



## The association between social stressors and drug use/hazardous drinking among former prison inmates



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### ABSTRACT

Social stressors are associated with relapse to substance use among people receiving addiction treatment and people with substance use risk behaviors. The relationship between social stressors and drug use/hazardous drinking in former prisoners has not been studied. We interviewed former prisoners at baseline, 1 to 3 weeks post prison release, and follow up, between 2 and 9 months following the baseline interview. Social stressors were characterized by unemployment, homelessness, unstable housing, problems with family, friends, and/or significant others, being single, or major symptoms of depression. Associations between baseline social stressors and follow-up drug use and hazardous drinking were analyzed using multivariable logistic regression. Problems with family, friends, and/or significant others were associated with reported drug use (AOR 3.01, 95% CI 1.18–7.67) and hazardous drinking (AOR 2.69, 95% CI 1.05–6.87) post release. Further research may determine whether interventions and policies targeting social stressors can reduce relapse among former inmates.

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## 1. Introduction

### 1.1. Drug use among incarcerated populations

Drug and alcohol use disorders are substantially more prevalent among the incarcerated population as compared to the general population (Karberg & James, 2005; Mumola & Karberg, 2006). Availability of drugs and alcohol in the prison setting is limited. This may lead to elective or unintentional abstinence among inmates and a reduced physiological tolerance, increasing the risk of a drug or alcohol related overdose death (Binswanger et al., 2007; Farrell & Marsden, 2008; White & Irvine, 1999; Zlodre & Fazel, 2012). Former prison inmates face the highest risk of death due to drug overdose in the immediate post release period (Binswanger et al., 2007; Farrell & Marsden, 2008; Kariminia et al., 2007; Merrill et al., 2010). Previous qualitative work has identified themes which lead to drug and alcohol relapse among recently released prison inmates. A lack of social support, medical co-morbidities, and limited economic resources were identified

as stressors contributing to relapse. Family support, drug treatment programs, spirituality or religiousness, and access to community resources were identified as protective factors in avoiding drug and alcohol relapse (Binswanger et al., 2012). Using quantitative data, we aimed to examine factors associated with drug use and hazardous drinking among former prison inmates during the first 2 to 9 months following prison release.

### 1.2. Homelessness and unstable housing

Social stress is characterized by an acute negative life event, chronic life strains, or trauma (Thoits, 2010). Social stressors, such as homelessness and unstable housing, are associated with alcohol and drug use. Homelessness and drug use have been shown to be highly correlated and are often concurrent (Rachlis, Wood, Zhang, Montaner, & Kerr, 2009). Studies that examined behaviors of at-risk youth demonstrated that crack cocaine use and injection drug use were associated with homelessness (Kerr et al., 2009; Wenzel et al., 2004). Among runaway and homeless youth, increased duration of homelessness was shown to be associated with a higher risk for a substance use disorder (Kipke, Montgomery, Simon, & Iverson, 1997). Women living in homeless shelters have a greater prevalence of binge drinking, alcohol dependence, drug use, and drug dependence as compared to women in low income housing (Henkel, 2011). Conversely, alcohol and drug use

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can contribute to unstable housing or homelessness. Among recently homeless adults in Amsterdam, homelessness due to an eviction was associated with having more extreme alcohol problems, while homelessness due to relationship conflicts was associated with having a drug problem (van Laere, de Wit, & Klazinga, 2009).

### 1.3. Unemployment

Social stress in the form of unemployment also plays an important role in drug and alcohol relapse. A systematic review of the literature shows higher rates of substance abuse among the unemployed as compared to the employed (Henkel, 2011). Unemployed individuals were more likely to consume excessive amounts of alcohol, use illicit and prescription drugs, and develop a dependence on alcohol and illicit drugs, as compared to employed individuals (Henkel, 2011). National survey data spanning 15 years demonstrated that unemployment was associated with increased frequency of heavy drinking, described as consuming 5 or more drinks at a time (Lo & Cheng, 2013). A Russian study found that working-age men who were unemployed and seeking work had higher levels of both alcohol consumption and alcohol related problems than men in regular paid employment (Cook et al., 2011). Abstinence from drugs is associated with employment and, among drug users, unemployment is common (McCoy, Comerford, & Metsch, 2007; Platt, 1995). Former inmates have a variety of characteristics which limit their employability, including little education and minimal work experience (Hirsch et al., 2002; Travis, Solomon, & Waul, 2001). Moreover, ex-prisoners are legally barred from working in certain occupations, and many employers are reluctant to hire former inmates with past criminal records (Hahn, 1991; Holzer, Raphael, & Stoll, 2003). Due to these factors, inability to find employment among recently released prison inmates may further increase their risk of drug and alcohol relapse in the post-release period.

### 1.4. Marital status

Relationship status among women with children is associated with the perception of one's social support and mental health. A secondary data analysis of a National US Population Health Survey showed that single mothers report higher levels of chronic stress, more negative life events, less perceived social support, fewer contacts with friends and family, and lower levels of social involvement than married mothers (Cairney, Boyle, Offord, & Racine, 2003). Additionally, rates of depression were more than double among single mothers as compared to married mothers (Cairney et al., 2003). Data from the British National Survey of Psychiatric Morbidity showed that social stress, poverty, and depressive disorders clustered in single mothers (Targosz et al., 2003). In a cohort of >10,000 subjects, single mothers were significantly more likely to report psychological distress, in the form of financial hardship, lack of social support, and lack of employment, than married mothers (Hope, Power, & Rodgers, 1999). Results from a Canadian community health survey revealed that single mothers, when compared to married or cohabitating mothers, had a higher prevalence of substance dependence and mood disorders, including major depressive disorder, mood and anxiety disorders (Wade, Veldhuizen, & Cairney, 2011). Similarly, single fathers had a higher prevalence of mood disorders and substance dependence when compared to married or cohabitating fathers (Wade et al., 2011).

### 1.5. Interpersonal relationships

Social networks, in the form of negative or positive interactions, play an important role in drug and alcohol use behaviors. Associating with family and friends who use substances increases the risk of drug and alcohol misuse (Tiffany, Friedman, Greenfield, Hasin, & Jackson, 2012). An analysis of a large social network of individuals followed for over 30 years found that people are 50% more likely to drink heavily (>1 drink/day for

women and >2 drinks/day for men) when they are surrounded by friends or relatives who drink heavily (Rosenquist, Murabito, Fowler, & Christakis, 2010). In a longitudinal study of current and former injection drug users, having peers who use drugs in one's social network was strongly associated with continued drug use (Schroeder et al., 2001). Former inmates may be at a higher risk of future drug use/hazardous drinking when compared to non incarcerated individuals because incarceration can introduce inmates into high-risk networks characterized by drug trade and use (Freudenberg, 2001; Moore, 1996). The lack of positive social support during the transition period of prison release has been associated with substance use relapse (Andrews & Dowden, 2006; Mooney et al., 2008; Schroeder, Giordano, & Cernkovich, 2007). In former inmates, we examined the relationship between feeling bothered by relationship problems, a proxy for a lack of social support and social stress, and drug and alcohol use following prison release.

Among non incarcerated populations, problems with functioning in marital, parental, and family roles, also described as "impaired psychosocial functioning", have been associated with a range of drug and alcohol use disorders (Compton, Thomas, Stinson, & Grant, 2007; Fergusson, Horwood, & Swain-Campbell, 2002; Ghitza, Epstein, & Preston, 2007; Grant, Hasin, Chou, Stinson, & Dawson, 2004; Hasin, Stinson, Ogburn, & Grant, 2007). Patients who report more stressful relationships with their spouses or partner at the time of substance abuse treatment entry are more likely to continue to drink and experience substance use problems following treatment completion (Tracy, Kelly, & Moos, 2005). Supportive social networks, such as low conflict relationships with family and friends, healthy partnerships with significant others, and strong family cohesion is protective for continued abstinence in substance users (Beattie & Longabaugh, 1999; Bond, Kaskutas, & Weisner, 2003; Heinz, Wu, Witkiewitz, Epstein, & Preston, 2009; Scott et al., 2010; Dearing, 2006). Higher levels of marital satisfaction are associated with longer drug and alcohol free periods (Beattie, 2001; McCrady, Epstein, & Kahler, 2004; McCrady, Hayaki, Epstein, & Hirsch, 2002). In a study of men with past alcohol abuse, marriage was protective against alcohol relapse (Heinz et al., 2009). Similarly, among men and women with past heroin and cocaine use, marriage and close personal relationships predicted a greater decrease in drug use over time, relative to being single or separated (Dearing, 2006). Among patients who completed short-term inpatient drug and alcohol treatment, abstinence support at home was protective in maintaining sobriety (Broome, Simpson, & Joe, 2002). Perceived problems with family, friends, or significant others may lead to an increased risk of drug and alcohol use among former prison inmates recently released from prison due to a lack of positive social support networks.

### 1.6. Mental health problems

Depression and drug and alcohol use are often comorbid conditions. The results of a large epidemiological survey showed that the lifetime odds of alcohol dependence was 3 times higher for men and 4 times higher for women with major depression as compared to non depressed adults (Kessler et al., 1997). A national longitudinal study demonstrated that, among individuals with major depression, 32.5% met criteria for a lifetime diagnosis of alcohol dependence (Grant & Harford, 1995). Similarly, a national survey of the US adult population found that drug use disorders and major depressive disorders were highly associated (AOR 2.2) (Compton et al., 2007). Among patients who completed alcohol treatment, having ongoing depressive symptoms was associated with subsequent alcohol relapse (McDowell & Newell, 1996; Radloff, 1977). The association between depression and relapse to drugs, including cocaine and opioids, is less clearly defined. A study which examined the impact of depression on relapse to illicit drug use, including cocaine, heroin, or benzodiazepines, found no significant effect of depression on relapse at a 3-month follow up as compared to non drug users (Miller, Ninonuevo, Hoffmann, & Astrachan, 1999). Another study which examined relapse to opioid use among individuals with and

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