simply neglected by larger society.

Citation	Year	Category 1	Category 2	Type	Age	Sex	Race	Other	Other	# Studied	Effect Size/Percentage Change, etc.
Wish, E.D., and O'Neil, J. (1991). Cocaine use in arrestees: Refining measures of national trends by sampling the criminal population. <i>NIDA Research Monograph</i> 110: 57–70.											Argument piece similar in scope to previous article. Authors argue that current estimates of drug use prevalence in U.S. aren't entirely accurate because they typically ignore or undersample most deviant drug abusers in the population—persons who are hospitalized, detained by criminal justice program, or dropped out of school. Cocaine use in arrestees is discussed along with the Drug Use Forecasting (DUF) system
Yu, J. (1998). Alcohol, cocaine, and criminality: Specifying an interaction effect model. <i>Journal of Criminal Justice</i> 26(3): 237–249.	1998	General Info		Quantitative				Adult “high-risk sample for criminality”		878	Attempts to establish a theoretical model for how alcohol and drug use (high interdependency assumed) interact in relation to crime involvement. But it was found that alcohol and cocaine use increase criminality independently of one another. Heavy use of either alcohol or cocaine is sufficient condition for criminality.