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Changes in inmates' substance use and dependence from pre-incarceration to one year post-release☆,☆☆

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ABSTRACT

Purpose: To assess changes in inmates' misuse of substances from pre- to post-incarceration.
Methods: In Study 1, professionals ($n = 162$) and laypersons ($n = 50$) predicted how jail inmates' substance misuse would change from pre-incarceration to post-release. In Study 2, a longitudinal study of 305 jail inmates, we examined actual changes in substance use and dependence from pre-incarceration to the first year post-incarceration, as well as whether changes varied as a function of demographic, criminal justice, treatment, and personality factors.
Results: Professionals and laypersons predicted little change in substance misuse whereas, in fact, inmates' frequency of substance use and dependence decreased substantially from pre-incarceration to post-release. Sharper decreases were observed for inmates who were female, younger, more educated, serving longer sentences, enrolled in substance abuse treatment, high in shame-proneness, and low in criminogenic thinking. Race, first time incarceration, transfer to other correctional facilities, mandated community supervision (probation), and guilt-proneness did not predict changes in substance use or dependence.
Conclusions: Although substance misuse decreased, this remains a population high in need of substance abuse treatment both upon arrest and at one year post-incarceration; 60% of former inmates met at least one DSM-IV criterion for substance dependence at one year post-release.

1. Introduction

Substance dependence is highly prevalent among jail inmates. Specifically, Karberg and James (2005) found that 46% of jail inmates meet DSM-IV criteria for substance dependence at the start of incarceration—a rate nearly 17 times higher than that of the general population. Incarceration represents a period of enforced sobriety for many, if not most, inmates. Does this hiatus in substance use result in changes in substance use post-release—relative to pre-incarceration? We first asked professionals and non-specialists to predict whether inmates' substance misuse would increase, decrease, or stay the same. We then drew on a large longitudinal study of jail inmates, comparing their pre-incarceration substance use and dependence to that reported one year post-release. In addition, we examined twelve theoretically derived predictors of individual differences in change.

1.1. Does substance misuse increase or decrease following incarceration? Competing theoretical predictions

There are compelling reasons to expect jail inmates to decrease their substance use and dependence post-incarceration, relative to pre-incarceration. First, incarceration typically involves a period of forced sobriety, which may provide the opportunity to develop adaptive coping skills. If inmates utilize these coping skills when rejoining the community, they may be more apt to remain substance-free. In addition, a substantial number of former inmates may be placed on probation, with desistence from substance use (i.e., drug testing) as a condition of probation, which could further motivate such inmates to limit their substance use and misuse.

On the other hand, several factors may exacerbate post-release substance use. One potential aggravating mechanism may be reactance (Brehm, 1966), defined as a "motivational state directed toward the reestablishment of the free behaviors that have been eliminated or threatened with elimination" (pg. 384). Many models of substance abuse

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treatment such as motivational interviewing emphasize the importance of intrinsic motivation to change as a determinant of reductions in substance use (DiClemente, Bellino, & Neavins, 1999). However, it is unclear how an externally imposed sobriety (i.e., coerced sobriety during incarceration) affects inmates' motivation for change. Because reactance is a response aimed at restoring one's own agency, an incarceration defined by a removal of freedom to use substances may intensify reactance, resulting in an unwillingness to maintain sobriety.

A second potentially aggravating mechanism is "ironic" thought processes (Wegner, Schneider, Carter, & White, 1987). Enforced sobriety may lead inmates to consciously suppress thoughts of substance use which, due to increased unconscious monitoring for the thoughts one is trying to suppress, can "ironically" lead to obsession and preoccupation with that thought, resulting in increased cravings and eventual relapse upon release. A sobriety marred by such thought suppression may offset the potential benefits of incarceration by magnifying the appeal of substance use, or at least the cognitive accessibility of cravings.

In addition to the psychological mechanisms that could predict post-release relapse, situational factors could also be conducive to increases in post-release substance use. For example, Knight, Simpson, and Hiller (2002) found that relapse is common among prison inmates in the first 90 days post-release, which may be due to the fact that incarceration is typically experienced as highly stressful (Haney, 2003), with uncertainties regarding housing and employment especially salient just prior to release. The pressures of post-release integration may foster maladaptive means of coping, such as substance use, which would align with stress management and coping theories that explain substance use as the result of high levels of stress.

In sum, some theories predict incarceration would exacerbate post-release substance misuse via increased stress, reactance, and ironic thought processes. Other theories suggest the opposite. An inmate's broach with sobriety may aid in the development of new adaptive stress management skills, and lead to reductions in use following release.

1.2. Does substance misuse increase or decrease following incarceration? Scant empirical evidence

Research examining changes in substance use from pre- to post-incarceration is surprisingly rare. Comparisons have been made primarily in the context of treatment studies (for a systematic review see Kouyoumdjian et al., 2015) or with highly specific populations such as HIV infected individuals with substance use disorders (Krishnan et al., 2012).

Of most direct relevance, in Visher and Courtney's (2006) Urban Institute study of 424 male prison inmates (median length of incarceration about 2 years), participants reported dramatic drops in substance use from pre- to post-incarceration. Just prior to release, participants reported retrospectively on substance use during the 6 months prior to incarceration; 72% said they used drugs and 60% reported alcohol intoxication prior to incarceration. In interviews conducted 1–3 months post-release with 358 (84%) participants, these percentages dropped to 13% and 17%, respectively. Confidence in these precipitous drops in substance use is somewhat tempered by the extraordinarily low self-reports of undetected crime (6%) also gathered at 1–3 months post-release. Little information is provided regarding assurances of confidentiality in this brief report.

Using a similar design, Shinkfield and Graffam (2009) asked 79 Australian prisoners nearing re-entry to report on pre-incarceration substance use. Unfortunately, the retention rates at one month and 3–4 months post-release were 46% and 24%, respectively. Nonetheless, substantial drops in drug use and alcohol misuse were reported from pre- to post-incarceration in the 36 and 19 participants interviewed at one month and 3–4 months post-release.

Somewhat less relevant, two studies focused solely on prison inmates with histories of substance misuse, estimating the likelihood of using substances following incarceration. In a large study of prison inmates with a history of substance misuse (<1% female), those in the control group ($n = 809$) who did not participate in a specialized residential substance abuse treatment had a 0.37 probability of using drugs or alcohol within the first 6 months of release from prison, reported by the probation officer (Pelissier et al., 2001). There are, however, obvious limitations in relying on probation officers' reports of post-release substance use, as not all substance use is detected or reported to the probation officer. Another study of 49 former prison inmates (93.9% of whom self-reported illicit drug or alcohol abuse during the year prior to incarceration) found only 7 relapsed within the first 30 days of release, although relapse is not clearly defined in the study (Nelson, Dees & Allen, 2011). Both of these studies looked at prison inmates' substance use outcomes post-release, focusing solely on inmates with pre-existing substance use problems, thus providing no information on the degree to which non-substance abusing inmates engage in problematic substance use after a stressful period of incarceration surrounded by a high percentage of substance abusing peers; and neither considered inmates incarcerated for relatively brief periods in local jails in addition to inmates housed in long-term prisons.

2. Study 1

Despite the lack of systematic data and the opposing predictions drawn from theory, criminologists and psychologists may have special insight into this issue based on clinical observation, knowledge of current theory, or both. Thus, we first conducted a survey of professionals with relevant expertise (clinical and social psychologists and criminologists), asking them to predict how substance misuse might change among jail inmates from pre- to post-incarceration. We also included a community sample of non-specialists to assess people's intuitive guesses – in short, "folk theories" – regarding changes in substance misuse from pre- to post-incarceration. Participants were also asked to state their perception of the weight of scientific evidence supporting their opinion.

2.1. Method

2.1.1. Participants

2.1.1.1. Professional participants. Professional participants were 162 individuals recruited from the: (a) Society for Personality and Social Psychology (Division 8) of the American Psychological Association (APA) ($n = 15$)[1]; (b) American Psychology and Law Society (Division 41) of the APA ($n = 79$); (c) Society for a Science of Clinical Psychology ($n = 19$); and (d) American Society of Criminology's Division on Sentencing and Corrections ($n = 49$). Members received an email via their organization's listserv with an invitation to complete a brief survey about professionals' opinions regarding the effects of jail incarceration. It was not possible to calculate response rates for professional samples because we did not know the number of members signed-up to receive listserv content in general, or listserv questionnaires in particular. Professional participants were 76% ($n = 123$) White, 60% ($n = 98$) female, and on average 47 years old ($SD = 10.62$, *range* = 26 to 73 years). Most completed a doctoral degree (94%; $n = 152$) and many (44%, $n = 71$) had worked in an adult correctional facility at some point during their lifetime.

2.1.1.2. Community participants. Community participants ($N = 50$) were recruited on Amazon Mechanical Turk (MTurk), a crowdsourcing internet marketplace. Participants accepting the assignment received $0.09 for successful completion of a brief survey about community opinions regarding the effects of jail incarceration. Participation was limited to United States residents. Of the community participants, 64% ($n = 32$) identified as White and 58% ($n = 29$) were female. On average participants were 29 years old ($SD = 5.37$, *range* = 24 to 56 years). The majority completed a bachelor's degree or higher (68%; $n = 34$). The vast