

Cops in the Making:
Substance Use Patterns and Traits of Youth Who Enter
the Criminal Justice Field

by
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ABSTRACT

Officials employed in the criminal justice system have a duty to serve, protect, and uphold the law. Nevertheless, previous research has found problematic drinking and illegal substance use exists among criminal justice system employees. Criminal justice employees may be more likely to use substances due to strains or due to increased access to drug. On the other hand, self-selection and screening processes may result in a pool of employees who fewer substances than the general population.

Using waves 1 through 17 of the National Longitudinal Survey of Youth 1997, the current research examines substance use patterns of criminal justice system employees, assessing how their rate of substance use compares to a nationally representative sample, and how their substance use changes once employed with the criminal justice system, this research surveys the alcohol and illicit drug use of people who went on to work in the criminal justice system and how their substance use compares to the general population. In addition, this research compares police officer substance use to the general population.

When compared to a nationally represented sample, criminal justice system employees consistently use illegal substances at lower rates. However, the prevalence of alcohol use among police officers specifically is higher when compared to the general population and increases once employed with the criminal justice system. Information from this research can be used to help agencies with employee selection procedures and employee assistance programs for current employees.

DEDICATION

I would like to dedicate this to my family. Without their love and support to my educational attainment I would not be where I am today. To my dad who has pushed me to pursue my dreams since I was a child. My mom whom I called to vent on a weekly basis. My sisters for showing me unconditional love and support. My nieces and nephews for filling me with light and laughter. To my grandparents who have showered me with limitless encouragement. My Aunt Marlene and Uncle Willie, who have always been my number one fans. And to my life coach Jordan for encouraging me and filling me with confidence to reach any goal I have set in life.

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CHAPTER 1

INTRODUCTION

Criminal justice system employees are respected individuals who are entrusted with the responsibility to uphold and maintain the law (Gorta, 2009; Sweitzer, 2004; Todak, 2017). There is a need to know the substance use patterns of criminal justice system employees given the obligations of their employment. Screening practices are in place prior to employment in the criminal justice system, and potential employees undergo a job selection process (Todak, 2017; Ostrov & Cavanaugh, 1987). Criminal justice system employers screen applicants to ensure the most qualified individuals are selected for employment (Detrick, Chinball, & Rosso, 2001; Blackmore, 1978; Shusman & Inwald, 1991). Criminal justice agencies screen applicants in a variety of ways because of the sensitive nature of the jobs. Similarly, applicants undergo a process of their own when deciding where to work. Although reasons differ among individuals, the decision to seek employment with the criminal justice system is commonly a thought-out process. Individual preferences play a role in job selection, including criminal justice jobs. Not everyone seeking employment looks to work for the criminal justice system. As a result of these practices, the pool of criminal justice system employees is systematically different from the general population.

This study examines the substance use of criminal justice system employees in two ways: how their rates of substance use compares to a nationally representative sample, and how their prevalence and frequency of use changes during employment with the criminal justice system. The pool of employees in the criminal justice system differs from the general population. Therefore, a comparison to a nationally representative

sample is needed to determine if rates of substance use are problematic. Examining changes of substance use rates allows for a better understanding of the impact of criminal justice employment on employee substance use.

The first section of this thesis examines what is known about substance use among criminal justice system employees. The substances examined are alcohol, marijuana, stimulants, and opioids. The second section examines reasons for substance use among criminal justice system employees. The theoretical orientations and evidence for theoretical explanations are explored as possible explanations of substance use among criminal justice system employees. The third section assesses who becomes a criminal justice system employee. In this section, how employees choose the criminal justice system and how the criminal justice system chooses employees are discussed. The fourth section, data and methods, discusses the nationally representative survey used to answer the research questions and includes a presentation of the results. An evaluation of the study's findings--including the strengths, limitations and future research--is addressed, followed by a discussion and conclusion.

CHAPTER 2

LITERATURE REVIEW

What We Know about Substance Use among Criminal Justice System Employees

Alcoholism, problematic drinking habits and illicit drug use is present in criminal justice system occupations (Blackmore, 1978; Weir, Stewart, & Morris, 2012; Menard & Arter, 2013; Sweitzer, 2004). Over the years, different studies have assessed the rate of substance use among criminal justice system employees. Previous studies have primarily focused on police and correctional officers in an attempt to measure the rates of alcoholism among all criminal justice system employees (Weir et. al, 2012; Lindsay, 2008). While research suggests that criminal justice system employees use illegal drugs, findings have not been compared to substance use rates in the general population (Girodo, 1991; Gorta, 2009; Mieczkowski & Lersch, 2002; Sweitzler, 2004). Previous studies have found that police and correctional officers exhibit problematic drinking habits and alcoholism. In addition to the examination of alcohol use, the drugs examined in this review of the literature are marijuana, cocaine, opioids, and steroids.

Alcohol Use

Prior research has reported problematic drinking and alcoholism among criminal justice system employees. Prior analyses have reported comparable rates of problematic drinking. Lindsay (2008) found in his study of police officers that 20% suffer from alcoholism, while Violanti (2004) found 23% and Marks (2001) reported 25%. These studies controlled for variables that impact rates of alcohol use such as age, race, job tenure, and gender (Lindsay 2008; Violanti 2004; Marks 2001). Utilizing samples from police departments, these studies were able to capture the rates of alcohol use and abuse

among officers in the selected departments across the country. However, findings are not compared to other occupations or the general population. Further research is needed to assess if the rates of substance use are problematic when compared to the general population, and to examine if problematic drinking rates are impacted by employment. The dependent variables in the studies done by Lindsay (2008), Violanti (2004), and Marks (2001) were not alcohol use. Rather, they studied attitudes towards drinking and suicidal ideation while including measures of alcohol use in their models. These findings are still significant as they give insight into rates of alcoholism among criminal justice system employees.

Weir, Stewart, and Morris (2012) compared a sample of public service occupations to other occupations and found that employees of public service occupations, including police officers and correctional officers, reported fewer drinking days than other employed participants but had a higher likelihood of binge drinking episodes. This study used a subset of the nationally representative 2009 National Survey of Health and Drug Use, which included public service occupations and other employed adults. In addition to controlling for the demographics, substance use, and job tenure of the participants, this study also controlled for mental health. When peer influence was introduced into the multivariate modeling, mental health was no longer a significant predictor of drinking, suggesting that the subculture of the occupation had a greater influence on drinking behaviors than mental health. The impact of police subculture may facilitate some of these drinking habits. The subculture of police officers creates perceived benefits to alcohol use as time drinking with fellow employees strengthens their bonds (Cox, Marchinna, & Fitch, 2017).

Studies done outside of the United States examining the prevalence of alcoholism and alcohol abuse among police officers produce consistent findings that alcohol abuse is common in varying degrees among police officers across the globe. Responsibilities of criminal justice system employees are comparable regardless of location, so findings of alcohol use in different countries is still relevant. Richmond, Wodak, and Kehoe (1997) found that 48% of male officers and 40% of female officers in an Australian sample reported excessive drinking in the prior three months. In this study, excessive drinking was defined as having nine or more drinks in one sitting for men and seven or more drinks in one sitting for women. In Norway, a study was done to examine alcohol use among police officers and ambulance personnel through a self-administered survey that used a modified version of the Alcohol Use Disorder Test. The findings showed that 17.7% of officers surveyed received a score that indicated potential alcohol problems (Sterud, Hem, Ekenber, & Lau, 2007). This study examined the rates of alcoholism among police officers in comparison to another stressful occupation, ambulance personnel. Police officers had slightly higher rates of excessive alcohol consumption compared to ambulance personnel (17.7% vs. 16.6%). The findings from this analysis on drinking among police officers are compared to ambulance personnel, but to no other occupations or the general population. Though the findings vary across different countries with regard to specific rates of alcohol abuse among police officers, all of the studies find some level of alcohol abuse among police officers. These previous findings give awareness to the existence of alcoholism among some criminal justice system employees but do not help in understanding why it exists and if the rates are actually problematic.

Updated and larger scale studies should be completed within the United States to better understand the current state of alcohol use and abuse among police officers. Research to date leads us to conclude that while problematic drinking exists, the lack of comparison to a nationally representative sample merits further analysis. Conclusions drawn from that comparison will help to understand these previous findings and decide if interventions are needed for these employees.

Furthermore, comparisons to other occupations among the general population should be made to determine if employees in the criminal justice system have a problem distinct to their occupations or if the patterns resemble others. In addition, more work needs to be done to examine the rates among other criminal justice system employees, such as how drinking patterns change once employed with the criminal justice system. It is important to evaluate the comparable rate of alcoholism to a nationally representative sample to understand if a problem exists that is specific to criminal justice system employees and if it is a coping mechanism for the job.

Illegal Drug Use

Previous research has found use of illegal drugs is present among criminal justice system employees. Previous studies have primarily focused on police officers and correctional officers, though there are many career paths in the criminal justice system. This section will examine the literature on marijuana, stimulants, steroids and opioid use.

Marijuana is a psychoactive drug that creates a mind altered state when used (Flor-Henry & Shapiro, 2018). In 2018, the National Institute on Drug Abuse reported that marijuana is the most abused drug in the United States. Similarly, among police officers this is the most common illegal drug used (Carter, Sapp & Stephens, 1988).

Marijuana is increasingly being legalized in the United States so rates of use among criminal justice system employees and the general population may increase in coming years (Singer & Page, 2016).

In an examination of police officer recruits who had passed the first round of screening, 20% tested positive for illegal drugs. Of those who tested positive for an illegal substance, only a third admitted to past drug use (Ostrov & Cavanaugh, 1987). The Internal Association of Chiefs of Police (1989) reported the state of drug use among police officer applicants and found that 64% had reported past use of marijuana. Though youthful experimental use of marijuana is not disqualifying for police officers in many jurisdictions, prolonged use can disqualify a candidate (Ostrov & Cavanaugh, 1987). Girodo (1991) reported 12% percent of candidates reported frequent recreational use of more than twenty times in their lifetime and were disqualified as job candidates. Reported use of other hard drugs (e.g., cocaine, heroin) is cause for immediate disqualification as a police officer. However, disqualifying levels of substance use can vary across departments.

Among police officers, stimulants are the second most abused illegal drug (Carter & Stephens, 1994; Gorta, 2008). Illegal stimulant drugs include cocaine and methamphetamine. The long-term effects of stimulant use include psychosis, which is defined as a mental disorder causing a disconnect from reality (Curran, Byrappa, & McBride, 2004). Lersch and Mieczkowski (2005) conducted a study to analyze the random urinalysis drug screens of police officers in a large city's police department in the eastern United States. The study found that of the 48,704 drug screens collected over nine years, 3.1% of the urinalysis samples tested positive for illegal substances. Of those

positive drug screens, 80% of the officers had cocaine as the only illicit drug in their system. Seventeen percent of the positive screens tested positive for marijuana only and 2% tested positive for marijuana and cocaine. Overall, 2.5% of the drug screens tested positive for cocaine, and less than 1% tested positive for marijuana. Depending on frequency of use, marijuana can be detected months after use. Cocaine metabolizes quicker than marijuana and can be detected until three days after consumption (Mieczkowski & Lersch, 2002). The use of cocaine is an immediate disqualifier for police officers, but it can be hard to detect the true rate of use as the drug is not detectable if the individual has abstained from use for a few days. Though criminal justice agencies can test for illegal substances, this does not allow the agencies to detect all illegal substance use. The use of drug screening practices by agencies is a step towards understanding the substance use of criminal justice system employees, but more needs to be done to truly investigate the rate and cause of substance use.

Anabolic steroids are most widely known to be used as performance enhancers among competitive athletes (Hoberman, 2015). The use of this substance increases the performance and physical strength of the individual taking the drug. Although there are perceived benefits to the use of steroids by criminal justice system employees, research shows that use of steroids by police officers can cause increased violence in their interactions with civilians which may encourage steroid use (Hoberman, 2015; Swanson 1991). Nonetheless, very little is known about steroid use among criminal justice system employees. It is hard to capture the true rate of steroid use among criminal justice system employees due to its concealed use. The Drug Enforcement Administration reported police officers are one of four occupations with the highest rate of illegal steroid

consumption (Stimson, 2010). Steroid use among criminal justice system employees is problematic though there may be perceived benefits. The use of steroids impedes the ability to regulate emotions. The ability to properly regulate emotions is a critical function for those who work in the criminal justice system as they often have to interact in emotionally challenging situations (Kadewaij, Koch, Zhang, Hashemi, Klimpers & Roelofs, 2018). It is important to gain more knowledge surrounding illegal steroid use

Opioids are a class of drug that include legal substances prescribed to relieve chronic pain, as well as illegal substances such as heroin. For criminal justice system employees who have sustained an injury on the job, it is common to be prescribed legal opioids as a method of pain management (Volkow, Benverniste, & McLellan, 2018). In some cases, long-term opioid therapy can be used as a treatment method. Long-term therapy for pain management can lead to physical dependence on and addiction to the opioids. Due to the nature of the job, criminal justice system employees are susceptible to sustaining injuries that may result in the prescription of an opioid (Mak, Tsui, & Ng, 2002).

The use of illegal substances by criminal justice system employees is problematic in multiple ways. The aforementioned substances are illegal in the United States; if employees are using these substances they are obtaining them illegally. The acquisition of these substances compromises their position within the criminal justice system as their interactions to obtain these substances can lead to blackmail and more illegal activity in an attempt to conceal the use of illegal substances from their employer (Carter, 1990).

Substance use and abuse while off duty is still problematic and has its own impact on job performance. For police officers, their job does not end when they are off the

clock. Officers can carry guns and operate department vehicles while off duty. The professionalism and law-abiding conduct of police officers needs to be continually maintained because their duty to society does not end with the work day. In addition there are general negative health effects criminal justice employees can incur while using these substances.

In summary, illicit drug use is present among criminal justice system employees to some extent. Through the examination of urinalysis and interviews with police officers, prior research has found that the use of illicit drugs does occur; however, previous studies have not researched how substance use among criminal justice employees compares to the general population. Additionally, the focus of most studies has been on police and correctional officers, and no other occupations in the criminal justice system. Further analysis needs to be done to examine other criminal justice system employees' use of illicit drugs, how their use compares to the general population, and how their use is impacted by their employment in the criminal justice system.

Gaps in the Literature

Alcohol abuse and illicit drug use by criminal justice system employees is a sensitive and private topic; thus, employees may not discuss the topic of their alcohol use willingly. For this reason, it is hard to discover the true rate of substance use among criminal justice system employees. The data gathered are primarily self-reported and collected while a person is employed. Skepticism can arise, and participants may be concerned with their employers discovering their substance use and abuse. For this reason, criminal justice system employees may fail to be transparent and honest when

asked about this topic. Due to this issue, the true rate of alcoholism and drug abuse may be higher than reported.

Large-scale surveys of alcohol use among police officers in the United States is limited in recent years. Weir and colleagues' (2012) study is the most recent study examining alcohol among a sample including some criminal justice system employees. Additionally, this work compares employees of the criminal justice system to a nationally representative sample of the general population. Though this is an important start, the sample incorporated all public safety occupations and not solely occupations in the criminal justice system. There are studies that examine alcohol abuse issues among correctional and police officers but not among other criminal justice system employees such as Lindsay (2008), Volanti (2004), and Marks (2001). Studies on the prevalence of alcohol abuse and dependence among police officers have been criticized for their methodology. They have often used convenience sampling techniques and typically suffer from low response rates. The respondents are advised to be truthful, but there is no way to assure accuracy and honesty in the responses when discussing such a sensitive topic.

Most research to date on this topic has been cross-sectional in nature (e.g., Lindsay, 2008; Marks, 2001; Violanti, 2004). This means that even if significant differences are found between criminal justice employees and the public, these findings may be due to selection effects. Only one study compares criminal justice employees to the public with strong enough controls to plausibly rule out selection effects (Weir et. al, 2012). Longitudinal data would allow identification of the effect of criminal justice employment using within-individual variation only, a type of natural experiment.

Using only a cross sectional approach to examining substance use among criminal justice system employees is problematic for a few reasons. For example, this approach does not give the researcher the ability to gauge how having a job in the criminal justice system impacts the use of substances. In researching substance use among criminal justice system employees, it is important to analyze if it is the job that has an effect on substance use, or if people who obtain criminal justice jobs are systematically different from the general population, accounting for substance use differences.

There is less knowledge about the trends of alcohol use among criminal justice system employees other than police or corrections officers. In addition, previous research has not addressed the development of substance use among criminal justice system employees. The current study adds to what is known about substance use in the criminal justice system. First it uses a sample that compares criminal justice system employees to the general population. Second, it incorporates multiple occupations within the criminal justice system such as security officer, judges, magistrates, bailiffs and jailers, in addition to police and correctional officers. Lastly, the research examines substance use of criminal justice system employees compared to non-criminal justice system employees over time. This will identify stable differences between criminal justice employees and non-criminal justice employees (between-individual differences) and whether substance use changes when employed in a criminal justice job (within-individual differences).

Reasons for Substance Use among Criminal Justice System Employees

Theoretical Orientations

Robert Agnew's general strain theory (1992) describes the challenges and stressors that create a state of strain. Strain occurs when a person is unable to achieve

positive goals, a positively valued stimuli is removed, or a negatively valued stimuli is present. While a person is facing strain, the stressors can cause them to desire corrective action. The manifestation of strain can take the form of illicit and illegal behaviors to reduce the feeling of strain. The use of drugs is one way a person can attempt to alleviate negative emotions (Agnew 1992; Slocum 2010). The life of a person working in the criminal justice system is one that can be unpredictable due to the nature of their work and the population they serve (Sterud et al., 2006; Sushman & Inwald, 1991). Stress from the job can tarnish work and personal relationships, and present strain in a person's life. For this reason, individuals may turn to substances to cope with the problems associated with the job. If criminal justice employees use more substances when employed in the criminal justice system than when not employed in this system, it may be due to strain.

Public service occupations, which include occupations in the criminal justice system employees, experience increased levels of occupational strain (Weir et. al, 2012; Denhoff & Spinaris, 2013; Swatt et al, 2007). These occupations cause employees to sometimes be in high risk situations; they may deal with people using dangerous weapons, or who are on drugs and who want to avoid interaction or evade detection. The day-to-day interactions and duties of the job can be stress-inducing for employees. This then may lead to an increase in maladaptive coping mechanisms in order to alleviate the strain felt from the occupations.

Routine activities theory typically explains victimization (Felson, 2014). The theory states that crime occurs where there is a motivated offender, a suitable target, and lack of capable guardianship. A major tenet of this theory is opportunity which matters because of the access and opportunity to use illegal substances. The criminal justice

system employee should be a capable guardian protecting against deviance and criminality, but if the criminal justice employee is participating in crime such as substance abuse and procuring illegal substances they are no longer the capable guardian. Criminal justice system employees have access to drugs through confiscation from criminals and items held in evidence lockers. This increased access to illegal substances is potentially a motivating factor for substance use. Furthermore, employees of the criminal justice system have specialized knowledge in the detection and assessment of substance use and abuse which aids their ability to conceal their use of illegal substances (Carter and Stephens, 1988).

Evidence for Theoretical Orientations

The cause of alcohol and substance abuse among criminal justice employees may vary from person to person and from substance to substance. Research has shown that the primary cause of alcohol and substance abuse among these employees are due to the high stress of the occupations. The abuse of alcohol and illicit drugs is a dysfunctional mechanism used as a means to manage stress that is coupled with their occupation (Swatt, Gibson, & Piquero, 2007; Weir, Stewart, & Morris, 2012;).

Some of the more common reasons given for substance use are to alleviate stress and to maintain optimal job performance. The use of substances is a coping mechanism that temporarily resolves work-related stress (Menard and Arter, 2013). The purpose of stimulant use while on the job is to increase alertness and the ability to stay awake long hours during the shift. Although there may be some perceived benefits of stimulant drug use while working, decreased inhibitions while on duty is a side effect and a major public safety concern (Gorta, 2008). It is problematic for a criminal justice system employee to

engage in deviant or illegal behavior at any point while employed because of their influence on the community.

Occupations in the criminal justice system can be particularly dangerous when compared to other professions (Ostrov & Cavanaugh, 1987; Shusman, Iwald, & Landa, 1984; Swatt et. al, 2007). Law enforcement officials are entrusted with the duty of protecting others around them, which includes putting themselves in harm's way in order to protect others. Since law enforcement officers may need to use physical- or weapon-based force in order to subdue people, they need to be in good physical shape. Occupations that have strength and fitness as a qualification are predisposed to the use of steroids (Sweizler, 2004). Anabolic steroids offer a quick and easy way to develop and maintain the physical strength necessary for the duties of the job (Sweitzer, 2004; Tuevey and Crowder, 2013). For this reason, the illegal use of steroids is attractive to some employees and has been a problem that has continually been present in these jobs (Swanson et. al, 1991; Sweitzer, 2004).

The danger and risk of positions in the criminal justice system are major contributors to employee stress (Hope, 2016; Zhao, He, & Lovrich, 2002). In addition to the environmental dangers, the organizational structure of the occupation is also stress-inducing for employees. Knowledge of occupational stressors is beneficial for employers so proper interventions can be made to reduce burnout. Although the danger associated with these positions will always be there, knowledge and awareness can allow organizations to get their employees the proper tools needed to handle their stress.

It is important to acknowledge and understand the sources of stress for officers and other workers in the criminal justice system as well as how the manifestations in

individuals occur so they can be monitored and addressed before it is too late. Workplace stress is measured by the manifestation of psychosomatic and physical symptoms that interfere with a person's ability to complete their duties in their work setting (Brown & Campbell, 1994). Zhao and colleagues (2002) measured rates of depression, anxiety, obsessive and impulsive behaviors, interpersonal sensitivity, and anger in their study of police officers. Officers were asked to rate the dimensions of workplace stress on a five-point Likert scale ranging from not troublesome at all to extremely troublesome. This study found in their sample of sworn male officers from two large police departments that three of the five dimensions of workplace stress were higher among the officers than among other adult males. The dimensions that were affected were anxiety, anger, and obsessive and impulsive behaviors. Danger associated with criminal justice system jobs create stress for the employees then lead to substance use as a coping mechanism.

Criminal justice agencies are organized strategically to distribute responsibilities among employees (Cox, Marchionna, & Fitch, 2017). Organizational stress arises as there is strain and tension among the relationships of the department. In addition, the strict organizational structure can cause stress among employees. Although the environmental stress of the job causes more trauma than the organizational structure and relationships, organizational stress is still present and an issue to be addressed. Bishopp, Piquero, Worrall & Piquero (2018) found in their study of officers that the presence of organizational stress is positively correlated with depression rates.

Among criminal justice system employees, correctional officers hold a unique position. As employees of the criminal justice system, correctional officers face some of the same stressors as police officers and other officials, albeit in a different

setting/context. In addition to the organizational and environmental stress present in these positions, correctional officers work directly with inmates, who can enhance the stress of the job with their behavior. Inmates can be unpredictable and have potential to act violently towards correctional officers which may increase strain (Griffin & Hepburn, 2005).

While police officers uphold the law, and ensure citizens are abiding by it, correctional officers are working directly with individuals who have already broken the law or are being held on charges for potentially having broken the law. The daily interaction with these individuals creates a different environment and introduces different stressors than that of a patrol officer. For both police officers and correctional officers, the major source of stress is derived from the organizational structure of the department or institution (Huckabee, 1992 & Bishopp et. al 2018).

Substance use can be a coping mechanism for stress so it is important to understand the different stressors present in criminal justice system employment to more properly address ways to alleviate the stress. Employee burnout can be described as "...the end result of exposure to prolonged stressful work conditions" (Matz, Woo, & Kim, 2014). When burnout occurs, employees can become detached from their work environment, which is especially problematic in individuals who are entrusted to uphold and preserve the law. Among criminal justice system employees, correctional officers have the highest rate of burnout, and this rate is greater than that of the general public and among police officers (Carlson & Thomas, 2006; Garland, 2002; Maslach, Schaufeli, & Leiter, 2001). Substance abuse may be a consequence of employee burnout; for example, as a person becomes dissatisfied with their work environment, their method of

management may be to turn to substances. The use of substances can occur on and off the job, and in every aspect the abuse of substances poses a great threat to the successful execution of the position. The introduction of substances as a coping mechanism can aggravate and add additional stress to an already stressful job. Employees may also worry about work performance and fear that if the behavior is discovered it could result in termination or other disciplinary actions (Carter & Stephens, 1988).

The American Psychological Association (2018) defines trauma as an emotional response to varying stressful situations. Subsequent distress and emotional turmoil after experiencing a traumatic event include a collection of symptoms such as flashbacks, intrusive memories, and nightmares. These collective manifestations after experiencing trauma are classified as an anxiety disorder called post-traumatic stress disorder (PTSD). Employees of the prison system and police officers report rates of post-traumatic stress disorder that are comparable to veterans of active combat. The National Institute of Mental Health (2017) reports that 3.6% of the general population suffers from PTSD. Rates are much higher among criminal justice system employees, with research showing that 18% of police officers and 19% of correctional officers suffer from PTSD, comparable to the 20% of veterans who do (James & Todak, 2018, Denhof & Spinaris, 2013).

There is an established link between PTSD and substance use and abuse. Among people with PTSD, substances can be used as a method to cope with their past trauma, or a means of avoiding the symptoms associated with the disorder (Dwokin, Wanklyn, Stasiewicz, & Coffey, 2018; Tull, Gratz, Aklin, & Lejuez, 2010). The trauma

experienced by the criminal justice system personnel may be another reason for their substance use and abuse after employment with the criminal justice system.

In addition to using substances as a means to alleviate stress, police officers have special access to substances. A police crime is defined as “when officers use their positions of public trust to violate an existing criminal status” (Kappeler et. al 1998). Police officers are exposed to drugs through their job duties. Patrol officers encounter low-level street drug dealers and also respond to calls where drugs are present. Some police departments even utilize special drug task force officers to specifically handle drug crimes. Officers who work in these specialized drug task units can become socialized to the drug culture and can eventually view drug use as common and unproblematic. Their exposure to environments where drugs are present may reduce the negative social connotations of drug use (Carter & Stephens, 1988). Included in the definition of police crime is the illegal confiscation of contraband. Police officers have access to drugs that have been confiscated by fellow officers and may take it for their own use (White & Kane, 2009). In addition, a previous study by Carter and Stephens (1988) found that officers admitted to failing to surrender confiscated drugs and choosing to not make arrests for the purpose of confiscating the drugs for personal use.

Who Becomes Criminal Justice System Employees?

It is important to examine who works in criminal justice jobs in order to better understand their substance use patterns. This section discusses who works for the criminal justice system by examining two selection processes: how employees decide they want to work for the criminal justice system, and how the criminal justice system chooses its employees.

How Employees Choose the Criminal Justice System

The criminal justice system serves a vital role in our society. Criminal justice system employees are entrusted with the maintenance of our country's law and order. The expectation is those entrusted with this duty will uphold the law as their position fosters an environment of integrity and a moral obligation to endorse and follow the law themselves (Carter and Stephens, 1988).

James and Todak (2017) interviewed aspiring police officers at an undergraduate university to examine why they wanted to become police officers. The major reason for seeking out a career as a police officer was motivation from previous life experiences. Their type of motivation varied: for some it began in their childhood with trauma and family problems that introduced police officers to their lives. Through these experiences, individuals sought the ability to help solve family issues in their future careers. For others, simply seeing police portrayed in the media and their roles in television shows sparked the desire to become an officer.

Aside from aspiring to become a police officer, some individuals seek a law enforcement career for more practical lifestyle reasons. Lester (1983) conducted a study to examine career choice motivation among 128 male officers in training. Through the use of self-administered surveys, three types of reasons emerged: pay and job security, the opportunity for service, and the role of attaining power and status. The most important reason for becoming a police officer in that sample was the pay and job security, followed by service, particularly the ability to help others and enforce the law. The study was replicated using a smaller sample of 19 female police officers. In that sample, the women rated service as the top inspiration for becoming a police officer,

specifically the opportunity to help people in the community. The female officers rated power and status lower but ranked pay and job security similarly to males.

How the Criminal Justice System Chooses Employees

Law enforcement jobs entail a screening process prior to employment wherein potential employees go through various evaluations which screen through the applicants to find the most fitting candidates. One way a department can screen qualified employees is through a process that evaluates psychological well-being (Detrick et. al 2001; Violanti, 2004; Shusman & Inwald, 1991). This is done to ensure the potential employee will be able to handle the stress and pressures of the job. In addition, a physical fitness test can be used to assess physical performance to ensure the candidate is capable of keeping up with the physical demands of the position (Cochrane, Tett, & Vandercreek, 2003). Conducting pre-employment screenings is a way for police departments to reduce the risk of hiring someone who would later present problems for the department (Carter and Stephens, 1988).

Inadequate psychological well-being is one indicator of the inability to handle the stress associated with law enforcement work. Psychological screening is performed before employment begins and is designed to evaluate personality and behavioral characteristics that will predict successful employment (Detrick, Rosso, & Chiball, 2001). As of 2010, the Bureau of Justice Statistics reports that 72% of police departments require a psychological pre-employment screen. Among departments nationwide that serve more than 25,000 residents, 98% require psychological prescreening. Correctional agencies also use psychological screening as part of their selection process (Shusman &

Inwald, 1991). Less is known about the screening of other criminal justice system employees.

Although many departments use psychological assessments, more research needs to be done regarding how they are used and how effective they are at screening out problem employees. Ho (1999) reported that the selection process of police officers is very test-oriented with many candidates excluded due to unsatisfactory performance on physical and psychological examinations. More research needs to be done on the specifics of what are deemed satisfactory scores, as well as how the assessments are used in the selection process of jobs in the criminal justice system other than police officers.

Police officers and correctional officers are also drug tested prior to employment. This is done through many means: blood samples, hair, and the most common method, urinalysis (Mieczkowski & Lersch, 2002). The use of drug testing as a screening technique results in people in the criminal justice field using fewer drugs than the general population because those who use illegal drugs at a high rate are screened out of the job.

How Criminal Justice Employees Differ from the General Population

Self-selection and screening by criminal justice agencies result in significant differences between criminal justice employees and the general population. The screening-out of employees results in an employee pool that is primarily male and at an age of optimal physical fitness, while self-selection results in criminal justice system employees who are strategically choosing their career. For these reasons, direct comparisons of criminal justice system employees to the general population are subject to selection bias. The FBI reported in an analysis of police employees that 87.5% of law enforcement officers in the United States were male (Police Employee Data, 2018).

Census data shows that criminal justice system employees are primarily white, male and on average in their late thirties (U.S Census Bureau, 2014). Nationwide the basic education requirement for police officers is a high school diploma, whereas 9% of agencies require an associate degree and 1% require a bachelor's degree (Hilal & Erickson, 2010). These differences will be controlled for in this study in order to reduce bias in between-individual comparisons.

The Current Study

The current study seeks to address gaps in previously published literature by taking a longitudinal approach and by assessing a wider range of criminal justice system occupations. Previous research has utilized cross-sectional analysis which examines substance use at one point in time which limits the conclusions that can be drawn from the findings. Using a nationally representative sample of people born in the U.S. between 1980 and 1984, this research will compare the alcohol and illicit drug use of criminal justice system employees to comparable individuals during their adolescent years into adulthood. Previous studies have used a cross-sectional approach to examine the substance use of criminal justice employees. By using a longitudinal approach, this study has the ability to gather more valid information from the study participants. This approach to analysis will also allow the researcher to examine between-individual and within-individual differences in substance use. Cross-sectional analysis assesses the substance use of participants at one particular time in their life. Between-individual differences across time, similar to cross sectional differences, show whether criminal justice system employees differ from the general population in terms of their substance use. Within-individual differences examine whether individuals use more substances

while employed within the criminal justice system compared to their use before and after employment with the criminal justice system. In this analysis, each individual serves as his or her own control. With regards to substance use of criminal justice system employees, participants may be hesitant to be honest if asked whilst employed with the criminal justice system in fear of jeopardizing their position with their agency. To overcome this potential problem, this study assesses both illegal and legal substances. Respondents are assumed to be more honest about legal substances. The substances examined in this study are alcohol use, marijuana use, and cocaine and other hard drugs. In addition, cigarette use is examined as a control for social desirability.

This study is more inclusive of all occupations in the criminal justice field. Previous research has examined the drug and alcohol use of criminal justice system employees separately. The current study examines correctional officers, police officers, and security officers in the same study. This allows for a broader examination of the drug and alcohol use of officials who have similar jobs and stresses within the criminal justice system. These occupations will be compared collectively to the general population. In addition each hypothesis will also compare police officers in particular to the general population.

Based on general strain theory and routine activities theory, and existing literature, this study tests two distinct hypotheses: one focused on between-individual differences and other on within-individual differences. Existing evidence suggests that police officers use more alcohol than the general population. These findings do not extend to other criminal justice employees and do not assess whether the rate of use changes after becoming a police officer. Screening tools, on the other hand, may result in

a pool of criminal justice employees who are less likely to use drugs. Thus, there is no clear expectation for the direction of between-individual differences.

H1: Criminal justice employees use alcohol and drugs at a different rate than non-criminal justice employees.

Within-individual differences compare the individual to him- or herself, measuring drug use during criminal justice employment to drug use before or after criminal justice employment, controlling for other dynamic changes. Because of the stress of the job, we might expect drug use to increase after employment. Because of social desirability, criminal justice employees might underreport use. Criminal justice employees might also decrease use during employment due to drug testing. Again, there is no clear expectation for within-individual differences.

H2: Criminal justice employees use alcohol and drugs at a different rate compared to before or after criminal justice employment.

Each of these hypotheses is tested and analyzed for criminal justice system employees generally and police officers specifically. In addition, each hypothesis is tested across a range of substance use indicators.

CHAPTER 3

DATA AND METHODS

Data Source

The National Longitudinal Survey of Youth survey was used for analysis in this study. This dataset was collected by the Bureau of Labor statistics. Data collection began in 1997 and collected information on 8,984 men and women born in 1980 to 1984. The data was collected annually until 2011 when it began to be updated biennially. The most recent data was collected in 2015, yielding a total of 17 waves. Upon the conclusion of the latest round of interviews, the study has a retention rate of 79% . There are many reasons for non-interview, including illness, death, inability to locate the individual, unavailability, technical problems, and refusal to participate. Prior to running the final models, subsamples were created for each model to include only respondents who were examined in at least three of the 17 waves for the outcome variable. Overall the final sample was comprised of 8,811 people interviewed a total of 130,112 times. Sample sizes slightly vary for each outcome variable depending on substance use reporting. On average, each person in this sample was interviewed in 14.8 waves

Demographic Variables

Each participant was given an identification number in 1997 to ensure their data could be matched throughout the years. This was the first variable extracted from the original dataset. The other demographic variables in the dataset are race, gender, and age. Race was coded into four categories: Black, Hispanic, mixed race (non-Hispanic), and non-black/ non-Hispanic. The gender variable was also coded as a binary variable for male and female. The age variable was originally collected as age in months, then

transformed into a variable to report the precise age in years allowing for a two-decimal rounding.

Occupation Variables

Occupations were self-reported for each wave. The respondents reported each job they held since the date of their last interview and these were recorded using 2002 census job codes. For the purpose of this study a criminal justice system employee is defined as officials who work for police, law enforcement, courts, and corrections, at the local, state and federal level. This definition excludes prosecutors and defense attorneys as they do not fit the scope of the present research as they have fundamentally different paths to employment (e.g. law school).

The 2002 census occupation codes used were:

2110: Judges, magistrates, and judicial workers

3700: first line supervisors (correctional officers)

3710: first line supervisors (police officer)

3800: Bailiffs and jailers

3820: Detectives and criminal investigators

3830: fish and game warden

3850: police and sheriff patrol

3860: transit and railroad police

3920: security guards

A dummy variable was created to identify criminal justice system employees in each wave. Criminal justice jobs were coded as 1 and those with non-criminal justice jobs or unemployed were coded as 0. In addition, a criminal justice police variable was

created. Those who had a police officer job (occupation codes 3710, 3820, 3830, 3850 and 3860) were coded as 1 and those who were interviewed but did not have a job as a police officer were coded as zero. An unemployment variable was created to assess those who did not have employment for each wave. If the respondent was employed the variable was coded as zero and if they were unemployed the variable was coded as 1.

Substance Use Variables

The next set of variables examined the use of substances for the participants in each wave. These variables measure alcohol use, marijuana use, cocaine/ hard drug use, and cigarette use. The first alcohol use measure examines if the respondent had drunk alcohol since the date of the last interview. This variable was coded as a binary yes, no variable where zero equals no and 1 equals yes. To gauge the extent of alcohol use, the respondents were asked how many days they drank in the last thirty days, how many days they drank before school and work in the last thirty days, and how many binge drinking sessions they had in the last thirty days. The original survey defined a binge drinking session as having five or more alcoholic drinks in one setting. The original 0 to 30 scale was used for the days drank and binge drinking measures, but the days drank before school or work measure was recoded to a binary indicator of any drinking before school/work in the past 30 days since it had very limited variation.

The first marijuana variable asked the respondents if they had used marijuana since the date of last interview and this was coded as a binary variable where yes equals 1 and no equals 0. The last two marijuana variables examine the extent of use: how many days in the last thirty the respondent used marijuana, and whether they used marijuana before school or work. The last type of illegal substance abuse variable examines the use

of cocaine and other hard drugs. This variable examines if the respondent had used cocaine or other hard drugs since the date of last interview and this was coded as a binary variable, where 1 equals yes, and 0 equals no.

There were two cigarette use variables. The first variable examined if the respondent had smoked in the last thirty days and this was coded as a binary variable where 0 represents no and 1 represents yes. The next variable examined how many days the respondent smoked in the last thirty days. This variable was coded as a numerical value ranging from 0 to 30 with the corresponding response to the question. Although cigarette use is not illegal nor necessarily problematic, this variable is included as a means to detect social desirability response patterns. If cigarette use patterns around criminal justice jobs mirror illegal substance use patterns, then there is less of a concern of false under-reporting of illegal substances.

Control Variables

Control variables were identified that may contribute to substance use and change over time. These variables were measured across all waves of the study. Relationship status was broken into three different binary variables to allow for comparison to respondents with a single status. Those variables were married, cohabitating, and divorced or separated. Residential status included three variables, if the respondent lived in a house, apartment, or other living arrangement. In addition, geographic regions were extracted and those regions were northeast, northcentral, south and west. These variables were also coded as binary variables to allow for analysis to the reference group. Urban and rural areas were also coded as dummy variables. The number of children living in the

household and total number of children were coded as numeric variables. Education level was examined as the highest grade completed and was also coded as a numeric variable.

A between-individual and within-individual variable was created for each time-varying independent variable in order to separately analyze between-individual and within-individual effects. The between-individual variables involve creating a new variable set at each person's mean of the selected variable across all observed waves. The within-individual variable is created by calculating each person's wave-specific deviation from their own mean. The within-individual variable allows for comparison of the before and after effect of the selected variable. That is, whether it is criminal justice employment that leads to a change in substance use. The between-individual variables allow for comparison of those in the sample who have ever had a criminal justice or police job to those who have never, similar to comparisons in cross-sectional research. However, whereas in cross-sectional research between-individual differences in criminal justice employment would be captured as a dummy variable, here cross-sectional differences are captured by person-specific mean of criminal justice employment dummy variable. This can range from 0 for those who never had a criminal justice job up to 1 for those who always had a criminal justice system. Values between these two extremes indicate the proportion of the waves a person had a criminal justice job but does not indicate timing of employment. Hypothesis 1 is tested using the between-individual occupation variables and Hypothesis 2 is tested using the within-individual occupation variables.

Methods

STATA was used for the statistical analysis in this study. A series of regression models were performed to investigate the relationship between the independent and

dependent variables. Prior to running the final models, subsamples were created for each model to include only respondents who were examined in at least three of the 17 waves for the outcome variable. This study used a series of mixed effect logistic regression models for binary outcome variable and mixed effect ordinary least squares regressions for non-binary outcomes.

Mixed effects regressions account for the clustering that occurred in the sample. This data was collected over time and there a multiple observations of the same person for the variables. Mixed effects logistic regressions were used because this analysis does not require a linear relationship between the independent and dependent variables. This assumption was the best fit for the binary outcomes as they are coded as 0/1 and the distribution lacks linearity. Mixed effects ordinary least squares regression was used instead of mixed effects negative binomial regression for outcomes ranging from 0 to 30 because these count variables were not zero-inflated or over dispersed. Robust standard errors were used in these models to address issues of heteroscedasticity. The within-individual effects are analogous to a fixed effect model. Within-individual effects are unbiased by any stable between-individual difference whether they are observed or not.

CHAPTER 4

RESULTS

Descriptive Statistics

Descriptive statistics are shown in Table 1. In the final sample, across all waves, 21% of the sample was unemployed. 1.7% of the sample had a criminal justice job and 0.3% had a police occupation. Ten outcome variables were examined for substance use. These variables examined alcohol, marijuana, cocaine and other hard drugs, and cigarette smoking. In this sample, there is a considerable amount of substance use, with a lot of variation in the rate of use variables. For the final sample the mean for prevalence of drinking is 68%. The mean number of drinking days in the last thirty days is 3.74 with a standard deviation of 6.04. The average number of binges in thirty days is 1.33 with a standard deviation of 3.42. Drinking before school and work had a mean of 13% for the entire sample. The prevalence of marijuana use is 20%. The mean number of days smoked marijuana in a month is 1.84 with a standard deviation of 6.28. The use of marijuana before school and work is 9%. The prevalence of cocaine and other hard drug use is 5%. The prevalence of smoking is 32%. The average number of smoking days in a month is 6.81 with a standard deviation of 11.82.

The final sample was evenly distributed with regards to gender as 50% were male and 50% were female. The average age of the final sample across all 17 waves is 23.3 and the ages ranged from 12.2 to 36.5. Twenty-six percent of the sample is black, 21% Hispanic, 2% mixed race, and 51% non-black/non-Hispanic.

The control variables represent different factors that may impact use of substances and employment that need to be controlled in order to have more accurate regression

estimates. The mean highest grade completed for the final sample is 12.1 with a standard deviation of 0.89. The highest grade completed ranges from zero to 20. The average number of children in the household is 0.46 with a standard deviation of 0.91. The number of children in the household for the final sample ranges from zero to 12. The mean number of children who did not live in the residence with the respondent is 0.12 with a standard deviation of 0.46. The number of non-resident children ranges from zero to nine. The prevalence of residential moves for the final sample was 43%. Twenty percent of the sample lived in a rural area and 77% lived in an urban area. Sixteen percent lived in the northeast region of the United States, 22% in the northcentral region, 39% in the south region, and 22% in the west. Across all waves, 18% of the sample was married, 3% divorced and separated, and 32% cohabiting. Twenty-nine percent of the sample lives in a house and 61% lived in an apartment.

Figure 1 visually depicts the proportion of criminal justice jobs across all waves. On average 1.7% of the population had a criminal justice job. The proportion of people who have a criminal justice job gradually increases until wave 12 when about 2.5% of the sample is employed in a criminal justice job. Figure 2 visually depicts the proportion of police jobs across all waves. On average 0.3% of the population had a police job. The proportion of police jobs increases over time, reaching 0.8% by wave 17.

Substance Use by Employment Status

A series of T-tests were conducted to examine if the mean value of the substance outcome variables were statistically significantly different for criminal justice and police occupations compared to employed individuals with other occupations. These results can be found in Table 2. Substance use is present amongst individuals who have criminal

justice and policing jobs. The prevalence of drinking when individuals are employed in the criminal justice is 72.3%. They are drinking alcohol an average 3.93 days, bingeing 1.31 days and 17% of them are drinking before school or work. Fourteen percent report marijuana use, with an average of 1.29 days and 4% report using marijuana before school or work. Three percent of criminal justice system employees report cocaine and other hard drug use. Twenty-eight percent report smoking with an average of 5.48 days. Many of these figures are statistically significantly different from the general population who are also employed. Criminal justice system employees have a prevalence of alcohol use and use of alcohol before school and work that is statistically significantly greater than the general population. In addition, all other illegal drugs and smoking outcome variables showed a significant difference in rate of use compared to the general population.

There is a substantial amount of substance use when we focus only on police officers. Eighty-six percent of people employed as police officers report drinking alcohol, with on average 4.65 drinking days and 1.35 binges in the past 30 days. Sixteen percent report drinking before school or work. Four percent report marijuana use with an average of 0.25 days and 0.8% use marijuana before school or work. One percent report cocaine and other drug use. Nearly all of these levels of substance use statistically differ from individuals employed in non-criminal justice jobs. Except for drinking prevalence and drinking in the past 30 days, people employed in non-criminal justice jobs report more substance use ($p < .05$). Police officers, however, drink alcohol at a higher rate than those employed in non-criminal justice jobs ($p < .05$).

These rates of use are important to compare to prior estimates in the literature for substance use among criminal justice professionals. They reveal a significant amount of

substance use across a range of substances. While many of these figures statistically significant differ from the general population of employed individuals, these T-tests do not adjust for other characteristics that make criminal justice system employees different than other employed individuals, or account for between and within-individual differences. Multivariate regression analyses in this study will overcome these issues.

Criminal Justice Occupations

Criminal justice system employees make up a small proportion of this sample. Table 3 shows criminal justice occupation categories for 2015 the final wave of the study, using 2002 census codes. In this wave respondents reported up to 12 occupations since the date of last interview. The most common criminal justice job, held by 108 people, was security officer. Forty-three people worked as police or sheriff patrol. Thirty-three people were bailiffs or jailers. Eleven were detectives or criminal investigators. Four were first line supervisors of police officers. Three were judges, magistrates, or judicial workers. Three were first line supervisors of correctional officers. In this final wave no one had a transit police or fish and game warden occupation.

Alcohol Use

1. Between-individual effects

a. Criminal Justice Jobs

Regression results for alcohol use outcomes are shown in Table 4. This table represents the results of 8 regression models examining the within-individual and between-individual effects of criminal justice and police occupations with regards to the four alcohol use outcome variables. These models and all subsequent models include all stable and dynamic control variables previously discussed, with the dynamic control

variables partitioned into between-individual and within-individual variation. Effects for these control variables are not shown since they are not the focus of this study.

Criminal justice employees significantly differ from other employed individuals on two alcohol measures, rate of use and binge drinking. Both variables had a significant negative coefficient meaning that there are statistically significant differences in the rates of use for those variables when comparing criminal justice occupations to the general population. To better understand these coefficients, I calculated predicted values at different levels of between-individual criminal justice job status, holding all other variables at their means. If a person has never had a criminal justice job, their average number of drinking days is 3.75 across all waves. For a person who has a criminal justice job thirty percent of the time their average number of drinking days is 3.19 (across all waves, regardless of current job status) and decreases as their tenure in the criminal justice system increases. A person who has never had a criminal justice job averaged 1.34 binges in the last thirty days. A person who has worked for the criminal justice system thirty percent of the time averages 1.05 binges and the number was smaller for those who worked in criminal justice jobs a higher proportion of the time. For the prevalence of use and use before school and work variables there was no statistically significant difference between those who ever have a criminal justice job and those who never have a criminal justice job. There is mixed evidence for hypothesis 1 with respect to alcohol use. The rate of use and binge variables showed statistically significant differences whereas the prevalence and use before school and work did not.

b. Police jobs

The between individual comparison shows that people who have ever had police jobs are consistently more likely to drink alcohol than those who have never had police jobs. However, there are no other significant differences between these groups for alcohol-related measures. This variable has a significant positive coefficient. To better understand the coefficients average alcohol use at different levels of between-individual police job status was calculated. For a person who never worked as a police officer, their average prevalence of drinking was 67.7%. A person who worked as a police officer thirty percent of the time averaged 73.1%. There is mixed evidence to support hypothesis 1. Those who ever have a police occupation are more likely to drink compared to those who have never had a police occupation. However, there is no statistically significant difference with regards to rate of use, number of binges, and drinks before school or work.

2. Within individual effects

a. Criminal Justice Jobs

For all criminal justice jobs, none of the four alcohol use variables had a statistically significant coefficient for within-individual variation. This mean that when people obtain criminal justice jobs there are no significant changes in alcohol use. Employment with the criminal justice system does not cause a change in the rate of alcohol use. With respect to criminal justice jobs and alcohol use, there is no support for hypothesis 2.

b. Police Jobs

For police officers, the only statistically significant effect was the prevalence of alcohol use. Police officers have a higher prevalence of alcohol use when employed as

police officers compared to before or after employment. To better understand this effect I calculated the average marginal effect of within individual police job status. When a person works as a police officer, their prevalence of alcohol use increases an average of 10.3 percentage points. There is mixed evidence for hypothesis 2 with respect to alcohol use. People who have police jobs are more likely to drink when employed as a police officer, but rates of use, use before school/work and binge drinking do not change.

Marijuana Use

1. Between-individual effects

a. Criminal Justice Jobs

Regression results for marijuana use outcomes are shown in Table 5. This table represents six regression models. No matter which indicator is used, people who ever have criminal justice jobs use less marijuana than those who never have criminal justice jobs. For a better interpretation of the coefficients, the predicted values at different levels of criminal justice job employment were calculated, holding all other values at their means. For someone who has never had a criminal justice job, the average prevalence of marijuana use is 20.6%. For a person who has had a criminal justice job thirty percent of the survey time their average prevalence of use is 11.2% and decreases as length of employment increases. For someone who has never had a criminal justice occupation, the average number of days using marijuana is 1.86. If a person had a criminal justice occupation thirty percent of the time, the average number of days was 1.00 and decreases as proportion of employment in the criminal justice system increases. A person who has never had a criminal justice job used marijuana before school or work 4.2% of the time. For a person who was employed with the criminal justice system thirty percent of the

time they average 2.3% and this decreases as tenure with the criminal justice system increases. There is support for hypothesis 1 with regards to marijuana use, as all measures of marijuana use show that people who are employed in the criminal justice system use less than the general population.

b. Police Jobs

Similarly, for police all three marijuana outcome variables produced a significant negative coefficient. The predicted values at different levels of between-individual criminal police job status were calculated for a better interpretation of the coefficients, while holding all other variables at their means. Examining the prevalence of use for police officers, for a person who has never worked as a police officer their prevalence of use is an averages 20.4%. For a person who is a police officer thirty percent of the survey time, their prevalence of use is 8.3% and decreases as time employed as a police officer increases. For a person who has never worked as a police officer, the average number of days using marijuana is 1.83. If a person was a police officer thirty percent of the time the average number of days using marijuana is 0.45 and decreases the longer a person is employed as a police officer. If a person has never had a police occupation the average use before school or work is 4.3%. For a person with a police occupation thirty percent of the survey time their use of marijuana before school or work is 0.9% and decreases the longer a person is employed as a police officer. There is support for hypothesis 1 as for all the variables there consistently are significant differences with respect to marijuana use and police officers.

2. Within-individual effects

a. Criminal Justice Jobs

The prevalence of marijuana use generally and marijuana use before school and work had statistically significant within-individual effects with regards to all criminal justice jobs. To understand the coefficient better the average marginal effect of within-individual criminal justice employment was calculated. After a person works for the criminal justice system the prevalence of marijuana use decreases by 2.3 percentage points. After a person works for the criminal justice system the use of marijuana before school and work decreases by 0.9 percentage points. There is mixed support for hypothesis 2 as two variables, the prevalence of use and use before school and work yielded significant differences. The other variable examining marijuana use did not show any statistically significant changes when people enter criminal justice jobs.

b. Police Jobs

Police occupation status had a statistically significant within-individual coefficient for prevalence of use. The prevalence of use has a negative coefficient. The average marginal effect of within-individual variation of police officers was calculated for a better understanding of the coefficients. When working as a police officer, the prevalence of marijuana use decreases on average 4.6 percentage points. There is mixed support for hypothesis 2 with regards to marijuana use and police officers. One of the marijuana outcomes has statistically significant differences when comparing police occupations to the general population, whereas the other two measure of marijuana use do not.

Hard Drug Use

1. Between-individual effects

a. Criminal Justice Jobs

The results for two regression models examining the outcome variable of cocaine and other hard drugs can be found in Table 6. There is a negative coefficient for criminal justice jobs for the prevalence of use of cocaine and other hard drugs. For a better interpretation of this coefficient, the predicted values were calculated at different levels of criminal justice system employment, while holding all other variables at their means. For a person who has never had a criminal justice job the prevalence of cocaine and other hard drugs average is 5.1%. For a person who had a criminal justice job thirty percent of the survey time the average prevalence of drug use is 3.1% and decreases as the length of employment increases. There is support for hypothesis 1 in this analysis as those who work in the criminal justice system use cocaine and other hard drugs at a different rate than the general population.

b. Police Jobs

Police jobs had a significant negative coefficient for the prevalence of use for cocaine and other hard drugs. To gain a better understanding of this coefficient the predicted values at different levels of police employment for between-individual variation were calculated, while holding all other variables at their means. For a person who has never worked in a police occupation their prevalence of cocaine and other hard drugs had a rate of 5%. Those who worked in a police occupation thirty percent of the survey time used cocaine or other hard drugs 1.2% of the time and the use decreases as their time in the occupation increases. Again, there is support for hypothesis 1 as those who work in police occupations use cocaine and other hard drugs at a different rate than the general population.

2. Within-individual effects

a. Criminal Justice Jobs

For all criminal justice occupations there was no significant within individual difference in the likelihood of using hard drugs. This finding does not support hypothesis 2 that criminal justice occupations use at different rates after being employed with the criminal justice system.

b. Police Jobs

For police occupations there was no statistically significant within individual difference in the likelihood of using hard drugs. This does not support hypothesis 2 that police officers use substances at different rates after being employed as a police officer.

Smoking

1. Between-individual effects

a. Criminal Justice Jobs

The regression results for the four regression analyses of smoking can be found in Table 7. The prevalence and rate of smoking yielded significant negative coefficients for criminal justice occupations. To better understand these coefficients, I calculated the predicted values at different levels of between-individual criminal justice job status, while holding all other variables at their means. The prevalence of use for someone who has never had a criminal justice job is 30.5% but for a person who has had a criminal justice job thirty percent of the survey time their prevalence of cigarette use 24.8% and decreases as time employed in the criminal justice job increases. The rate of use for a person who has never worked in the criminal justice system is 6.94 days in the past thirty days. A person who works for the criminal justice system thirty percent of the time on average smokes 5.38 days in the past thirty days and decreases as tenure with the criminal

justice system increases. These findings support hypothesis 1, compared to people who have never been employed with the criminal justice system and people who have, the rates are significantly different.

b. Police Jobs

For the prevalence of cigarette smoking there is a statistically significant negative coefficient for police occupations. This means police employees smoke less than other employed individuals. To better understand these coefficients, I calculated the predicted values at different levels of between-individual police job status. For a person who has never been a police officer their prevalence of smoking is 30.3%. For a person who worked as a police officer thirty percent of the time the prevalence rate drops to 21.9% and decreases for a person who works as a police officer longer. These findings also support hypothesis 1, when comparing people who have and have not been employed in a police occupation, the rates are significantly different.

2. Within-individual effects

a. Criminal Justice Jobs

For criminal justice jobs there is no statistically significant difference in the prevalence of cigarette smoking or the rate of cigarettes smoked when examining the within individual variation differences. These null findings do not support hypothesis 2. After being employed with the criminal justice system the rate of use for this substance did not change.

b. Police Jobs

Police officers smoke less after becoming employed as a police officer. For a better understanding of this coefficient the average marginal effect of within-individual police

employment was calculated. The rate of smoking for police officers decreases 0.9 percentage points after being employed as a police officer. This finding supports hypothesis 2, as police officers are using cigarettes at a different rate after being employed as a police officer.

Summary

Table 8 summarizes the effect of criminal justice system employment on all substance use outcomes. Most of the between individual effects for all criminal justice jobs and police are negative and significant. Whereas the within individual differences for all criminal justice jobs and police have no significance. There is a greater difference when examining criminal justice system employee substance use to the general population and less observable change after employment.

1. Between-individual effects

a. Criminal Justice Jobs

The between individual effect for criminal justice jobs was statistically significant for all of the variables except for the prevalence of alcohol use and use of alcohol before school and work. This supports the hypothesis that people who work in the criminal justice system use substances at different rates that are lower than those who do not. This analysis has found that compared to the general population people who have criminal justice jobs use substances at lower rates as all of the significant effects were negative.

b. Police Jobs

With the exception of alcohol use, police officers use substances at lower rates than the general population. This analysis has found that in this sample police officers do drink more but use marijuana, smoke cigarettes, and hard drugs at a lower rate than the

general population. These findings support hypothesis 1 that police officers use substances at different rates.

2. Within-individual effects

a. Criminal Justice Jobs

When examining all criminal justice jobs, only one variable produced a statistically significant difference for the within individual variation. That variable was the prevalence of marijuana use with a significant negative coefficient. With the exception of that measure of substance use, people who work in the criminal justice system do not change their prevalence or level of substance use when employed in the criminal justice system. Most substance use rates do not change after employment with the criminal justice system, indicating employment status does not impact the rate of substance use. Rates of substance use are already low among people who work for the criminal justice system compared to other employed individuals indicating the difference between these two groups of people is already so strong there is no room left for observable change after employment with the criminal justice system. Thus, there is little support for hypothesis 2 for criminal justice occupations.

b. Police Jobs

There are multiple within individual differences that are statistically significant in the examination of police officers. The prevalence of alcohol use increases after becoming a police officer. There are no other statistically significant differences in alcohol use. The prevalence of marijuana use decreases but the use of marijuana before school or work increases. Some variables that show statistically significant changes increase, and some decrease, but not all variables have a significant change when

examining use before and after becoming a police officer. The second hypothesis is that the rates of use change before and after becoming a police officer and the evidence is mixed.

CHAPTER 5

DISCUSSION AND CONCLUSION

Discussion

The current study examines substance use patterns of criminal justice and police employees over time. Previous studies have examined substance use primarily of police officers and correctional officers separately and at one point in time. This study adds to the literature as substance use is examined over time, comparing all criminal justice employees and police officers separately to the general population. Previous research found that substance use does exist among employees of the criminal justice system. This study has concluded that though substance use is present it is statistically significantly lower than other employed individuals. With regards to substance use, previous studies have focused on alcohol use but the current study included alcohol, marijuana, cocaine and other hard drugs, as well as cigarette smoking as a means of examining social desirability. The current study also has additional control variables that have not been previously controlled in analysis. This study contributes to the previous literature by examining substance use multidimensionally, assessing the changes over time, comparing use to a nationally representative sample, as well as assessing all criminal justice occupations and police officers separately.

Previous studies have found that alcoholism and problematic alcohol use is present among police and correctional officers. This study has found that the prevalence of drinking is greater in police occupations specifically but there is no statistically significant difference between criminal justice occupations and the general population. People who have ever had a police job have a higher prevalence of drinking than those

who have never had a police occupation. In addition, the prevalence of drinking is higher after employment in a police occupation. Previous literature has found that public service occupations which included police and correctional officers reported fewer drinking days but higher likelihood of binges than the general population. This study's findings are not consistent with that. This study has found that people who have ever had a criminal justice job have fewer binges in a month. There is no statistically significant difference in number of binges after working in a criminal justice job. Nor is there a significant difference for police occupations before and after employment with regards to number of binges.

Previous research has found that marijuana is the most common illegal substance used by police and correctional officers. The research has found that use is present but is unable to quantify the rate of use as compared to a nationally representative sample. This research adds to what is known about marijuana use among criminal justice system employees by broadening the sample of employees. The current research has found that marijuana use is present among all criminal justice system employees and police employees, though their prevalence and rate of use is less than the general population. This is building upon what is already known about marijuana use in the criminal justice system by quantifying the prevalence and rates of use of all criminal justice system employees and police occupations in particular. The findings are consistent, that there is marijuana use among criminal justice and police employees. But further analysis of this study has found that the rates of use are less than the general population. With the exception of police officer use before school and work, the rates of marijuana use do not change during employment with the criminal justice system.

There is not a lot of previous research on cocaine and other hard drug use of criminal justice system employees. The research that has been done has found that similarly to marijuana, the use of cocaine does exist, but it is not able to quantify how the rate of use compares to that of the general population. This study has found that some use of cocaine and other hard drugs does exist among criminal justice system and police employees, but the prevalence of use is very low and significantly lower than that of the general population of people who have never worked in those occupations.

Conclusion

The findings of this study can help interpret previous work. The current study examines the between and within individual variation of substance use, whereas previous work compared the rates of substance use being reported at one point in time. Previous studies were not able to distinguish whether differences between criminal justice occupations and the general population were driven by aspects of criminal justice jobs or by selection processes (e.g. people who obtain criminal justice employment are systematically different from the general population). Strong evidence for hypothesis 1 would highlight the importance of selection processes whereas support for hypothesis 2 directs attention to aspects of criminal justice jobs. The job selection process includes employee selection of the criminal justice system and employer screening processes. Evidence for hypothesis 1 would suggest the pool of applicants who apply to criminal justice jobs and the screening by employers creates a pool of employees who use substances at different rates. Criminal justice jobs are occupations with the potential to create strain and also grants the employee special access to illegal substances. Evidence for hypothesis 2, if criminal justice employees use more substances, would suggest the

occupation does create strain in the employees life that manifests through use of substances. Or, would suggest that the employees are failing to act as capable guardians and prevent use of illegal substances.

The first hypothesis of this study is that criminal justice system employees use substances at different rates than the general population. Consistently for all criminal justice occupations and police occupations, for the substances measured, criminal justice system employees and police employees used substances at lower rates that were statistically significant. This may be a result of the job selection process, where those who choose to become police officers are people who use less drugs. Or it could be a result of the screening process, as police departments are successfully screening out applicants who use illegal substances and smoke. It should also be noted that the differences for police officers to the general population are larger than all criminal justice jobs compared to the general population. It cannot be determined if this is an attribute of the individual job selection or the employer screening process.

The second hypothesis of this study is that criminal justice system employees use substances at different rates after being employed with the criminal justice system. For all criminal justice jobs the prevalence of marijuana use was significantly lower after employment, but no other measure of substance use changed after employment. For police occupations in particular, there was a significant increase in alcohol prevalence, and use of marijuana before school and work. While the prevalence of marijuana use significantly decreased after employment. All other variables showed no significant difference. This may be because the rates of use are already lower than the general population leaving little room for significant change. In addition, the rate of smoking

significantly decreases after being employed as a police officer. As previously mentioned in the literature, a physical evaluation is done as a part of the job screening process due to the physical nature of the job. Smoking is an unhealthy habit that can impact a person's physical ability. Knowing the demands of the job, people who smoke before being employed as a police officer may quit after employment as a means to keep up physically and maintain optimal health for the position. All other variables have null findings. This may be a result of the significant between individual differences leaving little room for significant change after being employed in a police occupation.

The prevalence of alcohol use increased after employment as a police officer. This may be due to the strain faced by employees on the job. As a result of strain people adapt coping mechanisms to alleviate the strain felt. Police officers in this study may be using alcohol more after working as a way to cope with strain. However, they are not bingeing or drinking more days per month. Future analysis needs to be done to control for mental health, job satisfaction and interpersonal job relationship variables to better understand these findings. This does not mean employees are not experiencing strain, thus disproving general strain theory in this context. Rather, employees of the criminal justice system may be using other coping mechanisms to cope with strain experienced from their occupation.

Policy Implications, Shortcomings, and Recommendations

The findings from this study indicate police departments are conducting successful screening processes for potential employees. There are large between-individual differences between police officers and the general population. People who become police officers use fewer drugs than the general population before, during, and

after employment. This is not due to the nature of the job. Rather, it is a result of who becomes police officers. It is possible this is from the job selection process of individuals or the screening done by the department. If other criminal justice occupations had comparable screening, they could employ a pool of workers who exhibit lower rates of substance use.

In addition, police officers have higher prevalence of alcohol use than the general population, and after being employed as police officer. This can be attributed to aspects of the job, but more research is needed to understand which aspects are responsible. This could be addressed at the employer level with departments making their employees aware of the statistical increase in alcohol use of police officers. Departments could also conduct structured bonding activities to reduce the bonding that occurs at local bars and taverns to promote healthy alternatives. When further analysis is done to better understand and interpret this finding, police departments will have additional insight on the cause of this increased prevalence of alcohol use. From this information, employee assistance programs can be developed with substance use prevention specialists to assist officers with the cause of their heightened alcohol use after employment.

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Table 1. Descriptive Statistics (N=8,811) (NT=130,112)

Variable	Mean (S.d)	Range
<i>Employment status</i>		
Unemployed	0.21	0-1
Criminal Justice job	0.017	0-1
Police	0.003	0-1
<i>Substance use</i>		
Drinking prevalence	0.68	0-1
Rate of drinking	3.74 (6.04)	0-30
Binges	1.33 (3.42)	0-30
Drinking before school/work	0.13	0-1
Marijuana prevalence	0.20	0-1
Rate of marijuana use	1.84 (6.28)	0-30
Marijuana before school/work	0.05	0-1
Cocaine and other hard drugs	0.05	0-1
Prevalence of Smoking	0.32	0-1
Rate of Smoking	6.81(11.82)	0-30
<i>Demographics</i>		
Male	0.50	
Female	0.50	
Age	23.3 (5.45)	12.2-36.5
Race		
Black	0.26	
Hispanic	0.21	
Mixed Race	0.02	
Non-Black/ Non-Hispanic	0.51	
<i>Control variables</i>	23.3 (5.45)	12.2-36.5
Highest grade completed	12.1 (2.89)	0-20
Children (in household)	0.46 (0.91)	0-12
Children (non-resident)	0.12 (0.46)	0-9
Moves	0.43	0-1
Rural	0.20	0-1
Urban	0.77	0-1
Northeast region	0.16	0-1
Northcentral region	0.22	0-1
South region	0.39	0-1
West region	0.22	0-1
Married	0.18	0-1
Divorced/separated	0.03	0-1
Cohabiting	0.13	0-1
Apartment	0.29	0-1
House	0.61	0-1

Table 2. Substance Use by Employment Status

	Employed	Criminal Justice	Police
Drinking prevalence	0.72	0.72*	0.86*
Rate of drinking	4.27	3.93	4.65*
Binge drinking	1.53	1.31	1.35
Drinking before school/work	0.13	0.17*	0.19*
Marijuana prevalence	0.22	0.14*	0.04*
Rate of marijuana use	2.07	1.29*	0.25*
Marijuana use before school/work	0.05	0.03**	0.008***
Cocaine/ hard drug prevalence	0.05	0.03*	0.01*
Smoking prevalence	0.34	0.28*	0.21*
Rate of smoking	7.33	5.48*	3.15*
NT	100,155	2,207	418

*p<0.05 compared to employed

Table 3. Criminal Justice Occupations in 2015

2002 Census Code	Occupations	N
3920	Security officers	108
3850*	Police and Sherriff patrol	43
3800	Bailiffs and jailers	33
3820*	Detectives and criminal investigators	11
3710*	First line supervisor (police)	4
2110	Judges, Magistrates, and Judicial workers	3
3700	First line supervisors (corrections)	3
3830	Fish and game warden	0
3860*	Transit and railroad police	0

**Police occupations*

Table 4. Effect of Criminal Justice Employment on Alcohol Use Outcomes

Alcohol	Prevalence	Rate of use	School/Work	Binges
C.J. job:				
Between	0.09	-1.86***	-0.08	-0.97*
Within	0.08	-0.18	0.00	0.00
Police:				
Between	1.53*	-1.75	-0.46	-1.07
Within	0.92**	0.04	0.13	0.05

*p<.05 **p<.01 ***p<.001

Table 5. Effect of Criminal Justice Employment on Marijuana Use Outcomes

	Prevalence	Rate of use	School/Work
C.J Job			
Between	-2.21***	-2.86***	-2.83***
Within	-0.27**	-0.22	-0.39*
Police:			
Between	-5.71***	-4.63***	-6.61***
Within	-0.77**	-0.22	0.49

*p<.05 **p<.01 ***p<.001

Table 6. Effect of Criminal Justice Employment on Hard Drug Use Outcome

Hard drugs	Prevalence
C.J Job:	
Between	-2.41***
Within	0.07
Police:	
Between	-6.29***
Within	0.45

*p<.05 **p<.01 ***p<.001

Table 7. Effect of Criminal Justice Employment on Smoking Outcomes

	Prevalence	Rate of use
C.J Job		
Between	-2.17***	-2.45***
Within	-0.52	-0.06
Police: Between	-3.28***	-4.62***
Within	-0.12	-0.37**

*p<.05 **p<.01 ***p<.001

Table 8. Summary of Criminal Justice Employment Effects on Substance Use

	Negative and Significant	Not Significant	Positive and Significant
<i>Between-individual</i>			
Criminal Justice	8	2	0
Police	6	3	1
<i>Within-individual</i>			
Criminal Justice	2	8	0
Police	2	7	1

Figure 1: Prevalence of Criminal Justice Employment from Wave 1 to Wave 17



Figure 2: Prevalence of Police Employment from Wave 1 to Wave 17

