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EXPLORING DIFFERENCES BETWEEN THE HEALTH AND WELLNESS OF
STATE POLICE OFFICERS AND COMMUNITY CORRECTIONS
PROFESSIONALS

By

Rodney Allen Copenhaver
B.S., Eastern Kentucky University, 2008
M.S., Eastern Kentucky University, 2010

A Dissertation
Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Doctor of Philosophy
in Criminal Justice

Department of Criminal Justice
University of Louisville
Louisville, Kentucky

May 2016

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A Dissertation Approved on

April 14, 2016

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DEDICATION

This dissertation is dedicated to Brees and Ezra Copenhaver. Brees, you never cease to amaze me with the things you are able to do and the new skills you learn each day. Ezra, you are my little guy with those big baby blue eyes and his mommy's personality. I love you both so very much and I hope the completion of this dissertation is the beginning of a better life for both of you.

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ABSTRACT

EXPLORING DIFFERENCES BETWEEN THE HEALTH AND WELLNESS OF
STATE POLICE OFFICERS AND COMMUNITY CORRECTIONS
PROFESSIONALS

Rodney A. Copenhaver

April 14, 2016

This dissertation is a comparison study of health and wellness outcomes for a sample of law enforcement officers and a sample of community corrections professionals within the same state. As such, it is the first attempt to determine and compare the independent variables which are significant predictors of law enforcement officer and community corrections professionals' health and wellness for criminal justice employees working in the same context. Data used in the research was gathered from nearly identical health and wellness surveys distributed to the sample of law enforcement officers and the sample of community corrections professionals. Logistic, negative binomial, and Poisson regression analyses were performed to determine which independent variables are significant predictors of officer and professionals' health and wellness outcomes. Results show several factors are significant predictors of both officer and professionals' health and wellness, with law enforcement organizational factors being the most frequent predictors of law enforcement health and wellness. Demographic variables are the most frequent significant predictors of professionals'

health and wellness. It is concluded that variables predictive of officer and professionals' health and wellness differ, necessitating different policy approaches designed to address issues associated with officer and professionals' health and wellness.

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CHAPTER I

INTRODUCTION TO OFFICER HEALTH AND WELLNESS

The criminal justice system in the United States operates as part of an open system, by which the activities and processes affecting the broader system (i.e. political, social, economic, etc.) also affect the operations and functioning of the criminal justice system (Kraska, 2004). The American criminal justice system has undergone significant changes in the last several decades. During this time frame several important events and processes with significant criminal justice implications have occurred which have drastically changed the nature of work in the criminal justice system for the foreseeable future. For example, the terror attacks of September 11, 2001 brought about an increased emphasis on security, highly controversial events related to police brutality (i.e. the deaths of Trayvon Martin, Michael Brown, Eric Garner, etc.), racism, and racial disparities have brought an increased focus on police accountability, and the growth and popularity of social media have brought an increased spotlight on the operations of the criminal justice system. Because of these events, the work performed by actors of the criminal justice system has experienced increased scrutiny, evidenced by the fact that civil litigation against the criminal justice system is ever-increasing [60,000 lawsuits per year (Ross, 2013)]. In turn, this increased scrutiny has sparked much needed change in the way the criminal justice system understands and responds to potentially dangerous and/or sensitive situations. Overall then, these changes have brought about fundamental

changes in police education, media relations, and policy, and additional calls for changes in police training.

An often understudied aspect of criminal justice work today, which can have serious implications for the work of specific actors in the field of criminal justice, is health and wellness. For people that work in the criminal justice field, daily work often includes interacting with physically combative “clients” within threatening situations, organizational pressures related to goals, efficiency, paper work, and tight budgets (Fitzgerald & Vance, 2015), handling potentially volatile media cases (Silverman, 2012), interactions with concerned citizens (Walker & Archbold, 2014), and a range of additional occupational realities inherent to work in the criminal justice system. Overall then, it is generally understood by criminal justice researchers that work in the criminal justice system can and does involve a considerable amount of stress.

The stress inherent to the public service aspect of working in the criminal justice system can have significant effects on the health and wellness of those that work in the system (see the U.S. Department of Justice’s recent report entitled, *Health, Safety, and Wellness Program Case Studies in Law Enforcement*; Kuhns, Maguire, & Leach, 2015). Research in the fields of criminal justice, occupational health, and health care have demonstrated that law enforcement officers, probation and parole officers, and correctional officers all experience a wide range of negative outcomes related to their health and wellness as a result of the occupational stressors and extra-occupational stressors (i.e. familial, personal, etc.) they experience in the course of their service. These negative health and wellness effects can be wide ranging, including a variety of heart problems [i.e. coronary heart disease (Janczura, Bochenek, Nowobilski, Dropinski,

Kotula-Horowitz, Laskowicz, Stanisz, Lelakowski, & Domagala, 2015), hypertension (Thayyil, Jayakrishnan, Raja, & Cherumanalil, 2012), and even cardiac death (Varvarigou, Farioli, Korre, Sato, Dahabreh, & Kales, 2014)], depression, post-traumatic stress disorder, chronic stress, suicide, alcoholism, and shift-work disorder

Because the stress of working in the criminal justice system can have such a wide ranging impact on the health and wellness of those working in the system, the argument is made here that when criminal justice actors experience problems with their health and wellness, that these problems may translate into poorer performance on the part of the worker. In general, if workers are plagued by illnesses, a lack of sleep, or are depressed, then they will be less able to meet the daily demands of their job. This is particularly problematic as officers are required to respond to calls for service, operate motor vehicles, and sometimes use physical force in the course of their duties. Additionally, from an organizational standpoint, if employees are not healthy either mentally or physically, then organizations will likely experience an increase in absences, job turnover, and chances of being presented with a civil lawsuit due to poor performance on the part of officers.

The effects of stress on health and wellness for law enforcement officers is particularly important to study because those that choose to work in law enforcement willingly accept that any encounter has the potential to turn violent (Crank, 2015). At the same time, law enforcement officers are taught to understand their work as particularly dangerous once they begin training in the academy (Blumberg, Giromini, & Jacobson, 2016; Garner, 2005; Henry, 2004; Kappeler, Sluder, & Alpert, 1998). Therefore, while law enforcement work is dangerous in general, law enforcement officers may perceive

their work to be more dangerous than it is in reality. This reality and attitude coalesces into a high-pressure job which has been associated with a range of cardiovascular problems, high rates of cigarette use, psychological stress, shift work, and obesity (Zimmerman, 2012). Additionally, while dealing with the high stress nature of work in law enforcement, law enforcement officers can develop depression and posttraumatic stress disorder (Dowling, Moynihan, Genet, & Lewis, 2006; Mumford, Taylor, & Kubu, 2015), problems which they may cope with through alcohol abuse (Gershon, 2000), suicide (Violanti, 2004), or psychological denial and/or repression (Bonifacio, 1991). In general, law enforcement officers do not want to seek help for the occupational stressors they experience (White, Shrader, & Chamberlain, 2015).

While law enforcement officers do not wish to seek help for the problems that affect them in the course of their duties, the public is generally not aware of the role officer health and wellness plays in the course of law enforcement officers attempting to do their jobs. Therefore, if a police officer cannot physically exert him or herself in short bursts of energy to physically detain a suspect, as is sometimes required (Zimmerman, 2012), the public does not understand the lack of police efficiency in terms of a lack of officer health and/or wellness. Instead, as Walker and Archbold (2014) contend, we now live in the *New World of Police Accountability* where the police are ever-increasingly accountable to the public because, as the police and their behavior are more visible to the public, so too are their mistakes. The public, therefore, is more aware of the mistakes of the police and holds them accountable because public tax dollars are used to fund the operations of law enforcement. Fyfe (2013) adds to this idea that law enforcement professionalism has gone through a transformation of sorts, as law enforcement

professionalism is no longer about strictly crime fighting, but instead enhancing “accountability, legitimacy, and evidence-based practice” (p. 407). Therefore, in short, the police professionalism of today is expected to be more about positive police/public relations and answering to the public when called upon instead of “catching bad guys”. Law enforcement health and wellness, then, fits into Fyfe’s (2013) concept of “new professionalism” by helping law enforcement officers and agencies meet public expectations, maintain legitimacy, and avoid civil lawsuits.

A lack of health and wellness on the part of law enforcement officers may lead to failures of police organizations as they attempt to meet the ideals of Fyfe’s (2013) “new professionalism”. This inability on the part of law enforcement organizations to meet these ideals can take place in a variety of ways, of which the following list is not exhaustive. First, law enforcement agencies are accountable to public citizens, law enforcement agencies must answer financially to the citizens they serve. If law enforcement organizations are faced with tight budgets and fewer officers [as many currently are (Fiedler, 2011)], then these agencies cannot afford to pay the financial costs of a lack of officer performance due to the negative effects of officer health and wellness [i.e. extra time off work, workers compensation claims, in-service health care bills (see Fiedler, 2011), early retirement (Violanti, 2007), and public funds spent on civil litigation costs]. Additionally, law enforcement agencies which do not meet public expectations will not be viewed as legitimate in the eyes of the public. This is particularly problematic, as some research indicates that if citizens do not view the police as legitimate then they will not cooperate with the police (Tankebe, 2013) and can increase levels of community violence and homicide (Corsaro, Frank, & Ozer, 2015). If a

policing organization experiences many of the problems associated with poor officer health and wellness [i.e. alcoholism, domestic violence (Blumenstein, Fridell, & Jones, 2012), traffic accidents, aggression (Griffin & Bernard, 2003), etc.] then citizens may demonstrate less respect for officers. Finally, poor officer health and wellness can stymie police organizational attempts to implement evidence-based practices which may show promise for initiating positive changes in police practices as officers may instead use perseverance strategies to cope with cynicism (Björk, 2008). If officers are cynical (Osborne, 2014) towards the organization they work for they may not buy into the initiatives the organization attempts to implement. Additionally, emerging research suggests police officers may not be trusting of citizens and hold cynical attitudes towards the citizens they serve (Kääriäinen, 2012). If law enforcement officers are unable to deal with job-related stress and/or are unwilling to seek help and hold cynical attitudes towards their jobs and the people they serve, then evidence-based strategies will be difficult to implement and well-intentioned policy changes will be irrelevant. Such hurdles could cause even the most promising community policing initiatives to fail. Therefore, officer health and wellness plays an important role for policing organizations attempting to become what Fyfe (2013) has called the “new professionalism”.

Probation and parole officers working in a community corrections capacity also experience a range of negative health and wellness outcomes, but these problems appear to be qualitatively different than the health problems experienced by law enforcement officers. While law enforcement officers work in ever-stressful environments due to the potential for physical violence probation and parole officers often know their clients ahead of time before they are required to interact with them in a professional capacity.

On the other hand, community corrections officers are often required to do home visits and sometimes have to track down clients when clients do not check in with their officer at required appointments. Probation and parole officers work under a variety of organizational stressors that serve as the primary source of occupational stress (Gayman & Bradley, 2013) for these officers. Such organizational stressors involve the organizational expectations that probation and parole officers not only serve in a law enforcement capacity, but also in a social work capacity. In serving in this social work capacity probation and parole officers can experience what Severson and Pettus-Davis (2013) define as secondary trauma, or the experience of listening to correctional clients recount their own traumatic experiences. Because of this, if probation and parole officers experience problems such as mental illnesses then they may not be able to deal with the mental health problems of their clients (see White, Aalsma, Holloway, Adams, & Salyers, 2015). Furthermore, community corrections officers are often negatively impacted by the effects of job-burnout (Allard, Wortley, & Stewart, 2003; Gayman & Bradley, 2013) and the lack of job satisfaction (Whiteacre, 2006) has on them personally.

Work in probation and parole is often not understood as comparable to law enforcement in terms of the danger represented by clients towards officers. However, a U.S. Department of Justice Report shows that across four states 39 to 55% of probation and parole officers have been victim of a violent attack. In general, probation and parole officers increasingly fear for their safety because of highly publicized attacks (Gonzales, Schofield, & Hart, 2005). This can cause officers to retire early, take more days off from work, and request transfers to other agencies.

Because of the danger inherent to work in probation and parole, the organizational stressors that weigh on officers, and the stressors of working with traumatized clients, it is imperative that criminal justice researchers understand the health and wellness outcomes caused by the stress of work in probation and parole. If probation and parole officers are afraid to come to work or face their clients, or are unable to deal with the stress of interacting with clients while attempting to meet organizational demands, it is likely that probation and parole officers are not effectively doing their jobs. As with law enforcement, when probation and parole officers do not do their jobs effectively they open themselves and their agencies up to public scrutiny, reduce their legitimacy in the eyes of the public, and may inadvertently invite civil lawsuits.

The above-mentioned health and wellness issues are particularly problematic for the contemporary criminal justice system. If those that perform work in the criminal justice system are not suited for service then this will make the efforts of criminal justice organizations ineffective. As the criminal justice system is under increased scrutiny, the ineffectiveness of those that work in the criminal justice system and the agencies such individuals represent will not be excused by a public that is not quick to forgive the mistakes of those that work in public service. The problems represented by a lack of effectiveness also present problems for system legitimacy, as the criminal justice system requires the public to view it as legitimate in order to carry out its responsibilities (Skinns, 2011).

The Role of Health and Wellness in Officer Performance

Many studies have demonstrated in various ways that officers who are deficient in some area related to health or wellness also demonstrate shortcomings in performance.

Shane (2010) found organizational stressors that impacted 461 officers from two Michigan and New Jersey police departments to be a significant predictor of officer performance. Research has also revealed that officers who battle occupational fatigue as a result of performing shift work perform worse in simulated driving scenarios (Waggoner, Grant, Van Dongen, Belenky, & Vila, 2012). Similarly, Violanti, Fekedulegn, Andrew, Charles, Hartley, Vila, & Burchfiel (2012) found law enforcement officers who perform shift work face a higher risk of incurring an injury in relation to officers who work first or afternoon shift. Law enforcement officers who drive while impaired can also lose the ability to effectively operate their vehicle. Stinson, Liederbach, Brewer, & Todak (2014) discovered that of 782 cases of driving under the influence (DUI) arrests of law enforcement officers, many involved traffic accidents and injuries (N=191), fatalities (N=40), and officers who attempted to flee (N=91). In fact, 53.2% of arrests involved a traffic accident and roughly 1/3 of cases involved arrested officers who refused to cooperate (p. 370). Additionally, research has suggested that health and wellness factors relate to an officer's ability to operate their weapon. Monaghan, Jacobsen, & Sellers (2014) found the amount of caffeine included in energy drinks affects an officer's ability to steady their pistol while attempting to aim. The work of Ma, Correll, Wittenbrink, Bar-Anan, Sriram, & Nosek (2013) found officer fatigue may negatively impact officer performance in shoot/don't-shoot decisions by increasing racial bias on the part of the officer. Furthermore, some research has shown that when officers experience anxiety it can lead to poor execution of self-defense tactics due to the effect anxiety has on stimulus-driven processing (Renden, Landman, Geerts, Jansen, Faber, Sveldbergh, & Oudejans, 2014). To summarize, it is clear that the health and

wellness of law enforcement officers has significant implications for the performance of law enforcement officers in real world policing situations.

Interventions Found to be Successful for Addressing Officer Health and Wellness

Research shows there are a variety of successful interventions which have been used to address problems related to officer health and wellness. Perhaps the most often cited recommendation for addressing officer health and wellness concerns is that of additional exercise. The research in this area consistently affirms the benefits of regular exercise to combat officer stress and/or its associated problems (i.e. see Gerber, Kellman, Hartmann, & Pühse , 2010). Specific types of exercise, such as weight training, have also been shown to have positive psychological effects, as Norvell and Belles (1993) found that officers who exited a weight circuit training program experienced greater problems with anxiety, depression, and hostility than program completers. Other organizational benefits have been highlighted in the literature. For example, Steinhardt, Greenhow, & Stewart (1991) found male officer physical fitness is related to less absenteeism from work.

Comprehensive health programs have also been recommended to address many of the health and wellness problems affecting law enforcement officers. These programs often include dietary information, stress reduction techniques, and overall health information/recommendations (i.e. exercise education) and checkups [i.e. blood pressure, body mass index (BMI), etc.]. Many of these programs have shown to have positive effects for participating officers. Kuhns et al. (2015) state these programs typically are best for improving officer nutrition habits and increasing exercise frequency, but have also been shown to improve cardiovascular health (Zimmerman, 2012). Additionally,

such programs have been shown to reduce stress levels and increase vegetable consumption, as such effects were revealed in a health promotion/harm reduction program evaluated by Kuehl, Elliot, Goldberg, MacKinnon, Vila, Smith, Miočević, O'Rourke, Valente, DeFrancesco, Sleigh, & McGinnis (2014). Often the elements of an overall health and wellness program can exist as stand-alone programs and achieve similar effectiveness. For example, Weltman, Lamon, and Chartrand (2014) found a stress reduction program for law enforcement officers delivered via an iPad led to better resilience, self-regulation skills, and on-the-job performance. Other programs designed to deal with the problems law enforcement officers experience with stress and health normally exist as stand-alone programs and have shown effectiveness. For example, one anger management program for law enforcement officers was found to reduce use of force arrests for the sample of officers who underwent anger management training (Abernethy & Cox, 1994). It is important to note that research on community corrections officer health and wellness and the effects of programs to address officer health and wellness are scarce, and thus, the bulk of this section has focused on the research pertaining to the effectiveness of programming designed to address law enforcement officer health and wellness.

This study hopes to build on the current research related to health and wellness in the criminal justice system. While there has been a vast amount of studies conducted on specific outcomes related to law enforcement, community corrections, and correctional officer health and wellness, health and wellness outcome comparisons between workers across the criminal justice professions are rare, if not non-existent. Therefore, this study seeks to provide a comparison of health and wellness outcomes for a sample of law

enforcement officers and a sample of community corrections officers. This comparison is possible, as the law enforcement officers and the community corrections officers are sampled from a state police agency and department of corrections within the same state. Such an analysis is important because previous research has not identified whether law enforcement officers and community corrections officers working in similar environmental contexts demonstrate similar or different outcomes regarding health and wellness. This is ultimately an important consideration because of the potential differences in organizational policy changes needed to address such problems.

CHAPTER II

LITERATURE ON OFFICER HEALTH AND WELLNESS

There is a great deal of research that has been conducted on officer health and wellness across the criminal justice, occupational health, and health care disciplines. Most of this research focuses on specific health and wellness outcomes for standalone samples of law enforcement officer and probation and parole officers. Many of the specific research topics included in these studies relate to specific physical diseases, mental illnesses, unhealthy wellness practices which are common amongst these criminal justice occupations, and the occupational (i.e. shift work, overtime, etc.) and demographic factors that are predictive of changes in health and wellness factors specific to each occupation. In keeping with the focus of this study, the academic literature on each of these respective criminal justice occupations is presented separately to highlight the fact that workers in different criminal justice occupations experience different health problems and practice different coping strategies to compensate for these health deficits. Additionally, the differences in health and wellness outcomes and coping strategies across these separate occupations can be better understood by appreciating the differing theoretical explanations used to interpret differences in health and wellness outcomes across organizational contexts. As such, the literature on law enforcement health and wellness is presented first, followed by the literature on community corrections officer health and wellness. Thus, these literature reviews on officer health and wellness will

establish the background for what is the first attempt at trying to separate the health and wellness differences across workers in two of the primary criminal justice occupations. These two occupations have been chosen because law enforcement and community corrections officers share similar occupational responsibilities in that both groups work in communities with limited supervision and are expected to maintain public safety in general.

1. Literature Review on Law Enforcement Officer Health, Wellness, Stress, and Danger

The scholarly research on law enforcement officer health and wellness is much deeper than any area of research regarding the occupational health and wellness of employees working in other areas of the criminal justice system. Furthermore, this research highlights the unique nature of work in law enforcement. The role of law enforcement in our society certainly involves a service component, however, the nature of law enforcement potentially involves dealing with volatile situations that may result in injury or even death for the officer (Fagin, 2014). Additionally, law enforcement work contains other unique occupational stressors (i.e. shiftwork, negative media coverage, expectations to reduce crime, etc.) (Roberg, Novak, Cordner, & Smith, 2015) that citizens on the other side of the “thin blue line” may not be able to understand. Given these factors, the unique role of law enforcement has been conceptualized by some criminal justice researchers as existing within an open system by which law enforcement organizations are affected by a variety of social, political, and economic factors (Kraska, 2004). How individual officers perceive and respond to the pressures associated with

these various factors has been the subject of much research and has typically been organized around the concepts of stress and danger.

Law enforcement officers experience many different types of stress. The National Institute of Justice (2012) describes sources of police stress as being divided into work-related factors and individual factors. Work-related factors related to police stress include poor management, inadequate or broken equipment, excessive overtime, frequent rotating shifts, regular changes in duties (i.e. “no day is ever the same”), conflicts with the public and system officials, bureaucratic inter-agency issues and politics, and life-threatening situations (Loo, 2005) . Individual factors include family problems [such as divorce, (Loo, 2005)], financial problems, health problems [physical, emotional and psychological, (Loo, 2005)], and taking a second job to bring in extra income. The stresses of overtime in law enforcement can also create extreme fatigue for officers, which are thought to be related to officer accidents, injuries, and complaints from citizens (Vila & Kenney, 2002). To add to these separate conceptualizations of the sources of officer stress, Finn, Talucci, & Wood (2000) note that law enforcement officers may view the punishments offenders receive to be too lenient, that law enforcement is organized along military lines and thus inflexible, and that leadership in law enforcement often does not include minorities and women, which may complicate the successful implementation of community policing efforts in minority neighborhoods. It is important to note that these sources of stress manifest themselves in different ways and thus, impact individual officers in various ways and to different extents.

Stress manifests itself in several ways for those individuals that serve in law enforcement. Zhao, He, & Lovrich (2002) identified five dimensions of police stress,

including depression, anxiety, obsessive/compulsive personalities, interpersonal sensitivity, and anger/hostility. In looking at several of these dimensions, research on depression in law enforcement shows that depression and anxiety among law enforcement officers are not uncommon (see Andrew, McCanlies, Burchfiel, Charles, Hartley, Fekedulegn, & Violanti , 2008; Hartley, Violanti, Fekedulegn, Andrew, & Burchfiel, 2007; Olson & Surrlette , 2004). Additionally, Asmundson and Stapleton (2008) used the Anxiety Sensitivity Index to examine officer anxiety for officers demonstrating PTSD symptoms and officers not exhibiting PTSD symptoms. They found officers demonstrating PTSD symptoms scored much higher (mean-24.6) vs. officers not likely to have PTSD (mean-13.7). An often cited study by DeCoster-Martin, Weiss, Davis, and Rostow (2004) of 800 Louisiana police officers found that female officers were more likely than men to exhibit compulsive characteristic traits than men and female officers may be more stressed than male officers. Research on officer anger and hostility suggests that older officers may be more aggressive than younger officers, yet do not think of themselves as highly as do younger officers (Malcher & Rymaszewska, 2009). Additionally, officer anger has been shown by structural equation modeling techniques to be a precursor to PTSD, which in turn leads to additional anger (Meffert, Metzler, Henn-Haase, McCaslin, Inslicht, Chemtob, Neylan, & Marmar, 2008). Overall, some evidence suggests the organizational aspects of law enforcement work are more stressful for officers than the physical aspects of policing (Suresh, Anantharaman, Angusamy, & Ganesan, 2013). As such, research on the most stressful aspects of policing suggests law enforcement officers think occupational stressors such as work

disrupting family life, lack of communication, lack of workload control, excessive work, and inadequate support as more stressful than policing itself (Collins & Gibbs, 2003).

The danger inherent to police work is also well documented in the literature. Describing the danger unique to police work, Brandl and Stroshine (2003) note most occupations do not contain assaults and homicide within their respective occupational realities (p. 558). This is not the case for law enforcement. As evidence, 48 law enforcement officers were killed in felonious incidents in 2012 and another 52,901 officers were assaulted while on duty (Federal Bureau of Investigation, 2013). Officers do not take these dangerous possibilities lightly. In one study police officers ranked the killing of another human being while on duty to be the most stressful event they could face in law enforcement, followed by the killing of a fellow officer, personal physical attack, encountering a battered child, and engaging in high-speed chases (Violanti and Aron, 1995). Despite these findings, the work of the police may not be as dangerous as the police and general public believe it to be. For example, while the statistics presented above reveal four dozen officers were killed in the line of duty in 2012, another 47 were killed as a result of accidents (22 of which were automobile related) in the same year (nearly as many as were killed feloniously). Researchers have worked to understand the killing of and assaults on police by relativizing these phenomenon against the dangers inherent in other occupations. After reviewing this literature Roberg et al. (2015) came to the conclusion, “that police work is only moderately dangerous compared with other occupations” (p. 440). Additionally, Lichtenberg and Smith (2001) found that when one considers the number of times police conduct a traffic stop that the officers killed rate is 1 in 9.2 million and the assault rate is 1 in 20,512. Furthermore, other officers die as a

result of stress-induced suicide (although whether or not these numbers are higher than in the general public is a source of contention within the literature) (Robert et al., 2015). Regardless, from their beginnings in the academy the police are taught to hold a worldview that perceives an ever-present danger (Kappeler et al., 1998), which in turn contributes to many of the occupational stressors officers experience.

Stress and perceptions of danger can affect police officers in a number of ways. The National Institute of Justice Journal (2000) reports officer job-related stress is associated with increased cynicism, suspiciousness, emotional detachment, absenteeism, early retirement, aggressiveness, posttraumatic stress disorder, suicide, and a variety of physical health problems such as heart attacks, weight gain, and ulcers (p. 20). Police officers have also shown high rates of alcoholism (Violanti, Slaven, Charles, Burchfiel, Andrew, & Homish, 2011) and drug problems (Blackmore, 1978; Gorta, 2009). Violanti (1995) even contends that, “The majority of police officers in the United States do little or no meaningful exercise. Surveys of police show that approximately 86 percent report lack of exercise and that 25 percent are overweight” (p. 590). Law enforcement officers are also prone to experience sleep deprivation and sleep disorders (see Marmar, McCaslin, Metzler, Best, Weiss, Fagan, Liberman, Pole, Otte, Yehuda, Mohr, & Neylan, 2006; Neylan, Metzler, Best, Weiss, Fagan, Liberman, Rogers, Vedantham, Brunet, Lipsey, & Marmar, 2002; Rajaratnam, Barger, Lockley, Shea, Wang, Landrigan, O’Brien, Qadri, Sullivan, Cade, Epstein, White, & Czeisler, 2011) and many are prone to falling asleep while operating patrol vehicles (see Rajaratnam et al., 2011). Furthermore, a lack of sleep quality in law enforcement officers has been linked to increasing stress, burnout, and depression (Yoo & Frank, 2013). Police officers have even demonstrated

increased risk of thyroid, skin, and breast cancer (specific to male police officers) (Wirth, Vena, Smith, Bauer, Violanti, & Burch, 2013), which some researchers believe is caused via the effects of chronic stress (Wirth, Vena, & Burch, 2014). Police stress can also extend to the homes of officers, as stress is also associated with a variety of family problems, such as divorce (Tanigoshi, Kontos, & Remley, Jr., 2008) and domestic violence (Gershon, Barocas, Canton, Li, & Vlahov, 2009). Furthermore, some research indicates that officer stress is positively associated with time spent in the field of law enforcement (Franke, Ramey, & Shelley, 2002).

Law enforcement agencies have tried various methods to reduce the negative effects associated with police officer stress. Law enforcement agencies do so based on research showing social supports reduce emotional distress and work related stress for law enforcement officers (Patterson, 2003). Strategies championed by researchers include classes on stress management and reduction, group therapy sessions for officers, and increased use of police mentoring programs, among other programming (Arrigo & Garsky, 2001) such as aerobic fitness (Norris, Carroll, & Cochrane, 1990), yoga (Jeter, Cronin, & Khalsa, 2013), and acupuncture (Jarero, Amaya, Givaudan, & Miranda, 2013). He, Zhao, and Archbold (2002) also highlight the importance of peer support and coping mechanisms in helping officers navigate the stress of police work (p. 536-537). Other research argues changes to the nature of police work, (i.e. eliminating rotational shifts) are essential to reducing officer stress (National Institute of Justice, 2000). While the changes recommended by such research may not be feasible, given the wealth of research and continuing efforts to reduce law enforcement stress and the negative side effects of

such stress, it is apparent that the need to help officers cope with stress has come to occupy an important place in the literature.

Perhaps the most obvious place to see the negative effects of stress on law enforcement officers is in their health and wellness behaviors. Stress leads to poor health, generally through the combination of the physical/physiological consequences of stress and through the ways that individuals do (or do not) respond to such stress (Gershon, Lin, & Xianbin, 2002). For example, research has shown an association between officer stress and lower officer self-perceptions of personal fitness (Gerber, Kellmann, Elliot, Hartmann, Brand, Holsboer-Trachsler, & Pühse, 2013) and that officers are more physically active on their days off work (Ramey, Perkhounkova, Moon, Tseng, Wilson, Hein, Hood, & Franke, 2014). Law enforcement officers also demonstrate poor dietary decisions, such as a lack of vegetable consumption (Kuehl et al., 2014), and drink energy drinks and excessive amounts of caffeine to deal with having to perform shift work (Monaghan et al., 2014). Officers even self-medicate in the form of alcohol (Ménard & Arter, 2013) and drug abuse (Cross & Ashley, 2004) to deal with some of traumatic events they experience in the course of duty. Finally, officers may even avoid work altogether to deal with the stressful nature of police work, as Violanti, Fekedulegn, Hartley, Andrew, Charles, Tinney-Zara, & Burchfiel (2014) suggest some officers may deal with work stress by using more 1-day absences. When officers respond to stress with little/no exercise, poor diets, self-medicating or pulling away from potentially supportive peers, family and other loved ones, the consequences of stress are exacerbated, and experienced both on and off the job.

2. Literature on Community Corrections Health and Wellness.

There also exists research on community corrections officer health and wellness, however, this research is less extensive than that of the health and wellness research on law enforcement officers. Writing in the journal *Federal Probation* in 1986 Paul W. Brown commented that there is, “little published regarding stress in our field” (p. 4). In the years since Brown wrote that statement, not much has changed.

As mentioned above, what research that has been conducted on community corrections officer health and wellness emphasizes the organizational stressors that negatively weigh on officers and impact their health and wellness. This research shows how the role of community corrections officers in our society involves a service component, however, the nature of community corrections potentially involves dealing with volatile situations that may result in injury or even death for the officer (Kemshall, 2012) in a variety of life-threatening situations (see also Finn & Kuck, 2005; Thomas, 1988). Because of these threats and the stressors inherent to bureaucratic service work, the stressors of work in community corrections are similar to that of work in law enforcement. Slate and Johnson (2013) contend community corrections officers experience stress from a total of four different realms, including the work of community corrections itself, internal stress from community corrections organizations, external sources such as the criminal justice system, the public and the community, and personal/family life (see also Spielberg, Westberry, Grier, & Greenfield, 1981; Whisler, 1994). These stressors are some of the same stressors experienced by workers across a variety of service occupations, however, the stressors experienced by community corrections officers across the differing stress areas are all experienced in unique ways by

community corrections officers. More specifically, Slate and Johnson (2013) found differences in job satisfaction levels between state and federal community corrections officers and that officers from each group created differing lists as to the top 10 stressors of their jobs. Federal probation officers listed in descending order, excessive paperwork, being expected to do too much in too little time, due dates for reports, having to take work home, lack of community resources, concern over making a mistake, frustration with the system, scheduling of court appearances, visiting probationers' homes, and political pressure within the agency. State probation officers listed the top 10 stressors of their job in descending order, inadequate salary, courts being too lenient on offenders, lack of promotional opportunities, frustration with the system, excessive paperwork, ineffectiveness of the judicial system, expected to do too much in too little time, lack of recognition for good work, ineffectiveness of the correctional system, inadequate support from the agency, and a lack of community resources.

Regarding the stressors of community corrections work itself, these stressors include less time with clients due to high case-loads and job expectations requiring officers to be more authoritative with clients (Salyers, Hood, Schwartz, Alexander, & Aalsma, 2015). Additionally, community corrections officers are required to work caseloads containing violent offenders, serve clients who commit suicide, and are threatened or assaulted by clients (Lewis, Lewis, & Garby, 2013, p. 67). These stressors also include job role stress related to the conflicting (and sometimes simultaneous) expectations that probation and parole officers act as both law enforcement officers and social workers (Slate & Johnson, 2013, p. 197). How individual officers perceive and

respond to the pressures associated with these various factors has been the subject of some research and has typically been organized around the concepts of stress and danger.

Referring to the various stress categories (mentioned above), organizational stress refers to the stress coming from the organization for which the officer works, where factors like having a lack of input into organizational affairs can cause stress for officers (see also Slate, Wells, & Johnson, 2003), as can unsatisfactory pay and a lack of promotion potential (see Simmons, Cochran, & Blount, 1997; Whisler, 1994; Whitehead, 1986), and role conflict (see also Brown, 1987; Whitehead, 1985, 1986). In addition to organizational pressures, probation officers are subject to pressures coming from other government officials and the media, as social, political, and economic factors weigh on the work of the individual probation officer (Davidson, 1976; Mawby & Worrall, 2011; Worrall & Mawby, 2013). Finally, personal stressors include, for example, problems officers experience from the strains the work of community corrections places on relationships between officers and their families, as community corrections officers often experience a lack of familial support, which leads to stress (Slate & Johnson, 2013, p. 198-201).

The potential danger inherent to work in community corrections is also well documented in the literature. Describing the danger unique to work in community corrections, Slate and Johnson (2013) note the nature of most occupations does not change as drastically as can work in community corrections (i.e. high-adrenaline events can occur at any time) (p. 199). They note this is so because community corrections officials must interact with clients under supervision in often unpredictable circumstances. At any time, clients may be in an unstable emotional condition because of

the loss of a job, they may be using drugs/alcohol, may not be taking prescribed medications, or may believe the officer has approached them to harass or take them into custody. Additionally, they note a client's family members may also pose risk to an officer, as they can also have altercations with officers or intervene on the behalf of a client in violent and confrontational ways.

Unfortunately, data on the number of community corrections officers injured or killed on the job is not collected as part of any unified data collection system [such as the Federal Bureau of Investigations' (F.B.I.) annual Uniform Crime Report (U.C.R.)] and data on the subject is generally limited in the criminal justice literature (Cobb, Thornton, & Schweer, 2014). Despite the lack of information on how dangerous community corrections officers perceive their work to be, the work of community corrections has been shown by a handful of empirical studies (much of which is dated) to pose a serious level of danger to officers serving in communities. As revealed above, one U.S. Department of Justice report showed that across four states 39-55% of community corrections officers surveyed had been victim of a violent assault (Gonzales, Schofield, & Hart, 2005). Additionally, Bigger (1993) found in a study of all United States and U.S. territorial jurisdictions (state and federal) conducted by The Federal Probation and Pretrial Officers Association that between 1980 and 1993 there was a reported 1,818 serious physical attacks against officers and another 792 attempted assaults. Also, in a Minnesota survey of community corrections officers Arola and Lawrence (1999) found 74% of officers had been threatened verbally or physically in their career and 19% had been physically assaulted at least once. Additionally, Parsonage (1990) contends 35-50%

of community corrections officers experience hazardous incidents¹ (p. 16). Parsonage & Bushey (1987) also found in a study of probation and parole officers that 38% of officers had been assaulted, intimidated, or threatened. When probation officers are threatened or injured, such incidents usually take place in the office rather than the field (Rapp-Paglicci, 2004). Despite limited data, most officers take the possibility of victimization into account (Thornton, Schweer, Eagleton, & Barton, 2003) and in one study federal probation officers ranked hazardous duty highly as a source of stress (Thomas, 1988).

The Impacts of Occupational Stress on Community Corrections Officers

Stress and perceptions of danger can affect community corrections officers in a number of ways. Denhoff, Spinaris, & Morton (2014) demonstrate that the primary stressors related to community corrections are organizational and operational, which affects officer stress and leads to officer burnout [other research also supports this notion, (see Gayman & Bradley, 2013; Salyers et al., 2015)]. Denhoff et al. (2014) also note that officer stress is caused by exposure to traumatic events inherent to work in community corrections. Some research shows the organizational stress of probation work may be more stressful than the occupational stressors of work in the field. For example, O'Donnell, and Stephens (2001) found organizational stressors (i.e. role boundary and overload) more straining on employees than occupational stressors. Dombek (2014) also found evidence to support the notion that environmental factors specific to the workplace relate to officer stress, specifically burnout. More specifically, burnout has been shown to be correlated with promotional and disciplinary fairness in correctional agencies

¹ "Hazardous Incidents" is defined by Parsonage (1990) as, "a situation that has the potential to result in physical assault or other illegal act against the worker" (p. 4-5).

(McDonald, 2012). Dombek (2014) found as officers experience more autonomy and a lack of supervisory support, that burnout increases. This suggests that officers need organizational guidance and support as to what their role and purpose is in the organization. When this is lacking, workers suffer burnout. Other research supports the notion that management styles and the culture of an organization are the most important predictors of officer satisfaction (Getahun, Sims, & Hummer, 2008). Stress has also been shown to be related to job dissatisfaction (Simmons et al., 1997), emotional exhaustion (Allard, et al., 2003), and employee turnover (Simmons et al., 1997). Additionally, research shows female state probation officers experience more physical stress, yet less occupational stress than male state probation officers (Wells, Colbert, & Slate, 2006). Finally, probation and parole officers who feel under-prepared educationally experience more occupational stress than officers who are better-prepared educationally (Pitts, 2007).

Other research on the effects of stress on community corrections officer health and wellness reveals interesting facts as to how the stress of working in community corrections can affect employees in different ways. In an ethnographic study of probation officers working with high-risk offenders, White, Gasperin, Nystrom, Ambrose, & Esarey (2005) found officers sometimes reported feeling, “angry, depressed, frustrated, or exhausted at work” (p. 21). Additionally, Rebman (2003) found probation officers can often experience depression in a variety of ways including sleep difficulties, becoming restless or agitated, and feeling fatigued. Kessler, White, Birnbaum, Qiu, Kidolezi, Mallett, and Swindle (2008) also found officer depression affects officers’ respiratory functioning, cardio-metabolic system, and is related to officers having problems with

arthritis, gastrointestinal issues, and obesity. The stress of working in probation can also lead to multiple types of cynicism (Curtis Jr., Reese II, & Cone, 1990), as well as high employee turnover rates (Lee, Joo, & Johnson, 2009). Finally, probation departments which do not allow officers to carry firearms may elect to allow officers to carry firearms if they believe officers face excessive dangers while on duty (Roscoe, Duffee, Rivera, & Smith, 2007).

The effects of occupational stress can even affect the quality of the services officers provide to their clients. Research by Lewis, et al., (2013) suggests probation officers who experience traumatic stress and burnout had caseloads with more violent and sexual recidivism, offender suicide, and threats/assaults on their caseloads. As a result of occupational stress, a range of negative psychological effects impact probation and parole officers, which usually includes depression (Gayman & Bradley, 2013). Stress has also been found to be directly related to officer physical health problems including poor sleep and concentration, poor job performance, and inappropriate anger (Pitts & Taylor, 2011). Additionally, if departments choose to allow officers to carry firearms this may change the nature of departmental service to clients, moving from treatment to enforcement (Roscoe, et al., 2007). Some officers even decide to carry firearms without departmental authorization (Lindner & Bonn, 1996), violating policy and opening themselves and their agency up to potential civil suits if officers discharge their weapons without authorization and injure or kill a client or by-stander. Job stress has also been revealed to have an indirect link to probation officer intentions to quit their jobs (Simmons, et al., 1997). This turnover has been linked to low morale and job productivity (Lee et al., 2009; Mitchell, Mackenzie, Styve, & Gover, 2000; Slate & Vogel, 1997; Slate, Vogel, & Johnson, 2001).

Additionally, turnover is associated with unnoticed violations/recidivism, increased training and recruiting costs, as well as higher caseloads for those officers who remain with the organization (Lee et al., 2009; Simmons et al., 2000), effectively reducing overall agency performance (Lee et al., 2009). The occupational stressors associated with work in probation and parole can also extend to the homes of officers, as stress is also associated with a variety of family problems.

Organizational Efforts to Reduce Occupational Stress in Community Corrections

Community corrections agencies have tried various methods to reduce the negative effects associated with officer stress. In a report put together for the National Institute of Justice (NIJ), Finn and Kuck (2005) contend community corrections administrators can reduce officer stress in several ways. This includes, 1) recruiting and hiring higher-quality and more dedicated staff, 2) offering, supporting, and participating in an organizational stress-reduction program, 3) ensuring confidentiality when officers seek mental health or other services, 4) assessing program effectiveness, 5) providing adequate program funding, and 6) reducing organizational sources of stress.

Additionally, Slate et al. (2003) contend participatory management schemes that allow officers more input into organizational decisions reduces stress. Finally, Pitts (2007) found less educated officers experienced higher levels of stress and contends officers can reduce stress levels by forming social support networks within their community corrections organizations. These results are not surprising, given the similarities between the work of law enforcement and community correctional officers, work that often involves searching for and physically detaining potentially noncomplying individuals and pressures to meet public safety demands while attempting to also hold to the rights and

civil liberties of suspects and offenders, among other potentially stressing factors. Furthermore, burnout reduction programs have been suggested to increase job satisfaction and reduce burnout and job turnover (White et al., 2015).

As with law enforcement officers, when community corrections officers experience stress it negatively affects their health and wellness in significant ways. However, little research exists on how the stress of working in community corrections affects officers in the field. Community corrections officers perform service work that exists somewhere on a continuum between the work of law enforcement and social work. At the same time, law enforcement officers are charged with investigating and arresting individuals who freely exist in a civil society who are suspected of breaking the criminal code. These differences in occupational realities warrant study across similar occupational environmental contexts.

3. Building on the Literature to Examine Differences in Law Enforcement and Community Corrections Health and Wellness Outcomes

The research cited above generally reveals that work in the criminal justice system can be stressful, yet the organizational aspects of work in criminal justice can be even more stressful and have further negative effects on officer health and wellness. This literature also reveals law enforcement officers and community corrections officers share many of the negative health outcomes associated with experiencing occupational stress. However, there are important differences between these groups that must be distinguished. Law enforcement officers experience the negative effects of stress in a more external fashion (i.e. suspiciousness, aggressiveness, etc.), experience the more

“concrete” effects of work/family conflicts related to occupational stressors (i.e. divorce), and appear to be more concerned with the possibility of being faced with danger during each shift. Community corrections officers seem to experience many of the negative health and wellness outcomes that law enforcement officers experience (i.e. job burnout, depression, general health problems, etc.), however, community corrections officers seem to direct their frustrations towards the bureaucracy and organizational problems inherent to community corrections in general. Therefore, given that these groups experience many of the same health and wellness problems, while also demonstrating some differences, this study is an important first step in understanding whether officers working within the same state for the state’s state policing agency and community corrections agency will demonstrate similar or differing outcomes on health and wellness measures.

Furthermore, we have a great wealth of information on law enforcement officer health and wellness, however, very little information on community corrections health and wellness, as the amount of scholarly attention to the health and wellness of law enforcement and community corrections officers is significantly unbalanced. This study will allow for the use of law enforcement officer health and wellness outcomes as a baseline to which we can compare health and wellness outcomes for the population of community corrections officers. In addition, this will allow us to compare the findings for law enforcement officers against what has already been established in the literature on law enforcement officer health and wellness. Ultimately, the findings gleaned from this study can be used in influence law enforcement and community corrections policy to increase officer health and wellness, and assist agencies in meeting the public’s

accountability expectations, maintain legitimacy, and effectively implement evidence-based practices.

CHAPTER III

METHODS

This chapter details the methodological procedures used to collect the data on the samples of law enforcement officers and community corrections officers from the populations of state criminal justice agencies. Because the data used in this research was collected from the law enforcement officers and the community corrections officers, the following section details the research methods used as part of each study to collect health and wellness data from the officers. The first major section of this chapter provides information on methods used to collect data on state law enforcement officers and the second section provides information on how data was collected on state community corrections officers. The third section provides information on how variables used in the analysis were operationalized. The fourth section provides descriptive statistics for law enforcement officer demographics, physical and mental health measures, wellness measures, and danger measures. Each of these topics will be presented via separate tables. The fifth section presents the same information for community corrections officers and is presented in a similar fashion. The sixth and final section presents information related to statistical analysis of collected data.

1. Law Enforcement Study Methodology.

To research the extent that law enforcement officers experience both positive and negative health and wellness attitudes and behaviors, the researcher surveyed all sworn

state police officers within one state police agency. A total of 1,021 officers working for the state police agency were invited to participate in this study. The researcher created the survey used in this study from a review of the academic literature on law enforcement health, stress, and wellness. After the survey was created, the researcher contacted the Commissioner of the state police agency in October, 2014 to request his endorsement and approval of the study so it could be administered across the state to each officer. This endorsement also helped the researcher to gain institutional approval from the University of Louisville's Institutional Review Board (IRB) and officer cooperation in completing the surveys, as the Commissioner's office sent a written request to each officer (via email) requesting each officer participate in the study.

Surveys were administered to officers via email through Survey Monkey, an electronic survey instrument. In February, 2015 the Commissioner's office sent an e-mail to each individual officer, requesting they participate in the health and wellness study. As mentioned above, this request was accompanied by an endorsement and request for participation by the Commissioner. Two follow-up requests for participation were sent through the Commissioner's office. After the two follow-up attempts the survey software in Survey Monkey stopped receiving completed surveys on March 4, 2015. The survey received 470 responses, for a response rate of 46%.

Officers were surveyed on their attitudes and experiences related to officer stress, danger, and health and wellness. Specifically, the officers were asked to answer questions related to basic demographic factors, current and past exercise habits, past physical injuries, attitudes towards health and wellness, supplement use, and perceptions

of the dangers of their work. Demographic questions include sex² (male/female), age, education (measured as the amount of education they had completed—high school, some college but no degree, associate’s degree, bachelor’s degree, graduate courses, and graduate degree), number of years served in law enforcement, shift typically worked, whether officers serve in an operations or administrative role, and whether officers work for the agency’s vehicle enforcement division.

Questions related to exercise include the number of days officers typically exercise each week, how many minutes officers exercise on the days they exercise, the primary type of exercise done (weight lifting, CrossFit, spinning/biking, yoga, Pilates, swimming, other, and none), whether officers played an organized sport in high school, and whether they participated in an organized/intramural sport in the last three years.

Questions related to injuries asked officers whether they have ever experienced one of several injuries while on the job [broken bone, deep cut or laceration, significant tendon/muscle damage, skin burn, significant head injury/trauma (i.e. concussion), and other]. Officers were also asked whether they have ever been taken to the hospital or emergency room for an injury sustained while on the job.

Questions related to officer health and wellness attitudes and experiences include questions asking officers to rate their current overall health, report their sleeping, eating, drinking, smoking and exercise habits. Additionally, questions about injuries and mental health are also included.

² Analysis of differences across officer sex was not possible due to the low number of women who work for the agency (22) (Branch Commander, personal communication, June 12, 2015), even though 16 women did respond to the survey for a very high response rate from women.

2. Community Corrections Study Methodology

Similarly, probation and parole professionals in the same state were surveyed to investigate the extent to which they demonstrate positive and negative outcomes on health and wellness measures. Collecting survey responses from community corrections professionals in the same state as law enforcement officers was done for purposes of being able to compare the similarities and differences on health and wellness measures between law enforcement and community corrections professionals. This sample included all community correction professionals serving as probation and parole officers and in office positions across the state. Sampling in this fashion was necessary, as some probation and parole professionals who are not technically “officers” also have caseloads of clients. In sum, 840 probation and parole professionals were invited to participate in the study.

Like the survey of state law enforcement officers, the researcher referenced the academic literature on community corrections officer health, stress, and wellness to create the survey. After the survey was created, the researcher contacted the Commissioner of the state’s Department of Corrections (DOC) to request her endorsement and approval of the study so it could be administered across the state to each officer. This endorsement also helped the researcher to gain institutional approval from the University of Louisville’s Institutional Review Board (IRB) and officer cooperation in completing the surveys, as the Commissioner’s office was instrumental in ensuring officer participation in the survey as it was distributed to the officers via agency email.

Surveys were administered to community corrections professionals via email through Survey Monkey. In October, 2015 the DOC sent an e-mail to each individual

employee requesting they participate in the health and wellness study. One follow-up request for participation was sent to the officers five days after the original request for participation was distributed. After the follow-up attempt the survey software in Survey Monkey stopped receiving completed surveys on October 22, 2015. The survey received 342 responses, for a response rate of 40.7%.

Professionals were surveyed on their attitudes and experiences related to officer stress, danger, and health and wellness, which means the community corrections professionals were administered the same survey questions as law enforcement officers³. Specifically, community corrections professionals were asked to answer questions related to basic demographic factors, current and past exercise habits, past physical injuries, attitudes towards health and wellness, supplement use, and perceptions of the dangers of their work. Demographic questions include sex (male/female), age, education (measured as the amount of education they had completed—high school, some college but no degree, associate’s degree, bachelor’s degree, graduate courses, and graduate degree), number of years served as a community corrections officer, shift typically worked, and whether officers serve in an operations or administrative role.

Questions related to exercise include the number of days officers typically exercise each week, how many minutes officers exercise on the days they exercise, the primary type of exercise done (weight lifting, CrossFit, spinning/biking, yoga, Pilates, swimming, other, and none), whether officers played an organized sport in high school, and whether they participated in an organized/intramural sport in the last three years.

³ With the exception that law enforcement officers were presented with one additional question asking officers whether they work in the agency’s vehicle enforcement division.

Questions related to injuries asked officers whether they have ever experienced one of several injuries while on the job [broken bone, deep cut or laceration, significant tendon/muscle damage, skin burn, significant head injury/trauma (i.e. concussion), and other]. Officers were also asked whether they have ever been taken to the hospital or emergency room for an injury sustained while on the job.

Questions related to officer health and wellness attitudes and experiences include questions asking officers to rate their current overall health, and to report their sleeping, eating, drinking, smoking and exercise habits. Additionally, questions about injuries and mental health are also included.

3. Operationalization of Variables

The following section contains information as to the operationalization of each variable of interest included in both the law enforcement and community corrections surveys. The major sections include information on the operationalization of demographic variables, officer physical and mental health, officer wellness, and officer danger as they originally appeared in the surveys distributed to officers. The recodings of variables used in the regressions included in the analysis section are included here as well.

Demographic variables included in the analysis are sex (1=male, 0=female), officer age, education (1=high school, 2= some college, no degree, 3= associate's degree, 4= bachelor's degree, 5= graduate courses, 6= graduate degree), number of years served in law enforcement, shift worked (1= first, 2= second, 3= third), and role [(1=operations, 2= administrative) scores for the operations value were later recoded into an "operations"

dummy variable]. Variables related to officer physical and mental health include overall health (originally measured as 1=excellent, 2=very good, 3=good, 4=fair, 5=poor, 6=very bad, but was later recoded into a dummy variable with 1=excellent, 2=very good, and 3=good as 1=good health, and 4=fair, 5=poor, and 6=very bad as 0=poor health), whether officers have experienced depression since they began working in law enforcement (1=yes, 0=no), whether officers would seek professional help for diagnosed or undiagnosed episodes of depression (1=yes, 0=no), whether officers feel in control of their jobs [originally measured as 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree, but later recoded into a dummy variable (1=yes, 0=no)], and whether officers feel they have an adequate level of self-esteem (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree). Variables related to officer wellness include the number of days officers exercise each week, participation in an intramural or recreational sports league in the last three years (1= yes, 0= no)], using stimulant drinks to get through a shift (1=yes, 0=no), number of stimulant drinks consumed per shift, using stimulant drinks to get through a workout (1=yes, 0=no), whether officers normally have an alcoholic drink when they return from work (1=yes, 0=no), number of days officers consume alcohol per week, and whether officers use tobacco (1=yes, 0=no). Several questions also asked officers about their stimulant drink choices and officers responded (1=yes, 0=no) as to whether they are currently using one of the following stimulant drinks: coffee, tea, energy drinks, caffeinated soda, or muscle building energy mixes. Officers were also asked how many hours they sleep each day, and how many fast food meals they consume per week. Finally, variables related to officer danger include whether officers believe law enforcement is dangerous (1=strongly agree, 2=agree,

3=disagree, 4=strongly disagree), whether they answered they had experienced one of the following injuries while on duty: broken bone, deep cut/laceration, significant tendon/muscle damage, skin burn, significant head injury/trauma (i.e. concussion), or some other type of injury, and whether they have ever been taken to the hospital for an injury they experience while on-the-job (1=yes, 0=no).

Dependent Variables

The following section contains information specific to the dependent variables which will be analyzed as part of the regression plan (detailed below) used to analyze officer and community corrections professionals' outcomes on a variety of health and wellness measures. First, whether officers rate their health as "good" will be defined using dummy coding of 1= Good Health and 0= Poor Health. Next, whether officers/professionals have experienced depression since working in law enforcement or community corrections is measured as whether officers stated 1=Yes or 0=No that they have experienced depression since working in law enforcement/community corrections. Next, whether law enforcement officers/professionals would seek help for depression is defined as whether officers/professionals answers 1=Yes or 0=No that they would seek professional help for diagnosed or undiagnosed episodes of depression. Next, whether law enforcement officers/community corrections professionals have been taken to the hospital or emergency room since they began work in their respective fields is defined as to whether officers/professionals responded 1=Yes or 0=No that they have been taken to the hospital for an on-the-job injury since they began working in law enforcement of community corrections. Next, officer/community corrections professionals' exercise is measured as a count of the number of days officers/professionals state they normally

exercise each week. Next, whether officers/professionals use stimulants to get through their work shifts was defined by officer/professionals' responses of 1=Yes or 0=No that they rely on stimulants just to help them get through their work shift. Additionally, whether law enforcement officers and community corrections professionals consume an alcoholic drink after returning home from work was defined as whether officers/professionals answered 1=Yes or 0=No that they normally consume an alcoholic drink after returning home from work. Next, the number of days officers/professionals drink alcohol per week is measured as a count of the number of days officers and professionals say they normally consume alcohol each week. Next, the number of hours of sleep officers/professionals get each day is measured as a count of the number of hours officers and community corrections professionals state they sleep each day. Finally, officer fast food consumption is measured as a count of the number of times officers and community corrections professionals state they normally consume fast food each week.

4. Descriptive Statistics for Sample of State Law Enforcement Officers

The section below shows the results of descriptive statistics for the sample of state law enforcement officers used in this study. Specifically, the tables presented below provide demographic information on the officers, as well as descriptive statistics related to officer physical and mental health, as well as officer wellness. Finally, important descriptive statistics related to officer perceptions of and experiences with danger are presented.

Table 4.1 below shows descriptive statistics for the sample of state law enforcement officers. Most officers who responded to the survey were male (96%).

Additionally, the average officer who responded to the survey is 38 years old, has an associate's degree level education, and has 13 years of experience as a law enforcement officer. Next, 63% of officers work first shift, 28% of officers work second shift, and 9% of officers work third shift. Finally, most of the officers who responded to the survey work in an operations capacity (86%), compared to the 14% of administrative officers who responded to the survey.

Table 3.1- Demographics for Law Enforcement Officers

| Measure | Value | Standard Deviation | Minimum | Maximum |
|--------------------|--------------|--------------------|---------|---------|
| Male | 96% | - | - | - |
| Female | 4% | - | - | - |
| Age | 38.33 (mean) | 7.96 | 22 | 65 |
| Education | 3.08 (mean) | 1.20 | 1 | 6 |
| Officer Experience | 13.09 (mean) | 7.64 | <1 | 40 |
| First Shift | 63% | .48 | - | - |
| Second Shift | 28% | .45 | - | - |
| Third Shift | 9% | .29 | - | - |
| Operations | 86% | - | - | - |
| Administration | 14% | - | - | - |

| | | | | |
|---------------------------------------|-----|--|--|--|
| Works in Vehicle Enforcement Division | 11% | | | |
|---------------------------------------|-----|--|--|--|

Data obtained from a Branch Commander for the state police agency under study shows the demographic data gleaned on this sample of state police officers is generally similar to the true demographic characteristics of the agency population as a whole. First, the agency is comprised of 98% male officers and 2% female officers, the average age of officers is 38 years (range of 22-62 years of age), and average officer experience is 9.73 years of service. Additionally, 11% of officers work in the agency's vehicle enforcement division. Regrettably, further information is not available on agency population demographics, however, what is available suggests the sample of officers surveyed for this project is demographically similar to the agency population.

The next set of statistics (see Table 4.2 below) reveals descriptive information related to law enforcement officer physical and mental health. Regarding officer physical health, 87% of officers stated they are in good health. In reference to mental health, 34% of officers stated they had experienced depression since they began working in law enforcement, however, only 56% of officers stated they would seek professional help if they experienced an episode of depression. Additionally, 88% of officers agreed they feel in control of their jobs and have an adequate level of self-esteem.

Table 3.2- Descriptive Statistics for Law Enforcement Officer Physical and Mental Health

| Measure | Value | Standard Deviation | Minimum | Maximum |
|---------------------------------|-------------|--------------------|---------|---------|
| Overall Health | 87% | - | - | - |
| Experienced Depression | 34% | - | - | - |
| Would Seek Help for Depression | 56% | - | - | - |
| Feeling in Control of One's Job | 88% | - | - | - |
| Self-Esteem | 3.33 (mean) | .56 | 1 | 4 |

Table 4.3 below reveals descriptive statistics for law enforcement officer wellness. In terms of officer fitness, these statistics show that officers exercise an average of three days per week and 35% of officers participated in an intramural or recreational sport in the last three years. Regarding stimulant use, 30% of officers stated they rely on a stimulant to help them get through their shift, with officers as a whole consuming an average of 1.81 stimulant drinks per shift. Additionally, 23% of officers rely on a stimulant to help them get through their workout. More specifically, 26% of officers drink coffee, 12% drink a form of tea, 9% of officers drink energy drinks, half of the officers (50%) drink caffeinated soda, and 18% consume some sort of muscle building energy mix (i.e. N.O. Explode). Regarding alcohol and tobacco use, 14% of

officers normally have an alcoholic drink when they return home from work, officers drink an average of 1.12 days per week, and 26% of officers use some form of tobacco. Finally, officers sleep an average of 6.78 hours a night and consume roughly four fast food meals per week (3.96).

Table 3.3- Descriptive Statistics for Law Enforcement Officer Wellness

| Measure | Value | Standard Deviation | Minimum | Maximum |
|---|-------------|--------------------|---------|---------|
| Officer Exercise | 3.11 (mean) | 1.75 | 0 | 7 |
| Intramural Participant | 35% | - | - | - |
| Use Stimulant to Get Through Shift | 30% | - | - | - |
| Stimulant Drinks Per Shift | 1.81 (mean) | 1.40 | 0 | 10 |
| Use Stimulant to Get Through Workout | 23% | - | - | - |
| Have Alcoholic Drink When Return Home from Work | 14% | - | - | - |
| Number of Days Drink Per Week | 1.12 (mean) | 1.60 | 0 | 7 |

| | | | | |
|------------------------------|-------------|-------|---|----|
| Use Tobacco | 26% | - | - | - |
| Coffee | 23% | - | - | - |
| Tea | 12% | - | - | - |
| Energy Drinks | 9% | - | - | - |
| Caffeinated Soda | 50% | - | - | - |
| Muscle Building Energy Mixes | 18% | - | - | - |
| Sleep | 6.78 (mean) | 1.147 | 3 | 12 |
| Fast Food Consumption | 3.96 (mean) | 2.95 | 0 | 25 |

The last section of descriptive statistics for law enforcement officers presented information related to officer perceptions of and experiences with danger. First, on average officers agree that law enforcement is dangerous, with no officers stating they strongly disagree that law enforcement is dangerous. In terms of injuries experienced by the officers, 8% of officers have broken a bone, 13% have experienced a deep cut or laceration, 31% experienced significant tendon or muscle damage, 6% a skin burn, 11% went through a traumatic head injury or trauma, and 28% experienced some sort of “other” injury not accounted for in the research protocol. Finally, almost half (49%) of officers stated they have been taken to the hospital or emergency room for an injury experienced while on duty.

Table 3.4- Descriptive Statistics for Law Enforcement Officer Danger

| Measure | Value | Standard Deviation | Minimum | Maximum |
|--|-------------|--------------------|---------|---------|
| Belief Law Enforcement is Dangerous | 3.46 (mean) | .54 | 2 | 4 |
| Broken Bone | 8% | - | - | - |
| Deep Cut or Laceration | 13% | - | - | - |
| Significant Tendon/Muscle Damage | 31% | - | - | - |
| Skin Burn | 6% | - | - | - |
| Significant Head Injury/Trauma (i.e. Concussion) | 11% | - | - | - |
| Other | 28% | - | - | - |
| Taken to Hospital or Emergency Room for an "On-the-Job" Injury | 49% | - | - | - |

5. Descriptive Statistics for Sample of Community Corrections Professionals

The section below shows the results of descriptive statistics for the sample of state community corrections professionals used in this research. The first table provides

demographic information on officers, the second table provides information on officer physical and mental health, and the third table provides information on officer wellness. The final table provides information on officer perceptions of danger and experiences with on-the-job injuries.

Table 5.1 below shows slightly more than one-half of the officers who responded to the survey are female (52%). Additionally, the average officer who responded to the survey is 37 years of age, has a bachelor's degree level education, and has worked seven years in community corrections. Almost all officers who responded to the survey indicated they work first shift (99%) and work in an operations capacity (78%) compared to the 21% of participating officers who indicated they work in administration.

Table 3.5 Demographics for Community Corrections Officers

| Measure | Value | Standard Deviation | Minimum | Maximum |
|--------------------|--------------|--------------------|---------|---------|
| Male | 48% | - | - | - |
| Female | 52% | - | - | - |
| Age | 37.64 (mean) | 9.37 | 21 | 68 |
| Education | 4.19 (mean) | .93 | 1 | 6 |
| Officer Experience | 7.75 (mean) | 6.06 | <1 | 31 |
| First Shift | 99% | - | - | - |
| Second Shift | < 1% | - | - | - |

| | | | | |
|----------------|------|---|---|---|
| Third Shift | < 1% | - | - | - |
| Operations | 78% | - | - | - |
| Administration | 21% | - | - | - |

A limited amount of demographic information on the community corrections agency population was obtained from the Accreditation Manager of the community corrections agency under study. The demographic information available on the population suggests the sample of community corrections professionals obtained in this research is demographically similar to the agency population demographics. For example, 53% of agency staff are female and 47% are male. Additionally, all officers are required to have a bachelor's degree at a minimum. Additionally, staff experience is 6.54 years, with a range of less than one year of experience to a maximum of 35 years of experience. Finally, all staff work first shift. Therefore, with the information available on population demographics, it seems the sample of community corrections professionals sampled here are demographically similar to the population of community corrections professionals as a whole.

The next section provides descriptive statistics for community corrections professionals' physical and mental health (see Table 5.2 below). In terms of physical health, 81% of professionals rated their overall health as "Good". Regarding officer mental health, 39% of professionals reported they have experienced depression since they began working in community corrections, however, only 60% of officers stated they would seek professional help if they experienced an episode of depression. Additionally,

72% of officers agreed they feel in control of their jobs and feel they have adequate level of self-esteem.

Table 3.6 Descriptive Statistics for Community Corrections Officer Physical and Mental Health

| Measure | Value | Standard Deviation | Minimum | Maximum |
|---------------------------------|-------------|--------------------|---------|---------|
| Overall Health | 81% | - | - | - |
| Experienced Depression | 39% | - | - | - |
| Would Seek Help for Depression | 60% | - | - | - |
| Feeling in Control of One's Job | 72% | - | - | - |
| Self-Esteem | 3.22 (mean) | .59 | 1 | 4 |

The descriptive statistics presented below relate to community corrections professional wellness (see Table 5.3 below). For exercise, community corrections professionals reported they exercise an average of two days each week and one-quarter reported they had participated in an intramural or recreational sports league in the last three years. In terms of stimulant usage, 39% reported they use some type of stimulant to help them get through their shift, consuming an average of 1.97 stimulant drinks per shift. Additionally, 13% stated they use a stimulant to help them complete their workouts. More specifically, 27% reported they drink coffee, 13% drink tea, 7% drink energy drinks, 45% drink caffeinated soda, and 8% use muscle-building energy mixes. For

alcohol and tobacco use, 17% have some type of alcoholic drink when they return home from work, and they drink an average of one day per week, and 16% use some sort of tobacco. Finally, the community corrections professionals who participated in the survey reported they sleep an average of six hours each night and consume three fast food meals per week.

Table 3.7- Descriptive Statistics for Community Corrections Officer Wellness

| Measure | Value | Standard Deviation | Minimum | Maximum |
|---|-------------|--------------------|---------|---------|
| Officer Exercise | 2.73 (mean) | 1.84 | 0 | 7 |
| Intramural Participant | 25% | - | - | - |
| Use Stimulant to Get Through Shift | 39% | - | - | - |
| Stimulant Drinks Per Shift | 1.97 (mean) | 1.42 | 0 | 8 |
| Use Stimulant to Get Through Workout | 13% | - | - | - |
| Have Alcoholic Drink When Return Home from Work | 17% | - | - | - |
| Number of Days Drink | 1.27 (mean) | 1.72 | 0 | 7 |

| | | | | |
|------------------------------|-------------|------|---|----|
| Per Week | | | | |
| Use Tobacco | 16% | - | - | - |
| Coffee | 27% | - | - | - |
| Tea | 13% | - | - | - |
| Energy Drinks | 7% | - | - | - |
| Caffeinated Soda | 45% | - | - | - |
| Muscle Building Energy Mixes | 8% | - | - | - |
| Sleep | 6.72 (mean) | 1.12 | 3 | 10 |
| Fast Food Consumption | 3.25 (mean) | 2.87 | 0 | 21 |

Table 5.4 below presents descriptive statistics for community corrections professionals' perceptions of danger. On average, respondents generally agreed that work in community corrections is dangerous. In terms of injuries experienced, 4% broke a bone while on duty, 7% received a deep cut or laceration, 11% experienced significant tendon or muscle damage, 3% received skin burns, 3% went through a significant head injury or trauma, and 11% experienced some sort of "Other" injury. Finally, 13% reported they had been taken to the hospital or emergency room for an on-the-job injury.

Table 3.8- Descriptive Statistics for Community Corrections Officer Danger

| Measure | Value | Standard Deviation | Minimum | Maximum |
|--|-------------|--------------------|---------|---------|
| Belief Community Corrections is Dangerous | 3.35 (mean) | .66 | 1 | 4 |
| Broken Bone | 4% | - | - | - |
| Deep Cut or Laceration | 7% | - | - | - |
| Significant Tendon/Muscle Damage | 11% | - | - | - |
| Skin Burn | 3% | - | - | - |
| Significant Head Injury/Trauma (i.e. Concussion) | 3% | - | - | - |
| Other | 11% | - | - | - |
| Been Hospitalized for an “On-the-Job” Injury | 13% | - | - | - |

6. Analysis

Data was analyzed using IBM's Statistical Package for the Social Sciences (SPSS) version 23. Data analysis was conducted and is reported in a series of regression models organized by health and wellness topic. As a new health and wellness topic is covered, analysis includes regression models to highlight the factors predictive of both law enforcement and community corrections professional health and wellness. In doing so, for each health and wellness topic separate models are constructed for law enforcement officers and community corrections professionals, respectively. As each health and wellness topic is presented, the results for data on law enforcement officers are presented first, followed by the results on community corrections professionals.

In the process of analyzing the independent variables predictive of law enforcement and community corrections professionals' outcomes on health and wellness measures several types of regression techniques are used. First, logistic regression will be used to examine the independent measures predictive of dependent variables where the dependent variable is measured using two values. The results of logistic regression analyses are interpreted as changes in log odds which may be exponentiated and calculated as odds ratios. Furthermore, odds ratios may be converted into percentages and probabilities as needed.

The data analysis plan will also involve the use of Poisson regression modeling. Poisson regression models are used when a dependent variable is measured as a count of some social phenomenon. More specifically, Poisson regression analysis is conducted when it is revealed by the Lagrange Multiplier test that there is model equality between the mean and the variance of a model. The results of Poisson regression models are

interpreted by a percent increase or decrease in the count of whatever the dependent variable is that is being used in a particular model.

Finally, the data analysis plan includes binomial regression modeling. Binomial regression analysis is performed when a dependent variable is measured as a count of something in the social world. Specifically, binomial regression modeling is used when the Lagrange Multiplier test shows a model does not demonstrate equality between the mean and the variance of a model. Moreover, this means the count is over-dispersed and that negative binomial regression techniques should be relied upon as opposed to Poisson regression modeling. The results of negative binomial modeling are interpreted by a percent increase or decrease in the count of the dependent variable included in a particular binomial regression model.

CHAPTER IV

FINDINGS FOR PREDICTIVE MODELS OF LAW ENFORCEMENT OFFICER AND COMMUNITY CORRECTIONS PROFESSIONALS' HEALTH AND WELLNESS

A. Predictive Models of Law Enforcement Officer Physical/Mental Health

“Good” Overall Health

Table 4.1 below presents the results of the logistic regression model predicting whether law enforcement officers rate their overall health as “good”. As highlighted above, officer overall health was operationalized as whether officers rate their overall health as “good health” or “poor health”. Results of this analysis show four factors are significant predictors of law enforcement officers rating their health as good. First, it was found that as officer education level increases the odds of officers rating their health as good increase 110.5%. Next, it was found that officers working second shift have 1,266% increased odds of rating their health as good. However, it was found that officer working third shift have 86.3% fewer odds of rating their health as good. Next, it was found that as officers reported exercising an additional day per week the odds of officers rating their health as good increased 164.5%. Additionally, when officers reported sleeping an extra hour per day they were found to have a 75.7% increased odds of rating their health as good. Finally, as officers reported eating one additional fast food meal each week the odds of officers rating their health as good decreased 16.5%. Therefore, officer

education, working second and third shifts, exercise frequency, sleep, and fast food consumption are significant predictors of officer overall health.

Before final analysis of officer overall health was able to be conducted, the researcher first conducted diagnostics on the data used for this particular logistic regression analysis. The researcher first checked for multicollinearity in the model and found multicollinearity was not a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, after placing these logged terms into the model no significant improvements in the model were identified. Therefore, the terms were not included in the model. Next, the research looked for outliers in the model and removed 16 outliers from the data by checking for standardized residual values above 2.58 or below -2.58. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, none of the quadratic terms brought about significant changes in the model, so they were not included in the final model. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.1. Logistic Regression Model Predicting Whether Law Enforcement Officers Have “Good” Overall Health

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---------------------------------|----------------|-------------------|---------------------|-----------|
| Age (years) | .001 | .086 | 1.001 | .290 |
| Education level ^{D, E} | .744* | .302 | 2.105 | .946 |
| Years in Law Enforcement | -.126 | .086 | .882 | .289 |

| | | | | |
|--|---------|-------|--------|------|
| Work in Operations (1=yes, 0=no) | -.746 | .889 | .474 | .883 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) ^F | 2.614* | 1.187 | 13.660 | .779 |
| Third Shift (1=yes, 0=no) ^G | -1.989* | .945 | .137 | .712 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) | -1.183 | .617 | 3.673 | .922 |
| Days Exercise Per Week ^{H,1} | .973** | .221 | 2.645 | .912 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | .768 | .687 | 2.155 | .924 |
| Days Drink Alcohol Per Week | -.102 | .152 | .903 | .940 |
| Number Stimulant Drinks Per Shift | -.187 | .215 | .830 | .882 |
| Number Hours Sleep Per Day ^J | .564* | .256 | 1.757 | .904 |
| Number Fast Food Meals Consumed Each Week | -.180* | .091 | .835 | .919 |
| Feel in Control of Job (1= yes, 0= no) | -.497 | .955 | .608 | .946 |
| (Constant) | -.576 | 3.607 | .562 | - |

*p≤ .05; **p≤ .01.

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree

- E. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- F. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- G. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- H. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- I. Relationship revealed as statistically significant based on Bonferonni check.
- J. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- K. Nagelkerke R-squared= .577
- L. N= 344.

Officer Depression

Table 4.2 below presents the results of the binary logistic regression model for whether law enforcement officers have experienced depression since they began working in law enforcement. As mentioned above, officer depression was defined as whether law enforcement officers have stated “yes” or “no” that they have experienced depression since they began working in law enforcement. The results of the regression analysis reveal several independent variables are predictive of law enforcement officer experiences with depression. First, a one year increase in officer age was found to be associated with a 6.6% reduced odds of officers experiencing depression. Next, the logged years of experience term was associated with a 158% odds increase of officers experiencing depression. Because the years of experience in law enforcement variable was logged, further clarification of these results is required (see also Figure 4.1 below). For example, officers serving one year in law enforcement is associated with 1.5% probability increase that officers will experience depression, officers with five years of law enforcement experience is associated with a 6.5% probability increase of experiencing depression, and officers who have served 10 years have a 11.9% probability increase of experiencing depression. Next, officers working second shift are 131% more

likely to experience depression compared to officers working first shift. Additionally, officers who rate their health as good have a 60.6% odds increase of experiencing depression. Next, the squared number of days officers drink per week term showed that when officers drink one additional day per week they have a 9% odds increase of experiencing depression. To clarify (also see Figure 4.2 below), as officers reported drinking one day per week the probability of officers experiencing depression increases 13.5%. When officers consume alcohol five days per week the probability that officers will experience depression increases 21.4%. When officers consume alcohol six days per week the probability of officers experiencing depression increases 32.7%. Additionally, if officers consume alcohol each day of the week the probability that officers will experience depression increases 50.6%. Finally, each number of stimulant drinks officers consume per shift was found to be associated with a 54.9% odds decrease of experiencing depression. Therefore, officer age, years of experience in law enforcement (logged term), working second shift, overall health, the number of days officers consume alcohol per week (squared), and the number of stimulant drinks officers consume per shift are significant predictors of whether officers have experienced depression since working in law enforcement.

To predict which factors are significant predictors of whether law enforcement officers experience depression the researcher had to first conduct diagnostics on the data used in the logistic regression analysis. The researcher first checked the tolerance statistic results to assess whether multicollinearity is present and established that multicollinearity is not a problem, as the collinearity statistics do not show a score below .200. Next, the researcher checked for skew and determined several independent

variables demonstrated problems with skew that needed to be corrected via log transformations. After checking the regression model with the transformed terms included in the model the researcher determined there was not enough of a difference between the original and secondary model p values, resulting in only the years experience term remaining in the model as a logged term. Next, the researcher checked for outliers by examining the standardized residuals values above 2.58 or below -2.58. No outliers were identified to be removed from the model. To control for non-linearity the researcher squared the number of days officers drink alcohol per week term after partial regression plots were examined and it was determined that adding a quadratic term for this variables would increase the overall R^2 value. The quadratic term was then added to the model and it was determined the quadratic term was significant. Hence, the quadratic term for number of days officers drink per week was included in the final model. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.2. Logistic Regression Model Predicting Law Enforcement Officers Have Experienced Depression^A

| Measure | B ^B | S.E. ^C | Exp(B) ^D | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Age (years) ^E | -.068* | .028 | .934 | .390 |
| Education level ^F | .057 | .110 | 1.059 | .929 |
| Years in Law Enforcement ^{G, H, I} | .948** | .323 | 2.580 | .364 |
| Work in Operations (1=yes, 0=no) | -.402 | .364 | .669 | .874 |
| Work Shift (First shift = reference group) | | | | |

| | | | | |
|--|--------|------|-------|------|
| Second Shift (1=yes, 0=no) ^J | .837** | .311 | 2.310 | .753 |
| Third Shift (1=yes, 0=no) | .451 | .513 | 1.570 | .669 |
| Overall Health Level (1= good health, 0= poor health) ^{K, L} | .474** | .180 | 1.606 | .712 |
| Days Exercise Per Week | .045 | .078 | 1.046 | .792 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.471 | .269 | .624 | .933 |
| Days Drink Alcohol Per Week | -.191 | .136 | .826 | .329 |
| Days Drink Alcohol Per Week (Squared) ^{M, N} | .087* | .037 | 1.090 | .330 |
| Number Stimulant Drinks Per Shift | .172 | .093 | 1.188 | .906 |
| Number Hours Sleep Per Day | -.154 | .112 | .857 | .897 |
| Number Fast Food Meals Consumed Each Week | .002 | .042 | 1.002 | .887 |
| Feel in Control of Job (1= yes, 0= no) ^{O, P} | -.797* | .365 | .451 | .961 |
| (Constant) | -1.877 | .369 | .153 | - |

*p≤ .05; **p≤ .01

A. All terms centered in the model to allow for predicted odds for years served in law enforcement on depression and number of days of alcohol consumption per week and depression.

B. B= Log odds.

C. S.E.= Standard Error.

D. Exp(B)= Odds Ratio.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

- F. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree
- G. Term logged to control for skew.
- H. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- I. Relationship revealed as statistically significant based on Bonferonni check.
- J. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- K. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- L. Relationship revealed as statistically significant based on Bonferonni check.
- M. Quadratic term created to meet linearity assumption.
- N. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- O. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- P. Nagelkerke R-squared= .192.
- Q. N= 360.

Figure 4.1- Association Between Officer Experience and Experiencing Depression

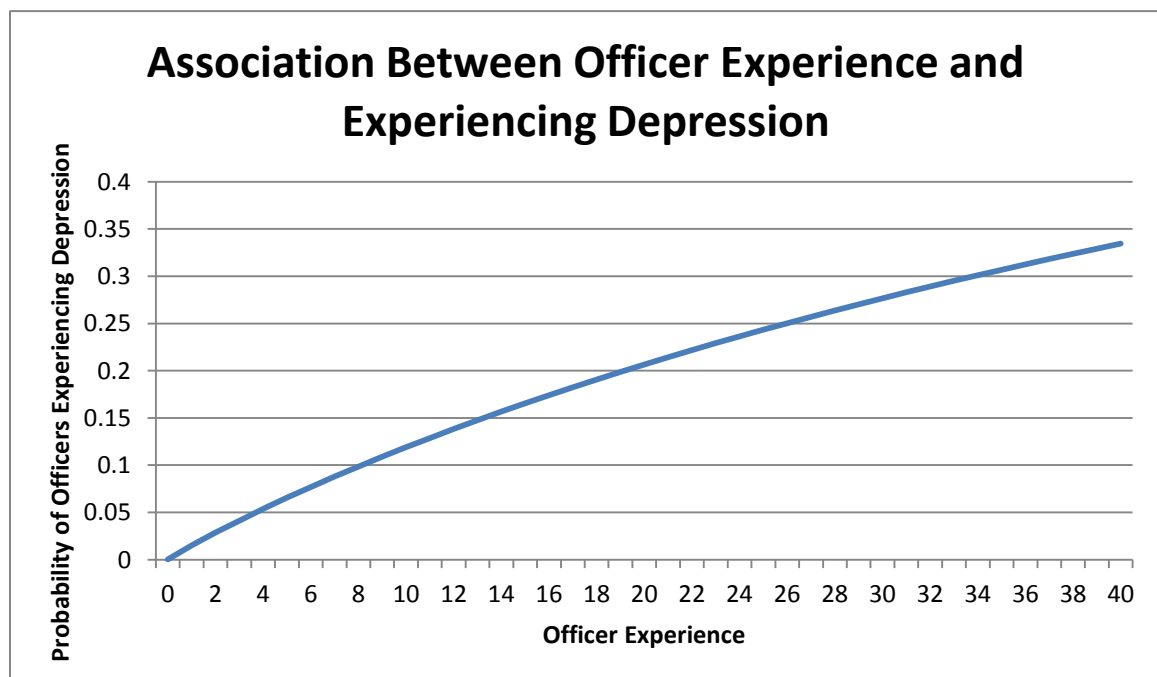
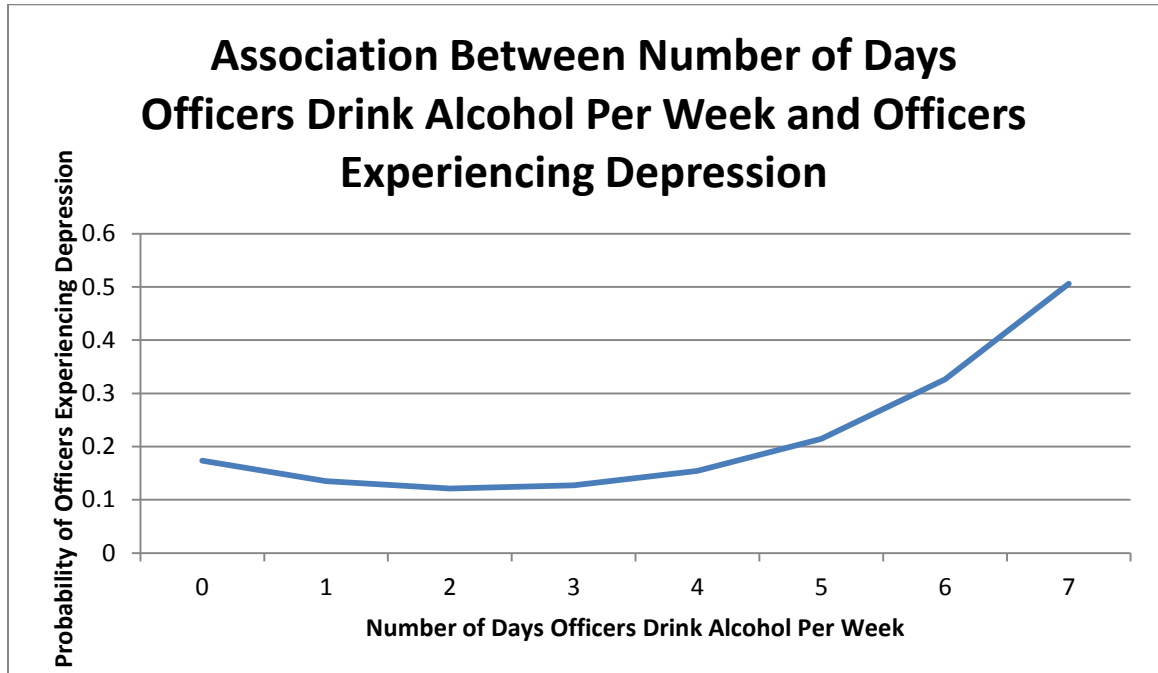


Figure 4.2- Association Between the Number of Days Officers Drink Alcohol Per Week and Officer Experiences with Depression



Whether Officers Would Seek Professional Help for Experiences with Depression

The logistic regression model below (see Table 4.3) provides information on the independent variables predictive of whether law enforcement officers would seek professional help for experienced episodes of depression. Remember, whether officers would seek professional help for experiences with depression was defined by officer responses of “yes” and “no”. Results of this analysis show two factors are significant predictors of whether law enforcement officers would seek professional help for depression. First, it was found that as officers sleep an additional hour per day the odds officers will seek professional help for depression increase 28.4%. Additionally, as officers report they feel in control of their jobs the odds officers will seek help for depression increase 101.6%. Therefore, officer sleep and whether officers feel in control

of their jobs are significant predictors of whether officers would seek professional help when experiencing depression.

Before the final analysis of whether officers would seek professional help for episodes of depression was able to be conducted, the researcher first conducted diagnostics on the data used for this model. The researcher first checked for multicollinearity in the model and found multicollinearity was not a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, after placing these logged terms into the model no significant improvements in the model were identified. Therefore, the terms were not included in the model. Next, a search for outliers was conducted and no outliers were removed from the analysis, as no standardized residual values were found to be above 2.58 or below -2.58. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, none of the quadratic terms brought about significant changes in the model, so they were not included in the final model. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.3. Logistic Regression Model Predicting Whether Law Enforcement Officers Would Seek Help for Depression

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|------------------------------|----------------|-------------------|---------------------|-----------|
| Age (years) | .007 | .026 | 1.007 | .293 |
| Education Level ^D | .040 | .097 | 1.040 | .928 |
| Years in Law Enforcement | .023 | .027 | 1.023 | .294 |

| | | | | |
|--|--------|-------|-------|------|
| Work in Operations (1=yes, 0=no) | .124 | .337 | 1.132 | .879 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) | .370 | .286 | 1.448 | .771 |
| Third Shift (1=yes, 0=no) | -.306 | .439 | .736 | .717 |
| Overall Health (1=good, 0=bad) | -.335 | .365 | .715 | .841 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) | -.227 | .244 | .797 | .903 |
| Days Exercise Per Week | .036 | .067 | 1.037 | .883 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | .226 | .238 | 1.253 | .928 |
| Days Drink Alcohol Per Week | -.114 | .072 | .892 | .937 |
| Number Stimulant Drinks Per Shift | .042 | .087 | 1.043 | .888 |
| Number Hours Sleep Per Day ^E | .250* | .102 | 1.284 | .917 |
| Number Fast Food Meals Consumed Each Week | -.031 | .039 | .969 | .900 |
| Feel in Control of Job (1= yes, 0= no) ^F | .701* | .358 | 2.016 | .946 |
| (Constant) | -2.574 | 1.370 | .076 | - |
| Nagelkerke R-squared | 0.081 | - | - | - |

*p≤ .05; **p≤ .01.

- A. B= Log odds.
- B. S.E.= Standard Error.
- C. Exp(B)= Odds Ratio.
- D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree
- E. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- F. Relationship identified as statistically significant based on binomial distribution confidence intervals.
- G. Nagelkerke R-squared= .081.
- H. N= 359.

Whether Officers Have Been Taken to the Hospital for an On-The-Job Injury

The logistic regression model below (see Table 4.4) provides information on the independent variables predictive of whether law enforcement officers have been taken to the hospital or emergency room for an injury sustained while on duty. As mentioned above, whether officers have been taken to the hospital for an on-the-job injury was defined as officer responses of “yes” or “no”. Results of this analysis show three factors are significant predictors of whether law enforcement officers have been taken to the hospital or emergency room for an injury sustained while on duty. First, it was revealed that for each year an officer ages the odds of being taken to the hospital or emergency room for an on-the-job injury increase 8.4%. Additionally, officers who stated they have experienced depression since working in law enforcement have 130% higher odds of being taken to the hospital or emergency room as a result of being injured on-the-job. Finally, the squared sleep term was found to be associated with a 14% odds increase in the odds officers have been taken to the hospital for an on-the-job injury. Further explanation of this effect is most instructive (see also Figure 4.3). For example, as officers sleep five hours per night there is a 62.7% probability that officers will have been taken to the hospital. As officers get six hours of sleep per night it was found that the probability that officers will be taken to the hospital decreases to 52.5%. As officers get

seven hours of sleep per evening the probability that officers have been taken to the hospital falls further to 48.5%. However, as officers get eight hours of sleep the probability officers have been taken to the hospital increases to 51.1%. Furthermore, as officers get nine hours of sleep each evening, it was found the probability that officers have been taken to the hospital again increases to 60.1%. Finally, it was found that officers who sleep 10 hours per day were shown to have a 73.8% probability of having been taken to the hospital. Therefore, officer age, experiences with depression, and officer sleep (squared) are significant predictors of whether officers have been taken to the hospital for on-the-job injuries.

Before the logistic regression model predicting whether officers have been taken to the hospital or emergency room for a work-related injury could be examined, model diagnostics were first performed. First, the model was examined for problems related to multicollinearity, which was not revealed to be a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, after placing these logged terms into the model no significant improvements in the model were identified. Therefore, the terms were not included in the model. Next, a search for outliers was conducted and no outliers were removed from the analysis, as no standardized residual values were found to be above 2.58 or below -2.58. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined. It was revealed that the sleep per day quadratic term was significant, therefore, this term remained in the final model. As a result of this decision, for purposes of being able to predict the effect that several values associated with this term would have on the

dependent variable, all variables were mean centered to allow for ease of performing these calculations. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.4. Logistic Regression Model Predicting Whether Law Enforcement Officers Have Been Taken to the Hospital After Being Injured on Duty^A

| Measure | B ^B | S.E. ^C | Exp(B) ^D | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Age (years) | .004 | .027 | 1.004 | .295 |
| Education Level ^E | -.078 | .100 | .925 | .929 |
| Years in Law Enforcement ^{F, G} | .081** | .028 | 1.084 | .294 |
| Work in Operations (1=yes, 0=no) | .525 | .345 | 1.690 | .880 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) | .277 | .297 | 1.320 | .769 |
| Third Shift (1=yes, 0=no) | -.478 | .491 | .620 | .717 |
| Overall Health Level (1= good health, 0= poor health) | -.065 | .166 | .937 | .701 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) ^H | .833** | .255 | 2.300 | .890 |
| Days Exercise Per Week | .041 | .075 | 1.042 | .795 |
| Intramural Participant in Last Three | .063 | .247 | 1.065 | .923 |

| | | | | |
|--|-------|------|-------|------|
| Years (1= yes, 0= no) | | | | |
| Days Drink Alcohol Per Week ^l | .061 | .077 | 1.063 | .938 |
| Number Stimulant Drinks Per Shift | .017 | .091 | 1.017 | .895 |
| Number Hours Sleep Per Day | -.098 | .108 | .907 | .892 |
| Number Hours Sleep Per Day (Squared) ^l κ | .131* | .064 | 1.140 | .930 |
| Number Fast Food Meals Consumed Each Week | .021 | .043 | 1.021 | .872 |
| Feel in Control of Job (1= yes, 0= no) | -.233 | .368 | .792 | .942 |
| (Constant) | -.043 | .321 | .958 | - |

*p≤ .05; **p≤ .01

A. Term centered to allow for predicted odds of the effect of the squared sleep per day term on whether officers have been taken to the hospital or emergency room for an injury sustained on duty.

B. B= Log odds.

C. S.E.= Standard Error.

D. Exp(B)= Odds Ratio.

E. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. Relationship revealed as statistically significant based on Bonferonni check.

H. Relationship identified as statistically significant based on binomial distribution confidence intervals.

I. Relationship revealed as statistically significant based on Bonferonni check.

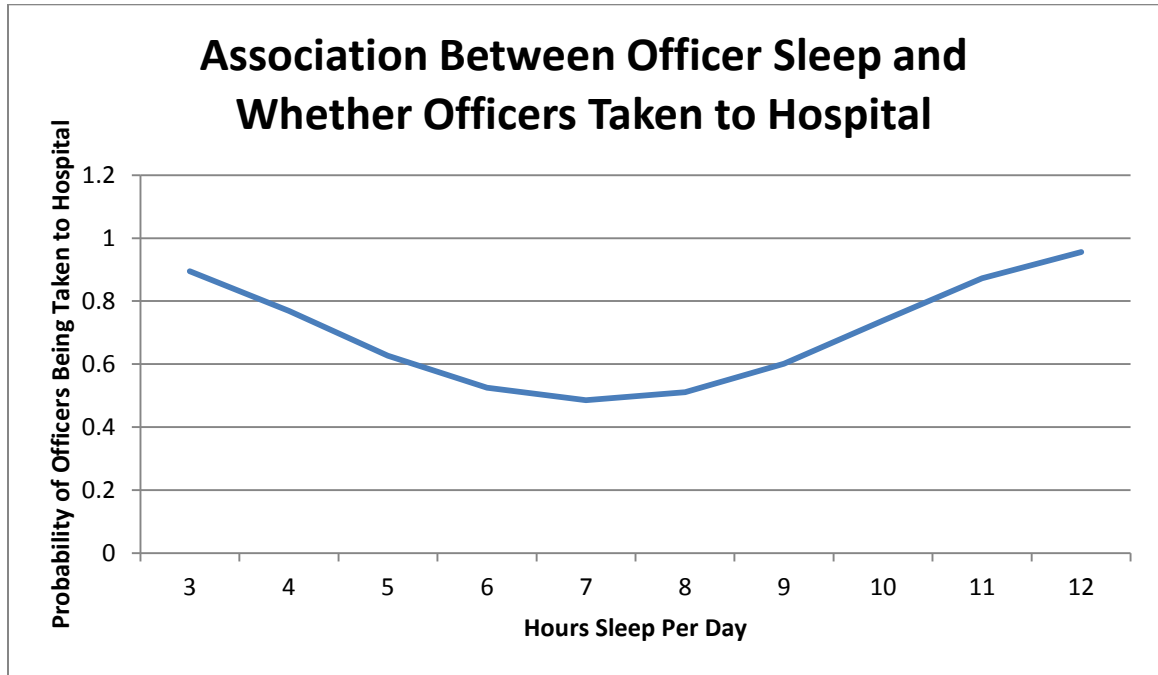
J. Quadratic term created to meet the linearity assumption.

K. Relationship identified as statistically significant based on binomial distribution confidence intervals.

L. Nagelkerke R-squared= .184.

M. N= 358.

Figure 4.3- Association Between Officer Sleep and Whether Officers are Taken to Hospital for Job-Related Injuries



B. Predictive Models of Law Enforcement Officer Wellness

Officer Exercise

The Poisson regression model below (see Table 4.5) provides information on the independent variables predictive of the number of days officers exercise per week. As defined above, officer exercise is measured as a count of the number of days officers stated they normally exercise per week. Results of this analysis show one independent variable is predictive of the number of days officers exercise each week. It was found that officers reporting they are in good health is associated with a 66.1% increase in the number of days officers exercise each week. Therefore, officer overall health is the only significant predictor of officer exercise.

Before the Poisson regression model predicting the number of days officers exercise per week was performed, model diagnostics were first carried out. First, the model was

examined for problems related to multicollinearity, which was not revealed to be a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, when the logged terms were included in subsequent models they did not produce significant findings, therefore the logged terms were left out of the final model. Next, a search for outliers was conducted and no outliers were removed from the analysis, as no terms with standardized residual values above 2.58 or below -2.58 were found in the data. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, no quadratic terms were retained in the final model because these variables were not found to be statistically significant. It is also important to note that a Poisson regression model was decided as the appropriate model for this particular analysis by examining the results of the Leverage Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are close suggesting that over-dispersion is not a problem.

Table 4.5. Poisson Regression Model Predicting the Number of Days Officers Exercise Per Week

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|----------------------------------|----------------|-------------------|---------------------|-----------|
| Age (years) | .003 | .0076 | 1.003 | .294 |
| Education level ^D | .004 | .0284 | 1.004 | .926 |
| Years in Law Enforcement | -.008 | .0079 | .992 | .295 |
| Work in Operations (1=yes, 0=no) | -.012 | .1018 | .988 | .879 |

| | | | | |
|---|--------|-------|-------|------|
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) | .017 | .0843 | 1.017 | .773 |
| Third Shift (1=yes, 0=no) | .095 | .1263 | 1.100 | .722 |
| Overall Health Level (1= good health, 0= poor health) ^{E, F} | .508** | .1296 | 1.661 | .821 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) | -.026 | .0738 | .974 | .891 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | .066 | .0698 | 1.069 | .923 |
| Days Drink Alcohol Per Week | -.033 | .0299 | .967 | .951 |
| Number Stimulant Drinks Per Shift | .010 | .0263 | 1.010 | .900 |
| Number Hours Sleep Per Day | .028 | .0305 | 1.028 | .906 |
| Number Fast Food Meals Consumed Each Week | -.021 | .0126 | .979 | .879 |
| Feel in Control of Job (1= yes, 0= no) | .150 | .1115 | 1.162 | .950 |
| (Intercept) | .401 | .4141 | 1.493 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. Relationship revealed as statistically significant based on Bonferonni check.

G. Scale= 1.199

H. Results of Legrange Multiplier Test (performed to justify the use of Poisson regression)-
Parameter <0= .010; Parameter >0= .990.

I. N= 360.

Officer Use of Stimulants to Get Through Shifts

Table 4.6 below presents the results of the logistic regression model predicting whether officers use stimulants just to get through their shifts. Remember, whether officers use stimulants to get through their shift was defined by officer responses of “yes” or “no”. The final model showed several factors are significant predictors of officer use of stimulant drinks to help them through their shifts. First, it was found that each one unit increase in officer education level increases the odds of using stimulant to complete work shifts by 35.1%. Next, officers who work second shift were found to have a 100.5% increased odds of using stimulants to get through their shift. Next, officers who work third shift were found to have a 192.7% increased odds of using stimulants to get through their shifts. Additionally, officers who have experienced depression since working in law enforcement showed a 141.3% increased odds of using stimulant to get through their shifts. Next, it was found that as officers exercise an additional day per week the odds they will need stimulants to get through their shift decrease 15%. Finally, it was found that as officers consume an additional stimulant drink per shift they have an 89.5% increased odds of consuming stimulants just to get through their shift. Therefore, officer education, working third shift, experiencing depression, stimulant drink consumption, officer sleep, and whether officers feel in control of their jobs are significant predictors of whether officers will use stimulants to get through their shifts.

In conducting diagnostics on the regression model, the following assumptions were checked. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. This resulted in 13 outliers being removed from the model. Finally, the residual plots were analyzed for each independent value and it was determined that the inclusion of quadratic terms did not improve the significance levels of any terms. Finally, standard error values were examined to test for empty cells. Empty cells do not appear to be a problem, as no standard error value is above 2.0.

Table 4.6- Logistic Regression Model Predicting Whether Law Enforcement Officers Use Stimulants to Get Through Their Work Shift

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Age (years) | -.012 | .036 | .988 | .292 |
| Education Level ^{D, E} | .301** | .117 | 1.351 | .944 |
| Years in Law Enforcement | -.037 | .032 | .964 | .299 |
| Work in Operations (1=yes, 0=no) | .520 | .425 | 1.682 | .879 |
| Work Shift (First shift = reference group) | | | | |

| | | | | |
|--|--------|-------|-------|------|
| Second Shift (1=yes, 0=no) ^F | .695* | .324 | 2.005 | .776 |
| Third Shift (1=yes, 0=no) ^G | 1.074* | .482 | 2.927 | .721 |
| Experience Depression Since Working in Law Enforcement (1=yes, 0=no) ^{H, I} | .881** | .278 | 2.413 | .913 |
| Days Exercise Per Week ^J | -.162* | .079 | .850 | .932 |
| Intramural Participant in Last Three Years (1= yes, 0= no) ^K | -.203 | .283 | .516 | .816 |
| Days Drink Alcohol Per Week | -.084 | .087 | .919 | .940 |
| Number Stimulant Drinks Per Shift ^L | .639** | .111 | 1.895 | .895 |
| Number Hours Sleep Per Day | -.183 | .120 | .833 | .919 |
| Number Fast Food Meals Consumed Per Week | -.033 | .045 | .968 | .916 |
| Feel in Control of Job (1= yes, 0= no) | .426 | .411 | 1.531 | .945 |
| (Constant) | -1.368 | 1.605 | .255 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. Relationship identified as statistically significant based on binomial distribution confidence intervals.

H. Relationship identified as statistically significant based on binomial distribution confidence intervals.

I. Relationship revealed as statistically significant based on Bonferonni check.

J. Relationship identified as statistically significant based on binomial distribution confidence intervals.

K. Relationship identified as statistically significant based on binomial distribution confidence intervals.

L. Relationship revealed as statistically significant based on Bonferonni check.

M. Nagelkerke R-square= .313

N. N= 359

Whether Officers Consume an Alcoholic Drink After Returning Home from Work

Table 4.7 below presents the results of the logistic regression model predicting whether law enforcement officers consume an alcoholic drink after returning home from work. As mentioned above, whether officers consume an alcoholic drink upon returning home from work was operationalized by officer responses of “yes” and “no”. The final model presented below reveals several independent variables predictive of whether officers consume an alcoholic drink after returning home from work. First, it was found that a one year increase in officer age is associated with a 27.2% reduced odds that officers will drink when they get home from work. Additionally, a one year increase in law enforcement experience was found to be associated with a 39.5% increased odds of drinking when returning home from work. Next, officers who work third shift were found to have a 1,697.4% increased odds of drinking when they get home from work in relation to first shift officers. Additionally, as officers exercise one additional day per week their odds of drinking when they return home from work decrease by 69.9%. Next, it was revealed that as officers report drinking an additional day per week the odds they will drink when they return from work increase 3,217.7%. Also, officers who report consuming an additional stimulant drink per shift showed a 285% increased odds of drinking when they get home from work. Finally, officers who feel in control of their job

were found to have a 94.4% reduced odds of drinking when they return home from work. Therefore, officer age, years of experience, working third shift, officer exercise, alcohol consumption, stimulant drink consumption, and whether officers feel in control of their jobs are significant predictors of whether officers consume alcoholic drinks after returning home from work.

The following assumption checks were performed on the logistic regression model for whether officers have an alcoholic drink when they return home from work. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. This resulted in two outliers being removed from the model. Additionally, the residual plots were analyzed for each independent variable and it was determined that the inclusion of quadratic terms did not improve the significance levels of any terms. Finally, standard error values were examined to test for empty cells. Empty cells do not appear to be a problem, as no standard error value is above 2.0.

Table 4.7- Logistic Regression Model Predicting Whether Law Enforcement Officers Consume an Alcoholic Drink after Returning Home from Work

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--------------------------|----------------|-------------------|---------------------|-----------|
| Age (years) ^D | -.317* | .153 | .728 | .274 |

| | | | | |
|--|----------|-------|--------|------|
| Education Level ^E | -.201 | .340 | .818 | .948 |
| Years in Law Enforcement ^F | .333* | .152 | 1.395 | .275 |
| Work in Operations (1=yes, 0=no) | .342 | 1.167 | 1.407 | .879 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) | -1.391 | 1.198 | .249 | .779 |
| Third Shift (1=yes, 0=no) ^G | 2.889* | 1.343 | 17.974 | .720 |
| Experience Depression Since Working in Law Enforcement (1=yes, 0=no) | -1.249 | .940 | .287 | .915 |
| Days Exercise Per Week ^{H, I} | -1.199** | .355 | .301 | .935 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.605 | .868 | .546 | .934 |
| Days Drink Alcohol Per Week ^{J, K} | 3.502** | .745 | 33.177 | .941 |
| Number Stimulant Drinks Per Shift ^{L, M} | 1.348** | .411 | 3.850 | .889 |
| Number Hours Sleep Per Day | .480 | .383 | 1.616 | .917 |
| Number Fast Food Meals Consumed Per Week | -.009 | .176 | .991 | .915 |
| Feel in Control of Job (1= yes, 0= no) ^N | -2.880* | 1.304 | .056 | .947 |

| | | | | |
|------------|--------|-------|------|---|
| (Constant) | -1.360 | 5.545 | .257 | - |
|------------|--------|-------|------|---|

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. Relationship identified as statistically significant based on binomial distribution confidence intervals.

H. Relationship identified as statistically significant based on binomial distribution confidence intervals.

I. Relationship revealed as statistically significant based on Bonferonni check.

J. Relationship identified as statistically significant based on binomial distribution confidence intervals.

K. Relationship revealed as statistically significant based on Bonferonni check.

L. Relationship identified as statistically significant based on binomial distribution confidence intervals.

M. Relationship revealed as statistically significant based on Bonferonni check.

N. Relationship identified as statistically significant based on binomial distribution confidence intervals.

O. Nagelkerke R-square= .849

P. N= 355.

Number of Days Officers Consume Alcohol Per Week

The negative binomial regression model presented below (see Table 4.8) presents the results of the regression model predicting the number of days officer consume alcohol per week. Please remember, as mentioned above that the number of days officers consume alcohol per week is measured as a count of the number of times officers state they normally consume alcohol per week. Results of this analysis show four independent variables included in the model are significant predictors of the number of days officers consume alcohol per week. First a one level increase in officer education was found to be associated with a 14.6% increase in the number of days officers drink alcohol per week. Additionally, officers working second shift showed a 68.5% increase in the

number of days they drink per week in relation to first shift officers. Next, third shift officers were found to drink 71.5% more days per week than first shift officers. Finally, consuming an additional stimulant drink per shift was found to be associated with a 13.6% increase in the number of days officers drink per week. Therefore, officer education, working second shift, working third shift, and stimulant drink consumption are significant predictors of the number of days officers consume alcohol per week.

Before the negative binomial regression model predicting the number of days officers drink alcohol per week was performed, model diagnostics were first carried out. First, the model was examined for problems related to multicollinearity. Multicollinearity was not found to be a problem because none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew. However, none of these variables demonstrated statistically significant improvements over the original model and thus, the logged terms were not included in subsequent models. Next, a search for outliers was conducted and 11 outliers were removed from the analysis, as terms with standardized residual values above 2.58 or below -2.58 were removed from the analysis. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, no statistically significant quadratic terms were retained in the final model. It is also important to note that a negative binomial regression model was decided as the appropriate model for this particular analysis by examining the results of the Leverage Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are not close

suggesting that over-dispersion is a problem, hence the use of the negative binomial regression model.

Table 4.8. Negative Binomial Regression Model Predicting the Number of Days Officers Drink Alcohol Per Week

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Age (years) | -.015 | .0177 | .985 | .298 |
| Education Level ^{D, E} | .137* | .0603 | 1.146 | .956 |
| Years in Law Enforcement | .016 | .0181 | 1.016 | .300 |
| Work in Operations (1=yes, 0=no) | -.140 | .2268 | .869 | .871 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) ^{F, G} | .522** | .1841 | 1.685 | .784 |
| Third Shift (1=yes, 0=no) ^H | .540* | .2737 | 1.715 | .720 |
| Number of Days Exercise Per Week | -.041 | .0443 | .960 | .941 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) | -.018 | .1619 | .982 | .919 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.128 | .1601 | .880 | .925 |
| Number Stimulant Drinks Per Shift ^I | .128* | .0561 | 1.136 | .907 |
| Number Hours Sleep Per Day | .011 | .0700 | 1.011 | .913 |

| | | | | |
|--|-------|-------|-------|------|
| Number Fast Food Meals Consumed Each Week | -.041 | .0275 | .960 | .915 |
| Feel in Control of Job (1= yes, 0= no) | .061 | .2342 | 1.063 | .957 |
| (Intercept) | -.277 | .9113 | .758 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. Relationship revealed as statistically significant based on Bonferonni check.

H. Relationship identified as statistically significant based on binomial distribution confidence intervals.

I. Relationship identified as statistically significant based on binomial distribution confidence intervals.

J. Scale= 1.068

K. Negative Binomial= .583 (S.E.= .1587).

L. Results of Legrange Multiplier Test (performed to justify the use of Poisson regression)-
Parameter <0= 1.000; Parameter >0= .000.

M. N= 349.

Officer Sleep

A Poisson regression was performed to analyze the independent variables thought to predict officer sleep. As mentioned above, officer sleep is measured as a count of the number of hours officers state they normally sleep each day. The regression model results below (Table 4.9) indicate several independent variables are predictive of how much sleep law enforcement officers sleep each day. First, officers who work second shift were found to sleep 5% fewer hours than first shift officers. Additionally, third shift officers were found to sleep 7.7% fewer days than first shift officers. Additionally,

officers who stated they have experienced depression since beginning their work in law enforcement sleep 3.7% fewer days than officers who have not experienced depression since working in law enforcement. Next, officers who have participated in recreational or intramural sports in the last three years were found to sleep 3.8% fewer days than officers who did not participate in such sports. Finally, it was found that as officers consume an additional stimulant drink per shift that officer sleep per day decreases by 2.1%. Therefore, working second shift, working third shift, experiencing depression, participating in recreational or intramural sports in the last three years, and stimulant drink consumption are significant predictors of officer sleep.

In conducting diagnostics on the regression model, the following assumptions were checked. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. As a result of this check eight outliers were removed from the analysis. Additionally, the residual plots were analyzed for each independent value and it was determined that officer age, number of days of exercise per week, and alcohol consumption variables needed a quadratic term to control for non-linearity. However, after adding these terms to the model it was found that none of the quadratic terms were revealed to be significant predictors of officer fast food consumption. Finally, it is important to note that a Poisson regression model was decided as the appropriate model

for this particular analysis by examining the results of the Leverage Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are close suggesting that over-dispersion is not a problem.

Table 4.9- Poisson Regression Model Predicting Law Enforcement Officer Sleep Per Day

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Age (years) | -.002 | .0019 | .998 | .295 |
| Education Level ^D | -.001 | .0071 | .999 | .925 |
| Years in Law Enforcement | .001 | .0020 | 1.001 | .294 |
| Work in Operations (1=yes, 0=no) | -.043 | .0243 | .958 | .887 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) ^E | -.051* | .0208 | .950 | .781 |
| Third Shift (1=yes, 0=no) ^F | -.080* | .0324 | .923 | .732 |
| Overall Health Level (1= good health, 0= poor health) | .046 | .0270 | 1.048 | .854 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) ^G | -.038* | .0180 | .963 | .918 |
| Days Exercise Per Week | .004 | .0049 | 1.004 | .882 |
| Intramural Participant in Last Three | -.039* | .0174 | .962 | .939 |

| | | | | |
|---|---------|-------|-------|------|
| Years (1= yes, 0= no) | | | | |
| Days Drink Alcohol Per Week | .004 | .0054 | 1.004 | .928 |
| Number Stimulant Drinks Per Shift ^{H, 1} | -.021** | .0065 | .979 | .899 |
| Number Fast Food Meals Consumed Per Week | -.001 | .0029 | .999 | .896 |
| Feel in Control of Job (1= yes, 0= no) | .001 | .0265 | 1.001 | .946 |
| (Intercept) | 2.040 | .0820 | 7.689 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. Relationship identified as statistically significant based on binomial distribution confidence intervals.

H. Relationship identified as statistically significant based on binomial distribution confidence intervals.

I. Relationship revealed as statistically significant based on Bonferonni check.

J. Scale= .154

K. Results of Lgrange Multiplier Test (performed to justify the use of Poisson regression)- Parameter <0= .000; Parameter >0= 1.000.

L. N= 354.

Officer Fast Food Consumption

A negative binomial regression model was analyzed to predict the number of times law enforcement officers consume fast food each week. Remember, the number of times officers consume fast food each week was measured as a count of the number of times officers state they normally consume fast food each week. As a result of the

negative binomial regression to predict law enforcement officer consumption of fast food, results revealed five independent variables are significant predictors of officer fast food consumption. First, a one year increase in age was associated with a 2.1% reduction in the number of fast food meals consumed per week. Next, officers working third shift showed a 28.8% reduction in the number of fast food meals consumed each week in relation to first shift officers. Additionally, officers exercising an additional day per week was associated with a 5.9% reduction in the number of fast food meals consumed each week. Next, officers drinking an additional day per week was associated with a 4.9% reduction in the number of fast food meals consumed each week. Finally, officers consuming an additional stimulant drink per shift was found to be associated with an 8.1% increase in the number of fast food meals consumed each week. Therefore, officer age, working third shift, officer exercise, number of days officers consume alcohol per week, and stimulant drink consumption are significant predictors of officer fast food consumption.

In conducting diagnostics on the regression model, the following assumptions were checked. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. This resulted in seven outliers being removed from the model. Additionally, the residual plots were analyzed for each independent value and it

was determined that officer age, number of days of exercise per week, and alcohol consumption variables needed a quadratic term to control for non-linearity. However, after adding these terms to the model it was found that none of the quadratic terms were revealed to be significant predictors of officer fast food consumption. Finally, it is also important to note that a negative binomial regression model was decided as the appropriate model for this particular analysis by examining the results of the Leverage Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are not close suggesting that over-dispersion is a problem, hence the use of the negative binomial regression model.

Table 4.10- Negative Binomial Regression Model Predicting Law Enforcement Fast Food Consumption Per Week

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Age (years) ^D | -.021* | .009 | .979 | .304 |
| Education Level ^E | -.038 | .033 | .962 | .928 |
| Years in Law Enforcement | .005 | .009 | 1.005 | .300 |
| Work in Operations (1=yes, 0=no) | -.015 | .110 | .985 | .885 |
| Work Shift (First shift = reference group) | | | | |
| Second Shift (1=yes, 0=no) | .001 | .092 | 1.001 | .775 |
| Third Shift (1=yes, 0=no) ^F | -.339* | .150 | .712 | .733 |
| Overall Health Level (1= good health, 0= poor health) | -.197 | .109 | .821 | .856 |

| | | | | |
|---|---------|-------|--------|------|
| Days Exercise Per Week ^{G, H} | -.061** | .022 | .941 | .880 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.057 | .078 | .945 | .927 |
| Days Drink Alcohol Per Week ^I | -.050* | .025 | .951 | .948 |
| Number Stimulant Drinks Per Shift ^{J, K} | .078** | .028 | 1.081 | .910 |
| Number Hours Sleep Per Day | .010 | .032 | 1.010 | .919 |
| Feel in Control of Job (1= yes, 0= no) | -.051 | .115 | .950 | .952 |
| Experienced Depression Since Working in Law Enforcement (1= yes, 0= no) | -.005 | .079 | .995 | .912 |
| (Intercept) | 2.460 | .4270 | 11.706 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. Relationship identified as statistically significant based on binomial distribution confidence intervals.

H. Relationship revealed as statistically significant based on Bonferonni check.

I. Relationship identified as statistically significant based on binomial distribution confidence intervals.

J. Relationship identified as statistically significant based on binomial distribution confidence intervals.

K. Relationship revealed as statistically significant based on Bonferonni check.

L. Scale= 1.167

M. Negative Binomial= .110 (S.E.= .0325).

N. Results of Leverage Multiplier Test (performed to justify the use of negative binomial regression)- Parameter <0= 1.000; Parameter >0= .000.

O. N= 353.

**C. Predictive Models for Community Corrections Professionals’
Physical/Mental Health**
Professionals’ Overall Health

Table 4.11 below presents the results of the logistic regression model predicting whether community corrections professionals rate their overall health as “good” or “bad”. As highlighted above, professionals’ overall health was operationalized as whether professionals rate their overall health as “good health” or “poor health”. Results of this analysis show one independent variable included in the regression model is a significant predictor of whether community corrections professionals rate their health as good. It was found that as officers exercise an additional day per week there is a 51.6% odds increase in professionals rating their health as “good”. Therefore, professionals’ exercise is the only significant predictor of professionals’ overall health.

Before final analysis of professionals’ overall health was able to be conducted, the researcher first conducted diagnostics on the data used for this particular logistic regression analysis. The researcher first checked for multicollinearity in the model and found multicollinearity was not a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, after placing these logged terms into the model no significant improvements in the model were identified. Therefore, the logged terms were not included in the model. Next, the research looked for outliers in the model and removed two outliers from the data by checking for standardized residual values above 2.58 or below -2.58. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, none of the

quadratic terms resulted in significant changes in the model, so they were not included in the final model. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.11 Logistic Regression Model Predicting Whether Community Corrections Professionals' Have "Good" Overall Health

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) | -.735 | .390 | .479 | .855 |
| Age (years) ^D | .019 | .027 | 1.019 | .539 |
| Education Level ^E | -.020 | .214 | .980 | .919 |
| Years in Community Corrections | .009 | .041 | 1.009 | .599 |
| Work in Operations (1=yes, 0=no) | -.095 | .503 | .909 | .877 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0=no) | -.719 | .404 | .487 | .775 |
| Days Exercise Per Week ^F | .416** | .116 | 1.516 | .837 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.138 | .435 | .871 | .868 |
| Days Drink Alcohol Per Week | .186 | .124 | 1.204 | .904 |
| Number Stimulant Drinks Per Shift | -.202 | .122 | .817 | .926 |

| | | | | |
|--|--------|-------|-------|------|
| Number Hours Sleep Per Day | .278 | .177 | 1.320 | .869 |
| Number Fast Food Meals Consumed Each Week | -.049 | .057 | .952 | .818 |
| Feel in Control of Job (1= yes, 0= no) | .533 | .389 | 1.703 | .853 |
| (Constant) | -1.016 | 2.022 | .362 | - |

*p≤ .05; **p≤ .01.

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

F. Relationship revealed as statistically significant based on Bonferonni check.

G. Nagelkerke R-square= .245.

H. N= 278.

Whether Professionals Have Experienced Depression Since Working in Community Corrections

Table 4.12 below presents the results of the binary logistic regression model for community corrections professionals' experiences with depression. As mentioned above, professionals experiencing depression was defined as whether professionals have stated "yes" or "no" that they have experienced depression since they began working in community corrections. The results of the regression analysis reveal several independent variables are predictive of whether community corrections professionals experience depression. First, it was found that male professionals have 48.7% lower odds of experiencing depression in relation to female professionals. Next, it was found that as professionals work one additional year in community corrections they have a 7% increased odds of experiencing depression. Additionally, it was also revealed that as

professionals consume an additional stimulant drink per shift they have a 92.1% increased odds of experiencing depression. Because this relationship required the transformation of the number of stimulant drinks per shift using a logged term, further elaboration of this association is required. For example, as professionals consumed one stimulant drink per shift the probability professionals experience depression increases 14.7%. When professionals consumed three stimulant drinks per shift the probability professionals experience depression increased 26%. When professionals consumed five stimulant drinks per shift the probability professionals experience depression increased 33%. Finally, it was found that when professionals consumed seven stimulant drinks per shift the probability professionals experience depression increased 38%. Next, as professionals sleep an additional hour each day they show a 35.1% reduced odds of experiencing depression. Finally, professionals who stated they feel in control of their jobs were found to have a 76% reduced odds of experiencing depression. Therefore, being male, professionals' years of experience in community corrections, stimulant drink consumption, professionals' sleep, and whether professionals feel in control of their jobs are significant predictors of whether professionals have experienced depression since they began working in community corrections.

To predict whether community corrections professionals experience depression the researcher had to first conduct diagnostics on the data used in the logistic regression analysis. The researcher first checked the tolerance statistic results to assess whether multicollinearity is present and established that multicollinearity is not a problem, as the collinearity statistics do not show a score below .200. Next, the researcher checked for skew and determined several independent variables demonstrated problems with skew

that needed to be corrected via log transformations. After checking the regression model with the transformed terms included in the model the researcher determined only the logged term of the stimulant drinks per shift variable should remain in subsequent models, as this was the only logged term to remain a significant predictor of depression. Next, the researcher checked for outliers by examining the standardized residuals values above 2.58 or below -2.58. No outliers were identified to be removed from the model. To control for non-linearity the researcher included several quadratic terms, however, none of these variables were found to be significant predictors of depression. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.12. Logistic Regression Model Predicting Whether Community Corrections Professionals Have Experienced Depression^A

| Measure | B ^B | S.E. ^C | Exp(B) ^D | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Sex (1= male, 0=female) ^E | -.668* | .305 | .513 | .858 |
| Age (years) | -.026 | .021 | .975 | .532 |
| Education Level ^F | .213 | .166 | 1.237 | .914 |
| Years in Community Corrections | .067* | .032 | 1.070 | .598 |
| Work in Operations (1=yes, 0=no) | .183 | .381 | 1.201 | .867 |
| Overall Health Level (1= good health, 0= poor health) | -.400 | .385 | .670 | .878 |
| Days Exercise Per Week | .105 | .086 | 1.110 | .807 |

| | | | | |
|--|----------|------|-------|------|
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.564 | .343 | .569 | .871 |
| Days Drink Alcohol Per Week | .160 | .088 | 1.173 | .903 |
| Number Stimulant Drinks Per Shift ^G | .653* | .321 | 1.921 | .923 |
| Number Hours Sleep Per Day ^H | -.433** | .137 | .649 | .900 |
| Number Fast Food Meals Consumed Each Week | .102 | .055 | 1.107 | .828 |
| Feel in Control of Job (1= yes, 0= no) ^I | -1.425** | .320 | .240 | .917 |
| (Constant) | -.488 | .142 | .614 | - |

*p≤ .05; **p≤ .01

A. All terms centered to allow for predicted odds of the logged term stimulant drinks per shift on depression.

B. B= Log odds.

C. S.E.= Standard Error.

D. Exp(B)= Odds Ratio.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

G. Term logged to control for skew.

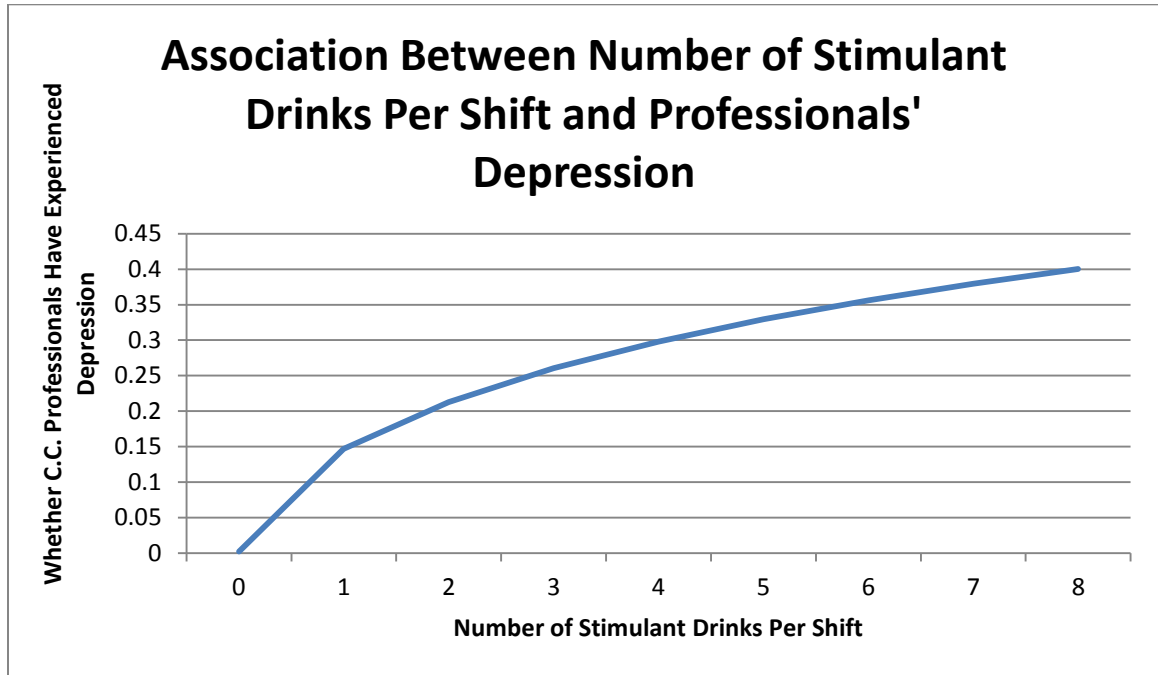
H. Relationship revealed as statistically significant based on Bonferonni check.

I. Relationship revealed as statistically significant based on Bonferonni check.

J. Nagelkerke R-square= .310.

K. N= 280.

Figure 4.4- Association Between Community Corrections Professionals' Consumption of Stimulant Drinks Per Shift and Depression



Whether Community Corrections Professionals Would Seek Help if They Experienced Episodes of Depression

The logistic regression model below (see Table 4.13) provides information on the independent variables predictive of whether community corrections professionals would seek professional help for experienced episodes of depression. Remember, whether professionals would seek professional help for experiences with depression was defined by professionals' responses of "yes" and "no". Results of this analysis show one independent variable included in the model is a significant predictor of whether community corrections professionals would seek professional help for depression. It was found that male professionals have 57.7% lower odds of seeking professional help for depression. Therefore, being male is the only independent variable which is a significant predictor of whether community corrections professionals would seek professional help with episodes of depression.

Before the final analysis of whether professionals would seek professional help for episodes of depression was able to be conducted, the researcher first conducted diagnostics on the data used for this model. The researcher first checked for multicollinearity in the model and found multicollinearity was not a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, after placing these logged terms into the model no significant improvements in the model were identified. Therefore, the terms were not included in the model. Next, a search for outliers was conducted and no outliers were removed from the analysis, as no standardized residual values were found to be above 2.58 or below -2.58. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, none of the quadratic terms brought about significant changes in the model, so they were not included in the final model. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.13. Logistic Regression Model Predicting Whether Community Corrections Professionals Would Seek Help for Depression

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) ^{D, E} | -.861** | .279 | .423 | .843 |
| Age (years) | .028 | .019 | 1.029 | .532 |
| Education Level ^F | -.105 | .150 | .900 | .907 |
| Years in Community Corrections | -.058 | .030 | .944 | .593 |

| | | | | |
|---|-------|-------|-------|------|
| Work in Operations (1=yes, 0=no) | .360 | .346 | 1.434 | .867 |
| Overall Health (1=good, 0=bad) | -.010 | .359 | .990 | .870 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0= no) | .002 | .297 | 1.002 | .771 |
| Days Exercise Per Week | -.086 | .077 | .918 | .805 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.055 | .304 | .946 | .867 |
| Days Drink Alcohol Per Week | -.067 | .082 | .935 | .892 |
| Number Stimulant Drinks Per Shift | .125 | .097 | 1.133 | .916 |
| Number Hours Sleep Per Day | -.001 | .124 | .999 | .860 |
| Number Fast Food Meals Consumed Each Week | -.029 | .049 | .971 | .811 |
| Feel in Control of Job (1= yes, 0= no) | -.314 | .317 | .731 | .844 |
| (Constant) | .831 | 1.443 | 2.296 | - |

*p≤ .05; **p≤ .01.

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. Relationship revealed as statistically significant based on Bonferonni check.

F. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

G. Nagelkerke R-square= .106

H. N= 279.

Whether Community Corrections Professionals Have Been Taken to the Hospital for an On-The-Job Injury

The logistic regression model below (see Table 4.14) provides information on the independent variables predictive of whether community corrections professionals have been taken to the hospital for an injury sustained while on duty. As mentioned above, whether professionals have been taken to the hospital for an on-the-job injury was defined by professionals' responses of "yes" or "no". Results of this analysis show one independent variable included in the model is a significant predictor of whether community corrections professionals have been taken to the hospital or emergency room for an injury sustained while on duty. Specifically, it was found that professionals working in an operations capacity have 326.7% greater odds of being taken to the hospital after being injured on duty than professionals who work in administration. Therefore, professionals working in operations is the only significant predictor of whether professionals have been taken to the hospital for an on-the-job injury.

Before the logistic regression model predicting whether professionals have been taken to the hospital for a work-related injury could be examined, model diagnostics were first performed. First, the model was examined for problems related to multicollinearity, which was not revealed to be a problem, as none of the tolerance statistic values were less than .200. Next, skew was examined and it was found that several variables needed to be logged to correct for skew, however, after placing these logged terms into the model no significant improvements in the model were identified. Therefore, the terms were not included in the model. Next, a search for outliers was conducted and no outliers were removed from the analysis, as no standardized residual values were found to be above

2.58 or below -2.58. Sixteen outliers were originally removed from the model, however, after the outliers were removed from the model and the model reanalyzed, it was found that the model exhibited problems related to empty cells. Hence, the outliers were inserted back into the data and the final model output should be interpreted with caution. Additionally, to control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, yet no quadratic term was found to be a significant predictor. Finally, the researcher checked for empty cells and determined empty cells are not a problem for this particular model, as no standard error value is greater than 2.0.

Table 4.14. Logistic Regression Model Predicting Whether Community Corrections Professionals Have Been Taken to the Hospital After Being Injured on Duty

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) | .410 | .429 | 1.507 | .846 |
| Age (years) | .031 | .029 | 1.031 | .536 |
| Education Level ^D | .049 | .244 | 1.050 | .919 |
| Years in Community Corrections | .059 | .043 | 1.061 | .597 |
| Work in Operations (1=yes, 0=no) | 1.451* | .705 | 4.267 | .878 |
| Overall Health Level (1= good health, 0= poor health) | .663 | .558 | 1.940 | .860 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0= | .651 | .454 | 1.917 | .769 |

| | | | | |
|--|--------|-------|-------|------|
| no) | | | | |
| Days Exercise Per Week | -.143 | .125 | .867 | .805 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -1.179 | .665 | .308 | .869 |
| Days Drink Alcohol Per Week | -.118 | .139 | .889 | .897 |
| Number Stimulant Drinks Per Shift | .243 | .146 | 1.275 | .915 |
| Number Hours Sleep Per Day | .028 | .194 | 1.028 | .860 |
| Number Fast Food Meals Consumed Each Week | -.040 | .071 | .961 | .816 |
| Feel in Control of Job (1= yes, 0= no) | -.494 | .437 | .610 | .846 |
| (Constant) | -5.745 | 2.427 | .003 | - |
| Nagelkerke R-squared | 0.206 | - | - | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

E. Nagelkerke R-square= .206

F. N= 277.

D. Predictors of Community Corrections Professionals' Wellness

Community Corrections Professionals' Exercise

The Poisson regression model below (see Table 4.15) provides information on the independent variables predictive of the number of days community corrections

professionals exercise each week. As defined above, professionals' exercise is measured as a count of the number of days professionals stated they normally exercise per week. Results of this analysis show several independent variables are predictive of the number of days community corrections professionals exercise each week. First it was found that male professionals exercise 23.8% more days per week compared to female professionals. Next, it was found that a one year increase in professionals' age is associated with a 1.8% decrease in the number of days professionals exercise each week. Additionally, it was revealed that professionals who rate their health as "good" exercise 42.6% more days each week. Finally, consuming one additional fast food meal per week was significantly related to a 9.4% decrease in the number of days professionals exercise each week. Therefore, being a male, professional's age, rating one's health as "good", and fast food consumption were revealed as significant predictors of the number of days professionals exercise each week.

Before the Poisson regression model predicting the number of days professionals exercise per week was performed, model diagnostics were first carried out. First, the model was examined for problems related to multicollinearity, which was not revealed to be a problem, as none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew, however, when the logged terms were included in subsequent models they did not produce significant findings, therefore the logged terms were left out of the final model. Next, a search for outliers was conducted and two outliers were removed from the analysis. To control for non-linearity several quadratic terms were included in the model after partial regression plots were examined, however, no quadratic terms were

retained in the final model because these variables were not found to be statistically significant. It is also important to note that a Poisson regression model was decided as the appropriate model for this particular analysis by examining the results of the Leverage Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are close suggesting that over-dispersion is not a problem.

Table 4.15. Poisson Regression Model Predicting the Number of Days Community Corrections Professionals Exercise Per Week

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) ^D | .214* | .0918 | 1.238 | .874 |
| Age (years) ^E | -.018** | .0065 | .982 | .543 |
| Education Level ^F | .001 | .0505 | 1.001 | .907 |
| Years in Law Enforcement | .015 | .0099 | 1.015 | .591 |
| Work in Operations (1=yes, 0=no) | .037 | .1161 | 1.038 | .870 |
| Overall Health Level (1= good health, 0= poor health) | .355** | .1374 | 1.426 | .913 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0= no) | .110 | .0993 | 1.116 | .777 |
| Intramural Participant in Last Three | .126 | .0990 | 1.134 | .868 |

| | | | | |
|---|---------|-------|-------|------|
| Years (1= yes, 0= no) | | | | |
| Days Drink Alcohol Per Week | -.027 | .0328 | .973 | .903 |
| Number Stimulant Drinks Per Shift | -.027 | .0328 | .974 | .923 |
| Number Hours Sleep Per Day | .000 | .0416 | 1.000 | .861 |
| Number Fast Food Meals Consumed Each Week ^G | -.098** | .0198 | .906 | .911 |
| Feel in Control of Job (1= yes, 0= no) | .122 | .1086 | 1.130 | .846 |
| (Intercept) | 1.313 | .4885 | 3.719 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

G. Relationship revealed as statistically significant based on Bonferonni check.

H. Scale= 1.396

I. Results of Lgrange Multiplier Test (performed to justify the use of Poisson regression)-

Parameter <0= .219; Parameter >0= .781.

J. N= 278

Whether Community Corrections Professionals Use Stimulants to Get Through Shifts

Table 4.16 below presents the results of the logistic regression model predicting whether community corrections professionals use stimulant drinks just to get through their shifts. Remember, whether professionals use stimulants to get through their shift was defined by professionals' responses of "yes" or "no". The final model showed

several factors are significant predictors of professionals' use of stimulant drinks to help them through their shifts. First, it was found that a one year increase in professionals' age is associated with 7.1% fewer odds that professionals will use a stimulant to get through their shift. Next, it was found that a one level increase in professionals' education is associated with 46.3% greater odds that professionals will use a stimulant to get through their shift. Finally, it was found that as professionals consume one additional stimulant drink per shift there is 47.2% greater odds that professionals will use a stimulant to complete their shift. Therefore, professionals' age, education, and stimulant drink consumption are significant predictors of whether professionals use stimulants to get through their shifts.

In conducting diagnostics on the regression model, the following assumptions were checked. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, an attempt to remove all outliers from the analysis was made by removing all standardized residual scores above 2.58 or below -2.58. However, this did not result in any outliers being removed from the analysis. Additionally, the residual plots were analyzed for each independent value and it was determined that the inclusion of quadratic terms did not improve the significance levels of any terms. Finally, standard error values were examined to test for empty cells. Empty cells do not appear to be a problem, as no standard error value is above 2.0.

Table 4.16. Logistic Regression Model Predicting Whether Community Corrections Professionals Use Stimulants to Get Through Their Work Shift

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) | -.192 | .300 | .825 | .857 |
| Age (years) ^{D, E} | -.073** | .022 | .929 | .537 |
| Education Level ^{F, G} | .380* | .175 | 1.463 | .919 |
| Years in Community Corrections | -.009 | .034 | .991 | .597 |
| Work in Operations (1=yes, 0=no) | .526 | .380 | 1.692 | .878 |
| Experience Depression Since Working in Community Corrections (1=yes, 0=no) | .602 | .314 | 1.826 | .775 |
| Days Exercise Per Week | -.048 | .084 | .953 | .837 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.529 | .341 | .589 | .869 |
| Days Drink Alcohol Per Week | .153 | .092 | 1.165 | .905 |
| Number Stimulant Drinks Per Shift ^H | .386** | .109 | 1.472 | .925 |
| Number Hours Sleep Per Day | -.232 | .138 | .793 | .867 |
| Number Fast Food Meals Consumed Per Week | -.025 | .051 | .975 | .821 |
| Feel in Control of Job (1= yes, 0= no) | -.429 | .330 | .651 | .853 |

| | | | | |
|------------|-------|-------|-------|---|
| (Constant) | 1.506 | 1.624 | 4.510 | - |
|------------|-------|-------|-------|---|

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. Relationship revealed as statistically significant based on Bonferonni check.

F. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

G. Relationship identified as statistically significant based on binomial distribution confidence intervals.

H. Relationship revealed as statistically significant based on Bonferonni check.

I. Nagelkerke R-square= .301

J. N=277.

Whether Community Corrections Professionals Consume an Alcoholic Drink After Returning Home from Work

Table 4.17 below presents the results of the logistic regression model predicting whether community corrections professionals consume an alcoholic drink after returning home from work. As mentioned above, whether professionals consume an alcoholic drink upon returning home from work was operationalized by professionals' responses of "yes" or "no". The final model presented below reveals two independent variables predictive of whether professionals consume an alcoholic drink after returning home from work. First, it was found that a one level increase in professionals' education level is associated with a 128.6 increase in the odds professionals will have an alcoholic drink when they return home from work. Next, it was also revealed that as professionals drink one additional day per week there is a 639.7% increase in the odds professionals will have an alcoholic drink when they return home from work. Therefore, professionals' education level and the number of days they drink alcohol per week are significant predictors of whether they will have an alcoholic drink when they return home from work.

The following assumption checks were performed on the logistic regression model for whether professionals have an alcoholic drink when they return home from work. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. This resulted in eight outliers being removed from the model. However, when the outliers were removed from the analysis, two of the relationships in the model demonstrated empty cell problems. Therefore, the outliers were placed back into the analysis to correct for this problem. As such, results should be interpreted with caution. Additionally, the residual plots were analyzed for each independent variable and it was determined that the inclusion of quadratic terms did not improve the significance levels of any terms. Finally, standard error values were examined to test for empty cells. Empty cells do not appear to be a problem, as no standard error value is above 2.0.

Table 4.17. Logistic Regression Model Predicting Whether Community Corrections Professionals Consume an Alcoholic Drink after Returning Home from Work

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---------------------------------|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) | -1.051 | .685 | .350 | |
| Age (years) | .029 | .042 | 1.030 | .274 |
| Education Level ^{D, E} | .827* | .374 | 2.286 | .948 |

| | | | | |
|--|---------|-------|-------|------|
| Years in Community Corrections | -.088 | .082 | .916 | .275 |
| Work in Operations (1=yes, 0=no) | .327 | .767 | 1.387 | .879 |
| Experience Depression Since Working in Community Corrections (1=yes, 0=no) | .794 | .712 | 2.211 | .915 |
| Days Exercise Per Week | -.095 | .192 | .909 | .935 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | .052 | .687 | 1.053 | .934 |
| Days Drink Alcohol Per Week ^F | 2.001** | .311 | 7.397 | .941 |
| Number Stimulant Drinks Per Shift | .003 | .276 | 1.003 | .889 |
| Number Hours Sleep Per Day | .374 | .283 | 1.453 | .917 |
| Number Fast Food Meals Consumed Per Week | .174 | .114 | 1.190 | .915 |
| Feel in Control of Job (1= yes, 0= no) | -.421 | .678 | .657 | .947 |
| (Constant) | -12.453 | 3.540 | .000 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. Relationship revealed as statistically significant based on Bonferonni check.

G. Nagelkerke R-square= .765

H. N= 280.

Number of Days Community Corrections Professionals Consume Alcohol Per Week

The negative binomial regression model presented below (see Table 4.18) presents the results of the regression model predicting the number of days community corrections professionals consume alcohol per week. Remember, as mentioned above that the number of days professionals consume alcohol per week is measured as a count of the number of times professionals state they normally consume alcohol per week. Results of this analysis show three independent variables included in the model are significant predictors of the number of days professionals consume alcohol per week. First, it was found that male professionals consume alcohol 48.9% more days per week than female professionals. Next, it was found that a one year increase in professionals' age is associated with a 3.2% decrease in the number of days community corrections professionals consume alcohol each week. Finally, a one year increase in professionals' education level is associated with a 21% increase in the number of days professionals drink alcohol each week. Therefore, being male, professionals' age, and education level are significant predictors of the number of days professionals drink per week.

Before the negative binomial regression model predicting the number of days professionals consume alcohol per week was performed, model diagnostics were first carried out. First, the model was examined for problems related to multicollinearity. Multicollinearity was not found to be a problem because none of the tolerance statistic values were less than .200. Next, the researcher checked for skew and found several variables needed to be logged to correct for skew. However, none of these variables demonstrated statistically significant improvements over the original model and thus, the logged terms were not included in subsequent models. Next, a search for outliers was conducted and six outliers were removed from the analysis, as terms with standardized

residual values above 2.58 or below -2.58 were removed from the analysis. To control for non-linearity the researcher included several quadratic terms after partial regression plots were examined, however, no statistically significant quadratic terms were retained in the final model. It is also important to note that a negative binomial regression model was decided as the appropriate model for this particular analysis by examining the results of the Legerange Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are not close suggesting that over-dispersion is a problem, hence the use of the negative binomial regression model.

Table 4.18. Negative Binomial Regression Model Predicting the Number of Days Community Corrections Professionals Drink Alcohol Per Week^A

| Measure | B ^B | S.E. ^C | Exp(B) ^D | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) ^E | .398* | .1719 | 1.489 | .869 |
| Age (years) ^F | -.033** | .0123 | .968 | .542 |
| Education Level ^{G, H} | .190* | .0957 | 1.210 | .909 |
| Years in Community Corrections | .014 | .0195 | 1.014 | .594 |
| Work in Operations (1=yes, 0=no) | -.302 | .2063 | .740 | .865 |
| Number of Days Exercise Per Week | -.048 | .0476 | .953 | .774 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0=no) | .275 | .1820 | 1.316 | .838 |

| | | | | |
|--|-------|-------|-------|------|
| Intramural Participant in Last Three Years (1= yes, 0= no) | .165 | .1861 | 1.179 | .866 |
| Number Stimulant Drinks Per Shift | .044 | .0600 | 1.045 | .929 |
| Number Hours Sleep Per Day | .015 | .0788 | 1.015 | .874 |
| Number Fast Food Meals Consumed Each Week | -.065 | .0339 | .937 | .829 |
| Feel in Control of Job (1= yes, 0= no) | -.273 | .1842 | .761 | .850 |
| (Intercept) | .529 | .9096 | 1.697 | - |

*p≤ .05; **p≤ .01

A. Due to the smaller sample size and the low number of officers at the tail ends of the distribution the model had difficulty converging on a solution. Therefore, results should be interpreted with caution.

B. B= Log odds.

C. S.E.= Standard Error.

D. Exp(B)= Odds Ratio.

E. Relationship identified as statistically significant based on binomial distribution confidence intervals.

F. Relationship identified as statistically significant based on binomial distribution confidence intervals.

G. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

H. Relationship identified as statistically significant based on binomial distribution confidence intervals.

I. Scale= 1.436

J. Negative Binomial= .238

K. Results of Legrange Multiplier Test (performed to justify the use of negative binomial regression)- Parameter <0= 1.000; Parameter >0= .000.

L. N= 274.

Community Corrections Professionals' Sleep

A Poisson regression was performed to analyze the independent variables thought to predict officer sleep. As mentioned above, professionals' sleep is measured as a count of the number of hours professionals state they normally sleep each day The regression

model results below (Table 4.19) indicate two independent variables are predictive of how much sleep community corrections professionals sleep each day. First, it was found that a one unit increase in professionals' age is associated with a .3% decrease in the number of hours professionals sleep each day. Next, it was found that professionals who experience depression sleep 6.5% fewer hours per day than professionals who have not experienced depression since working in community corrections. Therefore, professionals' age and whether professionals have experienced depression since working in community corrections are significant predictors of professionals' sleep.

In conducting diagnostics on the regression model, the following assumptions were checked. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. As a result of this check three outliers were removed from the analysis. Finally, the residual plots were analyzed for each independent value and it was determined that several variables needed to be transformed using a quadratic term to control for non-linearity. However, after adding these terms to the model it was found that none of the quadratic terms were revealed to be significant predictors of officer fast food consumption. Finally, it is important to note that a Poisson regression model was decided as the appropriate model for this particular analysis by examining the results of the Lefrange Multiplier test (dispersion test) for equality between the mean and variance,

the results of which suggested the mean and the variance are close suggesting that over-dispersion is not a problem.

Table 4.19- Poisson Regression Model Predicting Community Corrections Professionals' Sleep Per Day

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|--|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) | -.007 | .0199 | .993 | .843 |
| Age (years) ^D | -.003* | .0013 | .997 | .540 |
| Education Level ^E | -.006 | .0106 | .994 | .908 |
| Years in Community Corrections | -.000 | .0021 | 1.000 | .584 |
| Work in Operations (1=yes, 0=no) | .028 | .0246 | 1.029 | .866 |
| Overall Health Level (1= good health, 0= poor health) | .050 | .0259 | 1.052 | .876 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0= no) ^F | -.068** | .0210 | .935 | .799 |
| Days Exercise Per Week | .003 | .0055 | 1.003 | .806 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | -.043 | .0221 | .958 | .872 |
| Days Drink Alcohol Per Week | -.005 | .0061 | .995 | .905 |
| Number Stimulant Drinks Per Shift | -.013 | .0069 | .987 | .938 |

| | | | | |
|--|-------|-------|-------|------|
| Number Fast Food Meals Consumed Per Week | -.004 | .0036 | .996 | .823 |
| Feel in Control of Job (1= yes, 0= no) | -.014 | .0227 | .987 | .838 |
| (Intercept) | 2.072 | .0751 | 7.943 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

F. Relationship revealed as statistically significant based on Bonferonni check.

G. Scale= .155.

H. Results of Legrange Multiplier Test (performed to justify the use of Poisson regression)-

Parameter <0= 1.000; Parameter >0= .000.

I. N= 277.

Professionals' Consumption of Fast Food

As a result of the negative binomial regression to predict community corrections professionals' consumption of fast food, results revealed three independent variables are significant predictors of professionals' fast food consumption. Remember, the number of times professionals consume fast food each week was measured as a count of the number of times professionals state they normally consume fast food each week. First, it was found that a one year increase in professionals' age is associated with a 1.7% reduction in the number of fast food meals professionals consume each week. Next, it was discovered that professionals who have experienced depression consume 23.7% more fast food meals per week than professionals who have not experienced depression since working in community corrections. Finally, it was revealed that when professionals exercise one

additional day per week that professionals consume 14.4% fewer fast food meals each week. Therefore, for this particular model professionals' age, experiences with depression, and frequency of exercise are significant predictors of professionals' fast food consumption.

In conducting diagnostics on the regression model, the following assumptions were checked. First, it was determined that multicollinearity is not a problem for this model, as no variables have a tolerance statistic value below .200. Next, the researcher checked for skew and determined several variables needed to be logged to correct for skew, however, when these variables were logged and included in a subsequent model, none of these variables demonstrated an improvement on their respective p-values. Next, all outliers were removed from the analysis by removing all standardized residual scores above 2.58 or below -2.58. This resulted in seven outliers being removed from the model. Finally, the residual plots were analyzed for each independent value and it was determined that needed transformed using a quadratic term to control for non-linearity. However, after adding these terms to the model it was found that none of the quadratic terms were revealed to be significant predictors of professionals' fast food consumption. Finally, it is also important to note that a negative binomial regression model was decided as the appropriate model for this particular analysis by examining the results of the Leverage Multiplier test (dispersion test) for equality between the mean and variance, the results of which suggested the mean and the variance are not close suggesting that over-dispersion is a problem, hence the use of the negative binomial regression model.

Table 4.20- Negative Binomial Regression Model Predicting Community Corrections Professionals' Consumption of Fast Food Per Week

| Measure | B ^A | S.E. ^B | Exp(B) ^C | Tolerance |
|---|----------------|-------------------|---------------------|-----------|
| Sex (1=male, 0=female) | .059 | .0993 | 1.061 | |
| Age (years) ^D | -.017* | .0070 | .983 | .304 |
| Education Level ^E | .014 | .0542 | 1.014 | .928 |
| Years in Community Corrections | .008 | .0108 | 1.008 | .300 |
| Work in Operations (1=yes, 0=no) | .238 | .1292 | 1.269 | .885 |
| Overall Health Level (1= good health, 0= poor health) | -.138 | .1206 | .871 | .856 |
| Experienced Depression Since Working in Community Corrections (1= yes, 0= no) | .212* | .1048 | 1.237 | .912 |
| Days Exercise Per Week ^F | -.155** | .0276 | .856 | .880 |
| Intramural Participant in Last Three Years (1= yes, 0= no) | .182 | .1074 | 1.199 | .927 |
| Days Drink Alcohol Per Week | -.022 | .0293 | .978 | .948 |
| Number Stimulant Drinks Per Shift | .030 | .0348 | 1.030 | .910 |
| Number Hours Sleep Per Day | -.043 | .0446 | .958 | .919 |

| | | | | |
|--|-------|-------|-------|------|
| Feel in Control of Job (1= yes, 0= no) | .194 | .1137 | 1.214 | .952 |
| (Intercept) | 1.850 | .5059 | 6.358 | - |

*p≤ .05; **p≤ .01

A. B= Log odds.

B. S.E.= Standard Error.

C. Exp(B)= Odds Ratio.

D. Relationship identified as statistically significant based on binomial distribution confidence intervals.

E. 1= high school, 2= some college, no degree, 3= associate's degree, 4=bachelor's degree, 5= graduate courses, 6= graduate degree.

F. Relationship revealed as statistically significant based on Bonferonni check.

G. Scale= 1.219

H. Negative Binomial= .113 (S.E.= .0457).

I. Results of Lgrange Multiplier Test (performed to justify the use of negative binomial regression)- Parameter <0= .997; Parameter >0= .003.

J. N= 273.

E. Significant Predictors of Law Enforcement Officer and Community Corrections

Professionals' Health and Wellness

After analyzing the regression models on law enforcement officer and community corrections professionals' health and wellness, many independent variables were identified as significant predictors of the various dependent health and wellness outcomes predicted in the regression models above. The number of times each independent variable was identified as a significant predictor of an officer or community corrections professionals' health and wellness outcome are presented below in Table 4.21. What must be further explored, however, is the chance that some of the independent variables which did not appear frequently as significant predictors of the health and wellness outcomes examined above may be significant in a single model as simply the result of statistical chance. The possibility of chance significance was examined in two ways.

First, the significance of individual variables was assessed using the Bonferroni

correction. Briefly, the Bonferonni correction involves calculating more stringent model-level significance levels based on the overall desired significance level and the number of models run. Secondly, calculations performed using the binomial distribution show that at a 95% confidence level, the Type I error rate across 10 models is 0.3151 if a variable was significant only once, but falls to 0.0746 if a variable was significant twice and further falls to 0.0105 if a variable was significant 3 times (the global Type I error rate is less than $< .001$ if a variable is significant 4 or more times).

Table 4.21- Significant Predictors of Health and Wellness

| <u>Law Enforcement Officers</u> | <u>Community Corrections Professionals</u> |
|----------------------------------|--|
| Age- 3 | Age- 5 |
| Alcohol Consumption- 2 | Alcohol Consumption- 1 |
| Alcohol Consumption (Squared)- 1 | - |
| Control Job- 3 | Control Job- 1 |
| Depression- 3 | Depression- 2 |
| Education- 3 | Education- 3 |
| Exercise- 4 | Exercise- 2 |
| Intramural Participation- 1 | - |
| Fast Food- 1 | Fast Food- 1 |
| Health- 2 | Health- 1 |
| - | Operations- 1 |
| - | Sex- 4 |
| Sleep- 2 | Sleep- 1 |
| Sleep (squared)-1 | |
| Stimulant Drinks- 5 | Stimulant Drinks- 1 |
| - | Stimulant Drinks (Logged)- 1 |
| Years Experience- 2 | Years Experience- 1 |
| Years Experience (Logged)- 1 | - |
| 2 nd Shift- 5 | - |
| 3 rd Shift- 6 | - |

As a result of testing these variables as chance predictors of officer and community corrections professionals' health and wellness using the binomial distribution confidence intervals and the Bonferroni check, the following independent variables were found to most likely be significant predictors of officer and community corrections professionals' health and wellness outcomes (see Table 4.22 below).

Table 4.22- Predictors of Officer and Community Corrections Professionals' Health and Wellness After Reducing the Chance of Type I Error

| <u>Law Enforcement Officers</u> | <u>Community Corrections Professionals</u> |
|----------------------------------|--|
| Age- 3 | Age- 5 |
| Alcohol Consumption- 2 | Alcohol Consumption- 1 |
| Alcohol Consumption (Squared)- 1 | - |
| Control Job- 3 | Control Job- 1 |
| Depression- 3 | Depression- 1 |
| Education- 3 | Education- 3 |
| Exercise- 4 | Exercise- 2 |
| - | Fast Food- 1 |
| Health- 2 | - |
| - | Sex- 4 |
| Sleep- 2 | Sleep- 1 |
| Sleep (squared)-1 | |
| Stimulant Drinks- 5 | Stimulant Drinks- 1 |
| Years Experience- 2 | - |
| Years Experience (Logged)- 1 | - |
| 2 nd Shift- 5 | - |
| 3 rd Shift- 6 | - |

CHAPTER V

DISCUSSION

The previous chapter presented the results of statistical regression modeling used to analyze the differences between significant predictors of a variety of law enforcement officer and community corrections professionals' health and wellness outcomes. In order to highlight the most important differences between officer and community corrections professionals' health and wellness outcomes, the regression results must be discussed in a variety of ways, which will be done below. First, discussion will commence by commenting on the independent variables which were found to be significant predictors of law enforcement officer health and wellness and then discussing the factors found to be significant predictors of community corrections professionals' health and wellness. Next, comparisons will be made between the factors found to be significant predictors of law enforcement officer and community corrections professionals' health and wellness, comparing predictors of the dependent variables and the independent variables which were found to be significant predictors of the dependent variables and the directions of these associations. Finally, after discussing the variables found to be predictors of law enforcement and community corrections professionals' health and wellness and the differences related to the significant predictors identified across each sample, the discussion will focus on which groups of factors (i.e. demographic, organizational, physical and mental health, or wellness) were identified most often as significant predictors of law enforcement officer and community corrections professionals' health

and wellness. Differences between the two samples on which groups of independent variables were found most often to be significant predictors of officer and professionals' health and wellness will then be discussed. Ultimately, the argument will be made that these differences are important because they suggest relevant policy implications which will lead to changes in law enforcement and community correctional officers' health, which will in turn lead to increased performance and professionalism.

A. Significant Predictors of Law Enforcement and Community Corrections Professionals' Health and Wellness.

Significant Predictors of Law Enforcement Health and Wellness

The results presented above demonstrate that for each of the officer health and wellness dependent variables of interest, there are many significant independent variables found to be associated with officer health and wellness outcomes. First, officer overall health was found to be positively associated with officer education level, officers working second shift, officer exercise, and officer sleep and was found to be negatively associated with officers working third shift. Next, officers experiencing depression was found to be positively associated with officer experience, officers working second shift, officer overall health, and officer alcohol consumption, and was found to be negatively associated with officer age and whether officers feel in control of their jobs. Next, it was found that officers seeking help for depression was predicted by positive associations with officer sleep and officers feeling in control of their jobs. Next, whether officers have been taken to the hospital for an injury experienced on-the-job was predicted by positive associations with officer experience, officers experiencing depression, and officer sleep. Additionally, officer exercise was predicted by positive associations with

officer health. Also, officers using stimulants to get through their shifts was identified as predicted by positive associations with officer education level, officers working both second and third shifts, officers experiencing depression, and the number of stimulant drinks officers consume per shift was negatively associated with officer exercise. Next, whether officers consume an alcoholic drink after returning home from work was predicted by positive associations with officer experience, officers working third shift, officer alcohol consumption, and the number of stimulant drinks officers consume per shift and negative associations with officer age, officer exercise, and whether officers feel in control of their jobs. Additionally, officer alcohol consumption was found to be predicted by positive associations with officer education level, officers working second shift, officers working third shift, and the number of stimulant drinks officers consume per shift. Also, officer sleep was found to be predicted by negative associations with officers working second and third shifts, officers experiencing depression, and the number of stimulants officers consume per shift. Finally, officer fast food consumption was found to be predicted by positive associations with the number of stimulants officers consume per shift and negative associations with officer age, officers working third shift, officer exercise, and officer alcohol consumption.

The results of the various regression models presented above demonstrate that several demographic factors were revealed to be significant predictors of law enforcement officer health and wellness. First, officer age was found to be a significant predictor of officers not experiencing depression, consuming less alcohol at home, and a lower frequency of fast food consumption. These findings are somewhat surprising, as other studies have found that older officers are more likely to experience depression (i.e.

Darensburg, Andrew, Hartley, Burchfiel, Fekedulegn, & Violanti, 2006) and that police work is generally more stressful for older officers (Gershon et al., 2002), yet other research has found that as officer age increases, officers consume less alcohol (Me´nard & Arter, 2014). Little is known about officer fast food consumption, so one cannot rely on previous research for guidance. However, it could be that older officers, since it is likely they have more job experience than younger officers, often work day shifts as opposed to night shifts, which allows them to eat at home more often. If officers work second or third shift and the only restaurants that are open are of the fast food variety then it is likely officers working such shifts will consume more fast food. Officer education was found to be significantly predictive of higher officer health ratings, officers using stimulants to get through their shift, and officers consuming alcohol a greater number of days each week. It is not surprising that officer education is predictive of officers rating their overall health as “good”, as many studies have shown higher educational levels lead to better individual health outcomes (i.e. Baker, Parker, Williams, Clark, & Nurss, 1997; Lleras-Muney, 2005, Powell, Hill, & Clancy, 2007). It is also generally understood from a practitioner standpoint that officer education improves individual health and wellness outcomes, as the many workshops, employee assistance programs, and treatments designed to improve officer health and wellness are based on the idea that if officers are better educated about specific aspects of their health and wellness then they will be able to take practical steps towards self-improvement on those specific health and wellness areas. It is curious as to why officer educational level is positively associated with officers consuming more stimulant drinks each shift and drinking alcohol a greater number of days each week, however, when officers attended

college they may have been part of the drinking culture which may explain this relationship. This should be explored further in future research. The final demographic factor found to be a significant predictor of officer health and wellness was officer experience. Specifically, it was found that officer experience was significantly predictive of officers being taken to the hospital for an on-the-job injury, drinking at home more frequently, and being more likely to experience depression. It makes logical sense that as officers work longer in law enforcement that their risk of having to be taken to the hospital for an injury increases, especially given that the Bureau of Justice Statistics (2011) claims law enforcement officers come into contact with citizens roughly 40 million times each year. It is also not surprising that officers who have worked in law enforcement longer drink at home more often, as research highlighted above demonstrates that the longer law enforcement officers work in the field the more they define police work as stressful. Drinking at home may be a way for officers to handle such stressors, especially when experience is also associated with officer depression.

Several physical and mental health outcomes were also frequently revealed as significant predictors of the various law enforcement health and wellness dependent measures. First, whether officers feel in control of their jobs was significantly associated with officers not experiencing depression, officers seeking help for depression, and not drinking at home. These findings are not surprising, as previous research has found that when officers suffer occupational psychosocial stressors that these problems correlate with depression (i.e. Bhui, Dinos, Stansfeld, & White, 2012). The fact that officers who feel in control of their lives are more likely to seek help for depression is also not surprising. Ames' (1983) cognitive-motivational model of help-seeking behavior

includes components of what Ames calls ego-involved attributions which relate to an individual's self-esteem and the importance they place on their own abilities. This could have importance for whether law enforcement officers seek help for mental health issues like depression, as officers who feel in control of their jobs, and likely have higher levels of self-esteem, do not experience stigma as part of the decision making process as to whether they wish to seek help for mental health issues. Officers who do not feel in control of their jobs may not feel as confident, as these officers may feel as if they may lose their job if they seek help for mental health issues. It is also not surprising that officers who feel in control of their jobs are less likely to consume alcohol at home, as officers would not need to use alcohol as a coping mechanism to deal with the occupational stressors frequently highlighted in the police stress literature as frequently significant predictors of officer stress. Next, officer depression was found to be significantly associated with officers being more likely to be taken to the hospital for an on-the-job injury, officers using stimulants to get through their shift, and officers getting fewer hours of sleep each day. These findings, like many of the findings presented above, are not surprising. The relationship between officer depression and increases in officers having to be taken to the hospital for on-the-job injuries can be explained because depression is highly correlated with shift work disorders, which have been shown to correlated with officer injuries (Institute of Medicine of the National Academies, 2006; Rajaratnam et al., 2011). Officers who experience injury significant enough to require medical attention may do so as a result of a lack of focus due to the debilitating effects of depression or the fact that shift work causes increases officer injuries via depression. Related to this is the fact that law enforcement officers may

increasingly use stimulants to get through their shifts if they are fatigued due to the effects of shift work or the emotional exhaustion experienced through depression. Previous work has identified an association between officer depression and sleep (i.e. Yoo & Franke, 2013) and other stress and mental health measures (Gerber et al., 2013). Finally, officer health was found to be a significant predictor of officers experiencing depression and officers exercising more frequently each week. At first glance, it may appear surprising that whether officers have good health was associated with officers also stating they have experienced depression. However, the wording of the question included in the survey asked officers if they had ever experienced depression since they began working in law enforcement. It is possible that these officers have received help for their depression since experiencing it and now consider themselves to be “O.K.”. Health’s predictive value in relation to officers exercising more each week can be explained simply by the fact that officers who are in good health wish to maintain their health and exercise more frequently each week or it is also likely that the reverse is also true in that self-ratings of “good health” do not cause officers to exercise more each week, but that officers who exercise more each week feel they are in better health.

Several of the wellness variables included in the regression models as independent variables were found to be significant predictors of officer health and wellness outcomes as well. First, officer alcohol consumption was found to be a significant predictor of officers consuming alcohol at home after work, less fast food consumption, and depression. The relationship between officers consuming alcohol a greater number of days per week and officers drinking at home, as it is likely that if officers are drinking more days per week that they are also drinking alcohol when they

return home from work. This is not surprising, as some research suggests law enforcement officers suffer alcoholism at three times the rate of non-police officers (Hibberd, 1996). This relationship seems commonsensical, however, it was explored, as the multicollinearity statistic did not demonstrate a problem in terms of this relationship. The fact that officer alcohol consumption predicts lower rates of fast food consumption may be explained by the fact that increased alcohol consumption is also a significant predictor of officers consuming alcohol at home. Since officers who consume alcohol more times per week is associated with officers consuming alcohol at home after work it may be that these same officers are consuming more meals at home instead of consuming fast food on the run. The quadratic alcohol consumption term was found to be associated with officers experiencing depression, as officers consuming alcohol on four or more days per week have a much greater likelihood of experiencing depression. These officers are likely drinking more often to cope with the effects of depression, as alcohol is a coping mechanism for depression. Research by Barbosa-Leiker, McPherson, Cameron, Jathar, Roll, & Dyck (2013) found that depression mediates the relationship between stress and alcohol use. Next, officer exercise was found to be a significant predictor of “good” officer overall health, less of stimulants to get through shifts, less drinking alcohol at home, and less fast food consumption. These findings make sense for several reasons. When officers exercise more days per week it helps them to reduce stress and avoid the negative health consequences associated with stress (Gerber et al., 2010). When officers exercise more frequently they are using stimulants less to get through their shifts likely because they are not having to rely on products such as energy drinks for energy. Instead, their exercise habits are providing them with natural energy. Officers

who exercise a greater number of days per week are likely lowering their stress levels which reduces their reliance on alcohol (so they are not consuming alcohol at home) and fast food. Research has linked stress to increases in alcohol and fast food consumption (Steptoe, Lipsey, & Wardle, 1998). Additionally, sleep was found to be a significant predictor of “good” officer health, officers seeking help for depression, and officers being taken to the hospital for an on-the-job injury. Sleep as a significant predictor of officer health is not a surprise, as researchers have championed sleep as a boon to health (i.e. Pilcher & Ott, 1998) and the opposite has been highlighted as well, as a lack of sleep has been shown as related to a variety of health problems including, but not limited to, obesity (Kohatsu, Tsai, Young, VanGilder, Burmeister, Stromquist, & Merchant, 2006), diabetes (Knutson, Ryden, Mander, & Van Cauter, 2006), and heart problems (Kasasbeh, Chi, & Krishnaswamy, 2006). The relationship between sleep and depression is not surprising, as the National Sleep Foundation (2016a) states a lack of sleep has been found in some studies to be associated with depression. The quadratic equation for officer sleep was found to be a significant predictor of officers being taken to the hospital for on-the-job injuries. Specifically, it was found that when officers received less than six or more than eight hours of sleep a day the probability they would need to be taken to the hospital for an on-the-job injury increased significantly. This is not surprising, as the Mayo Clinic (Morgenthaler, 2013) recommends 7-8 hours of sleep each day for adults because the human body does not function properly if it receives too little or too much sleep. Finally, officer consumption of greater number of stimulant drinks per shift was found to be significantly associated with using stimulants to get through shifts, drinking at home, drinking alcohol a greater number of days per week, sleeping fewer hours per day, and

consuming more fast food. These findings make sense, as officers who consume more stimulant drinks per shift are logically more likely to state they use stimulants to get through their shifts. It is important to remember here that stimulants and stimulant drinks were operationalized in different ways, as stimulants were defined as any substance designed to increase one's energy and stimulant drinks were defined as coffee, tea, caffeinated soda, energy drinks, and muscle-building energy mixes. Therefore, the use of stimulants and stimulant drinks simultaneously may involve the use of different stimulant products. Regardless, these two variables are associated. Consuming more stimulant drinks per shift may be predictive of officers drinking alcohol when they get home from work because officers may be drinking alcohol to counter-balance the effects the stimulant drinks have on their bodies. In other words, alcohol may be used to help officers calm down. Consuming a greater number of stimulant drinks per shift may be associated with consuming alcohol more days per week, as officers consuming alcohol a greater number of days per week is associated with consuming alcohol at home after work, hence, this may be the reason why both are significantly predicted by officer stimulant drink consumption per shift. Additionally, officers may be combining alcohol and energy drinks while on shift. Much research exists highlighting how some individuals now combine alcohol and energy drinks (i.e. Miller, 2013; O'Brien, McCoy, Egan, Goldin, Rhodes, & Wolfson, 2013) and there is evidence to suggest that some officers consume alcohol while on duty. For example, Van Raalte (1978) found that in a 200 person sample of police officers that 40% had consumed alcohol while on duty, therefore, this is something that warrants further exploration. As mentioned above, officers consuming more stimulant drinks per shift may be significantly predictive of

officer sleep because officers may have trouble falling asleep after consuming a higher amount of stimulant drinks while on shift. Finally, consuming more stimulant drinks per shift is a significant predictor of consuming more fast food because individuals who consume more stimulant drinks per shift are probably less health-conscious in the first place, hence their associated higher consumption of fast food.

Two organizational factors were also identified as significant predictors of law enforcement officer health and wellness outcomes. Officer working second shift was found to be significantly predictive of officers having good health, officers experiencing depression, officers using stimulants to help them through their shifts, consuming alcohol a greater number of days per week, and officers sleeping less per day. Officers working second shift may be a significant predictor of officer health because officers working second shift may have a great deal of work-life flexibility, being able to handle personal matters during the day before going into work in the early afternoon. However, working second shift may lead to officer depression because of the reduced hours of sleep available to officers before they have to begin the next day. This may be particularly problematic for officers with families who must start the day earlier to meet family obligations (i.e. taking kids to school in the morning). Relatedly, officers who work second shift also use stimulants to help them through their shifts, suggesting these officers are energy-deprived in some ways, perhaps, as mentioned above, as a result of a lack of sleep. Officers working second shift also consume alcohol a greater number of days per week. This finding is curious, because if officers are going in later in the afternoon, yet getting off work later in the night (around midnight), so it leaves one to wonder when officers are consuming alcohol if they are not consuming it while on shift.

It is possible they are consuming alcohol when they get home from work, but if this was the case then this should have been identified as a statistically significant relationship. Finally, as suggested above, officers who work second shift are sleeping less, possibly for the reasons mentioned above. Next, officers working third shift was also identified as a significant predictor of poor officer health, greater use of stimulants to help officers through shifts, drinking alcohol at home after work, drinking a greater number of days per week, sleeping less, and consuming less fast food. It is not surprising that working third shift is a significant predictor of poor officer health, as law enforcement shift work has been tied to a variety of negative health outcomes [i.e. cardiovascular disease (Zimmerman, 2012), metabolic syndrome (Violanti, Burchfiel, Hartley, Mnatsakanova, Fekedulegn, Andrew, Charles, & Vila, 2009)]. Similarly, officers working third shift need stimulants to help them get through their shift because of the unnatural nature of working third shift, as their body works against their natural circadian rhythm (Wirth, Burch, Violanti, Burchfiel, Fekedulegn, Andrew, Zhang, Miller, Youngstedt, Hébert, & Vena, 2013). Officers working third shift also drink alcohol at home when they return home from work suggesting they are using alcohol to cope with the stress of shift work or to help calm themselves down in attempting to go to sleep during the day. Similarly, officers working third shift drink a greater number of days through the week suggesting officers drink more often to deal with the stress of shift work. At the same time these officers are sleeping less, as has been found in other research (i.e. Wright Jr., Bogan, & Wyatt, 2013). Finally, officers who work third shift consume less fast food possibly because while working third shift many fast food restaurants are not open, reducing officers' opportunity to consume fast food (Tewksbury & Copenhaver, 2015).

Significant Predictors of Community Corrections Professionals' Health and Wellness

The results presented above demonstrate that for each of the officer health and wellness dependent variables of interest, that there are many significant independent variables that were found to be associated with these health and wellness outcomes. First, professionals' rating their overall health as "good" was predicted by positive associations with professionals' exercise. Next, whether professionals have experienced depression since working in community corrections was found to be predicted by negative associations with sex, sleep, and whether professionals feel they are in control of their jobs. Additionally, whether professionals would seek help for experiences with depression was found to be predicted by a negative association with sex. Next, professionals' exercise was significantly predicted by positive associations with sex and negative associations with age and fast food consumption. Additionally, professionals using stimulants to help them through their shifts was found to be positively associated with professionals' education level and the number of stimulant drinks professionals consume each shift and a negative association with professionals' age. Additionally, professionals' consumption of alcohol after returning home from work was significantly predicted by positive associations with professionals' education level and the number of days professionals consume alcohol per week. Also, professionals' alcohol consumption was found to be significantly predicted by positive associations with professionals' sex and education level and a negative association with age. Next, professionals' sleep was significantly predicted by negative associations with age and experiencing depression. Finally, professionals' fast food consumption was significantly predicted by negative associations with age and professionals' exercise.

Several of the demographic variables included in the analysis were found to be significant predictors of community corrections professionals' health and wellness outcomes. The age of professionals was found to be significantly associated with exercising fewer days per week, using stimulants more frequently to get through shift, drinking fewer days per week, sleeping less, and consuming less fast food. It is not surprising that older professionals tend to exercise less, as older individuals experience more problems with pain and a lack of energy when it comes to exercise than do young people (Crombie, Irvine, Wililams, McGinnis, Slane, Alder, & McMurdo, 2003). Given this lack of exercise with older professionals it is no surprise that as officers age they need to rely on stimulants to help them through their shifts. Older professionals drink fewer days per week, which may mean that professionals are not going out with friends and doing these types of social activities as they get older. They may be spending more time with family at home as they age. As professionals age they sleep less, suggesting that older professionals may not be able to deal with the stressors of work in community corrections as well as younger professionals. This stress may weigh on them differently. Therefore, this finding is not surprising as Pitts & Taylor (2011) also stated the stress of community corrections is related to poor sleep. Finally, given, as mentioned above, it is likely older professionals are spending more time at home with family and less with friends in social settings it seems logical that older individuals eat fast food less frequently throughout the week. Next, professionals' education level was found to be significantly predictive of using stimulants to get through shifts, drinking at home, and the number of days professionals consume alcohol per week. These findings are not surprising, as Pitts (2007) found that in a study of community corrections officers, 90%

of which held a bachelor's degree (similar to the sample of community corrections professionals investigated here), that 29% of officers still felt educationally unprepared for work in community corrections. It would seem then that better educated professionals would not need to rely on stimulants to help them through their shifts and would drink less often at home and throughout the week, however, this is not the case. Finally, professionals' sex (being male) was found to be a significant predictor of experiencing depression less often, not seeking help for depression, exercising a greater number of days per week, and drinking a greater number of days per week. It is not surprising that male professionals are less likely to experience depression than female professionals, as this reflects a general societal trend in the U.S., as women are more likely to experience depression in general (Nolen-Hoeksema, 2001). Neither is the finding that male professionals are less likely to seek help for depression surprising, as men in general do not exhibit help-seeking behaviors as often as women (Addis & Mahalik, 2003; Möller-Leimkühler, 2002). The fact that female professionals exercise less often is also reflective of a societal trend of women exercising less frequently than men (i.e. Loprinzi & Cardinal, 2012). This finding is also reflective of the societal trend that men have historically consumed alcohol at higher rates than women (White, Castle, Chen, Shirley, Roach, & Hingson, 2015).

Only one physical/mental health type variable was found to be a significant predictor of professionals' health and wellness. Professionals' depression was found to be significantly predictive of professionals sleeping less hours per day and consuming more fast food each week. These findings are understandable, given how depression can cause individuals to lose sleep (National Sleep Association, 2016a). There is even newer

research that suggests the consumption of fast food increases individuals' risk of depression (Crawford, Khedkar, Flaws, Sorkin, & Gallicchio, 2011; Sánchez-Villegas, Toledo, de Irala, Ruiz-Canela, Pla-Vidal, & Martínez-González, 2011).

Two of the wellness measures included in the series of regressions were found to be significant predictors of professionals' health and wellness outcomes. First, exercise was found to significantly predictive of professionals having good overall health and consuming less fast food. Professionals exercising more frequently each week and experiencing good overall health is not surprising, as the relationship between exercise and health is well established. The reason why professionals exercising more days per week is predictive of lower fast food consumption rates is likely because individuals who are consciously making the effort to exercise more are probably more health conscious in general and subsequently consume less fast food each week. Next, professionals' consumption of more stimulant drinks per shift was found to be significantly predictive of professionals using stimulants to get through their shift and professionals being more likely to experience depression. The relationship between consuming more stimulant drinks per shift and relying on stimulants to get through shift suggests that professionals may become dependent on the energy provided by stimulants to get through their shifts. Stimulant drinks such as coffee and energy drinks contain high amounts of caffeine, which may become habit-forming (Budney & Emond, 2014; Olekalns & Bardsley, 1996). The relationship between increased stimulant drink consumption and depression may be explained in the sense that professionals may be using stimulant drinks to counter-balance the effects of depression, or in other words, to provide an emotional "pick-me-up". Some research on other populations suggests increased energy drink consumption is

associated with depression (i.e. Azagba, Langille, & Asbridge, 2014), as are sweetened drinks in general (Guo, Park, Freedman, Sinha, Hollenbeck, Blair, & Chen, 2014). Other studies have shown that increased caffeine consumption has been found to alleviate depressive symptoms (i.e. Whalen, Silk, Semel, Forbes, Ryan, Axelson, Birmaher, & Dahl, 2008), suggesting that for some individuals caffeine aids in helping individuals deal with depression and this is what may be occurring with these results. No organizational factors were identified as significant predictors of officer health and wellness.

Comparing Significant Predictors of Law Enforcement Officer and Community Corrections Professionals' Health and Wellness

The next section provides information on comparisons between significant predictors of law enforcement and community corrections professionals' health and wellness. Within this section the similarities and differences will be presented representative of the independent variables predictive of the health and wellness of individuals in both samples, examining the dependent health and wellness outcomes these factors predicted and the direction of the association inherent to these relationships will be discussed as well. These comparisons will be reported on by type of independent variable beginning with demographic variables, then physical and mental health predictors, then wellness variables, and concluding with organizational predictors.

The first set of comparisons discussed will be for the demographic variables predictive of law enforcement and community corrections professionals' health and wellness. First, age was found to be generally predictive of both a variety of officer and professionals' wellness outcomes, as age was found to be negatively associated with

officer alcohol consumption at home and fast food consumption and professionals' age was negatively associated with exercise, using stimulants to get through shifts, alcohol consumption, sleep, and fast food consumption. This suggests that for both groups age is a very important factor related to the wellness practices in which officers and professionals engage. While most of these relationships reveal desirable associations (i.e. older officers eat less fast food), it does suggest older professionals are not exercising or sleeping as much as younger professionals. Next, officer and professionals' educational level was related to a variety of wellness factors across both groups. Officer education was positively related to health, using stimulants to get through shifts, and alcohol consumption and professionals' educational level was positively related to using stimulants to get through shifts, drinking at home, and alcohol consumption. These findings make sense, despite the fact that education increases health, yet also increases alcohol consumption for both officers and professionals. Research has typically shown education has myriad positive effects on reducing unhealthy behaviors such as smoking, but is related to increases in alcohol consumption (Huerta & Borgonovi, 2010). Huerta and Borgonovi (2010) believe education may provide individuals with higher education, greater access to social life including events where alcohol is consumed, increase individual's perceptions related to alcohol use acceptability, and cause children to be exposed to adults drinking alcohol earlier in life, which assumes children are taught alcohol use is acceptable and should be used responsibly. It may seem strange that education is associated with increases in stimulant use, given that education has been identified as associated with greater energy drink consumption (Friis, Lyng, Lasgaard, & Larsen, 2014). However, energy drinks have also been found to be associated with

individual perceptions of stress (Pettit & DeBarr, 2011), which both law enforcement officers and community corrections professionals experience as part of their everyday occupational realities. Next, it was revealed that officer experience was found to be positively related to being taken to the hospital for an on-the-job injury, drinking at home, and depression, yet years of experience was not found to be a significant predictor of any of the professionals' health and wellness outcomes. The fact that law enforcement officer experience is predictive of several negative health and wellness outcomes may be explained by the fact that the law enforcement officers sampled have an average of 13.09 years of experience and the community corrections professionals have 7.75 years of experience on average. Therefore, officers working longer may demonstrate more negative health and wellness outcomes because they are serving almost twice as long on average as community corrections professionals. As mentioned above, Franke et al. (2002) show the longer officers stay in the field the greater their stress levels. This length of time in the field may be why officers show more negative health and wellness outcomes in comparison to professionals. Finally, professionals' sex (being male) was found to be negatively associated with depression and seeking help for depression and positively associated with exercise and drinking more frequently each week. None of these findings were identified in the sample of officers because there were not enough female officers that participated in the law enforcement survey to conduct statistical analyses on these relationships, as the agency is only made up of 2% female officers. However, if this analysis were possible it is likely the same relationships would be identified because the sex relationships identified in the professionals' analysis were reflective of general societal trends related to how women experiencing depression more

often, men not seeking help for depression, and men both exercising and drinking more often than women.

The next set of comparisons covers relationships for the physical and mental health factors predictive of law enforcement officer and community corrections professionals. First, officers feeling like they are in control of their jobs was negatively associated with depression and drinking at home and positively associated with seeking help for depression. It is surprising that professionals feeling in control of their jobs was only predictive of professionals' experiencing depression, as it was hypothesized that both officers and professionals would show positive health and wellness outcomes in general if they felt like they had more control of what happens to them at work, as the literature generally shows that community corrections officers desire autonomy at work. Perhaps this lack of significance between these relationships may be explained by the fact that so many of the demographic factors were found as significant predictors of professionals' health and wellness. In other words, perhaps demographic factors are more important predictors of professionals' health and wellness than are organizational, health, and wellness factors. Next, depression was found to be significantly predictive of whether officers have been taken to the hospital, officers using stimulants to get through their shifts, and officers sleeping less. For professionals, depression was only found to be associated with professionals sleeping less. Therefore, with the exception of the positive association with whether officers have been taken to the hospital for on-the-job injuries, officer and professionals' depression is generally related to wellness. Depression leads to officers using stimulants to get through their shifts and both officers and professionals sleep less as a result of depression. This suggests that depression has real wellness

impacts for officers and professionals which need to be addressed to avoid the negative health consequences of such actions. Next, it was found that officer health was positively associated with both depression and exercise, yet professionals' health was not identified as a significant predictor of any of the dependent health and wellness measures. These are peculiar findings, as health was expected to significantly predict professionals' health and wellness outcome in myriad ways. However, remember that above it was troubling explaining the fact that officer health increased depression, therefore, the absence of this relationship in the professionals sample is understandable. The fact that professionals' health does not increase professionals' exercise may have something to do with the fact that professionals' exercise less than officers in the first place. On average the sample of officers exercise 3.11 days per week and professionals only exercise 2.73 days per week.

This section includes comparisons between both samples related to wellness variables predictive of officer and professionals' health and wellness outcomes. First, officer alcohol consumption was predictive of increases in drinking at home, lower fast food consumption, and the quadratic term for officer alcohol consumption was associated with increases in depression. For professionals, alcohol consumption was only found to be predictive of professionals consuming more alcohol at home. These results are perplexing, however, it may be that officer alcohol consumption is predictive of drinking at home and depression because officers turn to alcohol more often than community corrections professionals to deal with stress. The sample of professionals consume alcohol a greater number of days per week (1.27) on average compared to officers (1.12) and professionals consume alcohol at home more often (17%) than officers (14%), however, the literature says very little about alcohol consumption by those that work in

community corrections. Next, for officers and professionals, exercise was a positive predictor of health and negatively predicted officer fast food consumption. Additionally, officers who exercised more use stimulants less frequently to get through shifts and drank at home less often. The relationships between exercise and both health and fast food consumption have been elaborated on above, however, it is curious that exercise predicts officers being less likely to use stimulants to get through shifts and consuming alcohol at home after work. Perhaps professionals' exercise does not predict increased stimulant use to get through shifts because professionals do not have to "push" to get through second and night shifts as do officers. One possible explanation for why professionals do not drink less often at home after work is because since professionals only work first shift that they are exercising before work. This exercise, then, would not interfere with drinking at home after work. Additionally, as highlighted above, professionals exercise less often than officers in general. Next, officer sleep was found to be significantly predictive of officers having good health, seeking help for depression, and the quadratic term was predictive of officers more likely to be taken to the hospital for an on-the-job injury. The differences between officers and professionals are likely a product of the shift work officers are required to work, as highlighted above, shift work is related to a variety of negative health and wellness outcomes, including depression and sleep. Officer sleep may be significantly related to seeking help for depression because, as suggested by Nasset, Rustad, Kjelsberg, Almvik, & Bjørngaard (2011), individuals experiencing problems with sleep may seek treatment, which leads to discussions with treatment providers on how depression symptoms may be addressed. In short, depression may be identified in treatment sessions for persons struggling to sleep. The relationship

between officers' sleep and having to be taken to the hospital for an on-the-job injury can be explained by the fact that officers who sleep too little or too much are susceptible to injury, especially if they are performing shift work and operating a patrol vehicle. These problems have been touched on in the health and wellness literature (i.e. Rajaratnam, et al., 2011; Vila & Kenney, 2002; Vila, Morrison, & Kenney, 2002a). However, it is strange that professionals' sleep is negatively associated with a decreased chance of experiencing depression, yet this finding is not true for law enforcement officers. Additionally, using stimulant drinks to get through shifts was identified as significantly predictive of several negative wellness for the sample of officers. For both samples, stimulant drink consumption was positively related to individuals being more likely to use stimulants to get through shifts, which is no surprise. Consuming more stimulant drinks per shift was also related to officers drinking more at home, drinking more days per week, sleeping less, and consuming more fast food. These relationships are likely a function of officers having to perform shift work, as these same officers are likely battling the negative health effects of shift work and are drinking more often to cope with stress and are not on regular schedules (primarily second shift) with family members, thus leading them to consume more fast food. Finally, fast food is associated with professionals exercising fewer days per week, but not law enforcement officers. This may be explained by the fact that professionals were found to exercise less on average than officers in the first place.

This section presents information on differences between law enforcement officers and community corrections professionals related to which organizational factors were significant predictors of officer and professionals' health and wellness outcomes.

First, officers working second shift experienced greater overall health, greater depression, use stimulants more frequently to get through their shifts, drink a greater number of days per week and sleep less than do first shift officers. These findings are significant for the sample of law enforcement officers, yet, shift was not a variable that could be examined statistically for the sample of professionals, as all professionals work first shift, shift is irrelevant for professionals as a predictive variable. Clearly, working second shift has a tremendous impact on the health and wellness of law enforcement officers, as working second shift relates to health, depression, sleep, and drinking alcohol and consuming stimulants to deal with having to work second shift. Additionally, officers who work third shift have poorer health, use stimulants to get through shifts, are more likely to drink at home and drink more often, sleep less, and consume less fast food than first shift officers. Again, the effect of shift on the dependent health and wellness outcomes could not be examined for the sample of community corrections professionals. It is important to note that officers working third shift appeared as a statistically significant predictor across six different models, which was more than any other independent variable included in any regression model across both the law enforcement and community corrections professionals analyses. Additionally, officers working second shift was a significant predictor five times, which was the next most frequently occurring predictor in terms of significance, equal to stimulant drink consumption for law enforcement officers (5) and professionals' age (5) in terms of the number of times the variable appeared as a significant predictor. It is clear that when officers are required to work evening and night shifts then this requirement may have significant impacts on officers' health and wellness. Officers may experience negative health outcomes related to

depression and overall health and may engage in potentially harmful wellness practices to cope with the stress of doing shift work (i.e. relying on stimulants, drinking more, sleeping less, etc.). These findings are no surprise, given the vast amount of criminal justice research on the negative effects shift work can have on police officers and their families ranging from shift disorder, cancer, traffic accidents, family problems, and poor sleep quality (Fekedulegn, Burchfiel, Charles, Hartley, Andrew, & Violanti, 2016), among other problems. The implications of officers demonstrating negative health and wellness outcomes as they are required to perform shift work in relation to the absence of the presence of such important relationships being seen in the sample of community corrections professionals will be elaborated on further below as part of a larger general discussion on the groups of factors most often predictive of officer and professionals' health and wellness.

Difference in Groups of Factors Predictive of Officer and Professionals' Health and Wellness

The independent variables which appeared as significant predictors of the various law enforcement officer and community corrections professionals' outcomes on dependent health and wellness measures also showed differences in terms of the types of variables which appeared most often as significant predictors of officer and professionals' health and wellness. This means that different types of factors, including demographic, physical/mental, wellness, and organizational factors appeared in differing ways as significant predictors of officer and professionals' health and wellness. These differences are discussed as follows.

The first type of independent variable which demonstrated differences in frequency of significance was officer and professionals' demographic variables. For the group of law enforcement officers, age appeared three times, education appeared three times, and experience appeared three times as significant predictors of officer health and wellness. For the professionals sample age appeared five times, education appeared three times, and sex appeared four times as significant predictors of professionals' health and wellness. Therefore, a total of eight instances were identified across three independent variables where officer demographic factors appeared as significant predictors and 12 instances across three independent variables where demographic variables appeared as significant predictors of community corrections professionals' health and wellness. Because of this, it can be assumed that demographic factors are much more important as predictors of community corrections professionals' health and wellness as opposed to law enforcement officer health and wellness. This is not surprising, given the above discussion on the importance of shift work in law enforcement and its myriad negative physical and mental health and wellness effects on officers. In other words, organizational factors may be more important when considering the effects of law enforcement stress on officer health and wellness and "who" is hired into community corrections may be more important for community corrections professionals' health and wellness. The measure included in this study designed to capture community corrections professionals' experience in the field found that their experience is roughly half of that of law enforcement officers, suggesting a great deal of turnover in community corrections. This complements what has been repeatedly identified in the corrections literature as a challenge to effective work in community corrections (i.e. Simmons et al., 1997)

specifically and corrections in a more general sense. Additionally, for the sample of professionals, whether professionals felt in control of their jobs was not identified as a significant predictor of any health and wellness measure after controlling for the likelihood that significant predictors which did not frequently appear as significant predictors were predictors simply by chance. This goes against what is known about how corrections officer internalize their work stress and experience burnout, job dissatisfaction, etc. when they are unable to exercise autonomy in their job. In sum, work in community corrections may be less about organizational factors in comparison to law enforcement, as it may take a “certain type of person” to be able to deal with the myriad challenges inherent to work in community corrections work (i.e. danger, client recidivism, client threats and attacks, client problems weighing on professionals’ psyches, etc.). Additionally, differences in occupational cultures may interact with demographic factors to affect changes in health and wellness outcomes. For example, community corrections professionals (and more specifically female professionals) were revealed to be more willing to seek help for depression. Perhaps the nature of work in community corrections (i.e. social work-related activities, such as helping clients locate jobs and living spaces) is better suited for women aiming to provide social services to offenders in relation to the traditional “macho” culture of law enforcement which provides primarily males the opportunity to “chase bad guys”. This could certainly affect some of the relationships with changes in health and wellness outcomes identified above.

Next, it is important to compare the frequency the types of physical and mental health independent variables identified as significant predictors of law enforcement officer and community corrections professionals were identified as significant predictors

of officer and professionals' health and wellness. First, for law enforcement officers, whether officers feel in control of their jobs appeared three times as a significant predictor, depression appeared three times, and overall health appeared twice. For community corrections professionals, control of job appeared only once as a predictor and depression once as a significant predictor. Therefore, in predicting law enforcement officer health and wellness, eight instances were identified across three independent health and wellness measures where physical and mental health measures were significant of the dependent officer health and wellness measures. This suggests that physical and mental health measures are much more important as predictors of law enforcement officer health and wellness than these mental and physical health measures are for community corrections professionals' health and wellness. This would suggest that if law enforcement officers or state police organizations wish to change specific areas of their/officer health and wellness they should attempt to address other physical and mental aspects of their health. More specifically, individuals and agencies in law enforcement should ask the questions: 1) What can be done to ensure I/officers feel in control of work (i.e. giving individuals autonomy); 2) What can be done to address my/officer depression? 3) How can my/officer overall health be improved? In considering these relationships for community corrections professionals, based on these results it does not seem it would be wise to attempt to address professionals' health and wellness by attempting to tackle other measures of professionals' health and wellness. Instead, it seems it may be more beneficial to ensure the right type of person is hired in the first place (see discussion above). In recent years, prisons have increasingly come to rely on the Corrections Selection Inventory (CSI) to make sure corrections officers have

the personality, personal judgment skills, lower turnover susceptibility, job skills, and behavioral characteristics necessary to do work in corrections. This inventory has typically been applied to correctional officers in prison settings, but it is argued here that this inventory could be modified for use in selecting community corrections officers for employment. More specifically, the scale aids in assessing officers on 11 characteristics including, dependability, respect for authority, self-control/stress tolerance, cooperation/teamwork, communication skills, work ethic, principled behavior, attention to detail, self-esteem, life stability, judgment (Morgan & Smith, 2009).

Next, the wellness independent variables identified as significant predictors of law enforcement officer and community corrections professionals' health and wellness will be discussed comparing differences in the frequency with which these factors are identified as predictors of the dependent health and wellness outcomes across samples. For the sample of law enforcement officers, officer alcohol consumption was identified in three of the regression models, exercise was identified in four of the regression models, sleep was identified in three of the regression models, and stimulant drink consumption was identified in five of the regression models as significant predictors of law enforcement officer health and wellness. For the sample of community corrections professionals, professionals' alcohol consumption was identified once, professionals' exercise was identified in two of the regression models, sleep appeared once, fast food appeared once, and professionals' stimulant drink consumption was identified in one of the regression models as significant predictors of professionals' health and wellness outcomes. This means there were 15 instances across four variables where law enforcement officer wellness variables were identified as significant predictors of officer

health and wellness. However, for the sample of community corrections professionals there were only six instances across five variables in which professionals' wellness was identified as a significant predictor of professionals' health and wellness. This suggests that if law enforcement agencies wish to address officer health and wellness then they should most certainly focus on the wellness practices in which officers engage in attempting to change officer wellness behavior. For community corrections professionals, wellness is much less important in terms of changing professionals' wellness outcomes for the better. This is not to suggest that community corrections agencies and individual officers should not pay attention to wellness, however, these findings do demonstrate wellness is much less important for addressing professionals' health and wellness in relation to law enforcement efforts at addressing wellness to change officer health and wellness. Therefore, programs related to alcohol treatment, exercise, sleep, and nutrition (to address stimulant consumption) should continue to be used to address officer health and wellness (discussed more in detail below). Regarding professionals' health and wellness, wellness should certainly be addressed, however, it may be more useful for community corrections agencies to identify the right job candidates to ensure employee health and wellness and avoid turnover. Certainly, the literature must be developed more in this area to assist community corrections agencies with this task.

Finally, differences were found in the number of times organizational factors were identified as statistically significant predictors across the sample of law enforcement officers and the sample of community corrections professionals. For law enforcement officers, officers working second shift was identified in five different regression models

as a statistically significant predictor of officer health and wellness. Additionally, officers working third shift was identified as a statistically significant predictor of officer health and wellness in six regression models as a statistically significant predictor of officer health and wellness. None of the organizational predictors included in the regression models were identified as significant predictors of community corrections professionals' health and wellness. Keep in mind, however, the only organizational variable included in the regression models which was used as a predictor of professionals' health and wellness was the operations/administration dummy variable. This was done because all community corrections professionals working for the agency under study work first shift. This still means, however, that there is no variability across shift; therefore, this is not a factor that is of importance for attempting to predict officer health and wellness. Regardless, there were 11 instances across two variables where organizational variables were identified as statistically significant predictors of officer health and wellness and none for community corrections professionals. What this means (and this has been a point of emphasis throughout the discussion section thus far) is that organizational factors are of much more importance for law enforcement officers when it comes to predicting health and wellness. This is not to suggest that there are not important organizational variables related to community corrections professionals' health and wellness which were unintentionally omitted from this analysis. However, this study demonstrates for this sample of community corrections professionals that shift is irrelevant to professionals' health and wellness, professionals' role (operations/administration) is not a statistically significant predictor of professionals' health and wellness, and whether professionals feel in control of their jobs (which one

could argue is a measure of the amount of autonomy an organization allows an individual) is not a significant predictor of professionals' health and wellness. Overall, these findings seem to support the contention in the literature that the organizational aspects of law enforcement may be the most stressful (i.e. Crank & Caldero, 1991), which results in negative health and wellness outcomes. Yet, these findings also suggest, as mentioned above that the organizational aspects of law enforcement have a greater impact on law enforcement officers in comparison to community corrections professionals.

B. Policy Implications

The findings discussed above suggest there are a variety of policy implications that can be put into place to address problems with law enforcement and community corrections professionals' health and wellness. These changes should lead to increases in officer and professionals' performance and subsequently lead to increased professionalism. Below the policy implications related to improving law enforcement officer health and wellness will be discussed first. These policy implications will be followed by a discussion of the policy implications related to improving community corrections professionals' health and wellness.

Policy Implications for Improving Law Enforcement Officer Health and Wellness

Many implications related to improving law enforcement officer health and wellness may be gleaned from the results of the regression models presented above. These findings are discussed below.

1. Creation of a Wellness Program (to educate officers on proper nutrition, exercise habits, and sleep patterns)

It would be benefit the state police agency under study to begin an officer wellness program to educate officers on proper nutrition, exercise habits, and sleep patterns. This wellness program could involve in-service trainings to provide educational materials and information to officers. This should be a priority because better educated officers demonstrated better overall health ratings and overall health was subsequently predictive of increased exercise. This could fairly easily and inexpensively be accomplished and can be done in several ways. First, given that many officers exercise already, or have participated in an intramural sport in the last three years, the agency could create sports leagues for officers to participate in, such as intramural leagues between offices, or the agency could encourage officers to participate in local intramural leagues. The agency could also promote health competitions between officers, such as weight loss competitions. In general, officers should be encouraged to exercise more, as the findings presented above show exercise has a variety of health and wellness benefits for officers. More specifically, if officers exercise more often they should experience better overall health, consume less fast food, drink less often at home, and would be less reliant on stimulants to get through their work shifts because they would already have the energy needed to accomplish work demands. Writing for the Mayo Clinic, Laskowski (2014) recommends adults get 150 minutes of moderate aerobic activity each week (equivalent to 30 minutes a day) or 75 minutes of vigorous activity each week, in addition to two strength training sessions each week. Additionally, such a wellness program should contain general information related to the effects which aging and experience may

have on law enforcement officers. This research shows younger officers are more likely to have experienced depression since working in law enforcement, drink more at home, and consume more fast food. Also, as officer experience increases so does the chances officers will need to be taken to the hospital for an on-the-job injury, the likelihood officers will drink at home, and officer depression. Therefore specific programming information needs to be relayed to officers to inform them of these potentially negative health and wellness outcomes so that officers may take steps to address such issues. Agencies would also want to conduct in-house research to identify further differences between older/younger more experienced/less experienced officers so that training programs can be developed to fit the needs of groups of officers. Finally, a health and wellness program of this nature could potentially “go a long way” in helping to boost officer morale, if administration is able to effectively communicate to individual officers that the agency as a whole is concerned for their health and wellbeing. Boosting officer morale and improving the way individual officers feel about the agency could also make individual officers more willing to agree and abide with any other policy changes the agency places on individual officers (i.e. attempts at evidence-based practice). Mass emails, posters, and various types of agency signage may be appropriate ways to communicate to officer that the agency is concerned for their well-being.

2. Encourage Officers to Choose Healthy Food Options

Next, officers should be encouraged to choose healthy food options. It may even be best to provide healthy food options at offices (i.e. salad bowls, fruit trays), so that officers can avoid the easy temptation of consuming fast food. Other ways to promote healthy eating should also be explored as well. Fast food was not identified as a predictor

of additional negative health and wellness outcomes, however, fast food consumption in and of itself is problematic given a wealth of research on the negative health affects fast food consumption can have on the human body. For example, fast food consumption has been identified in research as being associated with obesity (Anderson, Lyon-Callo, Fussman, Imes, & Rafferty, 2011; Bowman & Vinyard, 2004; Niemeier, Raynor, Lloyd-Richardson, Rogers, & Wing, 2006), cancer (Chandran, McCann, Zirpoli, Gong, Lin, Hong, Ciupak, Pawlish, Ambrosone, & Bandera, 2014; Collins, 2007; Stott-Miller, Neuhouser, & Stanford, 2013), and high blood pressure (American Heart Association, 2016). The law enforcement officers sampled here consume an average of four fast food meals per week. If one considers that human beings consume roughly 21 meals per week (three per day across seven days of the week), then officers are consuming almost 20% of meals from fast food sources. This amount should be much smaller.

3. Review Agency Policies Related to Shift Work

Perhaps the most consistent finding of the entire research was the fact that law enforcement officers performing shift work demonstrated a range of negative health and wellness outcomes. Officers performing shift work are more likely to have poor overall health, be more depressed, rely on stimulants to get through shifts, consume alcohol more frequently, and sleep fewer hours per day than first shift officers. The recommendation here is not to eliminate shift work, as that is an impossibility given the public safety demands state law enforcement agencies must meet in working to protect the public. What is recommended, however, is that state police agencies provide extra academy and in-service training time to address the hardships related to officers performing shift work. Officers need to be better trained on how to cope with the hardships that accompany shift

work (i.e. a lack of sleep, lack of energy, depression, etc.). More specifically, officers need to be trained on how to balance the demands of working shifts often opposite of their families and preparing for, for example, quarterly or bi-annual shift schedule changes if agencies require officers to perform shift work as part of rotating schedule. In other words, when officers are required to change schedules from first shift to second shift, for example, how are officers trained to prepare for such changes? Finally, officers must be trained on how to deal with the lonely nature of shift work and encouraged to seek help if they are experiencing problems with depression (a lengthier discussion on this is presented below).

4. Address Officer Lack of Sleep

Next, the educational component of the wellness program should address the problem of officer lack of sleep. Many officers in the study do not get the necessary amount of sleep each night they need to function properly. It should be stressed that all officers get the recommended seven-nine hours of sleep in accordance with the National Sleep Foundation's (2016b) guidelines for adults ages 18-64. To do so would provide officers with tremendous physical and psychological benefits. Improving officer sleep habits should, based on the above findings, improve overall officer health, improve officers' willingness to seek help for depression, and reduce the frequency of officers being taken to the hospital for job-related injuries. Recall that when officers receive less than six hours of sleep each night (too little) or receive more than eight hours of sleep a night (too much) that the number of times officers had to be taken to the hospital for on-the-job injuries increased.

5. Encourage Officers to Seek Help for Mental Health Problems

Basic descriptive statistics show 34% of the state police officers sampled here have experienced depression since they began working in law enforcement, however, 44% of officers also stated they would not seek professional help for depression. This is problematic, as depression was found to be predictive of officers needing to be taken to the hospital for an on-the-job injury, relying on stimulants to get through work shifts, and sleeping less than officers who have not experienced depression since beginning work in law enforcement. Depression clearly impacts officer energy levels and puts officers at risk of physical injury or death. Therefore, state police agencies must provide treatment opportunities for officers wishing to seek help with depression, as mental health counseling fosters changes in officer lifestyles and improves overall health (Tanigoshi, et al., 2008). The problems officers experience related to seeking help for mental health issues should be addressed as well. Ames (1983) suggests that whether individuals seek help is a product of an individual's self-esteem and the rational thought processes an individual engages in when making a decision whether to seek help. In other words, individuals go through mental decision making processes which involve the weighing of costs and benefits of seeking help. Therefore, if state police agencies wish to have not only physically, but mentally health officers as well, then they should encourage officers to seek help when they experience mental health problems such as depression. This could be accomplished by creating a social-norming campaign to give officers the perception that it is socially acceptable to seek help for issues related to depression. This would involve promotional flyers such as positive emails, posters hung on walls in state police posts, coffee mugs, etc. which would be frequently visible to officers and remind

them that depression is something for which one should get help. If additional services are offered, such as state police employed mental health counselors, then agencies should avoid making the mistakes identified by Church and Robertson (1999) as part of their review of police wellness programs. They found police agencies often had wellness programs in place to assist officers, however, officers felt stigmatized among other officers when they used such services, services were offered at locations geographically inaccessible to many, and there was a lack of confidentiality associated with using such programs. Finally, it would be beneficial to address whether employees feel in control of their jobs as well, as results suggest when officers feel in control of their jobs they are less likely to experience depression and more likely to seek help for depression.

Therefore, opportunities to increase officer input in agency functions should be explored as well. Officers should be allowed to seek professional mental health counseling with an employee on-site or, if they are not comfortable with this arrangement, should be allowed to seek such services at an off-site location with a private mental health service provider. State police agencies should cover the costs of these services for officers.

6. Discourage Officer Reliance on Stimulants

State police agencies must also discourage officers from relying on stimulants and stimulant drinks, such as coffee, energy drinks, caffeinated soda and other products high in caffeine and sugar. Descriptive statistics show 30% of officers rely on stimulants to get them through their shifts and consume 1.81 stimulant drinks per shift. Increased stimulant consumption was found to be associated with a range of behaviors which may be considered unhealthy. Specifically, as officers consume more stimulant drinks per shift they also drink alcohol a greater number of days per week, normally consume an

alcoholic drink after work, sleep less, and consume more fast food. Regression results suggest that education may be an avenue for addressing officer reliance on stimulants to get through shifts and that if officers will receive help for depression then they may become less reliant on stimulants. Additional exercise, proper sleep patterns, and proper nutrition should also be emphasized, as over reliance on stimulants can have negative consequences for the body. If the above recommendations are successfully implemented it is likely that officers will have additional stores of natural energy which will help them avoid over-reliance on stimulants. These recommendations could be implemented as part of the overall wellness program recommendation mentioned above, or in-service trainings on the harmful effects of stimulants could be delivered as part of an in-service training.

7. Provide Officers with Opportunities to Seek Help for Alcohol-Related Issues

The results presented above suggest state police agencies must work to address problems related to increased officer alcohol consumption. The primary concern revealed here is that the alcohol quadratic term demonstrated that for officers consuming alcohol more than four days each week that officers stood a greatly increased chance of experiencing depression. Additionally, drinking after work was predicted by several factors including officers working third shift, and officers feeling in control of their jobs. The number of days officers drink per week was predicted by officers working second and third shifts. All of this is to suggest that officers doing shift work and experiencing depression are particularly susceptible to consume alcohol at higher rates and in potentially more destructive ways than officers on first shift. Therefore, as mentioned

above, these problems must be addressed in academy and training to assist officers in the realities of shift work and how to seek help for depression. At the same time, if officers do develop problems with alcoholism it is imperative that these problems be identified as early as possible through employee early warning systems designed to “flag” employees experiencing problems with absenteeism or disciplinary infractions which may speak to larger problems of alcoholism. Identifying these problems early on may help reduce problems with depression, as the research above suggests. Therefore, agencies should offer alcohol education as part of the overall wellness program and possibly via in-service trainings as well. If officers develop problems with alcoholism they should be allowed to speak to department approved treatment specialists if available. It is key that, as mentioned above, in the process of offering services that departments do not unintentionally set up roadblocks such as those identified by Church and Robertson (1999).

Policy Implications for Improving Community Corrections Professionals’ Health and Wellness

Many implications related to improving community corrections professionals’ health and wellness may be gleaned from the results of the regression models presented above. These findings are discussed below.

1. Creation of a Wellness Program (to educate professionals on proper nutrition, exercise habits, and sleep patterns)

Similar to the policy implications for the sample of law enforcement officers, it would be beneficial to the community corrections agency under study to begin an

employee wellness program to educate professionals on proper nutrition, exercise habits, and sleep patterns. Doing these things should help to address some of the concerning relationships identified above (i.e. fast food consumption reduces professionals' exercise). In-service trainings using and distributing educational materials to professionals would be beneficial here as well. This program would largely mimic the overall wellness program recommended to state police agencies. Officers should be provided opportunities to participate in intramural sports leagues, enter into friendly competitions with each other, and should generally be encouraged to exercise more frequently, as exercise was associated with better overall health and less fast food consumption. Additionally, wellness here also includes how employees feel about their jobs, meaning that professionals should be educated on handling the organizational aspects of their work. Professionals should be afforded the opportunity to participate in an organizational grievance program, whereby professionals may express their concerns with the dealings of the organization as a whole. This research found that when professionals feel in control of their jobs that they have a lower chance of experiencing depression. Additionally, such a wellness program should contain general information related to the effects which sex and age may have on community corrections professionals. Older professionals exercise less, sleep less, and younger officers use stimulants more often to get through shifts, consume alcohol a greater number of days per week, and consume more fast food. Additionally, female professionals are more likely to experience depression, consume less alcohol, and exercise less than males and male professionals are less likely to seek help for depression. Specific programming may then address some of the problems associated with the demographic characteristics identified

above as related to particular health and wellness outcomes for professionals. Agencies would also want to conduct in-house research to identify further differences between older/younger and male/female professionals so that training programs can be developed to fit the needs of groups of professionals. Finally, similar to the sample of law enforcement officers mentioned above, policy implications seem to suggest that administrators in community corrections should seek to gain employee compliance with agency directives through the implementation and promotion of a comprehensive employee health and wellness program.

2. Adoption of the Corrections Selection Inventory (CSI)

The results presented above also suggest the use of the Corrections Selection Inventory (CSI) would be useful to community corrections agencies for purposes of identifying appropriate job applicants for employment. Recall that the comparison of the groups of independent factors found to be the most frequent predictors of law enforcement officer and community corrections professionals' health and wellness showed that for the sample of professionals' demographic factors were identified more frequently as significant predictors of professionals' health and wellness outcomes. Specifically, age, education, and sex were identified as significant predictors, when no organizational factors were identified as significant predictors of professionals' health and wellness, meaning that it is possible that individual demographic factors are more important for understanding professionals' health and wellness than organizational factors. Therefore, it is recommended here that community corrections agencies make use of the Corrections Selection Inventory (CSI) (described above) to identify job candidates who demonstrate high scores on characteristics associated with high

performance in correctional work. As mentioned above, these measures may need to be adjusted to meet the specific job demands of work in community corrections. While the CSI is a more recently created inventory, newer research shows psychological assessments have been identified before as successful predictors of later correctional employee performance (Hyland, 2015). If state correctional agencies do not have the resources to implement and make use of the CSI, they should at the very least revisit their methods of recruitment and applicant selection processes to ensure the right people are being selected and extended offers of employment into community corrections.

3. Encourage Professionals to Seek Help for Mental Health Problems

Basic descriptive statistics show 39% of the community corrections professionals sampled here have experienced depression since they began working in community corrections, however, 40% of officers also stated they would not seek professional help for depression. This is problematic, as depression was found to be predictive of professionals sleeping less, which reduces professionals' energy levels. As contended above, mental health counseling should be offered because it improves lifestyles and improves overall health (Tanigoshi, Kontos, & Remley, 2008). Additionally, female professionals were more likely to have experienced depression since they began work in community corrections and male officers were less likely to seek help for depression. These findings suggest social norming campaigns designed to increase professionals' understanding of depression and seeking help for depression must address the gender dynamics affecting such personal problems. Therefore, in addition to a social norming campaign, a significant part of the overall wellness program must focus on providing professionals with information related to depression and seeking help for depression. To

encourage increased professionals' participation in seeking help for depression it is advised here that professionals be afforded the opportunity to seek counseling with a department approved mental health counselor. If professionals are not comfortable with this then agencies should set aside funding to pay mental health professionals external to the organization to provide mental health counseling services to officers who wish to seek help.

4. Discourage Professionals' Reliance on Stimulants

As with the sample of law enforcement officers, state community corrections agencies must also discourage professionals from relying on stimulants and stimulant drinks, such as coffee, energy drinks, caffeinated soda and other products high in caffeine and sugar. Descriptive statistics show 39% of professionals rely on stimulants to get them through their shifts and consume 1.97 stimulant drinks per shift. Regression results suggest professionals' education influences whether professionals use stimulants to get through their shifts so it is likely that educating professionals on the negative health effects associated with stimulant and stimulant drink consumption may serve to change future officer behavior. These recommendations could be implemented as part of the overall wellness program recommendation mentioned above, or in-service trainings on the harmful effects of stimulants could be delivered as part of an in-service training.

C. Future Research

The results of this research suggest there are several areas where additional research should be conducted on the health and wellness of law enforcement officers and community corrections professionals. First, many of the independent variables examined

here as possible predictors of law enforcement officer health and wellness outcomes demonstrated statistically significant relationships with officers consuming alcohol when they get home from work. What it means for officers to consume alcohol at home after work should be further explored. Are officers having a glass of wine with dinner or are they drinking to deal specifically with the stressors they just experienced while on duty? Additionally, more research needs to be performed on officer-related accidents and hospital visits in relation to health and wellness factors as it is likely there are many other variables related to officer health and wellness that are predictive of officers being taken to the hospital for on-the-job injuries. These findings have real-world implications for departmental policies and the safety of officers. Next, further information needs to be gathered about officer use of stimulants and stimulant drinks. What other factors predict officer use of stimulants and what are the consequences of officers using stimulants? These are very understudied aspects of the overall officer health and wellness picture. Additionally, regarding officer shift work, how long in duration are the shifts officers performing shift work are expected to work? Gustafson (2015) notes the research in this area reveals that officers required to work longer shifts experience more fatigue (see also Vila 2000; Vila 2006; Vila 2009). Is this the case with state police agencies? Also, what sort of autonomy do officers have in determining the structure of their shift? When officers are not afforded the opportunity to provide input into the nature of their shift-work, they can begin to develop negative self-images and experience additional stress (Vila, Morrison, & Kenney, 2002b).

Regarding community corrections professionals, additional research should focus on exploring the personal characteristics of individuals predictive of successful

employment in community corrections and using this information to select appropriate individuals for employment in community corrections. At the same time, additional work should be done in comparing whether individual or organizational aspects of community corrections appear most often as significant predictors of professionals' health and wellness. It may seem counter-intuitive to further explore organizational factors predictive of community corrections professionals' health and wellness, given no organizational factor examined here were revealed to be a significant predictor of community corrections professionals' health and wellness outcomes. However, the research examining probation and parole officer stress has typically examined professionals' stress solely in terms of ranking stressors and not in relation to professionals' health and wellness. This study is only an initial effort to examine community corrections professionals' stress in relation to health and wellness outcomes, therefore conclusive results can not be assumed based on one initial study. Additionally, research should work to identify the independent variables most often predictive of community corrections professionals' health and wellness, as this study did not identify nearly as many significant predictors of community corrections professionals' health and wellness as were identified for the sample of law enforcement officers. Next, why do better educated officers and professionals consume alcohol more frequently throughout the week? What is it about being better educated that causes criminal justice employees to consume alcohol a greater number of days per week than less educated officers? Overall then, some of the more nuanced stressors (i.e. paperwork) should be explored in further detail for their relation to the health and wellness outcomes studied as part of this research.

D. Study Limitations

There are several limitations to this study which must be highlighted, as no research project is without shortcomings. First, it is unfortunate that this study could not provide a direct comparison of law enforcement officer and community corrections professionals' health and wellness outcomes, as there problems in each sample with the distribution of one demographic variable. Remember, for the sample of law enforcement officers there was a low number of responses from females based on the fact that the agency is comprised almost entirely of male officers. For the community corrections professionals sample almost all officers indicated they work first shift. Therefore, comparisons based on the sex and shift variables were impossible. Next, the definition of what a community corrections professional is presents some problems because when the agency under study distributed the survey there was no way for the agency to email just correction officers inviting them to participate in the survey. Additionally, many office staff who are not technically community corrections officers also hold case management responsibilities, so separating professionals based on these criteria was a significant challenge. Additionally, in considering that so many of the community corrections professionals' health and wellness outcomes were predicted by demographic variables and not organizational factors, this study does not account for many of the organizational stressors related to community corrections officer stress (i.e. low pay, paper work, etc.). However, the variable designed to measure whether professionals feel in control of their jobs was included as a blanket question to capture these organizational concepts. It may be argued that this inclusion of a "control of job" variable is not sufficient to capture information on all these other specific community corrections stress organizational

factors, yet because of survey space and the fact that the research sampled busy criminal justice professionals who may not have the time to complete a lengthy survey, it is contended here that the study design is sufficient. Next, this study, while it provides valuable information on state police organizations and what they can do from a policy standpoint to address employee health and wellness, may not be generalizable to large urban police departments or small rural police departments. It is likely that the results of this study are more generalizable to small rural police departments, given the majority of the officers and professionals included in each sample perform work primarily in rural areas. It is possible these results could be applicable to larger urban departments given relationships related to alcohol consumption and education likely reflect what is likely higher numbers of educated officers who are probably more likely to consume alcohol. However, without additional research this contention is merely an assumption. Further examination of the actual number of officers and professionals performing work in rural areas in relation to numbers of employees working in urban areas would help to shed light on this issue. Additionally, due to skew, some of the independent variables had to be logged for purposes of statistical analysis; yet, this is a generally accepted practice in the analysis of linear regression models. Next, while the sample of community corrections professionals was large enough to command statistical power in the course of examining regression models, some of the associations between variables were not examinable due to empty cell problems. It is highly likely these problems are present simply as a result of the lower than desirable size of the community corrections professionals sample. Finally, one might be concerned about possible tautological issues related to the use of the number of stimulant drinks consumed per shift and the number of

days individuals drink alcohol per week as predictors of whether officers/professionals use stimulants to get through their shifts and whether officers/professionals have an alcoholic drink when they return home from work respectively. It is argued here that in both cases, that the predictors are measures of use and the dependent variables measures of dependence. It is, however, possible for the models predicting whether officers and professionals have an alcohol drink when individuals return home from work that those models involve circular reasoning, given the high R-square scores for both the officer and professionals' models (above .800). This is not an issue for the models predictive of whether officers/professionals use stimulants to get through shifts. Secondly, there was no skip logic used in the survey instructions, meaning that officers and professionals who do not use stimulants or consume alcohol were not instructed to skip subsequent questions pertaining to substance dependence and alcohol dependence in the home. This means that officers answered each question and it is not the case that only officers who use stimulant drinks and consume alcohol answered each initial question on those topics. Furthermore, if this would have been the case the sample sizes for each of the regression model which include stimulant and alcohol dependence would be much smaller in relation to the sample sizes noted in the other regression models.

E. Conclusion

Despite the study limitations mentioned above, this study provides valuable insight into the factors predictive of law enforcement and community corrections professionals' health and wellness. More specifically, this study examined first the factors predictive of officer and professionals' health and wellness, then compared the differences between the two samples in terms of the independent variables which

appeared most frequently as significant predictors of officer and professionals' health and wellness, and then provided a comparison of the groups of predictors most often predictive of officer and professionals' health and wellness. The take away from the discussion of the significant relationships emerging from this statistical analysis are valuable policy implications which state law enforcement agencies and community corrections agencies can use to positively influence officer and professionals' health and wellness outcomes in the future. If state law enforcement and community corrections agencies will adopt and successfully implement these recommended policy changes then not only will law enforcement officers and community corrections professionals benefit as individuals, but agencies should benefit as a whole. Agencies would have healthier (both physically and mentally) officers, officers should perform better, agencies should experience less turnover, face fewer lawsuits, and less frequently lose scarce monetary resources to avoidable nuisances like employee medical bills, insurance claims, and civil lawsuits.

In sum contemporary American policing is certainly in the area of Fyfe's (2013) new professionalism, which is comprised of legitimacy, accountability, and evidence-based practice. It is likely that given how modern Internet technology and social media have "shrunk" our world and made the police more visible than ever before that we will never go back to a time when what the police do and how the public perceives them will be less important to contemporary policing than they are today. Focusing on state law enforcement and community corrections professionals' health and wellness is an important step in not only ensuring the health and safety of individual law enforcement officers, but also serving the interests of state law enforcement agencies and community

corrections agencies, and reassuring an ever-skeptical public that the criminal justice system is performing as expected. By focusing on improving officer health and wellness, state law enforcement and probation and parole agencies could work towards the aims of Fye’s “new professionalism” in a variety of ways. First, officer and agency accountability can be promoted because individual officers and agencies will be working towards meeting public demands that law enforcement agencies promote public safety while also appropriating public funds in the most fiscally responsible manner. Next, the public will view law enforcement as legitimate because individual officers will become increasingly healthier and physically fit, which should translate into increased officer performance. Finally, individual officers should be more compliant with agency attempts at implicating evidence-based practices when individual officers and professionals hold positive attitudes towards agencies which increase employee morale via comprehensive health and wellness programs.

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APPENDICES

1. Law Enforcement Survey

About This Questionnaire

This survey is designed to gather information on the health and wellness habits and experiences of law enforcement officers. The information from this study will be used to help develop policies and programs designed to improve the health and wellness of law enforcement officers as they go about their duties.

All survey results will be in summary form so no person or particular officer can be identified. Your participation is voluntary so you can choose not to participate in the survey, skip questions, or stop answering questions at any time. All information is anonymous.

We hope for your participation to help us get a clear picture of the health and wellness habits and experiences of law enforcement officers. Concerning the questionnaire...

- It takes about 10 minutes to finish.
- We ask that you complete the survey on your own.
- The questions try to identify your habits and experiences of your health and wellness.
- The questions regarding sex, age, education, etc. are important to help us understand the relationship between your responses and background characteristics.
- If you don't have a clear answer, feel free to guess or estimate.

If you have any questions or comments, please feel free to contact Allen Copenhagen, Ph.D. Student, at the University of Louisville, (606) 416-6638, or e-mail racope01@louisville.edu.

THANK YOU FOR YOUR PARTICIPATION

THE FIRST SET OF QUESTIONS IS ABOUT YOUR BACKGROUND CHARACTERISTICS. THEY WILL HELP US FIGURE OUT IF PEOPLE OF SIMILAR OR DIFFERENT BACKGROUNDS HAVE THE SAME EXPERIENCES/PRACTICES RELATED TO HEALTH AND WELLNESS. PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR BACKGROUND.

1. What is your sex?
1- Male 2- Female
2. What is your age? _____
3. How much school have you finished?
1- High school 4- Bachelor's degree
2- Some college, no degree 5- Graduate courses
3- Associate's degree 6- Graduate degree
4. How many years have you served in law enforcement? _____
5. What shift do you typically work? If on a rotating schedule, the shift you currently work.
1- first 2- second 3- third
6. Do you serve in an operations of administrative capacity?
1- Operations 2- Administrative
7. Is your position in the Commercial Vehicle Enforcement Division?
1-yes 2- no

THIS SET OF QUESTIONS RELATES TO YOUR EXERCISE HABITS . PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR EXERCISE HABITS.

8. How many days per week do you typically exercise? _____
9. On the days you exercise, how many minutes do you typically exercise? _____

10. What is the primary type of exercise you typically do? _____
 1- running 2- weight lifting 3- CrossFit 4- spinning/biking
 5- yoga 6- pilates 7- swimming 8- other
11. Did you play an organized sport while in high school?
 1- yes 2- no
12. Have you participated in any organized recreational/intramural sports such as basketball, softball, etc. in the last three years?
 1- yes 2- no

THIS NEXT SET OF QUESTIONS RELATES TO YOUR GENERAL HEALTH AND WELLNESS. PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR BACKGROUND.

13. Have you ever experienced any of the serious injuries listed below while on the job? (you may circle more than one answer)
 1- broken bone
 2- deep cut or laceration
 3- significant tendon/muscle damage
 4- skin burn
 5- significant head injury/trauma (i.e. concussion)
 6- other
14. Have you ever been taken to the hospital or emergency room for an injury sustained while on the job?
 1- yes 2- no
15. How would you rate your overall health currently?
 1- Excellent 2- Very Good 3- Good 4- Fair 5- Poor 6- Very Bad
16. How many hours of sleep do you typically get a day? _____
17. How many fast food meals do you consume each week? _____
18. Have you experienced episodes of depression (either diagnosed or undiagnosed) last since you began working in law enforcement?
 1- Yes 2- No
19. Would you seek help from a professional if you experienced episodes of depression? 1- Yes 2- No
20. Have you contemplated suicide since you began working in law enforcement?
 1- Yes 2- No
21. Do you normally have an alcoholic drink (of any type) when you get home from work?
 1- Yes 2- No
22. On how many days out of the week do you normally consume alcohol? _____
23. When you drink, how many drinks do you typically consume? _____
 -0
 -1
 -2
 -3
 -4
 -5

- 6
- 7
- 8
- 9
- 10+

24. Do you use any type of stimulants (this means any type of substance designed to give you an energy boost) to help with your workouts?
1- Yes 2- No
25. Do you use any type of stimulants just to help get through your shift?
1- Yes 2- No
26. What sorts of stimulant drinks do you presently use? (Please mark all that apply).
1- Coffee
2- Tea
3- Energy drinks
4- Caffeinated Soda
5- Muscle building energy mixes (i.e. N.O. Explode)
27. How many servings in a typical shift do you consume (drinks)? _____
28. What sort of stimulant drinks have you ever used in the past? (Please mark all that apply).
1- Coffee
2- Tea
3- Energy Drinks
4- Caffeinated Soda
5- Muscle Building Energy Mixes (i.e. N.O. Explode)
29. What sorts of stimulant substances do you currently use?
(Please mark all that apply).
1- Prescription Drugs such as Adderall
2- Steroids
3- B Vitamins
4- Vitamin C Supplements
5- Other
30. How often do you use any of the stimulant substances mentioned in Question #28?
1- Once a Day 2- A Couple of Times a Day 3- Once a Week 4- Once a Month
31. What sorts of stimulant substances have you used in the past? (Please mark all that apply).
1- Prescription Drugs such as Adderall
2- Steroids
3- B Vitamins
4- Vitamin C Supplements
5- Other
32. What sorts of tobacco products do you use (if any)? (Please mark all that apply)
1- Cigarettes
2- Pipe Tobacco
3- Cigars
4- Dipping Tobacco
5- Chewing Tobacco
6- None

THIS NEXT SET OF QUESTIONS IS THE LAST SET OF QUESTIONS IN THE SURVEY AND RELATES TO YOUR JOB EXPERIENCES, SAFETY, AND RELATED HEALTH CONCERNS. PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR BACKGROUND.

33. You feel like you are in control of most aspects of your life.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
34. You feel you have an adequate level of self-esteem.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
35. You feel good about your body the way it is.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
36. You feel you are in very good health.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
37. You feel you are in control in most aspects of your job. This includes all aspects of your job (i.e. relations with administration, interactions with the public, etc.)
1- strongly agree 2- agree 3- disagree 4- strongly disagree
38. You feel your job as a law enforcement officer is dangerous.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
39. You feel you have the physical strength to deal with most physical confrontations that may arise during the course of your work (i.e. detaining a suspect).
1- strongly agree 2- agree 3- disagree 4- strongly disagree

THANK YOU FOR YOUR PARTICIPATION

2. Community Corrections Professionals Survey About This Questionnaire

This survey is designed to gather information on the health and wellness habits and experiences of probation and parole officers. The information from this study will be used to help develop policies and programs designed to improve the health and wellness of probation and parole officers as they go about their duties.

All survey results will be in summary form so no person or particular officer can be identified. Your participation is voluntary so you can choose not to participate in the survey, skip questions, or stop answering questions at any time. All information is confidential.

We hope for your participation to help us get a clear picture of the health and wellness habits and experiences of law enforcement officers. Concerning the questionnaire...

- It takes about 10 minutes to finish.
- We ask that you complete the survey on your own.
- The questions try to identify your habits and experiences of your health and wellness.
- The questions regarding sex, age, education, etc. are important to help us understand the relationship between your responses and background characteristics.
- If you don't have a clear answer, feel free to guess or estimate.

If you have any questions or comments, please feel free to contact Allen Copenhagen, Ph.D. Student, at the University of Louisville, (606) 416-6638, or e-mail racope01@louisville.edu.

THANK YOU FOR YOUR PARTICIPATION

THE FIRST SET OF QUESTIONS IS ABOUT YOUR BACKGROUND CHARACTERISTICS. THEY WILL HELP US FIGURE OUT IF PEOPLE OF SIMILAR OR DIFFERENT BACKGROUNDS HAVE THE SAME EXPERIENCES/PRACTICES RELATED TO HEALTH AND WELLNESS. PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR BACKGROUND.

1. What is your sex?

1- Male 2- Female

2. What is your age? _____
3. How much school have you finished?
- | | |
|----------------------------|----------------------|
| 1- High school | 4- Bachelor's degree |
| 2- Some college, no degree | 5- Graduate courses |
| 3- Associate's degree | 6- Graduate degree |
4. How many years have you worked in community corrections? _____
5. What shift do you typically work? If on a rotating schedule, the shift you currently work.
- | | | | |
|----------|-----------|----------|----------------------|
| 1- first | 2- second | 3- third | 4- flexible schedule |
|----------|-----------|----------|----------------------|
6. Do you serve in an operations of administrative capacity?
- | | |
|---------------|-------------------|
| 1- Operations | 2- Administrative |
|---------------|-------------------|

THIS SET OF QUESTIONS RELATES TO YOUR EXERCISE HABITS . PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR EXERCISE HABITS.

7. How many days per week do you typically exercise? _____
8. On the days you exercise, how many minutes do you typically exercise? _____
9. What is the primary type of exercise you typically do? _____
- | | | | |
|------------|-------------------|-------------|--------------------|
| 1- running | 2- weight lifting | 3- CrossFit | 4- spinning/biking |
| 5- yoga | 6- pilates | 7- swimming | 8- other |
10. Did you play an organized sport while in high school?
- | | |
|--------|-------|
| 1- yes | 2- no |
|--------|-------|
11. Have you participated in any organized recreational/intramural sports such as basketball, softball, etc. in the last three years?
- | | |
|--------|-------|
| 1- yes | 2- no |
|--------|-------|

THIS NEXT SET OF QUESTIONS RELATES TO YOUR GENERAL HEALTH AND WELLNESS. PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR BACKGROUND.

12. Have you ever experienced any of the serious injuries listed below while on the job? (you may circle more than one answer)
- | |
|---|
| 1- broken bone |
| 2- deep cut or laceration |
| 3- significant tendon/muscle damage |
| 4- skin burn |
| 5- significant head injury/trauma (i.e. concussion) |
| 6- other |
13. Have you ever been taken to the hospital or emergency room for an injury sustained while on the job?
- | | |
|--------|-------|
| 1- yes | 2- no |
|--------|-------|
14. How would you rate your overall health currently?
- | | | | | | |
|--------------|--------------|---------|---------|---------|-------------|
| 1- Excellent | 2- Very Good | 3- Good | 4- Fair | 5- Poor | 6- Very Bad |
|--------------|--------------|---------|---------|---------|-------------|
15. How many hours of sleep do you typically get a day? _____
16. How many fast food meals do you consume each week? _____

17. Have you experienced episodes of depression (either diagnosed or undiagnosed) since you began working in community corrections?
1- Yes 2- No
18. Would you seek help from a professional if you experienced episodes of depression?
1- Yes 2- No
19. Have you contemplated suicide since you began working in community corrections?
1- Yes 2- No
20. Do you normally have an alcoholic drink (of any type) when you get home from work?
1- Yes 2- No
21. On how many days out of the week do you normally consume alcohol? _____
22. When you drink, how many drinks do you typically consume? _____
-0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10+
23. Do you use any type of stimulants (this means any type of substance designed to give you an energy boost) to help with your workouts?
1- Yes 2- No
24. Do you use any type of stimulants just to help get through your work shift?
1- Yes 2- No
25. What sorts of stimulant drinks do you presently use? (Please mark all that apply).
1- Coffee
2- Tea
3- Energy drinks
4- Caffeinated Soda
5- Muscle building energy mixes (i.e. N.O. Explode)
26. How many servings in a typical shift do you consume (drinks)? _____
27. What sort of stimulant drinks have you ever used in the past? (Please mark all that apply).
1- Coffee
2- Tea
3- Energy Drinks
4- Caffeinated Soda
5- Muscle Building Energy Mixes (i.e. N.O. Explode)
28. What sorts of stimulant substances do you currently use?
(Please mark all that apply).
1- Prescription Drugs such as Adderall

- 2- Steroids
- 3- B Vitamins
- 4- Vitamin C Supplements
- 5- Other

29. How often do you use any of the stimulant substances mentioned in Question #28?
1- Once a Day 2- A Couple of Times a Day 3- Once a Week 4- Once a Month
30. What sorts of stimulant substances have you used in the past? (Please mark all that apply).
1- Prescription Drugs such as Adderall
2- Steroids
3- B Vitamins
4- Vitamin C Supplements
5- Other
31. What sorts of tobacco products do you use (if any)? (Please mark all that apply)
1- Cigarettes
2- Pipe Tobacco
3- Cigars
4- Dipping Tobacco
5- Chewing Tobacco
6- None

THIS NEXT SET OF QUESTIONS IS THE LAST SET OF QUESTIONS IN THE SURVEY AND RELATES TO YOUR JOB EXPERIENCES, SAFETY, AND RELATED HEALTH CONCERNS. PLEASE MARK THE ANSWER THAT BEST REFLECTS YOUR BACKGROUND.

32. You feel like you are in control of most aspects of your life.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
33. You feel you have an adequate level of self-esteem.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
34. You feel good about your body the way it is.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
35. You feel you are in very good health.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
36. You feel you are in control in most aspects of your job. This includes all aspects of your job (i.e. relations with administration, interactions with the public, etc.)
1- strongly agree 2- agree 3- disagree 4- strongly disagree
37. You feel your job as a community corrections officer is dangerous.
1- strongly agree 2- agree 3- disagree 4- strongly disagree
38. You feel you have the physical strength to deal with most physical confrontations that may arise during the course of your work (i.e. detaining an offender).
1- strongly agree 2- agree 3- disagree 4- strongly disagree

THANK YOU FOR YOUR PARTICIPATION

CURRICULUM VITA

RODNEY “ALLEN” COPENHAVER

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EDUCATION

Ph.D., Criminal Justice, College of Arts & Sciences, University of Louisville
2016 (Expected)

M.S., Criminal Justice, College of Justice & Safety, Eastern Kentucky University
2010

B.S., Criminal Justice, College of Justice & Safety, Eastern Kentucky University
2008

TEACHING EXPERIENCE

Lindsey Wilson College
Instructor of Criminal Justice
08/2015-Present

Campbellsville University
Instructor of Criminal Justice
07/2012-06/2015
Online Criminal Justice Adjunct Instructor
12/2010-06/2012

University of Louisville
Online Criminal Justice Adjunct Instructor
05/2014-05/2015

Somerset Community College/West Kentucky Community and Technical College
Online Criminal Justice Adjunct Instructor
11/2010-Present

Eastern Kentucky University
Graduate Assistant
05/2008-12/2009

Criminal Justice Field Experience

The Center for Rural Development
Homeland Security Technology- Institute for Preventive Strategies Program
Coordinator
Somerset, Kentucky
10/2010-06/2012

- Responsible for the marketing and operations of the IPS training program on counterterrorism for law enforcement professionals.
- Attended professional law enforcement conferences and marketed to law enforcement agencies across the country.
- Participated in course development and course revisions for Department of Homeland Security Training Courses.

Kentucky Baptist Homes for Children
Direct Care Counselor
Bronston, Kentucky
04/2006-09/2006

- Responsible for monitoring male youths in a residential setting and assisting in their rehabilitation.
- Responsible for correcting deviant behavior, administering medication, transporting youth to various activities, and keeping records associated with each individual client.

Pulaski County Drug Court
Drug Screen Technician
Somerset, Kentucky
01/2006-06/2006

- Responsible for screening non-violent adult drug offenders for drug use.
- Recorded results from drug tests and shipped positive drug test samples.

PUBLICATIONS

PEER REVIEWED JOURNAL ARTICLES

Tewksbury, R., & Copenhaver, A. (2015). State police officer sleep patterns and fast food consumption. *International Journal of Police Science & Management*, 17(4), 230-236.

Copenhaver, A. (2015). Violent video game legislation as pseudo-agenda. *Criminal Justice Studies: A Critical Journal of Crime, Law and Society*, 28(2), 170-185.

Konty, M. & Copenhaver, A. (2009). Cultural value orientations and lethal violence. *International Journal of Contemporary Sociology*, 46(2), 131-147.

TECHNICAL REPORTS

Tewksbury, R., & Copenhaver, A. (2015). "Louisville Metro Police Department Officer Knowledge of Autism, Schizophrenia, and Health and Wellness". Louisville Metro Police Department.

Tewksbury, R., & Copenhaver, A. (2015). "Kentucky Department of Corrections Probation and Parole Officer Health and Wellness." Kentucky Department of Corrections.

Tewksbury, R., & Copenhaver, A. (2015). "Kentucky State Police Officer Health and Wellness." Kentucky State Police.

ENCYCLOPEDIA ARTICLES

Copenhaver, A. (Forthcoming). "The East Village Groovy Murders." In *Crimes of the Centuries: An Encyclopedia of Notorious Crimes, Criminals, and Criminal Trials in American History*. (Accepted for publication).

Copenhaver, A. (Forthcoming). "Joan Little Murder Trial." In *Crimes of the Centuries: An Encyclopedia of Notorious Crimes, Criminals, and Criminal Trials in American History*. (Accepted for publication).

MANUSCRIPTS UNDER REVIEW

Copenhaver, A. Preventing parental violence at youth sporting events. Under review at *Journal of Theoretical & Philosophical Criminology*.

PRESENTATIONS

Keeling, D.G, Copenhaver, A., Greenwell, L., Block, M., Schwendau, A., & Shon, L. *Evaluation of the Effectiveness of a Day Reporting Center*. Paper Presented at the Annual Academy of Criminal Justice Sciences Conference (Orlando, FL, March 3-7, 2015).

Copenhaver, A., & Copenhaver, B. *What is Public Criminology?* Paper Presented at the Annual Academy of Criminal Justice Sciences Conference (Orlando, FL, March 3-7, 2015).

Copenhaver, A. *Investigating Profit Motive and the Rise in the Number of Immigration and Customs Enforcement Detainees*. Poster Presentation at the Annual American Society of Criminology Conference (San Francisco, California, November 19-22, 2014).

Keeling, D.G, Copenhaver, A., Greenwell, L., Block, M., Schwendau, A., & Shon, L.. *Louisville Metro Day Reporting Center Program Evaluation*. Presented to the Louisville Metro Department of Corrections on the University of Louisville Shelby Campus (Louisville, KY, April 17, 2014).

Copenhaver, A., & Copenhaver, B. *Violent Video Game Legislation: A Dramaturgical Revelation of Pseudo-Agenda and Economic Opportunity*. Paper Presented at the International Crime, Media, and Popular Culture Studies Conference (Terre Haute, IN, September 23-25, 2013).

COURSES TAUGHT

Crime and the News Media
Criminology
Corrections
Social Problems
Introduction to the Criminal Justice
Juvenile Delinquency
Victimology
Introduction to Law Enforcement
Police Supervision
Issues and Ethics in Criminal Justice
Criminal Investigations
Criminal Law
Criminal Procedures
Terrorism and Political Violence
Statistics in Criminal Justice
Rural Crime
White Collar Crime

SERVICE

Community

Pulaski County Kentucky Agency for Substance Abuse Policy (KY-ASAP) Board, 2013-Present

Somerset Community College Criminal Justice Advisory Board, 2011-Present

CONSULTING

National Occupational Competency Testing Institute (2012-2013)- Served on a team of subject matter experts in the construction of a nation-wide, standardized criminal justice program exit exam.

Technical assistance and consultation for Somerset Community College Criminal Justice Program student learning outcome data (Spring 2014).

PROFESSIONAL MEMBERSHIPS

Academy of Criminal Justice Sciences
American Society of Criminology

CERTIFICATES AND TRAININGS

- AWR-148-W Crisis Management for School-Based Incidents-Partnering Rural Law Enforcement and the Local School Systems
- AWR-187-W Terrorism and WMD Awareness
- AWR-209 Dealing with the Media: A Short Course for Rural First Responders
- MGT-335 Event Security Planning for Public Safety Professionals
- Per-281 Homeland Security Terrorism Prevention Certificate for Law Enforcement
- Best Practices 101: Foundations of Online Teaching
- Kentucky Adolescent Substance Abuse Consortium Fall Regional Summit- “From Heroin, Flakka, Spice, Bath Salts, BHO and Meth... What’s On the Streets?” and “Exploring Adolescent Gender Identity and Substance Abuse” (September, 2015).

ACADEMIC AWARDS

Delta Epsilon Iota, Eastern Kentucky University, 2006-2008
Presidential Scholarship, Eastern Kentucky University, Fall 2006-Spring 2008
Mattie Helen Elliot Scholarship, Somerset Community College, Fall 2003-Spring 2006.