PREDICTING JOB PERFORMANCE IN CORRECTIONAL OFFICERS WITH PRE-EMPLOYMENT PSYCHOLOGICAL SCREENING

by

Shelley S. Hyland

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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
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ABSTRACT

There is substantial cost in the hiring and training of a correctional officer, with a high rate of turnover compounding these costs. While pre-employment psychological screening is suggested as one method to prevent these losses, mandates to screen are not as common in corrections as they are in law enforcement. Further, minimal research has examined the validity of psychological testing in correctional officers. This dissertation examined pre-employment psychological screening for 421 correctional officers hired by one of three upstate New York sheriff's departments. Assessments were conducted by Public Safety Psychology, PLLC from March, 1997 to June, 2012. T scores and risk estimates from the California Psychological Inventory (CPI) and Personality Assessment Inventory (PAI), DQ admission and problem points from the Personal History Questionnaire (PHQ) and Psychological History Questionnaire (PsyQ) and the psychologist's recommendation were used as predictors of supervisor rating and job status. Utilizing logistic regression and controlling for agency of hire, high ratings by the psychologist, high scores on PAR-H and low scores on BOR-S from the PAI were associated with satisfactory supervisor ratings. Multinomial logistic regression revealed that being non-White, having a lower rating by the psychologist, higher To and Ai scores and lower So scores from the CPI, and more General problem points on the PsyQ were predictive of officers who were fired compared to being currently employed. Furthermore, previous law enforcement experience, being younger, lower Gi, So and Wo scores on the CPI, higher To and Sc scores on the CPI, and lower probability of substance abuse issues as based on the PAI and PHQ were predictive of officers quitting rather than staying on the job. Limitations and future directions are discussed.

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CHAPTER 1

INTRODUCTION & AIMS

Selecting the most suitable applicants for the job of correctional officer is a costly endeavor. The Bureau of Prisons estimates the cost of hiring and training a new federal correctional officer is $66,650 for the first year (Office of the Inspector General, 2011). Additionally, millions of dollars have been lost through litigation because of faulty hiring practices among public safety agencies. In the 1981 case of *Bonsignore v. City of New York* a negligence suit was brought against the New York City Police Department for failing to conduct psychological evaluations of its officers (Cochrane, Tett & Vandecreek, 2003). Holding municipalities responsible for the wrong doing of their employees was upheld in 1978 by the US Supreme Court in *Monell v. Department of Social Services* (Rostow & Davis, 2004).

There have been a number of lawsuits brought against correctional officers for brutality and the subsequent violation of cruel and unusual punishment (see *Tolber v. Bragan,* 1971; *Hudson v. McMillan,* 1991; *Whitley v. Albers,* 1986). The passage of the 1996 Prison Litigation Reform Act has made it increasingly difficult to bring forth lawsuits against correctional officers. Further it treats excessive force as a matter to be handled administratively (see *Booth v. Chumer,* 2001). Even with these suits, recommendations for screening have not been prevalent for correctional officers as compared to law enforcement. The application of psychological testing is not without its own legal battles, but in general the courts have ruled that such testing is warranted for individuals applying for public safety positions provided they are administered properly and without bias (Rostow & Davis, 2004).

Unlike corrections, psychological evaluations and interviews of law enforcement officers are mandated by most departments today (Wrightsman, Greene, Nietsel & Fortune, 2002; Varela, Boccaccini, Scogin, Stump, & Caputo, 2004). Most agencies utilize a battery of assessments in order to assess how candidates compare to standardized norms of normal or abnormal behaviors. The battery typically contains a psychological test for normal personality characteristics and/or one or more for pathological characteristics as well as a detailed inventory on the applicant's history. The use of a battery provides the psychologist the ability to weigh a number of factors rather than rely on one assessment in order to validate their recommendation for hire (Ben-Porath, Fico, Hibler, Inwald, Kruml, & Roberts, 2011).

The reason for employing psychological evaluations is to identify the most suitable candidates for the job and/or identify those who may be more likely to engage in inappropriate work behaviors (Janik, 1994). The field of public safety involves the protection of the public in some capacity and includes law enforcement, corrections, probation and parole, fire, ambulance and dispatch personnel (Roberts & Johnson, 2001). Within this domain, the majority of the research has focused on law enforcement (Stewart, 2008; Roberts & Johnson, 2001). Of these studies, the effectiveness of psychological evaluations in predicting performance has varied by the type of job performance measure being studied (Stewart, 2008).

This dissertation focuses on psychological assessment in correctional officers, a public safety group often ignored. One of the main reasons for the lack of research among correctional officers is the limited data collected on job performance. There are more job performance measures (e.g., arrests, civilian complaints, traffic tickets, etc.) for police

officers compared to correctional officers. Among correctional officers, there are limited tools for tracking performance with only four main performance measures: supervisor ratings, inmate grievances, absenteeism and employment status (Shusman, Inwald, & Landa, 1984; Downey & Signori, 1958). In order to fully understand the role of psychological testing in correctional officer selection, studies conducted with law enforcement officers will also be discussed due to the lack of extant research with correctional officers. It should be noted that there is some overlap in the duties of law enforcement and correctional officers such as the use of discretion, effectiveness of dealing with others (some of which are potentially dangerous), and bureaucratic pressures (Toch, 1978). This allows for parallels to be made.

In regards to performance outcomes, supervisor ratings have demonstrated mixed results partly due to the type of psychological test being assessed, the low sample sizes used and the bias of ratings when given during an annual review that affects raises or promotions. One method to eliminate bias would be to have a supervisor measure job performance in a way that would not be influenced by promotion or wage increases (like the annual review). Another option would be to examine current job status. While previous studies have focused on officers who are still employed compared to those who have been fired, this leaves out an important group of correctional officers—those who quit.

This dissertation examines pre-employment psychological assessment data collected by Public Safety Psychology, PLLC (PSP) from March 1997 to June 2012 for correctional officers applying to three upstate New York sheriff's departments. PSP utilizes a psychological battery developed by Johnson, Roberts and Associates, Inc.

(JR&A) for both pre-employment and fitness for duty evaluations. This battery includes the Personal History Questionnaire (PHQ; Johnson, Roberts & Associates, 1998) or Psychological History Questionnaire (PsyQ; Johnson, Roberts & Associates, 2001), California Psychological Inventory (CPI; Gough & Bradley, 1996), and Personality Assessment Inventory (PAI; Morey, 1991). This battery is designed to obtain a thorough assessment of the applicant's suitability in regards to both desirable and undesirable characteristics. The assessment consists of almost 1000 items, most of which comprise meaningful scales. Each main assessment (PHQ/PsyQ, CPI, PAI) once scored generates its own report. In addition to the item and scale scores, the CPI and PAI reports include job suitability risk estimates. Risk estimates are predictions from key components of the applicant's background as obtained by the PHQ on how the applicant answered questions from either the CPI or PAI (Roberts & Johnson, 2001). The PHQ and PsyQ track unfavorable background experiences by providing counts based on potential severity of the admission (critical vs serious). After scoring, these reports are then reviewed and a clinical interview is conducted before the overseeing psychologist makes their final hiring recommendation (scored A through F). To date, no studies have been conducted examining the predictive validity of this battery on correctional officer performance.

Therefore, this dissertation has three aims each corresponding with the following hypotheses:

Aim 1: To examine the relationship of the CPI and PAI to the risk estimates.

Hypothesis 1.A: The CPI scales will be related to the Risk Estimates, with higher scale scores associated with lower risk estimate probabilities. Some supplemental scales will display direct relationship to risk estimates.

Hypothesis 1.B: The PAI scales will be related to the risk estimates, with higher scale scores on pathological characteristics showing higher risk.

Aim 2: To examine the ability of the JR&A psychological battery and risk estimates to predict supervisor's rating of job performance.

Hypothesis 2.A: PHQ/PsyQ scores will differentiate between satisfactory and unsatisfactory ratings, with officers rated unsatisfactory by their supervisors demonstrating higher frequency of critical and serious admissions.

Hypothesis 2.B: CPI scale scores and CPI risk estimates will differentiate between satisfactory and unsatisfactory ratings, with officers rated satisfactory by their supervisors receiving higher T scores and lower risk estimates.

Hypothesis 2.C: PAI scale scores and PAI risk estimates will differentiate between satisfactory and unsatisfactory ratings, with officers rated satisfactory by their supervisors receiving lower T scores and risk estimates.

Hypothesis 2.D: The psychologist's overall recommendation will be directly related to supervisor ratings of job performance.

Aim 3: To examine the ability of the JR&A psychological battery and risk estimates to predict officer job status, comparing those who are currently employed, fired or quit.

Hypothesis 3.A: PHQ/PsyQ scores will differentiate between the three job status groups, with officers terminated having more serious and critical admissions compared to those who quit or are still employed. Officers who quit will also

differ from those currently employed but the direction is unclear and dependent on the reason for leaving.

Hypothesis 3.B: CPI scale scores and risk estimates will differentiate between the three job status groups, with officers terminated receiving lower T scores and higher risk estimates compared to those who quit or are still employed. Officers who quit will also differ from those currently employed but the direction is unclear and dependent on the reason for leaving.

Hypothesis 3.C: PAI scale scores and risk estimates will differentiate between the three job status groups, with officers terminated receiving higher T scores and risk estimates compared to those who quit or are still employed. Officers who quit will also differ from those currently employed but the direction is unclear and dependent on the reason for leaving.

Hypothesis 3.D: The psychologist's overall recommendation rating will differentiate between the three job status groups, with officers terminated receiving lower scores compared to those who quit or are still employed. .

The dissertation will be organized in the following manner. Chapter 2 will provide an overview of the literature on the use of pre-employment psychological evaluations in public safety officers. Chapter 3 will provide an overview of the three psychological tests to be included in the study: CPI, PAI and PHQ/PsyQ, with an examination of previous studies that evaluated predictive validity in public safety officers. Chapter 4 will detail the methods and data analytical plan of the current study. Chapter 5 will examine PHQ/PsyQ scores alone on both supervisor ratings and job

performance. Chapter 6 will focus on the relationship of the CPI scale scores to the risk estimates and these scores on both supervisor ratings and job status. Chapter 7 will focus on the relationship of the PAI scale scores to the risk estimates and these scores on both supervisor ratings and job status. Chapter 8 will examine the psychologist's overall recommendation rating and key variables from the CPI, PAI and PHQ/PsyQ combined on both supervisor ratings and job performance. Finally, Chapter 9 will evaluate the results and make recommendations going forward.

CHAPTER 2

PUBLIC SAFETY SELECTION

The intersection of psychology and corrections originates in police psychology and many of the principles applied to law enforcement officers have been generalized to correctional officers. Given the lack of historical focus on correctional officers, it is important to examine the role of psychology in law enforcement. According to Bartol and Bartol (2004) there have been four trends in police assessment: 1) intelligence and ability testing; 2) personality assessment; 3) stress management; and 4) fairness in testing. A large portion of the work done by police psychologists revolves around pre-employment screening (Blau, 1994; Bartol, 2011). Early screening focused on intelligence and ability testing, with personality assessment beginning over 50 years later. This shift can be attributed to the adverse impact of intelligence testing on minority groups and governmental recommendations on the improvement of employment selection procedures (Bartol, 2011), the latter of which will be further discussed later in the chapter. Today personality assessments remain the most popular choice in psychological evaluations of public safety agents largely due to their ability to predict job performance (Blau, 1994; Cochrane et al., 2003; Weiss & Inwald, 2010).

Personality is often difficult to define, but it often refers to a set of organized and enduring psychological traits and mechanisms within an individual that influence interactions with his or her environment (Larsen & Buss, 2004; Gowan & Gatewood, 1995). Based on this definition, it can be inferred that personality can be used to predict future behavior. In regard to personality assessment in public safety officers there have

been two forms in which this has been applied: 1) determination of a distinct police personality; and 2) selecting in and screening out public safety candidates (Bartol, 2011).

In 1975, Lefkowitz first identified the notion of a "police personality." Research was focused on the idea that law enforcement attracted certain types of individuals or the work itself fostered specific traits. Two widely cited police personality traits include authoritarianism and cynicism (Skogan, 2004; Dempsey & Forst, 2012). It has been hypothesized that police work attracts those who are more authoritarian, or prone to power and strength, compared to the average person (Skogan, 2004). Additionally, more conservative persons are also hypothesized to be prone to police work (Lefkowitz, 1975). Conversely, police personality has also been described as a "working personality," in which the exposure to danger and use of authority shape an officer's personality (Skolnick, 1966). This interaction can lead to cynicism, secrecy, and suspiciousness (Dempsey & Forst, 2012). Correctional officers could also be described as prone to cynicism and desiring authority. At one time the nature of corrections may have reinforced these characteristics with the need of the employee to be a disciplinarian and strong (Morgan & Smith, 2009). While there is no empirical evidence to support the existence of a specific cluster of characteristics that draws persons to public safety professions (Bartol, 2011; Gallo, 2011; Brooks, 2001), there is some evidence that personality characteristics interact with job tasks resulting in police and correctional officer misconduct (Dempsey & Forst, 2012; Skolnick & Fyfe, 1993; Finn, 1998).

Shifting from an overall police personality, research then turned to focus on specific personality traits. These traits could either select-in suitable public safety candidates or screen-out unsuitable candidates. Selecting-in attempts to identify attributes

that distinguish one candidate over another as being more effective on the job (Bartol, 2011). This approach assumes that there are traits and attitudes that distinguish superior officers from satisfactory or undesirable officers (Bartol, 2011). Research has attempted to identify what makes a desirable public safety officer. For example, police managers have determined the following characteristics of a "good cop": honesty or integrity, bravery or courage, decisiveness, consistence and reliability, resistance to stress, cooperativeness, traditional values and respect for authority (Blau, 1994). In corrections, Heper, Skok and McLaughlin's (1990) review of the literature finds that the following characteristics are displayed in ideal correctional officers: good human relations, team worker, communication skills, self-confidence, ability to cope with stress, tolerance and stability. It should be noted that the studies reported here were based on opinion rather than systematic measurement (Blau, 1994; Heper et al., 1990).

Empirical research examining measured personality factors have shown a link to success in public safety officers' job performance (Aamodt, 2004; Cuttler & Muchinsky, 2006; Schneider, 2002; Varela, 2000). For example, emotional stability has been empirically linked to officer performance (Stewart, 2008). Personality characteristics falling under the Big Five taxonomy (notably Conscientiousness and Openness to Experience) have also been empirically linked to job performance in public safety officers (Schneider, 2002; Arrigo & Claussen, 2003; Detrick, Chibnall, & Luebbert, 2004; Chibnall & Detrick, 2003). While there has been empirical support for certain personality features in predicting success on the job, there is not significant evidence that there is a one particular instrument in distinguishing between good officers and better officers (Bartol, 2011).

In contrast to selecting-in, screening-out attempts to eliminate candidates who exhibit emotional instability or have had past behaviors that may indicate an increased likelihood of engaging in negative work activities (Bartol, 2011). Most agencies focus on the screening out procedure (Blau, 1994), which research has demonstrated has been more successful than selecting-in (Bartol, 2011). For example, Bartol (1991) found that terminated police officers had higher scores on Pd (psychopathic deviate), Ma (hypomania) and L (lie scale) scales of the Minnesota Multiphasic Personality Inventory (MMPI) used during pre-employment. Super, Blau, Wells and Murdock (1993) found that higher scores on D (depression) and Ma on the MMPI were found among correctional officers who engaged in more negative behaviors. Other research has also shown that officers who are unsuccessful on the job display differences in measured personality characteristics (Sarchione, Cuttler, Mucinsky & Nelson-Gray, 1998; Ones, Viswesvaran, Cullen, Drees, & Langkamp, 2003 as cited in Cuttler & Muchinsky, 2006; Hargrave, Hiatt, & Gaffney, 1988; Costello, Schneider & Schoenfeld, 1996; Hargrave & Hiatt, 1989). However, prediction of more severe forms of misconduct (i.e., misuse of force) may be less successful with pre-employment screening (Grant & Grant, 1996; Gallo, 2011).

With both selecting-in and screening-out methods, there is an assumption that personality traits remain stable over time. This is a tenet of trait theory, which holds that all of us have characteristics that carry with us throughout our lives. Research has best demonstrated this endurance with the Big Five (Vyse, 2004). Regardless of whether these traits stem from genetic factors or socialization experiences, traditionally, personality characteristics are viewed as long-standing and underlie how people respond to different

experiences (Gerber & Ward, 2011). For example, the heritability of the Big Five traits has been found to range from 41% to 61% (Jang, Livesley & Vernon, 1996). However, there is some evidence to suggest, particularly among public safety agents, that personality traits can change over time hence the working personality (Gallo, 2011; Grant & Grant, 1996; Skolnick & Fyfe, 1993). The main reasoning here is due to the impact public safety work can have on the officer, mainly the stress that officers can face.

Perhaps it is not our traits that change over time but the behavior that manifests from these traits. It may seem counterintuitive to state that personality traits can remain stable but that changes in behavior (and possibly personality) can happen over time. This relationship can become more complex when a modifying factor, such as stress, is introduced. According to diathesis-stress theory, an individual may be more vulnerable to developing pathology due to the interaction of specific personality traits, psychosocial factors and stress (Davidson & Neale, 1982, as cited in Malloy & Mays, 1984). Traits can influence both psychosocial factors and the ability to deal with stress. For example, persons with high extraversion or agreeableness may have more positive social connections and therefore are better able to cope with stressful situations. Conversely a person who is prone to anxiety even with high social support may struggle to cope with stressful situations. Rather than the working personality, through which the occupation shapes a person's behavior, the underlying traits influence how the officer is able to cope with the stresses of the job. Negative behaviors that had not manifested themselves may come to the surface when faced with high stress due to underlying psychological susceptibility (Malloy & Mays, 1984). So while psychological traits may remain stable over time, the behavior can change depending on the situational factors present.

A similar theory known as the dynamic equilibrium theory (Hart, Wearing & Headley, 1995) explains the interaction between personality traits, coping with stress and work experience on officer behavior. The theory holds that enduring personality traits, such as those represented by the Big Five (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness to Experience), determine officers' work experiences, coping strategies and overall psychological well-being. Behavior is largely determined by personality traits but the interaction of these traits with coping and work experience can also impact outcomes (Lazrus & Folkman, 1984 as cited in Hart et al., 1995). In summary, underlying personality traits shape how officers internalize work tasks, cope with stress and subsequently act on the job.

It has been argued that public safety personnel experience some of the highest levels of stress-related burnout when compared to other occupations that deal directly with the public (Malloy & Mays, 1984; Castle & Martin, 2006). However, research on the severity of stress has been limited. Pendelton, Stotland, Spiers & Kirsch (1989) compared police officers, firefighters and other municipal workers and found that police reported more stress but municipal workers actually experienced more strain. The correctional environment lends itself to stressors unlike any other public related occupation, given the adversarial nature of the client and employee (Castle & Martin, 2006). In this occupation the client doesn't want to be inside but it's the employee's job to make sure they are, which keeps the organization in constant stress (Brodsky, 1982). Lastly, a study comparing stress levels between police and correctional officers found both sets of officers to report similarly low levels of daily operational stress. However, correctional officers reported having higher stress levels on all organizational variables

measured, including lack of resources, unequal sharing of work responsibilities, and inconsistent leadership styles of superiors (Summerlin, Oehme, Stern & Valentine, 2010).

Stress can arise from multiple factors, which vary by the public safety profession. Common to both law enforcement and corrections is stress from not having backup in dangerous situations and daily challenges (Summerlin et al., 2010). While it is believed that operational factors such as uncertain danger and unappealing job tasks are the most common form of stress in law enforcement, it has been found that organizational stresses are more burdensome (Hart, et al., 1995; Toch, 2002). Organizational stresses such as internal politics, unfairness in promotion and disciplinary actions are described as major sources of stress (Toch, 2002), which can lead to burnout. Withdrawal is a common form of burnout and can lead to absenteeism, grievances and turnover (Lee & Brotheridge, 2006; Harris, 1980).

Correctional officers face their own unique set of challenges. They must be capable of employing appropriate levels of force and persuasion to control inmates and be able to recognize manipulation attempts. Safety concerns have explained most of the variance in correctional officer stress (Tripplet, Mullings, & Scarborough, 1996; Cullen, Link, Wolfe & Frank, 1985; Auerbach, Quick, & Pegg, 2003). Other factors that contribute to stress include career development concerns (Tripplet et al., 1996), poor physical working conditions due to prison overcrowding (Martin, Lichtenstein, Jenkot, & Forde, 2012), negative interactions with colleagues and prisoners (Jurick & Winn, 1987), poor communication with coworkers and management (Tripplet et al., 1996), and organizational leadership and resource stressors (Summerlin et al., 2010). A study by

Lindquist and Whitehead (1986) found that 68% of correctional officers reported their job to be at least somewhat stressful, with 33% experiencing burnout.

Another issue in corrections is turnover (Jacobs & Grear, 1977). Turnover can be a product of stress but can also be voluntary (e.g., job did not meet expectations, was temporary until a law enforcement position became available). There is a high rate of turnover in the field with average estimates ranging around 20% annually, but others have reported turnover up to 40% annually (Minor, Wells, Angel & Matz, 2011; Jurik & Winn, 1987; National Institute of Law Enforcement and Criminal Justice, 1978). Screening out those who may quit is an important consideration because turnover can lead to substantial economic losses. Therefore, turnover should not be overlooked as an outcome with to be predicted by pre-employment correctional officer screening.

As discussed earlier, how officers perceive and cope with stress can impact their decisions on the job. Both personality and situational factors influence behavior. However, personality can be more powerful especially when a situation is unclear and the individual must rely on their own disposition to determine how to react (Stewart, 2008). This is especially true in positions such as public safety in which a person has high discretion in limiting one's liberties. Additionally, research has shown that personality traits have a strong influence on officers' well-being. Hart et al. (1995) found that organizational factors had more impact on officers' quality of life or well-being compared to operational factors. However the strongest predictors of officers' quality of life were their Big Five personality dimensions of extraversion and neuroticism as measured by NEO Personality Inventory (Costa & McCrae, 1985). Another study examining personality factors and police stress, found that personality accounted for 61%

of the variance in responses to the Police Stress Inventory (Lawrence, 1984)[1]. Therefore, there exists a strong relationship between personality and perceived stress among police officers (Hart, Wearing, & Headley, 1994).

Public Safety Personnel Selection

The first psychological tests applied and empirically researched in pre-employment screening occurred in the early 1900s and were comprised of intelligence tests (Super, 2006; Griffith, 1991). Lewis Terman, known for developing the Stanford-Binet, is first credited with using psychological testing to predict performance among public safety officers (Weiss & Inwald, 2010). In 1917, Terman recommended the use of intelligence testing for pre-employment evaluations but stated there was little criterion-related validity to be applied specifically to police and fireman selection (Kitaeff, 2011; Weiss & Inwald, 2010). He further stated the minimum level of intelligence for a public safety officer was an intelligence quotient (IQ) of 80 (Rostow & Davis, 2004). Prior to World War I, psychological testing was documented in the selection of salesmen to predict success on the job (Blau, 1994). World War I led to significant advancement in psychological testing in order to select large numbers of personnel for the military. Similarly, these tests largely revolved around intelligence.

Personality testing in law enforcement didn't become popular until the 1950's. It was also during this time that research on the prediction of officer performance became a topic of research (Blau, 1994). The history of psychological testing for personality factors in law enforcement has been well documented (Blau, 1994; Chung, 2009; Benner, 1991; Kitaeff, 2011). The first psychological test battery was employed by the Los Angeles

[1] I was unable to find a study examining personality on stress in correctional officers. Of those examining factors relating to stress most focused on job aspects followed by demographic characteristics.

Police Department in 1954, and included an interview and the MMPI (Blau, 1994). The New York City Police Department did not employ psychological assessment until the mid-1960s (Schlossberg & Freeman, 1974) and did not standardize the process until the 1970s.

The utilization of psychological testing for predicting law enforcement job performance significantly increased in the 1970s, due to two initiatives. In 1967, the President's Commission on Law Enforcement and Administration of Justice encouraged the involvement of psychologists in police selection. Additionally, in 1973, the National Advisory Commission on Criminal Justice Standards and Goals (NACCJSG) provided recommendations on the selection of law enforcement, including the use of a psychological exam, oral interview and background investigation. For example, in 1979, the NYPD had been using psychological testing but added a clinical interview performed by a psychologist to complete the screening process (Chung, 2009).

In 1978, the *Uniform Guidelines on Employee Selection* was published by the Equal Employment Opportunity Commission, and provided validity requirements for all selection tests, including psychological testing, in public safety officers. These guidelines had a major impact on psychological screening in public safety agencies, including increasing justification with assessments used for selection (Weiss & Inwald, 2010). By 1990, almost half (49%) of law enforcement agencies were using some form of psychological screening (which may or may not include a personality test) for candidates, and by 1997, 94% were using psychological testing as part of the screening process (Chung, 2009). Today, psychological evaluations and interviews of law enforcement officers are mandated by most departments (Wrightsman et al., 2002; Varela et al., 2004),

with one study demonstrating that over 90% of agencies require psychological evaluation for applicants (Cochrane et al., 2003).

Testing in correctional officers has not been as well documented. Before 1946, only Michigan and New Jersey employed some type of psychological screening for correctional officers (Downey & Signori, 1958). In a report by the Joint Commission of Correctional Manpower and Training (1969) it was found that the selection of correctional officers was "uncoordinated and haphazard" (p.12). The NACCJSG also recommended standards for corrections. Among these, Standard 2.4 stated that prisoners should be free from abuse by correctional officers, and that in order to minimize officer abuse, it was recommended that facilities institute screening procedures to weed out unsuitable officers (National Advisory Commission on Criminal Justice Standards and Goals, 1973).

Goldstein (1975) conducted a state survey on the use of screening for psychological fitness in correctional officers; of the 46 states that responded, only four (9%) stated they did not employ some type of screening. The main methods of screening included an employment application and personal interview rather than a standardized psychological test. Only eight states claimed to administer a psychological test before hire routinely: five states used the MMPI and one used the 16 Personality Factors Test (16-PF). Behrens (1985) showed only 25% of correctional agencies, compared to 50% of police agencies, to employ psychological screening. A more recent study showed that nearly all correctional departments in the US employ some type of pre-employment screening, but only 28% of state correctional systems utilize psychological tests (Anonymous, 2007a). Many states have legislation that outlines the selection methods to

be employed in screening correctional officer candidates. The main requirement is a background check, with some states also requiring psychological screening. For example, in 1984, New York joined Ohio, New Jersey, Pennsylvania and Rhode Island by passing legislation to mandate pre-employment psychological screening of all state correctional officer applicants (Morgenbesser, 1984). Below the state level, utilization of psychological testing or screening is likely to be less coordinated and to vary by agency.

Most departments must rely on the expertise of consultants to provide this service. The methods used and what a psychologist is looking for can vary widely. More recently there has been a movement to develop guidelines on what psychologists should be doing in terms of pre-employment screening. For example, the International Association of the Chiefs of Police Police Psychological Services Section (IACPPPSS) has developed a set of guidelines on pre-employment psychological evaluation. These guidelines were developed for all law enforcement positions, not just officers, and apply to both selecting in ideal qualities and screening out risk factors (Ben-Porath et al., 2011). There is some discord on which approach is better—selecting in or screening out. It has been argued that the "select-in" strategy is more difficult to accomplish since one cannot predict potentially negative future events that could impact an initially good applicant, and that the "screen-out" approach is more effective because it is easier to identify emotional unsuitability for the position (Saxe & Fabricatore, 1982). However, there is evidence to suggest that the select-in strategy has been helpful in identifying traits of an ideal officer when testing is normed across different groups (Grant & Grant, 1996). Since both methods have been recommended, an ideal psychological battery should contain more than one personality test in order to capture both desirable (for selecting-in) and

maladaptive (for screening-out) characteristics, such as the JR&A battery used in this study.

Some of the main guidelines of the IACPPPSS include the use of a test that contains objective and job-related assessments. A key component is the use of objective measures that have been standardized and are not subject to the interpretive scoring by the psychologist. A good measure will identify areas of concern as well as suitability factors. All test results should be reviewed prior to the administration of a face-to-face interview (another recommendation) so that areas of concern can be addressed (Ben-Porath et al., 2011). Test cutoff scores can be used but only if they have been validated to be useful in predicting job performance. Any evaluation conducted should also include the integration of behavioral history information, such as employment, education, and substance abuse experience. Lastly, the psychologist should be responsible for providing evidence-supported hiring recommendations (Ben-Porath et al., 2011).

In addition to the guidelines set forth by the IACPPPSS, the American Psychological Association (APA) and American Educational Research Association (AERA) have their own set of guidelines for police psychologists and pre-employment screening practices (Serafino, 2010). The APA guidelines are broader in nature and cover general issues related to all psychologists, including ethical practices, confidentiality of test data, and record keeping guidelines (Serafino, 2010). The *Standards for Educational and Psychological Testing* (1999) by the AERA puts the burden of validation of psychological screening on the psychologist. In order for the psychologist to employ certain testing methods he/she must show validity of those methods and use appropriate normative data (Davis & Rostow, 2010).

The Commission on Accreditation for Law Enforcement Agencies (CALEA) produced the *Standards for Law Enforcement Agencies* in 1989, which has served as the first national standards for law enforcement agencies that include psychological services (Blau, 1994). The standards include those that are mandatory and non-mandatory, however, agencies wishing to be accredited must follow at least 80% of the non-mandatory standards. The standards address selection, fitness for duty and special assignments. Under selection, the standards state that any written tests used must have utility, validity and minimum adverse impact (Blau, 1994, p. 49). Additionally, all tests must be administered and evaluated in a systematic manner, with test data properly and securely stored. Further, the standards require that only qualified psychologists can perform these services (Blau, 1994).

Lastly, the International Association of Directors of Law Enforcement Standards and Training (IADLEST) provides model minimum state standards for peace officer selection, which includes both law enforcement and correctional officers. In terms of selection, IADLEST recommends each state commission should include the following as minimum standards: drug screening, background investigation, oral interviews, minimum age and education requirements, physical fitness assessment, medical qualifications and psychological screening. The psychological screening standard (2.0.11) positions that state commission or law should require psychological screening to all law enforcement and correctional officer candidates for the purpose of screening out those who may suffer mental illness or be prone to "unnecessary violence or poor impulse control" (International Association of Directors of Law Enforcement Standards and Training, 2014, p.5).

To my knowledge, the major oversight agencies (i.e., American Correctional Association, National Sheriff's Association and American Jail Association) do not provide recommendations or standards for psychological screening of correctional officers. Accreditation by the American Correctional Association only provides standards for employing a background check before hiring and training requirements after hire.

Most agencies use a battery of assessments in order to assess how candidates compare to standardized norms of normal or abnormal behaviors, which is the recommended method in order to fully capture all of the relevant characteristics of the candidate (Ben-Porath et al. 2011; Hogan, Hogan & Roberts, 1996). A test battery can incorporate one or more standardized psychological tests. However, the assessments employed can vary greatly from one agency to the next, and is largely at the discretion of the psychologist (Behrens, 1985). A study by Super (2006) found that the majority of law enforcement agencies utilized the Inwald Personality Inventory (IPI; 69%), CPI (66%) and/or MMPI (51%) as part of their psychological assessment. While there has been some criticism of the application of these tests to public safety personnel, there has been increasing research validating their use in the field (Roberts & Johnson, 2001; Varela, et al., 2004; Aamodt, 2004). One of the most suited for public safety selection is the CPI due to the measurement of normal personality variables such as social interaction, which is particularly useful in this setting (Hargrave & Hiatt, 1989). Varela et al.'s (2004) meta-analysis demonstrated that the CPI had the strongest predictive validity as compared to the MMPI and IPI in law enforcement performance.

While the CPI is shown to have predictive validity in law enforcement performance, it is only one assessment and as mentioned is primarily used to classify

normal personality characteristics. These characteristics are best used for the screening in strategy and may not fully capture less desirable characteristics for screening-out purposes. The most frequently used measure for maladaptive behaviors (and as an all-purpose psychological measure) is the MMPI (Super, 2006; Hartman, 1987; Cochrane et al., 2003), but research has shown the clinical scales have only moderately predicted officer behavior (Kitaeff, 2011). A promising battery is the PAI, a newer test developed to measure psychopathology. The PAI addresses many of the disadvantages of the MMPI (see Chapter 3). Additionally, the PAI has become an increasingly popular alternative to the MMPI with 42% of agencies utilizing this assessment (Super, 2006).

In addition to the personality assessment, a clinical interview and/or background history questionnaire is also recommended to be included in the psychological battery. Both the IACPPPSS and CALEA recommend the use of a clinical interview as part of psychological testing (Ben-Porath et al., 2011; Blau, 1994). Engaging in particular past behaviors has shown to be predictive of future behaviors (Roberts & Johnson, 2001; Abbot, 1986; Richardson, Cave & La Grange, 2007; Sarchione et al., 1998). For example, Sharf (1994, as cited in Stewart, 2008) found a number of personal history categories predictive of successful job performance, including work and educational history, money management, social activities and health. Generally, some sort of background investigation is incorporated into the hiring decisions and may be the only method used to screen correctional officers (Anonymous, 2007b). Typical criminal and credit background investigations may only take a cursory look into someone's history. The psychological battery should attempt to gather as much information on the person's history as possible. One instrument used for this purpose is the PHQ (Johnson, Roberts &

Associates, Inc., 1998) and its expanded form, the PsyQ (Johnson, Roberts & Associates, Inc., 2001). The PHQ contains 300 questions covering nine different topics related to past behaviors. The PsyQ expands on the PHQ by including five additional topic areas related to developmental and psychological history. Both instruments provide standardization for the collection of this important component of selection.

Validation

The reason for employing psychological evaluations is to identify the most suitable candidates for the job, and identify those who may be more likely to engage in inappropriate work behaviors (Janik, 1994). Therefore, most research has focused on the predictive validity of psychological evaluations based on job performance. Research assessing predictive validity is not without limitations. Ideally, one would employ a random sample but given the potential liabilities of hiring unsuitable public safety officers this is not possible. Additional legal obligations often require agencies to employ psychological evaluations after a conditional offer is made, therefore most candidates are of a higher caliber than a general sample. Most studies of criterion-related validity lose power due to this decidedly processed group of individuals, which subsequently leads to little variability on predictor variables (Weiss & Weiss, 2011).

Another issue is related to defining performance. Research examining predictive validity has operationalized performance in a variety of ways. Public safety officer performance has primarily been measured through academy performance, supervisor ratings, and discipline problems (Aamodt, 2004). A survey of law enforcement superiors found that grades and passing academy training were the primary criterion for measuring academy performance. For those who are on the job, performance has been measured

through supervisor ratings, peer ratings, commendations/reprimands, terminations/resignations, and promotions. Supervisor ratings were used most often, but were considered to be more subjective than other measures except peer ratings (Spielberger, Spaulding, Jolley & Ward, 1979). Supervisor ratings can also be positively biased if these ratings tend to occur around times of pay increases or promotions. One of the least subjective methods is using current employment status, with studies comparing those still employed versus those who were involuntarily let go. Lastly, more specific performance measures associated with either positive or negative performance have been collected with law enforcement officers, such as number of arrests, excessive absenteeism, use of force incidents, civilian complaints, and resisting arrests reports (Blau, 1994; Worden, Kim, Harris, Pratt, Catlin & Hyland, 2013).

A number of studies have examined successful and/or negative performance in public safety officers, with most research focused primarily on police officers. One reason for this is the overall lack of research on correctional officers due to a perceived lack of importance (Heper et al., 1990). Toch (1978) described a correctional officer as only needing "20/20 vision, the IQ of an imbecile, a high threshold for boredom, and a basement position in Maslow's hierarchy" (p. 20). This view often clouds the importance of the work a correctional officer is tasked to do. Correctional officers have the most direct contact with an often volatile population. Failure to employ competent and desirable staff can lead to legal liability or possibly life threatening situations (Shusman et al., 1984) as well as promulgating the unfavorable stereotype of being "sadists" (Davidson, 1974 as cited in Philliber, 1986). Evidence has shown that undesirable correctional officers ignore or even contribute to violence among inmates (Peterson-

Badali & Koegl, 2002; Arrigo & Shipley, 2004). Additionally, unlike police officers, correctional officers are out of the public eye, which allows them to be out of mind. However, they are still tasked with the duty to keep the public safe (Price, 2010). Dealing with a population of this magnitude on a day-to-day basis in a confined environment requires a number of key personality features. Correctional officers need to be dependable, quick thinking, professional, achievers, non-judgmental, effective communicators, and stable (Heper et al., 1990; Shusman et al., 1984; Super et al., 1993). Qualified applicants often possess characteristics that are difficult to measure, such as integrity and judgment (Office of the Inspector General, 2011), therefore administering the right assessment is essential.

A final reason for the lack of research among correctional officers is the limited data collected on job performance. There are more potential job performance measures (e.g., arrests, civilian complaints, traffic tickets, etc.) for police officers compared to correctional officers. There are only four main performance measures: supervisor ratings, inmate grievances, absenteeism and employment status (Shusman et al., 1984; Downey & Signori, 1958). Supervisor ratings have demonstrated mixed results partly due to the type of psychological test being assessed, the low sample sizes used and the bias of ratings when given during an annual review related to raises or promotions. A less subjective rating is current employment status, comparing those still on the job with those terminated, with research demonstrating that certain assessments, such as the IPI, show increased predictive validity over others (Shusman et al., 1984).

CHAPTER 3

POLICE AND PUBLIC SAFETY SELECTION REPORTS

The Johnson, Roberts and Associates, Inc. (JR&A) psychological battery consists of the California Psychological Inventory (CPI), Personality Assessment Inventory (PAI), State-Trait Anger Expression Inventory (STAXI), Personal History Questionnaire (PHQ) or Psychological History Questionnaire (PsyQ), and a structured clinical interview. The battery was specifically developed for use by licensed psychologists who conduct pre-employment and fitness for duty evaluations with public safety personnel. The Police and Public Safety Applicant Selection Reports are created after administration of the five main instruments (Johnson, Roberts & Associates, Inc., 2012). These reports provide scoring results for each instrument. Norms for the following public safety groups have been developed: law enforcement, corrections, firefighter/EMT, juvenile probation counselor and dispatcher. For the CPI and PAI, the reports also include risk estimates based on items from the CPI or PAI and background items from the PHQ. Data for this project were obtained from these reports and directly from JR&A, with a focus on the CPI, PAI and PHQ and PsyQ.[2] The next section focuses on the development and utility of each of these three instruments in predicting job performance in public safety personnel.

California Psychological Inventory

The CPI was first published in 1948 and is considered a measure of "normal" (i.e., non-pathological) personality characteristics (Stewart, 2008). A number of items (n=171) overlap with the MMPI; however, the MMPI measures pathological traits and

[2] The STAXI was not included in these analyses because the PSP psychologists stated its utility would be limited. The questions make it readily apparent to the candidate that it is measuring stress and therefore, faking good is easy to accomplish. Therefore, the results are generally not used for making hiring recommendations.

therefore the constructed scales on each of the inventories do not overlap (Black, 1994; Gough & Bradley, 1996). The CPI was normed on non-pathological persons and its most current version (3rd edition) contains 434 items. Items which conflicted with the 1991 Americans with Disabilities Act and privacy rights were removed for this most current version in order to meet legal requirements with pre-employment selection (Gough & Bradley, 1996; Roberts & Johnson, 2001).

The goal of the CPI is to assess individuals through the use of concepts that are used throughout daily life (Gough & Bradley, 1996). It is meant to be applied to large numbers of individuals in order to represent society as a whole (Gough, 1975). The items form key "folk concepts" for scaling. The folk concepts are broad constructs that are considered universal. They describe consistent patterns in behavior which can be used to predict future behavior (Gough & Bradley, 1996; Stewart, 2008). The CPI was not developed to measure psychological traits but rather to evaluate how people respond in certain contexts and to describe how people are perceived by each other (Gough & Bradley, 1996; Roberts & Johnson, 2001). Because it measures non-pathological behaviors, it has been noted that it is one of the few assessments that can both select-in (desirable) and select-out (undesirable) characteristics of public safety candidates (Weiss, 2010).

The CPI has two different types of scales. The first type contains the primary scales which measure the main folk concepts. There are 20 primary scales (Appendix A) that each measure an important individual feature (Kitaeff, 2011). These scales are meant to provide a complete picture of an individual based on a social interaction viewpoint (Stewart, 2008). The scales can be grouped by four main classes (Megargee,

1972; McAllister, 1996). Class I contains measures of poise, ascendancy, self-assurance and inter-personal adequacy. These scales assess interpersonal style and how people deal with others: Dominance (Do), Capacity for Status (Cs), Sociability (Sy), Social Presence (Sp), Self-Acceptance (Sa), Independence (In), and Empathy (Em). Class II measures socialization, responsibility, intra-personal values, and character. Theses scales assess internalization and endorsement of norms: Responsibility (Re), Socialization (So), Self-Control (Sc), Good Impression (Gi), Communality (Cm), Well-Being (Wb), and Tolerance (To). Class III measures achievement potential and intellectual efficiency. These scales assess cognitive and intellectual functioning as well as the need for achievement: Achievement via Conformance (Ac), Achievement via Independence (Ai), and Intellectual Efficiency (Ie). Lastly, Class IV measures intellectual and interest modes. These scales are broad qualitative aspects of behavior and can be assessed on their own or used to modify scores on the other three scales: Psychological Mindedness (Py), Flexibility (Fx), and Femininity/Masculinity (FM) (Gough & McAllister, 2005; Kitaeff, 2011; Stewart, 2008). The classes were created purely for interpretation purposes as the CPI was designed so that the scales could be examined individually. The folk concepts can be added or removed based on the group being studied. Therefore, if certain scales are not deemed to be useful they can be ignored (McAllister, 1996). Lastly, since the folk scales were partly designed to forecast what a person would do or say under certain conditions, the CPI scales are ideal in examining predictive validity.

These scales fall into three factorial structures known as vectors (Gough & Bradley, 1996; McAllister, 1996). Vector 1 (v.1) measures a continuum of introversion to extroversion, Vector 2 (v.2) measures a continuum of norm-questioning to norm-

favoring; and Vector 3 (v.3) measures a continuum of self-realization/fulfillment to inefficacy/alienation. Scores on v.1 and v.2 yield four lifestyles known as Alpha (i.e., dependable and outgoing), Beta (i.e., reserved and responsible), Gamma (i.e., adventurous and restless) and Delta (i.e., withdrawn and private). Each of these lifestyles has its own modes of psychopathology and self-actualization (Gough & McAllister, 2005; Stewart, 2008). It has been found that almost half of correctional officers are Beta types (Gough & Bradley,1996).

There are three primary scales that also act as validity measures (faking-bad, faking-good and item responding). If a person is exaggerating personal distress or faking bad, he/she will display low score on Wb (Well-being). Conversely, high scores on Gi (Good Impression) measures faking-good, or a person trying to present themselves in a favorable light (Gough & Bradley, 1996). Lastly, item responding is reflected in one of two ways: a large number of unanswered items or inconsistent responding. More than 18 items missing will generally lead to inaccurate scoring (Roberts & Johnson, 2001), while low scores on Cm suggest random responding (Gough & Bradley, 1996).

The second type of scale is known as the special purpose scales (Roberts & Johnson, 2001; Gough & McAllister, 2005). These scales were developed with a specific purpose and are only relevant in certain circumstances. They are often used when the primary scales may be insufficient for prediction purposes (Stewart, 2008). There are a number of these scales which have been applied to public safety applicants (Appendix A), including Managerial Potential (Mp), Work Orientation (Wo) and Law Enforcement Orientation (Leo; Roberts & Johnson, 2001).

Gough has concluded over the years that the relationship between the scales may be too weak in certain settings and so it is recommended to look at patterns or combinations of scales based on algorithms (Stewart, 2008). Roberts & Johnson (2001) took items from the CPI to create specific algorithms for determining suitability in public safety applicants, known as the CPI Job Suitability Risk Estimates. The eight risk estimates include the probability an applicant will engage in six different problems on the job: Substance Abuse Problems (Sub Abuse), Illegal Drug Use Problems (Drug Use), Alcohol Use Problems (Alcohol), Anger Management Problems (Anger), Integrity Problems (Integrity), and Job Performance Problems (Job Perform). The other two risk estimates measure the probability of being rated poorly suited by a psychologist or being fired if hired. The job-relevant problem variables are obtained from the applicants' omissions of said past behaviors on the PHQ or PsyQ (Roberts & Johnson, 2005). The estimates are the results of logistic regression analyses predicting applicants who did or did not report the problem behaviors from the CPI results (Kostman, 2004), and therefore reflect the likelihood that answers from the CPI can predict future problem behaviors as demonstrated through past behaviors. The risk estimates afford the examiner the ability to establish any potential inconsistencies in reporting between the two assessments (CPI and PHQ/PsyQ). The eight problem behavior categories are shown in Appendix A.

The CPI Police and Public Safety Selection Report provides normative data for public safety applicants as well as the risk estimates (Gough & Bradley, 1996; Roberts & Johnson, 2001). Normative data are from a sample of over 50,000 public safety applicants (including 40,814 police officers and 5,885 correctional officer applicants) from over 100 agencies across the US. Two sets of norms were established: 1) All

applicants in the public safety field for which the candidate applied; and 2) Those who were hired and "became successful incumbent officers" (Roberts & Johnson, 2001, p.5). Success was defined as being on the job for at least one year. Additional norms were created based on gender and race regardless of position.

The CPI scales are designed to measure consistent behaviors over time. Screening in desirable behaviors assumes that the officer will continue to have desirable characteristics over time. Therefore, one must be able to establish if the assessment is reliable by accurately measuring the same constructs over time. The CPI scales have demonstrated very good test-retest reliability in this regard. Megargee (1972) found the test-retest reliability to be .70. Russell (1989) examined changes in CPI scores administered at the start of academy training (post-hire) to one year after graduation in correctional officers. Differences in scale scores were noted between state and local correctional officers, with state officers scoring higher on most scales, however, test-retest reliability was high with little variation between test scores.

The CPI scales are reported using standardized *T* scores, with a mean of 50 and standard deviation of 10. Normative data have shown police officers as a whole tend to score higher on all scales compared to other occupational groups, including correctional officers (Gough & Bradley, 1996).

Predictive Validity of CPI

Given the versatility of the CPI in the selection of public safety officers, there have been a number of studies examining whether or not the CPI scales can predict future performance. Much of the validation with the CPI has been conducted with law enforcement officers (Cochrane et al., 2003; Hargrave & Hiatt, 1989; Stewart, 2008).

Hogan (1971) conducted one of the first studies examining the utility of the CPI in prediction of performance by supervisor ratings. He found eight scales (Wb, Re, Sc, Gi, Ac, Ai, Ie, and Py) were significantly correlated to supervisor ratings. Through stepwise regression, Sp, Sc, Ai and Ie were found to be significant predictors (independent of the other scales) of supervisor ratings in law enforcement personnel. A study by Mills and Bohannon (1980) utilized the regression equation developed by Hogan (1971) and found it significantly correlated to supervisor's ratings of leadership and overall suitability in state police officers.

Aamodt (2004) conducted a meta-analysis to examine which assessments can successfully predict police officer performance. Performance was measured through supervisor ratings, academy performance and discipline problems. A number of CPI scales were found to predict performance, with To and Ie predicting all three categories. Those scoring high in To are non-judgmental and resourceful, while those scoring high in Ie are capable and clear thinking.

Similarly, a study by Benner (1991) examined the differences in CPI scale scores (administered after hire) among 44 officers considered successful (i.e., participated in the research, completed training and were active officers) versus 46 officers who were terminated or resigned. Results showed that Wb and To as well as Sc and Gi mean scale scores were higher in successful officers. Only one scale, Ac, was found to be higher in terminated officers. Hiatt and Hargrave (1988) examined pre-employment administration of the CPI among law enforcement officers who received at least one supervisor evaluation while on the job. Utilizing t-tests, the only scale with significance was Ai, with those officers scored as unsatisfactory (i.e., received unsatisfactory ratings, been

suspended or resigned, or involved in off-duty violations) scoring significantly lower on Ai. Lastly, a study by Sarchione et al. (1998) examined three CPI scales (Re, So and Sc) which were hypothesized to assess the construct of Conscientiousness from the five factor model of personality in officers with and without disciplinary problems. For all three scales, officers without disciplinary problems scored significantly higher than those who had disciplinary issues. Overall, research has found some support for higher rated police officers obtaining higher scores on second (primarily Wb, Re, Sc, To, and Cm) and third class (Ai, Ac, Ie) scales (Hargrave & Hiatt, 1989); however, the analyses have been based primarily on correlational relationships and tests of mean differences which only allows for general associations and not how the scales may predict future behavior.

To my knowledge no studies have been done examining predictive validity of the CPI in correctional officers. Research has been conducted assessing other personality measures, most notably the MMPI, IPI and/or 16-PF (Griffith, 1991; Schuerger, Kochevar, & Reinwald, 1982; Shusman et al., 1984; Sproule & Berkley, 2001; Super et al., 1993; Goldstein, 1975; Perdue, 1964; Downey & Signori, 1958).

Personality Assessment Inventory

The PAI was first published in 1991 by Leslie Morey, and is a self-administered test designed to measure personality and psychopathology (Morey, 2003). The PAI was developed due to a lack of instruments based on construct validation. Constructs were based on "two criteria: the stability of their importance within the conceptualization and nosology of mental disorder and their significance in contemporary clinical practice" (Morey, 2003, p. 2). Essentially, the assessment was developed in a way that fully captures the multiple dimensions of the constructs being measured. Development of the

PAI relied heavily on two types of construct validity: content and discriminant validity. Content development relied on both breadth and depth in order to fully capture each construct. Breadth was achieved through a utilization of a wide range of concepts to measure each construct. In order to capture the breadth, subscales were created within each of the major constructs. Depth was achieved through the answer choice scaling of the items, in order to capture a range in construct severity. Test bias or discriminant validity was minimized through the removal of items that could be interpreted differently by gender, race and ethnicity. Therefore, there is only one set of norms across all demographics (Morey, 2003).

While the MMPI is the most utilized psychological test assessing psychopathology in law enforcement, the PAI follows second (Archer, Buffington-Vollum, Stredny & Handel, 2006) and has a number of advantages. The PAI is shorter and therefore takes less time to administer. Additionally, the PAI only requires a fourth grade reading level compared to eighth grade with the MMPI (Roberts & Johnson, 2005). As discussed shortly, the PAI also includes general personality scales, whereas the MMPI only measures constructs as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (Morey, 1991; Hays, 1997).

The PAI consists of 344 items that are answered by one of the following options: *False, Slightly True, Mainly True or Very True* (Johnson, Roberts & Associates, Inc, 2012). These items comprise four sets of scales (Appendix B). The first set contains four validity scales: Inconsistency (ICN), Infrequency (INF), Negative Impression (NIM), and Positive Impression (PIM; Morey, 2003). INC reflects the degree to which items that are similar are answered consistently. Unlike the CPI Cm scale, items were created

specifically to assess response consistency. There are ten pairs of items, with five pairs that should be answered similarly and five pairs that should be answered in the opposite direction (Morey, 2003). A high score (at or above 73 *T*) on ICN reflects inconsistent item responding. Whereas INC, reflects consistency among similar items, INF assesses if a person responds carelessly or randomly throughout the test. Items are placed throughout the assessment in order to determine if a person isn't really paying attention to the items before answering. Items are designed to be answered similarly across both normal and clinical subjects. Low scores (below 60 *T*) indicate a person was careful in their responding, whereas high scores (above 75 *T*) indicate a person may have had confusion, reading problems, or random responding (Morey, 2003). The other two scales reflect faking good (CPI: high scores on Gi) and faking bad (CPI: low scores on Wb). The NIM scale corresponds to a person who may be faking bad or portraying him/herself in a negative way. However, persons who are clinical and show clear pathology can also score high on this scale, especially if the disorder makes one prone to viewing themselves negatively (e.g., depression, paranoia). Items in this scale either characterize bizarre symptoms or an exaggerated view of the self (Morey, 2003). High scores (at or above 92 *T*) indicate a person is faking bad. The last validity scale is PIM, which assesses faking good or denial of minor flaws. Items were selected to show low endorsement in both clinical and normal samples, but normal samples tend to endorse more PIM items. High scores (at or above 68 *T*) indicate a person is denying shortcomings that are commonly admitted among most individuals. Elevated scores on any of the four scales indicate questionable validity and interpretation of the other scales should be done with caution (Morey, 2003).

The second set contains 11 clinical scales and 28 corresponding subscales, which were designed to measure the major clinical diagnoses of the DSM (Morey, 2003). Each individual scale serves to measure a major clinical construct, whereas the subscales identify specific symptoms of the construct. These scales include: 1) Somatic Complaints (SOM), with subscales Conversion (SOM-C), Somatization (SOM-S), and Health Concerns (SOM-H); 2) Anxiety (ANX), with subscales Cognitive (ANX-C), Affective (ANX-A), and Physiological (ANX-P); 3) Anxiety-Related Disorders (ARD), with subscales Obsessive-Compulsive (ARD-O), Phobias (ARD-P), Traumatic Stress (ARD-T); 4) Depression (DEP), with subscales Cognitive (DEP-C), Affective (DEP-A), and Physiological (DEP-P); 5) Mania (MAN), with subscales Activity Level (MAN-A), Grandiosity (MAN-G), and Irritability (MAN-I); 6) Paranoia (PAR), with subscales Hypervigilance (PAR-H), Persecution (PAR-P), and Resentment (PAR-R); 7) Schizophrenia (SCZ), with subscales Psychotic Experiences (SCZ-P), Social Detachment (SCZ-S), and Thought Disorder (SCZ-T); 8) Borderline Features (BOR), with subscales Affective Instability (BOR-A), Identity Problems (BOR-I), Negative Relationships (BOR-N), and Self-Harm (BOR-S); 9) Antisocial Features (ANT), with subscales Antisocial Behaviors (ANT-A), Egocentricity (ANT-E), and Stimulus-Seeking (ANT-S); 10) Alcohol Problems (ALC); and 11) Drug Problems (DRG). High score (at or above 70 *T*) descriptions are shown in Appendix B.

The third set contains five treatment scales which are related to case management and treatment (Morey, 2003). These scales do not have a corresponding DSM diagnosis but can span behaviors in multiple clinical constructs. The first of these is Aggression (AGG), which addresses issues of anger and aggression and their management.

Aggression is an element in a number of DSM categories, and will be expected to correlate with elevations on certain individual scales (e.g., BOR and ANT). AGG provides a global assessment of anger, hostility and aggression. There are three subscales: Aggressive Attitude (AGG-A), Verbal Aggression (AGG-V), and Physical Aggression (AGG-P), which determine the degree of anger and mode of expression. The remaining treatment scales do not have subscales. The second treatment scale is Suicidal Ideation (SUI), which evaluates the candidate's suicide potential. The next two treatment scales focus on the individual's perception of their environment related to Stress (STR) and Nonsupport (NON). STR includes items related to life stressors that the person has experienced, such as family relationships, major changes, and changes in financial status. High scores on STR are correlated with high scores on DEP. NON measures a perceived lack of support among social relationships, with low scores indicating a high perception of social support. Scores on STR and NON tend to be positively correlated. The last treatment scale, Treatment Rejection (RXR), measures a person's attitude toward receiving treatment. Persons with high scores on this scale are not amenable to treatment and are prone to noncompliance (Morey, 2003).

Lastly, the fourth set contains two interpersonal scales: Dominance (DOM) and Warmth (WRM; Morey, 2003). These two scales tap into a person's interpersonal style (i.e., the degree to which a person relates to another person). The interpersonal style can impact the clinical and treatment constructs. Scores on DOM and WRM are distributed similarly for both normal and clinical populations. Unlike the other scales, both low and high scores signify problems (Appendix B). These two scales create an interpersonal circumplex with four quadrants: 1) Warm and domineering, 2) Cold and domineering, 3)

Warm and submitting, and 4) Cold and submitting (Morey, 2003). Warm and domineering is noted with high scores on both WRM and DOM, which indicates an individual who is controlling but also wants to secure attachment like a parent. Cold and domineering signifies a person who has low scores on WRM with high scores on DOM. This individual has an independent interpersonal style and can be seen as competitive and possibly egocentric. They will take more than they give in a relationship. A person who falls into warm and submitting (high WRM, low DOM) is willing to give in order to maintain healthy relationships. More extreme scores can indicate a person who is needy, gullible and fears rejection. Lastly, a person who falls into cold and submitting (low WRM, low DOM) is a person who is dependent, withdrawn and introverted. This person tends to be passive-aggressive and withdrawn (Morey, 2003).

In addition to the scales, Roberts and Johnson created risk estimates based on PAI test results in order to discriminate between applicants who did or did not report problematic behavior on the PHQ or PsyQ (Roberts, Thompson & Johnson, 2004). The same techniques were utilized as with the CPI. The risk estimates present the probability that the applicant has engaged in six problem behaviors: Substance Abuse Problems (Sub Abuse), Illegal Drug Use Problems (Drug Use), Alcohol Use Problems (Alcohol), Anger Management Problems (Anger), Integrity Problems (Integrity), and Job Performance Problems (Job Perform). Additionally, PAI results were used to discriminate between the psychologist's overall rating (suitable vs. poorly suitable) to predict being Rated Poorly Suited by Psychologist (Poorly Suited; Roberts et al., 2004). The CPI risk estimate Fired if Hired (Fired) was not created for the PAI.

The PAI Police and Public Safety Selection Report provides scoring on PAI scales, risk estimates and normative data for public safety applicants. The report helps "the evaluator assess the emotional stability of the applicant, in order to screen out applicants who display job-relevant psychopathology" (Johnson, Roberts & Associates, Inc., 2012, p. 2). Normative data are from a sample of almost 16,000 public safety applicants (including 10,572 police officers and 4,467 correctional officer applicants) from over 100 agencies across the US. Similar to the CPI, two sets of norms were established for: 1) All applicants in the public safety field for which the candidate applied; and 2) Those applicants who passed all screening criteria, were hired and on the job for a year (Roberts et al., 2004). Norms were also created based on gender and race regardless of position.

Reliability of the PAI is very good. Median internal consistency alpha in the normative sample was .81 and .86 in the clinical sample. The test-retest reliability for both samples was .83 (Morey, 2003). Similar to the CPI, PAI scales are reported using standardized *T* scores, with a mean of 50 and standard deviation of 10.

Psychological assessment generally occurs in the latter stages of pre-employment screening, therefore many unfit candidates have already been screened out. Overall the majority of public safety applicants are emotionally stable (Weiss, Hitchcock, Weiss, Rostow and Davis, 2008). Officer candidates tend to not endorse items that signify serious psychopathology (Weiss, Hitchcock, Weiss, Rostow & Davis, 2001) and score high on validity scales. Due to the limited range in pathology, it is recommended that measures of psychopathology be conducted in conjunction with background and interview information in order to further assess potential problematic behavior (Weiss et

al., 2008). Therefore, in the Chapter 8 job performance will be examined in a combined model using variables from the PAI, PsyQ and CPI as predictors.

Concurrent Validity of PAI

Before discussing the predictive validly of the PAI, it is important to examine its concurrent validity. Since the PAI was developed as an alternative to the MMPI it is often compared to this assessment. Therefore, studies have examined the concurrent validity of these two instruments in public safety officers. Hays (1997) conducted one of the first studies to examine the use of the PAI in police officers. He examined the concurrent validity of the PAI and MMPI-168 (short version of the standard test) in nine law enforcement officers being screened for pre-employment. Mean *T* scores for all MMPI-168 scales were subclinical (i.e., normal) with slight elevations on Correction (K), Lie (L), Psychopathic Deviate (Pd) and Hypomania (Ma). Hays (1997) found significant differences between the L and SI scale on the MMPI compared to the sample used in Hargrave, Hiatt, Ogard and Karr (1994). Scores on the PAI were also mainly subclinical except for the PIM and RXR scales, which demonstrate the tendency of job applicants to present themselves in a positive light. In normal samples, Hays (1997) reports that slight elevations on these scales may also indicate "satisfaction with life and little motivation for change" (p. 246).

Roberts (1997, as cited in Roberts, et al., 2004) examined concurrent validity of PAI and MMPI-2 scales with PHQ constructs theoretically measuring the same behaviors and psychological suitability in 3,420 public safety applicants. PAI clinical *T* scores showed higher correlations with both PHQ constructs and psychological suitability compared to MMPI-2 *T* scores. There were three PAI scales that were most highly

correlated with PHQ constructs related to job-screening criteria: ANT, ALC and AGG. There were a number of PAI scales correlated with psychological suitability rating: PIM, DEP, PAR, ANT, ARD, SCZ, MAN, ALC and AGG. Additionally, Roberts (1997, as cited in Roberts et al., 2004) found that MMPI-2 *T* scores were not elevated enough to show any problems, therefore the use of only the MMPI-2 would have resulted in a number of false positives (i.e., the psychologist recommending the candidate because pathologies are not screened out). One possible reason for this is due to item scaling. The MMPI-2 uses true/false (presence/absence), whereas the PAI uses a 4-point Likert scale which can measure varying levels of pathology and therefore may allow for more accurate reporting (Weiss, Rostow, Davis, & DeCoster-Martin, 2004). Lastly, MMPI-2 raw scores are converted to *T* scores using the K scale (defensiveness). In job applicant samples, K scale scores are generally elevated so having to use this scale to calculate *T* scores will result in lower *T* values (Roberts et al., 2004). The PAI does not have this issue so the interpretation of *T* scores is straightforward and based on the community or public safety norms.

Predictive Validity of PAI

Similar to the CPI, the research examining the predictive validity of the PAI in public safety has been done primarily with law enforcement officers. Roberts (1997, as cited in Roberts et al., 2004) conducted one of the first studies examining the predictive validity of both the MMPI and PAI with the development of the risk factors. PAI *T* scores were used to predict problem behaviors based on six categories and psychological rating (i.e., risk estimates) in a sample of 3,420 public safety applicants. MMPI *T* scores were added to the prediction equation to assess incremental value and there was little.

However, when the prediction equations first started with the MMPI *T* scores and added in the PAI *T* scores, there was increased incremental validity. Therefore, PAI *T* scores were more predictive of potential behaviors on the job.

Richardson et al. (2007) assessed the predictive validity of one of the PAI risk estimates (probability psychologist rated officer as poorly suited) for 62 officers from the New Mexico State Police. Half the sample (n=31) was identified as having disciplinary action taken against them on the job for various problematic behaviors (e.g., excessive use of force, duty mistakes, substance abuse). The other half were matched controls that had passed the same pre-employment requirements and had no incidents on-duty. Logistic regression was conducted and found that the risk estimate was not predictive of which category the officer fell into. Only one risk estimate was evaluated of the seven, so the job-related risk estimates may be better predictors. Additionally, the use of probability of being poorly rated by the psychologist may not be a good predictor if officers were ultimately hired based on the recommendation of the psychologist. Verification of psychologist's actual grade could reveal that only officers recommended were hired. In contrast, the sample for this study includes officers who were not recommended but were ultimately hired.

In a series of studies, Weiss et al. (2004, 2005, 2008) examined the predictive validity of the PAI on police performance. Weiss, et al. (2004) examined the relationship of the PAI to problematic job behaviors in 800 law enforcement officers applying to state, municipal, county and federal positions. Based on research conducted with the MMPI, the authors focused on 8 scales: the three subscales of AGG, the three subscales of ANT and two validity scales—PIM and NIM. AGG-P, ANT-E, ANT-S, and ANT-A

clinical subscales were significantly correlated with a number of job performance criteria, including insubordination, excess civilian complaints and neglect of duty. Lastly, high scores on NIM were related to negative job behaviors, whereas PIM was not. Following up on this work, Weiss, Zehner, Davis, Rostow and DeCoster-Martin (2005) examined the predictive validity of the same clinical scales on the three job performance criteria above using multiple regression. ANT-E was a significant predictor for insubordination and excessive citizen complaints, while NIM and ANT-S were significant predictors for neglect of duty. A study by DeCoster-Martin, Weiss, Davis and Rostow (2004) examined the ability of Obsessive-Compulsive characteristics as measured by ARD-O to predict police officer performance in the same sample. Conversely to what had been found previously (higher PAI scale scores indicate poorer performance), a higher score on ARD-O, for men only, had mixed implications. Men with slightly elevated ARD-O scores tended to have fewer undesirable off-duty conduct and citizen complaints, but more unprofessional conduct incidents. Lastly, Weiss et al. (2008) examined the predictive validity of the four BOR subscales, DRG and ALC scales on supervisor performance assessments. Discriminate function analysis was unable to distinguish between the three job performance classification groups (0-no reported problems, 1 problem, or 2 or more problems). Further evaluation of the sample revealed 123 officers with 3 or more problems. For these officers, BOR-N and DRG were significant predictors of total performance (i.e., total number of reported problems across 32 categories) in this group.

Caillouet, Boccaccini, Davis and Rostow (2007) examined predictive validity of job status among 989 law enforcement officers with the PAI, while controlling for

defensive responding, PIM. PIM was examined due to previous research that demonstrates job applicants are prone to defensive responding. Of the total sample, 356 officers were fired or forced to resign, while the others remained on the job. Additionally, the sample was divided into low and high PIM (greater than 57*T*) score groups. Eighty-six percent of the total sample had PIM above 50*T*, which dropped to 54% when PIM was above 60*T*. Results indicate that the correlations between the PAI clinical scales and employment status were greater among individuals who were less defensive (PIM < 57*T*). Therefore, defensive responding will be examined in the current study.

Lastly, Lowmaster and Morey (2012) examined the predictive validity of the PAI in a sample of 85 law enforcement officers who were subsequently hired. Job performance was assessed through factor analysis of the Officer Evaluation Form, a standardized 25-item assessment of job performance and problem behaviors. Three factors emerged: job knowledge and decision making, integrity problems and sick leave abuse. Mean PAI full scales and subscales showed officers scoring lower than the community norms on all except MAN-G, RXR and the two interpersonal scales (DOM and WRM). Overall, there was little variability among the officers on the PAI scales. Due to range restriction in the scores, correlation coefficients were corrected using Cohen, Cohen, West and Aiken's (2003) method. Prior to correction, very few scales and subscales were correlated with job performance. However, after correction nine full scales and 15 subscales were significantly correlated with the three job performance indicators.

To my knowledge, no studies have examined the predictive validity of the PAI in correctional officers. In terms of examining predictive validity in measures of

psychopathology most research has involved the MMPI and IPI. A study by Griffith (1991) examined the predictive validity of the MMPI and IPI with 590 police and correctional officers on employment status and disciplinary infractions. The MMPI did not predict job performance in either police or correctional officers. However, scores on 10 IPI scales (e.g., guardedness, substance abuse, antisocial attitudes, undue suspiciousness) significantly differed by performance group in correctional officers. Another study by Shusman et al. (1984) similarly examined the predictive validity of the MMPI and IPI in correctional officers' job performance. Again the IPI was better at prediction compared to the MMPI, with the IPI being more accurate in classifying correctional officers by employment status and other job performance measures.

Personal History Questionnaire/Psychological History Questionnaire

The Personal History Questionnaire (PHQ) is a self-report measure developed by JR&A. in 1989 in order to standardize the background investigation for public safety officer candidates (Roberts & Johnson, 2006). Using a standardized format for the questions allows for increased reliability in obtaining the same background histories across candidates. It was designed to be administered pre-offer of employment in order to screen candidates to reduce costs associated with field background testing, polygraph or psychological testing. An estimated 15-20% of candidates can be screened out pre-offer with the use of the PHQ (Roberts & Johnson, 2006).

The PHQ contains 300 items covering nine different topics: education, employment, military experience, law enforcement experience, driving record, financial history, legal history, substance use, and general information (see Appendix C for further explanation of these categories; Roberts & Johnson, 2006). Questions focus on specific

behaviors falling into these categories. Item responses vary depending on the question being asked. For example, some items may have yes/no options (e.g., 'Did you graduate from high school?') while others contain multiple categories (e.g., 'How long have you been working for your current employer?' a. Not currently employed, b. Less than 1 year, c. 1 to 2 years, d. 3 to 5 years, e. 6 or more years).

In 2001, Johnson, Roberts and Associates, Inc. extended the PHQ by creating the Psychological History Questionnaire (PsyQ). The purpose of the PsyQ is to verify the psychological test (i.e., CPI and PAI) results to actual behavior. In addition to the background items of the PHQ, items pertaining to developmental and psychological problems as well as treatment are included in the PsyQ (Roberts & Johnson, 2005). The PsyQ can only be administered post-offer due to the inclusion of items relating to disabilities covered under the Americans with Disabilities Act (Johnson, Roberts & Associates, Inc., 2001).

The PsyQ contains 340 items under 14 different topic areas. In addition to the same nine categories contained in the PHQ, the PsyQ also contains five additional topic areas related to development and psychological issues: developmental history, adult relationships, parental responsibilities, psychological treatment and evaluation history, and job relevant sexual history (see Appendix C). As with the PHQ, item responses vary with the question (Roberts & Johnson, 2005; Johnson, Roberts & Associates, Inc., 2001).

Given the sensitive nature of the items in both instruments, that they are self-report and that public safety and general job applicants tend to fake good, there is a possibility of dishonest answering. In order to increase honesty in answering items, each topic area has a warning statement before the start of the section. Each statement is

specific to the topic area and addresses how the respondent's answers will be verified through record checking and interviews with other persons. For example, under financial history it states the respondent's answers will be "verified by checks of records kept by police agencies, courts, financial institutions, credit reporting agencies…income tax returns…and through interviews with persons acquainted with you" (Johnson, Roberts & Associates, Inc., 2001, p. 13; Johnson, Roberts and Associates, Inc., 1998, p. 14). Research by Roberts and Johnson (2005) has shown that honesty also increases when the agency utilizes a polygraph in pre-employment screening.

The PHQ and PsyQ collect biodata--historical and discrete events that persons have control over (Jacobs, Cushenbery, & Grabarek, 2011, p.196). The purpose of biodata assessments is to collect data on past behaviors. The test attempts to tie job requirements to specific indicators of past behavior in order to identify the candidate's ability to perform the job tasks (Johnson, Roberts & Associates, Inc., 2011). In this way, biodata instruments can be used to screen-in or screen-out candidates. Item endorsement of characteristics that are favorable to the position, such as foreign language knowledge or past employment in public safety, can help screen-in the candidate. However, item endorsement of past behaviors, such as alcohol or drug use, may be considered unfavorable to the position and help screen-out candidates. Both the PHQ and PsyQ focus on screening-out by identifying past behaviors which could cause problems in public safety positions (Roberts & Johnson, 2006).

The JR&A PHQ and PsyQ reports provide a "problem profile" for each public safety applicant. Included in the problem profile are "critical" and "serious" categories based on how items were answered and highlight potential major problems in the

applicants' background (Johnson, Roberts & Associates, Inc., 2012). Items not answered are then listed. These can include omitted required and optional questions. The main body of the report contains information on how each item was answered. Certain items can be flagged for the psychologist to review during the interview depending on how they are answered. Additionally, all items are displayed with the following information in parentheses: question number, candidate response letter, % of respondents who made the same response, % of respondents who made the same response or worse, and problem category assigned to the response (Johnson, Roberts & Associates, Inc., 2011). The last section of the report includes a signature statement from the respondent certifying the responses are accurate and a signature statement from the psychologist stating that he/she reviewed the items with the applicant.

An interesting feature of the PHQ and PsyQ was the creation and weighting of problem responses. Problem categories were developed by ten police psychologists with extensive pre-employment screening using a sample of 12,330 public safety applicants. There are six problem categories associated with the following point values shown in parentheses (Johnson, Roberts & Associates, Inc., 2011):

NP (0): No problem

S1 (1): A relatively minor problem, which is nevertheless worth noting

S2 (2): A moderately serious problem, but one which would definitely not justify rejection by itself

S3 (3): A quite serious problem, which nearly justifies rejection by itself

DQ1 (6): A problem that, by itself, justifies disqualification; however, mitigating factors may rule against rejection

DQ2 (7): A problem that, by itself, justifies disqualification, regardless of mitigating factors (Roberts & Johnson, 2006, slide 26).

For each item, responses are assigned one of the ratings above. Consensus was reached by the ten psychologists on how responses should be scored. For items in which there was some consistency, the median rating was used. Items where there was substantial variation in the ratings were discussed by the group until a consensus was made (Roberts & Johnson, 2006). Critical items will contain responses which were identified as either DQ1 or DQ2. Serious items will contain responses that were identified as either S1, S2 or S3. The number of items in each PHQ and PsyQ category that qualify as serious or critical are shown in Appendix C. Based on the points assigned, agencies can elect to use a cut-off value to reject the applicant. The PsyQ and PHQ rejection criteria can include: 1) Any DQ response that did not have a mitigating factor or was responded to in error; or 2) A total number of S1-S3 problem points that exceed the predetermined cut-off value[3]. For most public safety applicants, the number of either critical or serious admissions is very low (Roberts & Johnson, 2006).

Both the PHQ and PsyQ are not considered typical psychological assessments. They do not measure constructs or personality characteristics, which are inferred by the items being asked. The items contained ask about past actions that have occurred. Therefore, although they are structured questions, their reliability is not reported. However, the PHQ and PsyQ as well as other measures of past behaviors can be used to assess future job performance.

[3] A cut-off value was not employed for the agencies included in this study.

Predictive Validity of Background History

There is a consensus that past behaviors predict future behaviors (Abbot, 1986; Richardson et al., 2007; Sarchione et al., 1998; Roberts & Johnson, 2001); therefore, an important aspect of pre-employment screening focuses on the candidates' past actions. Typical dysfunctional job behaviors include theft, absenteeism, and disciplinary problems. For public safety officers, dysfunctional behaviors can also include sexual misconduct, excessive use of force, insubordination and inappropriate conduct with others (Sarchione et al., 1998; Skolnick & Fyfe, 1993). If a candidate has engaged in a certain activity in the past there is a possibility of engaging in it in the future. Therefore, national agency standards such NACCJSG and CALEA for law enforcement agencies and the ACA for corrections recommend the use of a background investigation in selection (National Advisory Commission on Criminal Justice Standards and Goals, 1973; Blau, 1994; American Correctional Association). Use of background investigations can vary by agency. One study surveying correctional institutions found only 36% utilized sex offender registry records, 89% checked fingerprints, 71% verified state employment records and 84% checked state criminal records (Annoymous, 2007a).

Typically, the background investigation is done during the pre-offer stage. Any behaviors indicative that a candidate may not be able to perform the duties of an officer are examined, for example: driving history, arrest records, credit problems and disciplinary problems in the military (Aamodt, 2004). Therefore, a person is often screened out based on certain problem behaviors before they reach the psychological evaluation stage. In other agencies, the background investigation may be the last step in

the process since it can be cost prohibitive (Colarelli & Siegel, 1964; Roberts & Johnson, 2005; Anonymous, 2007b).

Research examining background history predictors on public safety performance is limited due to the pre-offer screening process. Research pertaining to the PsyQ and PHQ is no exception[4]. The domains covered under the PsyQ and PHQ overlap with other methods of obtaining background information on a candidate. Therefore, research examining the predictive validity of background characteristics (no matter how measured) in public safety applicants will be discussed.

Aamodt's (2004) meta-analysis found only three studies focusing on background factors. The reason for this was due to the likelihood of candidates with past problems not being hired. Even with the limited number of studies, the author found background factors to be one of the better predictors of police performance. Specifically, officers with past arrests and problems in past employment are less likely to perform well on the job. However, increased number of traffic tickets resulted in mixed results—those with more traffic tickets had higher supervisor ratings, more commendations but also used more sick time (p. 79).

Cohen and Chaiken (1972) examined the background and performance in 1,915 NYPD officers. The authors examined race, age, IQ, occupational history, military experience, personal history, criminal and civil history, academy performance, probation rating and education on three outcomes: career advancement, disciplinary actions, and absenteeism. It was found that academy performance and probation rating were the greatest predictors followed by disciplinary actions in the military and prior employment

[4] To date there have been no published studies examining the predictive validity of the PHQ or PsyQ, therefore, this literature review focuses on any studies that have examined background history.

discipline problems. Additionally, having at least one year of college education was predictive of positive performance on the job.

Davis and Rostow (2003) examined a number of background factors, including education, military experience, and credit rating to being fired for cause in 1,987 law enforcement officers. Only education was found to be correlated significantly with being fired, with increased education negatively related to being fired.

Harris (2006) also examined key background factors on police misconduct over time. He found education decreased risk of citizen complaints and prior military experience decreased risk of internal complaints. In contrast, non-White officers and those who used force increased the risk of both civilian and internal complaints.

Sarchione et al. (1998) examined the predictive validity of a number of life history variables on job performance in 218 law enforcement officers. Life history items were collected through self-report, a structured interview and/or background investigation prior to the psychological assessment being administered. Items were weighted and categorized into three groups: work history, drug history and criminal history. All three were significant predictors of disciplinary problems in officers, with the disciplinary group having more past problems than the control group.

Similar to the other assessments covered in this paper, research examining the predictive validity of background factors on correctional officer performance is limited. A study conducted within the Bureau of Prisons investigated the predictive validity of their screening process on correctional officer misconduct and good behavior (Office of the Inspector General, 2011). Two background factors predicted good behavior in correctional officers: educational level (with at least some college) and length of longest

previously held civilian job. Seven characteristics predicted higher likelihood of correctional officer misconduct (i.e., at least 1-day suspension in first 2 years of employment): unfavorably separated from a past job, disciplined in past job, less supervisory experience in previous employment, relatives who are incarcerated, financial accounts in collection, past use of marijuana, and worked less than 10 years in longest held civilian position, for which 95% of the sample met this criteria (p. 20). No other studies were found assessing background history in correctional officers.

Due to the overall absence of research examining pre-employment screening in correctional officers, this research will examine the predictive validity of the CPI, PAI and PHQ/PsyQ on the criterion of job performance and employment status utilizing regression analysis. In addition, defensiveness responding as measured by the CPI and PAI will be examined in order to minimize any potential effects on the outcomes.

CHAPTER 4

MATERIALS AND METHOD

Procedure

The sample for the current study was drawn from the files of Public Safety Psychology, PLLC (PSP) for correctional officer candidates applying to one of three sheriff departments in the same geographic region of upstate New York. Between 1997 and 2012, over 700 candidates completed pre-employment screening, which consisted of the following: civil service exam, agility test and background investigation. After completing these steps successfully, the candidate was given a conditional offer of employment pending the passing of the psychological screening and medical exam. The psychological screen conducted through PSP included a two-part procedure. The first part consisted of the candidate attending PSP or being tested at the agency of application to complete the self-report test battery[5]. Prior to completing the assessments each candidate signed a waiver of consent for research purposes. The self-report test battery included the CPI, PHQ or PsyQ and PAI. Candidates screened between 1997 and 2002 received the PHQ, while candidates screened after 2002 received the PsyQ. The candidate either sat in a private area of the PSP office or in a classroom setting to complete the approximately 1,000 question test battery.

The second part consisted of the candidate undergoing a 30-45 minute structured interview with a PSP psychologist. Interviews were conducted the same or next day for those who were hired before 2001, and for those who were hired in 2001 and beyond the

[5] A polygraph is not part of the pre-employment process for these agencies. This increases the likelihood of dishonesty. While this could be limiting there are a number checks put into place. First, a background check is run on all candidates. Second, there are overlapping themes with the PAI and CPI that could show inconsistencies. Third, the overseeing psychologist addresses any inconsistencies in responding in a face-to-face interview.

face-to-face interview was conducted anywhere from two days to a week later. Once the test battery was scored and the interview conducted, the overseeing psychologist compiled an 8-page recommendation report for the hiring agency. The same psychologist either administered the evaluation personally (97% of the cases) or oversaw the completion of the final recommendation report for all officers in this study.

In addition to collection of the psychological assessment, in January through March 2010, the primary psychologist asked one supervisor at each of the three correctional facilities to complete a brief assessment of job performance for officers who met the study criteria. Each supervisor was provided a list of officers who had been screened for hire for their facility during the study period, which included the candidate's name, gender, race and date of psychological testing. In addition, the supervisor was given a one-page summary of how to evaluate the officer. This rating was conducted solely for the purposes of this study, and therefore was not subjected to the same bias as rating conducted through annual review. The rater for each department was specifically chosen because he had direct supervision and knowledge of each candidate. All three raters were white males who had been on the job at least 20 years. The evaluators were asked to rate each candidate using one item asking about their overall job performance for the purposes of the study. Additionally, raters were asked to provide the current job status of each officer.

The original sample size included officers who had been screened between March 1997 and January 2009 and had been on the job for at least one year prior to the supervisor rating in 2010. Preliminary frequencies of job status revealed a low sample size of correctional officers who had voluntarily left or had been fired. Therefore, it was

decided to expand the sample to include correctional officers screened February 2009 through June 2012 in order to increase the sample size for those who were no longer employed as a correctional officer. In March, 2013, the psychologist provided the expanded sample list of officers to the original supervisors and asked for their current job status but did not ask them to rate their performance[6]. All candidates who were hired during this three year period were added to the sample.

Variables

Independent Variables

Demographic and Study Variables. The following demographic variables were obtained on all correctional officers: gender (female=0; male=1), age (at time of testing; continuous), race (non-White=0; White=1), and education (HS diploma/GED=0; some college or higher=1). Lastly, agency of hire (Agency A=1, Agency B=2 and Agency C=3) was included as a control variable.

California Psychological Inventory (CPI). Items from the PPSSR were obtained in an SPSS database from JR&A. Any missing records were obtained from paper files at PSP and entered into the SPSS database. Included in the analyses were the *T* scores (continuous) based on community norms[7] for 19 primary scales[8] and ten special purpose scales. Also included were the probabilities (percentage) for seven risk

[6] Job status for those screened between 1997 and 2009 (original sample) was also updated at this time. The 2013 job status was used for analyses.
[7] T scores can also be calculated based on public safety norms including norms based on fellow correctional officers, which are displayed on the report printouts. These T scores were not provided in the electronic database received and conversion formulas could not be obtained JR&A.
[8] Femininity/Masculinity is not included in the paper report as it can be considered a potential violator of equal employment opportunity. Therefore, it was not examined.

estimates[9]. Lastly, the lifestyle type (Alpha=1, Beta=2, Delta=3, or Gamma=4) for each candidate was also utilized.

Psychological Assessment Inventory (PAI). Items from the PAI Law Enforcement, Corrections, and Public Safety Selection Report were obtained in an SPSS database from JR&A. Any missing records were obtained from paper files at PSP and entered into the SPSS database. Included in the analyses were the *T* scores (continuous) based on community norms for the 22 scales and 28 subscales. Also included were the probabilities (percentage) for the seven risk estimates. Lastly, scores from the Defensiveness Index and Cashel Discriminant Function were calculated from the T scores as additional measures of defensive responding.

Personal History Questionnaire (PHQ)/Psychological History Report (PsyQ). Items from the PHQ or PsyQ were obtained in an SPSS database from JR&A. Any missing records were obtained from paper files at PSP and entered into the SPSS database. Included in the database were responses for the 300 items. Items were converted to the standard scoring mechanism (NP=0, S1=1, S2=2, S3=3, DQ1=6, DQ2=7). However, few officers had any DQ admissions, so DQ admission was dichotomized, with an officer receiving a value of 1 if there was at least one DQ admission and 0 if there were no DQ admissions overall. Total Problem Points (S1-S3 admissions) were calculated by summing responses to items based on the scoring mechanism above. For example, if an officer had three S1 responses and two S3 responses overall, then their total Problem Points would be nine (3*1 + 2*3). Total Problem Points were examined overall and by topic area. Lastly, previous military experience (no=0, yes=1) and law enforcement experience (no=0, yes=1) were obtained.

[9] Probability of fired if hired was not analyzed as this is only estimated for law enforcement candidates.

Psychologist Rating. The overall recommendation of the psychologist to the hiring agency was also obtained: A (Well Suited), B (Suitable: no concerns), C (Suitable: mild concerns), C- (Marginally Suitable), D (Poorly Suited) and F (Not psychologically suited for public safety employment). No officers hired received a rating of F so rating was coded 0 (D) to 4 (A).

Dependent Variables

Supervisor Rating. In order to control for potential bias in supervisor ratings due to promotional or raise issues, a job performance measure was created solely for the purpose of this research. Job performance is a single grade based on a similar rating scale to the psychologist's grade. Each supervisor was asked to rate each employee's job performance using A through F, where A (Well Suited: The officer's psychological traits contribute(d) to above standard performance of essential job function); B (Suitable: The officer's psychological traits have not interfered with the performance of essential job functions); C (Suitable: There are some mild concerns about psychological traits that interfere with the performance of essential job functions); C- (Marginally Suitable: There are substantial concerns that psychological traits and behavior patterns interfere with the performance of essential job functions); D (Poorly Suited: Psychological traits have significantly interfered with the performance of essential job functions); and F (Not psychologically suited for public safety employment). Grades A through C are considered to be satisfactory based on job performance, while grades C- through F are not satisfactory. Supervisor rating was recoded in two ways for analyses. First, it was coded as an ordinal variable 0 (F) to 5 (A) and also dichotomously (not satisfactory: C-, D, F=0, satisfactory: A, B, C=1). Previous research utilizing supervisor ratings of psychological

attributes on job performance has yielded positive results in law enforcement officers[10] (Hargrave & Hiatt, 1989).

Job Status. Supervisors were asked to provide the current (2013) job status for each officer based on the following: current employee, fired/forced resignation, voluntary departure, or retired. A three-level categorical variable was utilized for analyses (currently employed=1, fired/forced resignation=2, voluntary departure=3).

Samples

Between March 1997 and June 2012, 709 applicants were made pre-offers of employment at the three sheriff's departments for the position of correctional officer. Of these, 268 were not hired or did not accept the position, 15 did not show for their pre-employment psychological exam, and an additional 5 were excluded because their psychological records were missing. This left a final sample of 421 correctional officers who completed the pre-employment requirements and were hired. Of these, 148 (35.2%) were from Agency A, 135 (32.1%) were from Agency B and 138 (32.8%) were from Agency C. Demographic variables were examined using the full sample.

In order to assess supervisor ratings, officers additionally needed to be hired before 2009 (supervisor rating was captured January-March, 2010) and on the job for at least one year. Of the 421 correctional officers in this study, 23 were on the job for less than one year and 79 were hired after 2009. Therefore the final subsample to examine supervisor ratings was 318. A breakdown of supervisor ratings for the 318 correctional

[10] Supervisor rating was constructed for the purpose of this study in order to closely mirror the original scale of the psychologist's recommendation. Ratings were conducted independent of position or monetary promotions, which can minimize positive bias in responding. However, the administration of a rating for the sole purpose of a research study is not without its own challenges. Ratings are only seen by the researcher and supervisor and therefore cannot be questioned by others in the department, including the employee. Additionally, there may be a lack of importance given to the ratings which causes the supervisor to rate officers in a modal fashion. Therefore, it will be imperative to assess the distribution and potential differences in ratings across supervisors.

officers is shown in Table 4-1. The majority of correctional officers received either an A (32%), B (30%) or C (24%) rating from their supervisor. Approximately, 15% (n=47) received a C-, D or F. There were significant differences in supervisor ratings across departments (χ^2 (10) = 240.29, $P < 0.001$). The majority of the D and F ratings (94%) were from Agency C, whereas the majority of officers who received an A rating were from Agency A (90%) and the majority of officers who received a B rating were from Agency B (62%). Similarly, when supervisor rating is dichotomized, the majority of correctional officers were rated as satisfactory (85%) rather than not satisfactory (15%). Agency differences were apparent with dichotomized supervisor rating, χ^2 (2) = 62.74, $P < 0.001$. More officers at Agency C (42%) were rated not satisfactory compared to Agency A (5%) or B (7%).

Job status was obtained on all 421 correctional officers; however, two officers had died and two had retired and therefore dropped from these analyses. The final subsample to analyze job status was 417. In 2013, 69% (n=288) of the officers were still employed, while only 7% (n=30) were either forced to resign or terminated, and 24% (n=99) voluntarily departed (Table 4-1). There were significant differences by agency, with Agency A having the fewest fired (3% vs. 11% & 7%) compared to Agencies B and C respectively. Additionally, there was a lower percentage of persons who quit at Agency C (17%) compared to Agencies A (31%) and B (23%; χ^2 (4) = 13.14, $P < 0.05$).

Table 4-1. Supervisor Ratings and Job Status by Agency.

	Agency A (n=145)	Agency B (n=95)	Agency C (n=78)	Total (N=318)
Supervisor Rating	**N (%)**	**N (%)**	**N (%)**	**N (%)**
A	91 (62.8%)	6 (6.3%)	4 (5.1%)	101 (31.8%)
B	26 (17.9%)	59 (62.1%)	10 (12.8%)	95 (29.9%)
C	21 (14.5%)	23 (24.2%)	31 (39.7%)	75 (23.6%)
Total Satisfactory	*138 (95.2%)*	*88 (92.6%)*	*45 (57.6%)*	*271 (85.3%)*
C-	5 (3.4%)	7 (7.4%)	0 (0%)	12 (3.8%)
D	1 (0.7 %)	0 (0%)	17 (21.8%)	18 (5.7%)
F	1 (0.7%)	0 (0%)	16 (20.5%)	17 (5.3%)
Total Not Satisfactory	*7 (4.8%)*	*7 (7.4%)*	*33 (42.3%)*	*47 (14.8%)*
	Agency A (n=146)	**Agency B (n=134)**	**Agency C (n=137)**	**Total (N=417)**
Job Status	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Current employee	96 (65.8%)	88 (65.7%)	104 (75.9%)	288 (69.1%)
Fired	5 (3.4%)	15 (11.2%)	10 (7.3%)	30 (7.2%)
Voluntarily Resigned	46 (30.8%)	31 (23.1%)	23 (16.8%)	99 (23.7%)

Data Analysis

The next four chapters will present the results of the data analyses. Both dependent variables (supervisor rating and job status) will be evaluated in each chapter. Chapter 5 will focus on the PHQ/PsyQ items and demographic variables. Chapter 6 will utilize the CPI scales and risk estimates, while Chapter 7 will examine the PAI scales and risk estimates. Finally, Chapter 8 will evaluate significant variables of interest from all three assessments, the psychologist's rating and their combined predictive validity on supervisor rating and job status.

Neither dependent variable in this study is continuous. Supervisor rating is ordinal and can be further truncated into a binary variable. Job status is a 3-level nominal variable. Having a continuous dependent variable is often preferred—it can capture more values and lends itself to clear interpretation. However, many outcomes of interest in the social sciences are not continuous. Further, observations may not be available for all cases of interest (Long, 1997). The use of nominal variables lends itself to lack of reliable

information and potentially a lack of knowledge. It can be argued that the basis of the categorization is not known, meaning the underlying cause of the differences in the population is not known (Hanushek & Jackson, 1977). For example, officers within each category may show variation, particularly among those who quit, and these variations are not captured in nominal analyses. While the independent variables will not be able to distinguish differences within categories, of primary importance are the differences between categories which will be captured. Another limitation is that only those officers who fall into the categories of analyses will be examined. For example, officers who retired or died were not examined and therefore any interpretation of the independent variables will not be applicable to these populations.

One of the main issues in using a categorical dependent variable is the interpretation of the independent variables. The use of a linear model (continuous dependent variable) allows for easier interpretation of the impact of the independent variables. For example, for the equation, $y = \alpha + \beta_1 x_1 + \beta_2 x_2$, y is being predicted by two independent variables, x_1 and x_2. In a linear model, the change in y given the change in x_1 (holding x_2 constant) is the same for *all* values of x_1 and x_2. Additionally, when x_1 increases by one unit, y is increased by β_1 units no matter the level of x_1 and x_2 (Long, 1997). When utilizing nominal and ordinal dependent variables, the estimated model is non-linear and interpretation becomes less straightforward. When utilizing the same variables above in a logistic model, the interpretation of x_1 is now dependent on the value of x_2. The effect of a unit change in x_1 differs with the level of both x_1 and x_2. Therefore, the change in y with respect to x_1 now depends on the values of all independent variables in the model (Long, 1997). It is important to note that multivariate models will need to be

interpreted in this matter and that the values of the independent variables can change depending on which ones are entered in the models.

Preliminary analyses of the data were conducted using IBM SPSS Statistics 22 (IBM Corporation, 2013) and included descriptive statistics on all variables of interest: means and standard deviations on continuous variables (i.e., CPI & PAI scales, risk estimates, time on the job, age, PHQ/PsyQ total Problem Points) or counts and percents on categorical variables (i.e., supervisor rating, job status, agency of hire, CPI lifestyle, military experience, law enforcement experience, psychologist's rating, DQ admission). Pearson correlations were used to examine the relationship between CPI and PAI scales to their respective risk estimates as well as to determine relationships between the significant independent variables in the final data chapter.

Analyses of supervisor rating and job status included an examination of mean differences using one-way ANOVAs (or t-test for 2-level supervisor rating) for the continuous independent variables. Chi-square was conducted to assess differences in categorical independent variables. Ordinal logistic regression was conducted using the supervisor rating as an ordinal scale; logistic regression was conducted predicting supervisor rating as a dichotomous scale (satisfactory vs not satisfactory) and multinomial logistic regression was conducted predicting job status (employed vs. fired vs. quit). Bivariate associations were assessed to determine which predictors were statistically significant to be included in a multiple predictor model. Prior to running the final model, VIFs were assessed for the significant independent variables to test for multicollinearity. The Hosmer-Lemeshow test and model c-statistic were used to evaluate model performance and model fit adequacy for binary logistic regression. The

multinomial logistic model fit was assessed through likelihood ratio test, AIC, and Pearson goodness-of-fit. Lastly, slope dummy variables and Chow test analog was conducted in order to assess model differences for the PAI analyses based on defensive responding.

CHAPTER 5

DEMOGRAPHICS & PHQ/PsyQ

This chapter will evaluate the ability of demographic and background variables as measured by the PHQ or PsyQ to predict supervisor rating and job status. A brief summary of the demographic and background characteristics will be discussed first. Frequencies and descriptive statistics for each of the independent measures will then be provided. Bivariate analyses will follow and finally multivariate analyses will be conducted to predict supervisor rating and job status.

Independent Measures

Study Variables

Agency of hire was captured for the entire sample. Correctional officers were evenly distributed by Agency (Table 5-1), with 35% hired by Agency A, 32% at Agency B and 33% at Agency C. Two dummy variables (Agency A: 0-no, 1-yes; Agency B; 0-no, 1-yes) were added to the regression models for both supervisor rating and job status as a control. Agency C was used as the reference category.

Demographics

Age (continuous), gender, race and education were captured for the entire sample. The mean age at time of application was 28.4 years (Table 5-1). The majority of correctional officers were male (84.3%) and white (91%). Since past research has found some college education or more to be related to positive performance (Davis & Rostow, 2003; Office of the Inspector General, 2011; Cohen & Chaiken, 1972; Carter, Sapp, & Stephens, 1989; Terrill & Mastrofski, 2002), a dichotomous variable was created for

education (0-high school diploma/GED, 1-some college or higher). The majority of correctional officers had some college or higher education (70%).

Additionally, previous military experience and law enforcement experience were also captured on the PHQ and PsyQ. Dichotomous variables for prior military experience (1-yes, 0-no) and prior law enforcement experience (1-yes, 0-no) were created due to the small number of correctional officers who had these experiences.[11] Only 18% had previous military experience and fewer (12.4%) had prior law enforcement experience.

Table 5-1. Study Characteristics and Demographics for the Total Sample (N=421).

	M (SD)
Age	28.40 (6.69)
	N (%)
Agency	
--A	148 (35.2%)
--B	135 (32.1%)
--C	138 (32.8%)
Male	355 (84.3%)
White	383 (91.0%)
Some college or higher	293 (69.6%)
Military experience[a]	76 (18.1%)
Prior LE experience[b]	52 (12.4%)

[a]n=408
[b]n=407

Personal History Questionnaire (PHQ)/Psychological History Report (PsyQ)

In order to assess correctional officers' background history the PHQ or PsyQ was administered. Correctional officers tested between 1997 and 2001 were given the PHQ. The PsyQ replaced the PHQ in 2002. While many of the items overlap, the PsyQ added

[11] The PHQ and PsyQ have a number of items related to the military and law enforcement sections. Generally, these items are analyzed as a set. However, with the limited number of officers who actually completed the section it was decided to not analyze the remaining items and only the qualifying item. Additionally, there were a handful of officers who did not answer the qualifying item for these sections, leaving a sample of n=408 for military experience and n=407 for law enforcement experience.

an additional 60 items and replaced 29 other items. Each response is provided with one score using the following classifications: NP (0): No problem; S1 (1): A relatively minor problem, which is nevertheless worth noting; S2 (2): A moderately serious problem, but one which would definitely not justify rejection by itself; S3 (3): A quite serious problem, which nearly justifies rejection by itself; DQ1 (6): A problem that, by itself, justifies disqualification; however, mitigating factors may rule against rejection; or DQ2 (7): A problem that, by itself, justifies disqualification, regardless of mitigating factors (Roberts & Johnson, 2006, slide 26).

Items are grouped into one of the following categories on both measures:

- Education (e.g., 'What is the highest level of education you have completed?', 'What was your letter grade average in high school?')
- Employment (e.g., 'Are you currently employed?', 'How often are you tardy or late to work?')
- Military (e.g., 'How long did you serve in the military on active duty?', 'What type of military discharge did you receive?')
- Law Enforcement (e.g., 'Do you have any law enforcement experience?', 'During the time you have been a law enforcement officer, how may citizen's complaints were formally filed against you?')
- Driving (e.g., 'Do you currently have a valid driver's license issued by this state?', 'How many traffic citations (other than parking) have you had since you started driving?')
- Financial (e.g., 'Are you able to pay all of your monthly bills, on time?', 'Have you ever failed to file an income tax return?')

- Legal (e.g., ‘Have you ever been questioned as a suspect in any crime?’, ‘Did you ever buy anything that you suspected was stolen?’)
- Substance Abuse (e.g., ‘On average, about how much alcohol do you drink?, ‘During the last 12 months, how often have you tried , used or experimented with marijuana?’)
- General (e.g., ‘Do you have any prejudices that you are aware of against any group?, ‘If it became necessary to shoot another human being in the course of carrying out your law enforcement duties, would you be willing to do so?’).

The additional items on the PsyQ added in the following categories:

- Development (e.g., ‘Did your parents have problem with alcohol during the time you were living at home?’, ‘Were you ever suspended or expelled from high school for any reason?’)
- Adult Relationships (e.g., ‘How many times have you been married?’, ‘Have you ever slapped, punched, or otherwise struck or injured a spouse or romantic partner?’)
- Parenting (e.g., ‘Are you currently delinquent with any child support obligations?’, ‘Have you or your spouse ever been referred to Child Protective Services?’)
- Psychological (e.g., ‘Have you ever voluntarily consulted with a psychologist, psychiatrist, or family counselor for any reason?’, ‘Have you ever attempted suicide?’)
- Sexual (e.g., ‘Have you ever used the services of a prostitute?’, ‘Have you ever had sexual contact with someone 14 years old or younger?’).

Upon examination of the items in the categories that overlapped between the two measures, it was determined there was not a one-to-one match (see Appendix C). Therefore, in order to analyze the impact of background history on performance, the sample needed to be split based on measure (PHQ vs PsyQ).

For all categories other than education, law enforcement and military, all items were included to examine the number of serious (S1-S3 responses) and critical (DQ1-DQ2) admissions. Problem points for any items scoring S1-S3 were totaled across all categories (overall) and for each category. Due to the low number of critical admissions, any critical admission no matter the number was flagged into a dichotomous variable (1=yes, at least one DQ admission; 0=no DQ admission).

Serious and Critical Admission Frequencies. The purpose of the PHQ and PsyQ is to identify potential red flags in the candidate's history for the purpose of screening out. Therefore, item responses are flagged by serious (S1-S3) and critical (DQ1 & DQ2) admissions. Table 5-2 provides a breakdown of the number of correctional officers who had at least one serious or critical admission by PHQ or PsyQ category and across all categories (overall). The majority of all correctional officers had at least one serious admission throughout the measure, with 95% of those who took the PHQ and 99% who took the PsyQ. S1 and S2 responses were most common. Ninety percent of correctional officers who took the PHQ had at least one S1 or S2 response. Similarly, 99% of correctional officers who took the PsyQ had at least one S1 admission and 95% had at least one S2 response. A critical admission can be grounds for not recommending a candidate unless there are mitigating factors. Not surprisingly, only about a quarter of

correctional officers had a critical admission, with 26% of officers who took the PHQ and 22% who took the PsyQ.

When examining the questionnaire categories, approximately half of all correctional officers taking the PHQ received at least one serious admission in each of the categories, with 57.6% having at least one serious admission in the Legal category, 53.2% having at least one S1 in the Financial category and 48% having at least one S2 in the Substance Abuse category (Table 5-2). Fewer correctional officers had any kind of critical admission among the categories, with 12.8% of correctional officers having either a DQ1 or DQ2 in the Substance Abuse category. No officers had a critical admission in the Employment or Financial categories.

There were bigger differences between categories for correctional officers who took the PsyQ, with 87% having any kind of serious admission in the Substance Abuse category. [12] The most common was S1 (81%) followed by a S2 (76%). Fifty-five percent of officers had a S1 admission in the Employment category, while 49% had a S1 admission in the Development category. Very few correctional officers had any kind of serious admission in the Sexual (5.7%) or Parenting (6.5%) categories. Similarly to those who took the PHQ, few officers had a critical admission among the categories, with the most common category being Substance Abuse. Approximately 14% of officers had a critical admission in this category, with the majority having a DQ1 response (13%).

[12] Differences in frequencies between those who took the PHQ and PsyQ cannot be solely attributed to differences in history or time period. For example, items in the substance abuse category are not the same between the tests. The PsyQ has an additional five questions that could produce a serious or critical response. For example, if an officer answers 3-5 drinks for the question 'How many drinks does it take before you feel the first effects of alcohol?' they are scored S1 on the PsyQ. Approximately, 48% of officers answered in this manner.

Problem Points. One of the main methods of screening out candidates is through the calculation of problem points based on the number of S1-S3 admissions. Some departments have specific cut-offs for the number of problem points a candidate can have. However, the departments in this study do not employ a cutoff. The distribution of the problem points for the categories and overall were skewed due to the majority of officers having few serious admissions in most of the categories. Means and standard deviations for the total problem points by category and overall are shown in Table 5-3. For officers who took the PHQ, the mean problem points were approximately 1.5 for the Employment, Driving, and Financial categories, reflecting that on average officers had just over one S1 admission in these categories. For officers who took the PsyQ, Driving, Financial and Legal categories had also had mean problem points around 1.5. For officers who took the PHQ and PsyQ, the Substance Abuse category had the highest mean, with a mean of 3.66 problem points for officers who took the PHQ and 6.64 problem points for those who took the PsyQ. Overall, on average, correctional officers had 11 problem points while taking the PHQ and 16.6 problem points for the PsyQ.

Table 5-2. Number of Correctional Officers Who Had a Serious or Critical Admission by Type and PHQ/ PsyQ Category.

	PHQ (n=173)						
	S1	**S2**	**S3**	**Any S**	**DQ1**	**DQ2**	**Any DQ**
Employment	58 (33.5%)	51 (29.4%)	13 (7.6%)	95 (54.9%)	0 (0.0%)	*	0 (0.0%)
Driving	52 (30.0%)	65 (37.8%)	20 (11.6%)	97 (56.1%)	4 (2.3%)	*	4 (2.3%)
Financial	92 (53.2%)	44 (25.4%)	0 (0.0%)	98 (56.6%)	0 (0.0%)	*	0 (0.0%)
Legal	71 (41.3%)	76 (44.2%)	26 (15.1%)	99 (57.6%)	12 (7.0%)	0 (0.0%)	12 (7.0%)
Substance Abuse	78 (45.3%)	83 (48.2%)	40 (23.2%)	96 (55.8%)	20 (11.6%)	4 (2.3%)	22 (12.8%)
General	37 (21.5%)	21 (12.2%)	12 (7.0%)	61 (35.5%)	0 (0.0%)	12 (7.0%)	12 (7.0%)
OVERALL	154 (89.0%)	154 (89.0%)	80 (46.5%)	164 (94.8%)	36 (20.9%)	12 (6.9%)	46 (26.6%)

	PsyQ (n=246)						
	S1	**S2**	**S3**	**Any S**	**DQ1**	**DQ2**	**Any DQ**
Employment	135 (54.9%)	78 (31.7%)	17 (6.9%)	156 (63.4%)	3 (1.2%)	0 (0.0%)	3 (1.2%)
Driving	74 (30.1%)	97 (39.4%)	22 (8.9%)	136 (55.3%)	6 (2.4%)	*	6 (2.4%)
Financial	114 (46.3%)	62 (25.2%)	3 (1.2%)	126 (51.2%)	2 (0.8%)	*	2 (0.8%)
Legal	102 (41.5%)	74 (30.1%)	36 (14.6%)	127 (51.6%)	11 (4.5%)	1 (0.4%)	11 (4.5%)
Substance Abuse	199 (80.9%)	187 (76.0%)	74 (30.1%)	214 (87.0%)	33 (13.4%)	10 (4.1%)	34 (13.8%)
General	76 (30.9%)	20 (8.1%)	16 (6.5%)	96 (39.0%)	1 (0.4%)	2 (0.8%)	3 (1.2%)
Development	121 (49.2%)	85 (34.6%)	0 (0.0%)	147 (59.8%)	*	*	*
Adult Relations	22 (8.9%)	24 (9.8%)	15 (6.1%)	43 (17.5%)	4 (1.6%)	1 (0.4%)	4 (1.6%)
Parenting	8 (3.2%)	0 (0.0%)	8 (3.2%)	16 (6.5%)	1 (0.4%)	*	1 (0.4%)
Psychological	50 (20.3%)	40 (16.3%)	29 (11.8%)	63 (25.6%)	1 (0.4%)	0 (0.0%)	1 (0.4%)
Sexual	7 (2.8%)	4 (1.6%)	5 (2.0%)	14 (5.7%)	0 (0.0%)	*	0 (0.0%)
OVERALL	243 (98.8%)	234 (95.1%)	145 (58.9%)	243 (98.8%)	52 (21.1%)	14 (5.7%)	55 (22.4%)

*No items in this category score at this level.

Table 5-3. Means and Standard Deviations for Total Problem Points (S1-S3) by Test Type and Category.

	PHQ (n=173) Problem Points M (SD)	**PsyQ (n=246) Problem Points** M (SD)
Employment	1.49 (1.87)	2.13 (2.74)
Driving	1.62 (1.92)	1.64 (1.91)
Financial	1.36 (1.66)	1.31 (1.79)
Legal	2.28 (2.75)	1.83 (2.52)
Substance Abuse	3.66 (5.06)	6.64 (5.86)
General	0.69 (1.11)	0.72 (1.27)
Development	--	2.36 (3.26)
Adult Relationships	--	0.58 (1.67)
Parenting	--	0.15 (0.65)
Psychological	--	1.40 (2.90)
Sexual	--	0.15 (0.74)
OVERALL	11.10 (7.69)	16.56 (11.06)

Predictors of Supervisor Rating

Demographics

Table 5-4 provides the chi-square and ANOVA results for the differences in supervisor rating on an ordinal scale and as a 2-category variable by demographic characteristics. There were no significant differences in age, race, education, past military experience and past law enforcement experience across supervisor rating at the ordinal or dichotomous level. However, gender was significantly different across supervisor rating (ordinal) with females receiving more F ratings (17.0%) compared to males (3.3%; χ^2 (5) = 16.20, $P < 0.01$). Gender was also significant when supervisor rating was dichotomized, χ^2 (1) = 5.06, $P < 0.05$, with more females rated unsatisfactory compared to males.

Table 5-4. Differences in Demographic Characteristics across Supervisor Rating (n=318).

	Supervisor Rating (ordinal)													Supervisor Rating (2-level)				
	A		B		C		C-		D		F			Satisfactory		Not Satisfactory		
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*M*	*SD*	*M*	*SD*	*t*
Age	28.25	7.02	27.98	5.57	29.15	7.10	29.08	7.18	27.06	5.76	25.41	3.14	1.15	28.40	6.56	26.98	5.49	-1.40
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	χ^2	*N*	*%*	*N*	*%*	χ^2
Gender																		
Male	91	33.6%	81	29.9%	64	23.6%	10	3.7%	16	5.9%	9	3.3%	**16.20****	236	87.1%	35	12.9%	**5.06***
Female	10	21.3%	14	29.8%	11	23.4%	2	4.3%	2	4.3%	8	17.0%		35	74.5%	12	25.5%	
Race																		
White	92	31.7%	84	29.0%	71	22.3%	11	3.8%	17	5.9%	15	5.2%	2.46	247	85.2%	43	14.8%	0.01
Other	9	32.1%	11	39.3%	4	14.3%	1	3.6%	1	3.6%	2	7.1%		24	85.7%	4	14.3%	
Education																		
GED/HS	29	27.4%	28	26.4%	28	26.4%	4	3.8%	6	5.7%	11	10.4%	9.68	85	87.7%	21	19.8%	3.20
Some college or higher	72	34.0%	67	31.6%	47	22.2%	8	3.8%	12	5.7%	6	2.8%		186	80.2%	26	12.3%	
Military exp.																		
Yes	14	20.6%	26	38.2%	18	26.5%	2	2.9%	5	7.4%	3	4.4%	6.09	58	85.4%	10	14.6%	0.00
No	82	34.3%	67	28.0%	55	23.0%	9	3.8%	12	5.0%	14	5.9%		204	85.3%	35	14.7%	
Prior LE exp.																		
Yes	13	27.7%	15	31.9%	13	27.7%	2	4.3%	0	0.0%	4	8.5%	5.57	41	87.2%	6	12.8%	0.13
No	86	33.5%	76	29.6%	57	22.2%	8	3.1%	18	7.0%	12	4.7%		219	85.2%	38	14.8%	

*P<0.05, **P<.01

Prediction Results. In order to examine which demographic variables were predictors of supervisor rating individually, bivariate ordinal regression was conducted. Gender ($\beta = 0.69$, $P < 0.05$) and education ($\beta = 0.46$, $P < 0.05$) were found to be significant predictors of supervisor rating at the ordinal level. Age, race, military experience and law enforcement experience were not significant predictors. A multivariate ordinal logistic model was run with the significant bivariate predictors adding agency to the model as a control variable. The introduction of agency into the final model led to many problems[13]. In order to correct for this, ratings were examined dichotomously.

At the bivariate level with 2-level supervisor rating, agency and gender were significant (Table 5-5). Both Agency A (OR: 14.46; 95% CI: 5.98, 34.93) and Agency B (OR: 9.22; 95% CI: 3.78, 22.48) were more predictive of satisfactory supervisory ratings compared to Agency C. Satisfactory supervisor ratings were more likely among men (OR: 2.3; 95% CI: 1.10, 4.87).

Multicollinearity was assessed on these predictors through calculation of VIF. All VIF values were under 2, well under the recommendation of 10. Multiple binary logistic regression was run using agency and gender. For the final model, Hosmer and Lemeshow goodness of fit was not significant (χ^2 (4) = 1.41, $P = 0.842$) and the c-statistic was 0.79 indicating good fit of the data. The final model included agency as a significant predictor of supervisor rating (Table 5-5). Officers from Agency A (OR: 13.73; 95% CI: 5.61,

[13] Upon running ordinal regression while controlling for agency, the assumption of parallel lines was violated using both the logit link and cloglog link. When parallel lines is violated, the recommendation is to use multinomial regression, even though categories are treated as nominal (Chen & Hughes, 2004). Therefore, multinomial regression was conducted but also resulted in error. There were unexpected singularities in the model, meaning that certain categories of supervisor ratings were not distributed properly for each agency.

33.59) or Agency B (OR: 8.93; 95% CI: 3.65, 21.88) being more likely to be rated satisfactory over Agency C. Gender was not significant in the final model.

Table 5-5. Logistic Regression Results of Agency and Demographics on Supervisor Rating (Satisfactory^ vs. Not Satisfactory) (n=318).

	Bivariate OR (95% CI)	**Final Model** OR (95% CI)
Agency		
--A	**14.46 (5.98, 34.93)****	**13.73 (5.61, 33.59)***
--B	**9.22 (3.78, 22.48)****	**8.93 (3.65, 21.88)***
Gender (Male)	**2.31 (1.10, 4.87)***	1.33 (0.57, 3.10)
Race (White)	0.96 (0.32, 2.90)	
Education (Some college or higher)	1.77 (0.94, 3.32)	
Military exp.	0.99 (0.46, 2.13)	
Law enforcement exp.	1.19 (0.47, 2.98)	

^ Reference category
**P* < 0.001

Problem Points & DQ Admission

Table 5-6 provides the chi-square and ANOVA results for the differences in supervisor rating on an ordinal scale by DQ admission (1-yes, 0-no), total problem points overall and total problem points for each PHQ or PsyQ category. For correctional officers who took the PHQ, none of the predictor variables were significantly different across supervisor rating. For correctional officers who took the PsyQ, there were significant differences in total problem points based on category. Officers who were given a C- rating by their supervisor, on average, had more problem points in the Driving category than the other ratings (F (5,152) = 2.68, $P < 0.05$). Tukey post hoc test revealed the mean problem points for the C- rating (M = 3.57) was significantly higher than the mean

problem points for A rating (M = 1.21), C rating (M = 1.28) or F (M = 0.89). Correctional officers who received a D rating by their supervisor, on average, had more problem points in the Legal category than the other ratings (F (5, 152) = 3.46, $P < 0.01$). Tukey post hoc analysis revealed that the mean problems points for the D rating (M=6.00) were significantly higher than the mean problem points for A (M = 1.72), B (M = 1.66) and C (M = 1.56) ratings. In the Adult Relationship category, officers who received a C- from the supervisor had higher mean problem points compared to those scored A, B, C or D, F (5,152) = 5.25, $P < 0.001$.

Supervisor rating (2-level) produced similar results with the exception of the Driving category (Table 5-7). Both the Legal and Adult Relationship categories showed significant differences across supervisor rating. Officers who were rated satisfactory by their supervisor had significantly lower mean problem points in the Legal category compared to those who were rated not satisfactory (1.65 vs. 3.40; t (151) = 2.95, $P < 0.01$). The same pattern was found for the Adult Relationship category, where the mean problem points for those rated satisfactory (M=0.46) were lower than those rated not satisfactory (M=1.80; t (151) = 3.14, $P < 0.01$).

Table 5-6. Differences in DQ Admission and Problem Points across Supervisor Rating (Ordinal) by Test Type.

PHQ (n=163)

	A		B		C		C-		D		F		
	N	***%***	***N***	***%***	***N***	***%***	***N***	***%***	***N***	***%***	***N***	***%***	χ^2
DQ Admission													
Yes	10	22.7	17	38.6	8	18.2	1	2.3	4	9.1	4	9.1	6.09
No	43	36.1	31	26.1	28	23.5	3	2.5	10	8.4	4	3.4	
	M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F***
Employment	1.43	1.92	1.31	1.86	1.92	1.96	0.75	1.50	0.86	1.35	2.00	2.20	1.02
Driving	1.34	1.74	1.48	2.02	2.00	1.51	1.00	2.00	1.93	2.49	3.25	2.60	1.88
Financial	1.28	1.85	1.75	1.73	1.36	1.46	0.75	1.50	0.57	0.76	1.75	1.91	1.37
Legal	2.09	2.43	2.35	2.84	2.33	2.93	1.25	2.50	2.93	2.76	1.75	2.19	0.40
Substance Abuse	3.45	4.64	4.31	6.77	2.83	3.67	3.00	6.00	5.43	4.50	2.75	4.30	0.73
General	0.47	0.91	0.57	1.01	1.08	1.18	0.00	0.00	0.93	1.27	0.75	1.39	2.13
Development	--	--	--	--	--	--	--	--	--	--	--	--	--
Adult Relations	--	--	--	--	--	--	--	--	--	--	--	--	--
Parenting	--	--	--	--	--	--	--	--	--	--	--	--	--
Psychological	--	--	--	--	--	--	--	--	--	--	--	--	--
Sexual	--	--	--	--	--	--	--	--	--	--	--	--	--
OVERALL	10.08	7.16	11.75	8.91	11.53	6.79	6.75	7.41	12.64	6.71	12.25	9.28	0.68

PsyQ (n=153)

	A		B		C		C-		D		F		
	N	***%***	***N***	***%***	***N***	***%***	***N***	***%***	***N***	***%***	***N***	***%***	χ^2
DQ Admiss.													
Yes	11	32.4	11	32.4	8	23.5	0	0.0	2	5.9	2	5.9	3.93
No	36	30.3	36	30.3	31	26.1	7	5.9	2	1.7	7	5.9	
	M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F***
Employment	1.77	2.36	2.68	3.26	2.18	2.04	2.00	1.73	1.25	1.50	0.78	2.33	1.21
Driving	**1.21**	1.63	**1.63**	1.72	**1.28**	2.01	**3.57**	1.40	**1.25**	0.96	**0.89**	1.17	**2.68***
Financial	0.98	1.52	1.19	1.54	1.77	1.87	1.57	2.15	0.50	1.00	0.78	1.09	1.44
Legal	**1.72**	2.72	**1.66**	2.22	**1.56**	2.07	**3.86**	3.98	**6.00**	1.82	**1.89**	2.14	**3.42****
Substance Abuse	8.24	7.19	6.96	5.35	6.31	5.05	5.28	3.95	10.25	2.22	5.44	3.20	1.12
General	0.55	0.75	0.68	0.89	0.59	0.94	0.14	0.38	1.25	2.50	0.56	0.53	0.90
Development	1.68	2.84	2.45	3.03	3.28	4.07	5.43	4.96	2.00	2.31	2.89	3.98	2.01
Adult Relations	**0.21**	0.93	**0.79**	1.97	**0.36**	1.01	**3.57**	5.09	**0.00**	0.00	**1.22**	1.64	**5.25*****
Parenting	0.06	0.44	0.25	0.76	0.13	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.72
Psychological	1.08	3.35	0.79	1.70	1.97	3.30	1.29	2.63	0.00	0.00	2.44	3.13	1.26
Sexual	0.38	1.26	0.06	0.44	0.05	0.22	0.86	2.27	0.00	0.00	0.00	0.00	1.75
OVERALL	16.32	15.12	16.70	9.12	16.20	8.79	22.14	13.72	20.50	1.29	14.00	5.61	0.55

*$P < 0.05$, ** $P < 0.01$, ***$P < 0.001$

Table 5-7. Differences in DQ Admission Proportions and Mean Problem Points across Supervisor Rating (2-level) by Test Type.

	PHQ (n=163)					PsyQ (n=153)				
	Satisfactory		Not Satisfactory			Satisfactory		Not Satisfactory		
	N	***%***	***N***	***%***	χ^2	***N***	***%***	***N***	***%***	χ^2
DQ Admission										
Yes	35	79.5	9	20.5	0.91	30	88.2	4	11.8	0.07
No	102	85.7	17	14.3		103	86.6	16	13.4	
	M	***SD***	***M***	***SD***	***t***	***M***	***SD***	***M***	***SD***	***t***
Employment	1.51	1.91	1.19	1.70	-0.81	2.21	2.64	1.30	1.98	-1.48
Driving	1.56	1.80	2.19	2.50	1.53	1.38	1.78	1.90	1.71	1.22
Financial	1.47	1.72	0.96	1.37	-1.42	1.28	1.66	1.00	1.52	-0.73
Legal	2.25	2.69	2.31	2.56	0.10	**1.65**	2.35	**3.40**	3.17	**2.95***
Substance Abuse	3.59	5.28	4.23	4.67	0.58	7.26	6.01	6.35	3.74	-0.65
General	0.66	1.05	0.73	1.22	0.32	0.61	0.85	0.55	1.14	-0.28
Development	--	--	--	--	--	2.42	3.35	3.60	4.16	1.42
Adult Relation.	--	--	--	--	--	**0.46**	1.42	**1.80**	3.36	**3.14***
Parenting	--	--	--	--	--	0.15	0.63	0.00	0.00	-1.06
Psychological	--	--	--	--	--	1.25	2.88	1.55	2.68	0.45
Sexual	--	--	--	--	--	0.17	0.81	0.30	1.34	0.59
OVERALL	11.04	7.72	11.62	7.66	0.35	16.42	11.44	18.15	9.39	0.64

*$P < .01$

Prediction Results. In order to examine if DQ admission or problem points were predictors of supervisor rating individually, bivariate ordinal regression was conducted for each assessment (Table 5-8). None of the problem point categories or DQ admissions were found to be significant predictors of supervisor rating (2-level) for the PHQ; only agency was significant. Therefore, a final model was not run for the PHQ sample. For officers who took the PsyQ, agency, Legal and Adult Relationships were significant predictors. Agency displayed a similar pattern as earlier, with Agency A and B more predictive of rating officers satisfactory compared to Agency C. Lower problem points in the Legal category was predictive of satisfactory ratings (OR: 0.80; 95% CI: 0.68, 0.94). Additionally, lower problem points in the Adult Relationship category was predictive of officers being rated satisfactory (OR: 0.77; 95% CI: 0.62, 0.95).

Multicollinearity was assessed on these predictors through calculation of VIF. All VIF values were under 2, well under the recommendation of 10. Multiple binary logistic regression was run using these significant predictors. For the final model, Hosmer and Lemeshow goodness of fit was not significant (χ^2 (7) = 2.694, P = 0.912) and the c-statistic was 0.82 indicating good fit of the data. The final model included all three of the factors significant at the bivariate level: agency, Legal problem points and Adult Relationship problem points (Table 5-8). Agency again had the largest effect in the model, with officers from Agency A (OR: 12.70; 95% CI: 2.43, 66.30) or Agency B (OR: 6.77; 95% CI: 1.91, 24.02) being more likely to be rated satisfactory over Agency C. Problem points in the Legal and Adult Relationship categories remained significant. Lower problem points in the Legal category was predictive of satisfactory ratings, holding agency and Adult Relationship problem points constant (OR: 0.82; 95% CI: 0.68, 0.99). Additionally, lower problem points in the Adult Relationship category was predictive of officers being rated satisfactory holding agency and Legal problem points constant (OR: 0.76; 95% CI: 0.59, 0.98).

Table 5-8. Logistic Regression Results of DQ Admission and Problem Points on Supervisor Rating (Satisfactory^ vs. Not Satisfactory) by Test Type.

	PHQ (n=163)		PsyQ (n=153)	
	Bivariate OR (95% CI)	**Final Model[a]** OR (95% CI)	**Bivariate** OR (95% CI)	**Final Model** OR (95% CI)
Agency				
--A	**28.12 (8.49, 93.19)****		**10.53 (2.22, 50.08)****	**12.70 (2.43, 66.30)****
--B	**19.38 (4.02, 93.48)****		**5.11 (1.66, 15.73)****	**6.77 (1.91, 24.02)****
DQ Admission (Yes)	0.65 (0.26, 1.59)		1.16 (0.36, 3.75)	
Employment	1.11 (0.86, 1.42)		1.24 (0.94, 1.64)	
Driving	0.86 (0.70, 1.05)		0.86 (0.67, 1.10)	
Financial	1.24 (0.92, 1.69)		1.13 (0.82, 1.55)	
Legal	0.99 (0.85, 1.16)		**0.80 (0.68, 0.94)****	**0.82 (0.68, 0.99)***
Substance Abuse	0.98 (0.91, 1.06)		1.03 (0.94, 1.14)	
General	0.94 (0.64, 1.37)		1.08 (0.62, 1.89)	
Development	--	--	0.92 (0.82, 1.03)	
Adult Relationships	--	--	**0.77 (0.62, 0.95)***	**0.76 (0.59, 0.98)***
Parenting	--	--	--[b]	
Psychological	--	--	0.97 (0.83, 1.12)	
Sexual	--	--	0.88 (0.57, 1.35)	
OVERALL	0.99 (0.94, 1.04)		0.99 (0.95, 1.02)	

^Reference category

[a]Since only agency was found significant at the bivariate level, a final model was not run.

[b]There were no officers with problem points in the not satisfactory category, therefore, logistic regression could not be run for this category.

*$P < .05$, ** $P < .01$

Predictors of Job Status

Demographics

Table 5-9 shows the differences across job status categories for the demographic variables using ANOVA and chi-square. Age was significantly different by job status ($F(2,416) = 4.67$, $P < 0.01$). Tukey HSD demonstrated that those who quit were younger than those who were currently employed ($P < 0.01$). Race was significantly different across job groups, χ^2 (2) = 17.44, $P < 0.001$, with whites more likely to be currently employed and other races to have been fired. Education was also significantly different, with persons who were currently employed more likely to have HS/GED. Those who had some college or higher were more likely to quit, χ^2 (2) = 6.87, $P < 0.05$. Correctional officers with past law enforcement experience compared to those without were less likely to be currently employed (48.1% vs. 71.9%, respectively) and more likely to have quit (44.2% vs. 21.3%, respectively), χ^2 (2) = 13.59, $P < 0.001$. Gender and previous military experience were not significantly different.

Prediction Results. Bivariate multinomial logistic regressions with each predictor were conducted in order to determine how each was associated with job status (Table 5-10). The same patterns emerged as with the chi-square and ANOVA results. Officers who were younger (OR: 0.94; 95% CI: 0.90, 0.98), had some college or higher (OR: 1.91; 95% CI: 1.10, 3.31), or previous law enforcement experience (OR: 3.10; 95% CI: 1.67, 5.78) were more likely to quit compared to stay on the job. Non-white officers were more likely to be fired (OR: 0.17; 95% CI: 0.70, 0.43) than be employed.

Multicollinearity was assessed on these predictors through calculation of VIF. All VIF values were under 2, well under the recommendation of 10. Multinomial logistic

regression was conducted with all predictors found significant at the bivariate level above (Table 5-10). For the final model, the likelihood ratio test was significant (χ^2 (12) = 55.86, $P < 0.001$) and the AIC was reduced from 477.252 to 445.40. However, the Pearson goodness-of-fit was significant (χ^2 (350) = 451.16, $P < 0.001$), which indicates a lack of model fit. The multivariate model yielded the same results as at the bivariate analysis. Correctional officers at Agency A were more likely to quit than remain on the job, holding other variables constant. Additionally, non-White correctional officers were more likely to be fired than currently employed (OR: 0.16; 95% CI: 0.06. 0.41). Those officers who quit were younger than those on the job (OR: 0.92; 95% CI: 0.88, 0.97). Officers with some college or higher were more likely to quit than stay on the job (OR: 1.84; 95% CI: 1.01, 3.34). Lastly, officers with prior law enforcement experience were more likely to quit than stay on the job (OR: 3.89; 95% CI: 1.97, 7.67), holding other variables constant.

Table 5-9. Differences in Demographic Characteristics by Job Status (N=417).

	Employed		Fired/Forced Resignation		Voluntary Resignation		
	M	**SD**	**M**	**SD**	**M**	**SD**	**F**
Age	28.88	7.00	29.23	7.28	26.63	4.66	**4.67****
	N	**%**	**N**	**%**	**N**	**%**	χ^2
Gender							
Male	239	67.9%	25	7.1%	88	25.0%	1.98
Female	49	75.4%	5	7.7%	11	16.9%	
Race							
White	268	70.7%	21	5.5%	90	23.7%	**17.44*****
Other	20	52.6%	9	23.7%	9	23.7%	
Education							
GED/HS	94	74.6%	12	9.5%	20	15.9%	**6.87***
Some college or higher	194	66.7%	18	6.2%	79	27.1%	
Military exp.							
Yes	54	72.0%	4	5.3%	17	22.7%	0.71
No	225	68.2%	26	7.9%	79	23.9%	
Prior LE exp.							
Yes	25	48.4%	4	7.7%	23	44.2%	**13.59*****
No	253	71.9%	24	6.8%	75	21.3%	

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

Table 5-10. Multinomial Logistic Regression Results of Agency and Demographic Characteristics on Job Status^ .

	Bivariate (N=417)		Final Model (n=404)	
	Fired/Forced Resignation	**Voluntary Resignation**	**Fired/Forced Resignation**	**Voluntary Resignation**
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Agency				
--A	0.40 (0.15, 1.08)	**1.67 (1.05, 2.65)***	0.56 (0.18, 1.78)	**1.86 (1.02, 3.39)***
--B	**2.27 (1.06, 4.85)***	1.04 (0.63, 1.70)	1.75 (0.70, 4.39)	1.37 (0.73, 2.58)
Age	1.01 (0.96, 1.06)	**0.94 (0.90, 0.98)****	0.99 (0.93, 1.05)	**0.92 (0.88, 0.97)****
Gender (Male)	1.02 (0.37, 2.81)	1.64 (0.82, 3.30)		
Race (White)	**0.17 (0.70, 0.43)*****	0.75 (0.33, 1.70)	**0.16 (0.06, 0.41)*****	0.75 (0.32, 1.80)
Education (Some college or higher)	0.73 (0.34, 1.57)	**1.91 (1.10, 3.31)***	0.71 (0.30, 1.68)	**1.84 (1.01, 3.34)***
Military exp.	0.64 (0.22, 1.91)	0.90 (0.49, 1.64)		
Law enforcement exp.	1.69 (0.54, 5.25)	**3.10 (1.67, 5.78)*****	1.47 (0.44, 4.92)	**3.89 (1.97, 7.67)*****

^Currently employed is the reference category.
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

Problem Points & DQ Admission

The chi-square and ANOVA results examining the impact of DQ admission and problem points on job status are shown in Table 5-11. Officers who took the PHQ and had a DQ admission fell into the employed or fired categories compared to officers who had quit (χ^2 (2) = 9.77, $P < 0.01$). Overall problem points for officers who took the PHQ were significantly different across job status, F (2,171) = 6.97, $P < 0.001$. Tukey post hoc revealed officers who quit had lower problem points, on average, compared to those who were fired ($P < 0.01$) or currently employed ($P < 0.01$). Finance problem points also significantly differed by job status, F (2,171) = 3.52, $P < 0.05$. When examining individual comparisons, none were significant, although there was a trend for officers who quit to have lower mean problem points than currently employed officers ($P = 0.055$). Lastly, Driving problems points were significantly different across job status, F (2,171) = 4.34, $P < 0.05$. Officers who quit had significantly lower mean Driving problem points than those who were fired ($P < 0.05$).

For officers who took the PsyQ, there was a significant difference in General problem points, on average, across job status, F (2,243) = 8.96, $P < 0.001$. Tukey post hoc analyses demonstrated that officers who were fired had higher mean General problem points compared to those who were current employees ($P < 0.001$) or had quit ($P < 0.001$). There were no other significant differences in job status for the other categories or DQ admission for those who took the PsyQ.

Table 5-11. Differences in DQ Admission Proportions and Mean Problem Points by Job Status and Test Type.

	PHQ (n=172)							PsyQ (n=244)						
	Employed		Fired/Forced Resignation		Voluntary Resignation			Employed		Fired/Forced Resignation		Voluntary Resignation		
	N	*%*	*N*	*%*	*N*	*%*	χ^2	*N*	*%*	*N*	*%*	*N*	*%*	χ^2
DQ Admission														
Yes	33	71.7	6	13.0	7	15.2	**9.77****	45	81.8	5	9.1	5	9.1	3.78
No	70	55.6	7	5.6	49	38.9		139	73.5	12	6.3	38	20.1	
	M	***SD***	***M***	***SD***	***M***	***SD***	***F***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F***
Employment	1.67	2.04	1.38	1.76	1.21	1.53	1.11	2.17	2.83	2.06	2.66	1.93	2.32	0.14
Driving	**1.80**	1.99	**2.62**	2.43	**1.11**	1.51	**4.34***	1.55	1.84	2.47	2.27	1.79	2.02	1.96
Financial	**1.54**	1.74	**1.92**	1.75	**0.91**	1.40	**3.52***	1.27	1.77	1.53	1.87	1.35	1.86	0.18
Legal	2.37	2.66	3.46	4.03	1.88	2.53	1.87	1.83	2.53	2.65	3.12	1.60	2.19	1.06
Substance Abuse	3.96	5.66	5.46	4.54	2.75	3.78	1.92	6.88	6.14	6.42	5.65	6.00	4.60	0.41
General	0.79	1.15	0.62	1.12	0.54	1.04	0.95	**0.63**	1.06	**1.94**	2.72	**0.63**	0.98	**8.96*****
Development	--	--	--	--			--	2.24	3.24	3.88	3.82	2.28	3.08	2.00
Adult Relationships	--	--	--	--			--	0.59	1.72	0.65	1.37	0.53	1.61	0.03
Parenting	--	--	--	--			--	0.16	0.66	0.06	0.24	0.16	0.75	0.20
Psychological	--	--	--	--			--	1.16	2.77	1.82	2.79	1.98	2.96	1.72
Sexual	--	--	--	--			--	0.15	0.72	0.41	1.46	0.02	0.15	1.71
OVERALL	12.13	7.83	15.46	8.36	8.39	6.29	**6.97*****	16.38	11.33	20.00	9.42	16.00	10.65	0.89

*P < .05, **P < .01, ***P < .001

Prediction Results. Bivariate multinomial logistic regressions with each predictor were conducted in order to determine how each was associated with job status. The same patterns emerged as with the chi-square and ANOVA results. For officers who took the PHQ (Table 5-12), those who had quit were less likely to have a DQ admission (OR: 0.30; 95% CI: 0.12, 0.74) compared to those on the job. Additionally, officers who quit had lower Driving problem points (OR: 0.80; 95% CI: 0.65, 0.98), Finance problem points (OR: 0.76; 95% CI: 0.60, 0.96) and overall problem points (OR: 0.92; 95% CI: 0.88, 0.97) compared to officers who stayed on the job. Multinomial logistic regression was conducted using entry method with predictors found significant at the bivariate level (Table 5-12). No VIF values for the predictors were above 2. For the final model, the likelihood ratio test was significant (χ^2 (8) = 23.15, $P < 0.01$), the AIC was reduced from 272.69 to 265.55, and the Pearson goodness-of-fit was not significant (χ^2 (268) = 265.60, $P = 0.53$) indicating good fit. None of the predictors were significant in the final model. This argues that the impact of problem points and any DQ admission would be considered weak, particularly when holding other variables constant for officers who had taken the PHQ.

For officers who took the PsyQ, the bivariate results are shown in Table 5-13. Agency B was significant, with these officers being more likely to be fired rather than currently employed (OR: 4.29; 95% CI: 1.45, 12.71). Only General problem points was significant and in the same manner as the ANOVA result. Higher General problem points were more predictive of being fired rather than currently employed. A final model was run with Agency B, time on the job and General problem points. For the final model, the likelihood ratio test was significant (χ^2 (4) = 15.90, $P < 0.01$), the AIC was reduced from

75.07 to 67.18 and Pearson goodness-of-fit was not significant (χ^2 (20) = 11.86, P = 0.92), indicating good fit of the data. Both Agency B and General problem points remained significant in the final model and in the same direction. Fired officers were more likely to be from Agency B (OR: 3.47; 95% CI: 1.14, 10.59), holding General problem points constant. Additionally, fired officers were more likely to have higher General problem points (OR: 1.52; 95% CI: 1.10, 2.10) compared to officers who were still employed, holding Agency B constant.

Conclusion

There were some key differences among agencies in regards to performance. Officers from Agencies A and B were more likely to be rated satisfactory compared to officers from Agency C. Ideally, the distributions across agencies would have been more similar (see Table 4-1); however, each supervisor provided a unique range of scores. While it is possible that the general performance of the officers at each agency could be different, it is likely that the single rater demonstrated more influence over the distribution. In regards to job status, officers from Agency A were more likely to quit rather than stay on the job. Further examination of those who quit from Agency A revealed that the majority went on to become deputies and in essence were promoted. It is possible that Agency A allows for increased opportunity for promotions of this type compared to the other agencies.

None of the demographic characteristics significantly predicted supervisor rating, but gender was significant when agency was not in the model. There were few females in the sample (n=66), so any small variations across categories can impact the overall percentages compared to males. The difference between males and females in regards to

negative supervisor ratings was apparent only with Agency B, with 14% of females and 6% of males receiving not satisfactory ratings. However, this 14% was comprised of only two females.

There were some key demographic differences for job status, particularly when examining officers who quit compared to those still employed. Officers who had prior law enforcement experience were more likely to quit than stay on the job. This was expected particularly if officers were using this position as a stepping stone for a law enforcement career. Additionally, officers with some college or higher were also more likely to quit than stay on the job. Past research has shown that increased education has been linked to positive performance (Davis & Rostow, 2003; Office of the Inspector General, 2011; Cohen & Chaiken, 1972; Carter et al., 1989; Terrill & Mastrofski, 2002). It could be that officers with more education find the job less satisfactory and like those with past law enforcement experience may have left due to promotion. Additionally, officers with more education may be more attractive to other employers and have increased opportunities. Younger officers were also more likely to quit than stay on the job, which would be expected. Officers who are older are more likely to be farther along in their career and therefore have more invested in staying. Lastly, non-White officers were more likely to be fired than currently employed. This was an unexpected finding. Similar to gender, there were very few non-White officers in the sample (n=28). Only 6% (n=21) of White officers were fired compared to 23% (n=9) of non-White officers. Across all agencies, non-White officers were more likely to be fired compared to White officers. Fyfe & Kane (2006) found similar results with non-Whites having higher involuntary separation rates compared to Whites among NYPD officers. Overall, the

rates were low (less than 7%) across all race groups studied and it is assumed if the sample of non-Whites in this study were larger a similar pattern would have emerged.

The effect of problem points & any DQ admission varied depending on the background questionnaire administered. The PHQ and PsyQ were analyzed separately since the items were different enough to impact the scoring of problem points. For officers who took the PHQ, DQ admission, overall problem points and problem point categories did not have a significant effect on supervisor ratings or job status in the final models. This argues that the impact of problem points and any DQ admission would be considered weak particularly when holding other variables constant for officers who had taken the PHQ. However for officers who took the PsyQ, certain problem point categories were significantly related to supervisor ratings and job status. The reason why the PsyQ may be better able to predict performance could be due to the item and categorical revisions from the original PHQ. The Legal and Adult Relationship categories significantly predicted supervisor rating in the final model. Lower Legal and Adult Relationship problem points were more likely for officers rated as satisfactory which was expected. Officers who had admitted to fewer legal issues and reported increased stable adult relationships were more predictive of satisfactory ratings.

General problem points were significantly related to job status. It was predicted that officers who were fired would have higher problem points compared to officers currently employed or who quit. As predicted, fired officers were more likely to have higher General problem points compared to officers who are still employed. The General category contains items that others would agree would have an impact on future performance. Items cover issues such as, the ability to use force, including deadly force,

when necessary, previous involvement in physical fights, and past rejections from a job due to lying or screening issues.

Table 5.12. Multinomial Logistic Regression Results of DQ Admission and Problem Point Categories on Job Status^ for Officers who Took the PHQ (n=173).

	Bivariate		Final Model	
	Fired/Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)	**Fired/Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)
Agency				
--A	0.39 (0.11, 1.34)	1.57 (0.80, 3.07)		
--B	1.10 (0.28, 4.36)	1.47 (0.70, 3.10)		
DQ Admission (yes)	1.82 (0.57, 5.84)	**0.30 (0.12, 0.74)****	1.46 (0.40, 5.29)	0.42 (0.16, 1.07)
Employment	0.92 (0.67, 1.27)	0.87 (0.72, 1.05)		
Driving	1.20 (0.92, 1.55)	**0.80 (0.65, 0.98)***	1.13 (0.84, 1.51)	0.90 (0.72, 1.12)
Financial	1.12 (0.83, 1.51)	**0.76 (0.60, 0.96)***	1.07 (0.77, 1.48)	0.84 (0.66, 1.07)
Legal	1.12 (0.94, 1.34)	0.93 (0.82, 1.06)		
Substance Abuse	1.04 (0.95, 1.14)	0.94 (0.87, 1.02)		
General	0.87 (0.50, 1.50)	0.80 (0.59, 1.11)		
Development	--	--		
Adult Relationships	--	--		
Parenting	--	--		
Psychological	--	--		
Sexual	--	--		
OVERALL	1.05 (0.98, 1.12)	**0.92 (0.88, 0.97)****	1.03 (0.95, 1.11)	0.96 (0.90, 1.02)

^Currently employed is the reference category.
*P < .05, **P < .01

Table 5-13. Multinomial Logistic Regression Results of DQ Admission and Problem Point Categories on Job Status^ for Officers who Took the PsyQ (n=244).

	Bivariate		Final Model	
	Fired/Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)	**Fired/Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)
Agency				
--A	0.22 (0.03, 1.75)	0.95 (0.42, 2.15)		
--B	**4.29 (1.45, 12.71)****	0.96 (0.48, 1.92)	**3.47 (1.14, 10.59)***	1.00 (0.73, 1.38)
DQ Admission (yes)	1.29 (0.43, 3.85)	0.41 (0.15, 1.10)		
Employment	0.98 (0.82, 1.19)	0.97 (0.85, 1.10)		
Driving	1.25 (0.99, 1.57)	1.07 (0.90, 1.27)		
Financial	1.08 (0.83, 1.39)	1.02 (0.85, 1.23)		
Legal	1.11 (0.94, 1.32)	0.96 (0.84, 1.11)		
Substance Abuse	0.99 (0.90, 1.08)	0.97 (0.91, 1.04)		
General	**1.62 (1.18, 2.21)****	1.00 (0.73, 1.37)	**1.52 (1.10, 2.10)****	0.96 (0.48, 1.93)
Development	1.12 (1.00, 1.26)	1.00 (0.90, 1.12)		
Adult Relationships	1.02 (0.77, 1.35)	0.98 (0.80, 1.21)		
Parenting	0.68 (0.19, 2.41)	1.00 (0.61, 1.64)		
Psychological	1.08 (0.93, 1.26)	1.10 (0.98, 1.22)		
Sexual	1.28 (0.85, 1.94)	0.47 (0.11, 2.06)		
OVERALL	1.02 (0.99, 1.06)	1.00 (0.96, 1.03)		

^Currently employed is the reference category.
*$P < 0.05$, **$P < 0.01$

CHAPTER 6

CPI RESULTS

Introduction

The second assessment evaluated was the California Psychological Inventory (CPI). As discussed in Chapter 3, the CPI was first published in 1948 as a measure of non-pathological personality characteristics (Stewart, 2008). The assessment consists of 20 primary scales, each of which measures an important individual feature and that together seek to provide a complete picture of an individual based on a social interaction view point (Stewart, 2008). The primary scales fall into three factorial structures which can classify an individual into one of four lifestyle types (Alpha, Beta, Gamma or Delta). The CPI also includes a series of special purpose scales which were developed for specific populations. Included in this analysis are those that are most applicable to correctional officer applicants. Lastly, Roberts and Johnson (2001) created algorithms based on items from the CPI and PHQ/PsyQ in order to identify the probability of engaging in problem behaviors on the job or being found poorly suited by the psychologist.

This chapter will evaluate the ability of the CPI scales, lifestyle and risk estimates to predict supervisor rating and job status. A brief summary of the factors will be discussed first with frequencies and descriptive statistics. Before analyses of supervisor rating and job status, correlations will be conducted in order to determine the relationship between the CPI scales and risk estimates. Bivariate analyses will follow and finally multivariate analyses will be conducted to predict supervisor rating and job status.

CPI Independent Variables

Lifestyle Type

As mentioned earlier, the CPI produces four lifestyles (Alpha, Beta, Gamma or Delta) based on the scorings of v.1 (Internality/Externality) and v.2 (Norm-Favoring/Norm-Doubting; McAllister, 1996). Gough & Bradley (1996) report that in a sample of 221 correctional officers, 48% are Betas, 30% Alphas, 14% Deltas and 7% Gammas. Police officers, conversely, tend to be primarily Alphas (50%). In our sample, the majority of officers were Alphas (61%) followed by Betas (29%). Only 5% were Gammas and 6% were Deltas. This would indicate our sample of correctional officers may have characteristics more similar to police officers. There were no differences in lifestyle type by agency.

CPI Scales

Table 6-1 shows the means and standard deviations of the T scores based on community norms for the primary and special purpose scales of the CPI. In accordance with past studies examining public safety job applicants, there is a tendency for public safety applicants to be faking good[14] notably shown on the Gi scale but as seen through elevations on the other CPI scales compared to community norms (Roberts & Johnson, 2001; Johnson, Roberts & Ben-Porath, 2011). In the community sample, faking good is indicated by a score of Gi $\geq$ 70T. Using the 70T cutoff is not considered justified in public safety applicants as it is difficult to know if the applicant is falsifying their answers or is trying to put their best foot forward (Roberts & Johnson, 2001). Overall,

[14] A method recommended to assess faking good in this population is for the applicant to meet these criteria: When Gi - Cm > 30T and either Gi $\geq$ 85T or Cm < 40T (Johnson, Roberts, & Ben-Porath, 2011). Of the 421 included in the study, 6 met this criteria. All analyses were run with these subjects removed and there was minimal variation in the results. Since there was little difference, it was decided to keep the subjects so as to not further reduce the sample size.

approximately 50% of public safety applicants tend to score above this cutoff (Johnson et al., 2011). Accordingly, 53% of included officers had scores on Gi of 70T or higher. It is also worth noting that a number of the other CPI scale items show elevated mean T scores as compared to the community norms, including Dominance (Do), Self-Control (Sc), Law Enforcement Orientation (Leo), Managerial Potential (Mp), Leadership (Lp) and Integrity (Itg). Conversely, the Anxiety (Anx) and Narcissism (Nar) special purpose scales show lower mean T scores compared to the community norms. There were no differences in mean scale scores by agency.

Risk Estimates

The means and standard deviations of the risk estimates are shown in Table 6-1. The majority of the mean risk estimates fell into the moderate range (25% - 49%), with only the probability of illegal drug use problems and alcohol use problems being in the low range. There were no significant differences in risk estimates by agency.

Table 6-1. Means and Standard Deviations of the CPI Primary Scales, Special Purpose Scales and Risk Estimates.

CPI Scale	Mean T score (SD)
Primary	
Dominance (Do)	62.0 (7.6)
Capacity for Status (Cs)	57.7 (5.3)
Sociability (Sy)	58.5 (5.8)
Social Presence (Sp)	53.5 (5.9)
Self-Acceptance (Sa)	55.9 (5.7)
Independence (In)	59.8 (5.0)
Empathy (Em)	57.1 (6.7)
Responsibility (Re)	57.8 (6.3)
Socialization (So)	57.5 (5.8)
Self-Control (Sc)	65.8 (7.3)
Good Impression (Gi)	70.2 (7.7)
Communality (Cm)	55.1 (4.9)
Well-Being (Wb)	61.2 (3.6)
Tolerance (To)	60.0 (6.7)
Achievement via Conformance (Ac)	61.1 (5.7)
Achievement via Independence (Ai)	60.2 (6.4)
Intellectual Efficiency (Ie)	57.8 (5.2)
Psychological Mindedness (Py)	58.4 (5.8)
Flexibility (Fx)	50.1 (9.4)
Special Purpose (High: $\geq$ 60T; Low $\leq$ 40T)	
Law Enforcement Orientation (Leo)	71.4 (6.8)
Managerial Potential (Mp)	64.0 (6.3)
Work Orientation (Wo)	63.1 (4.8)
Leadership (Lp)	63.7 (4.7)
Amicability (Ami)	62.8 (6.4)
Anxiety (Anx)	40.7 (5.2)
Narcissism (Nar)	42.0 (8.6)
Integrity (Itg)	76.8 (7.4)
Risk Estimates (High $\geq$50, Low $\leq$ 24)	**M % Likelihood (SD)**
Substance Abuse Problems (Sub Abuse)	37.1 (13.1)
Illegal Drug Use Problems (Drug Use)	12.5 (8.0)
Alcohol Use Problems (Alcohol)	19.8 (8.8)
Anger Management Problems (Anger)	41.6 (13.8)
Integrity Problems (Integrity)	33.5 (10.5)
Job Performance Problems (Job Perform)	36.3 (12.2)
Rated Poorly Suited by Psychologist (Poorly Suited)	28.0 (16.0)

Relationships between CPI Scales and Risk Estimates

In order to determine the relationship between the CPI scales and risk estimates, Pearson product moment correlation coefficients were produced (Table 6-2). It was

hypothesized (1.A) that the CPI scales would be related to the risk estimates, with higher scale scores associated with lower risk estimate probabilities. It was also hypothesized (1.A) that some supplemental scales will display direct relationships to risk estimates.

As hypothesized, most of the Pearson correlations between the risk estimates and scales were negative. Only Cm (Communality) and Nar (Narcissism) demonstrated positive correlations, with high scores on each associated with high probabilities of problem behavior. This was expected of Nar but not for Cm. High scores on Cm reflect positive views of others and sincerity so it is unclear why it would be associated with higher probabilities of problem behavior. One possible explanation is that low scores on Cm can indicate random responding and high scores may be reflective of honest responding. It could be that officers with higher Cm scores were more honest in reporting their past experiences on the PHQ/PsyQ which may have generated higher risk estimate probabilities. However, the correlations between Cm and the risk estimates were lower than 0.35, which is a typical cutoff to demonstrate a strong relationship between variables.

A number of Pearson correlations were lower than -0.35. A few key scales demonstrated strong relationships for all seven risk estimates: Re, So, Sc, Gi and Ac. Lp and Ami were related to all but Integrity, and Mp and Wo had strong relationships with Sub Abuse, Alcohol Use, Anger, Job Performance and Poorly Suited. For all these, lower scores on the CPI scales were associated with higher probabilities of problem behaviors. Lastly, a majority of the scales were strongly associated with the probability of being rated poorly suited by the psychologist compared to the other risk estimates.

Table 6-2. Correlations between the CPI Scales and Risk Estimates.

	Sub Abuse	Drug Use	Alcohol Use	Anger	Integrity	Job Perform	Poorly Suited
Do	**-0.35**	-0.31	-0.27	-0.08	-0.19	-0.19	-0.24
Cs	-0.29	-0.16	-0.32	-0.29	-0.20	-0.21	-0.31
Sy	-0.16	-0.20	-0.11	-0.06	-0.13	-0.09	-0.23
Sp	0.29	0.25	**0.35**	0.25	0.21	0.28	0.18
Sa	-0.07	-0.04	-0.07	0.09	-0.15	0.02	-0.05
In	-0.11	-0.15	-0.18	-0.13	-0.18	-0.18	-0.20
Em	-0.15	-0.01	-0.14	-0.10	-0.03	-0.05	-0.21
Re	**-0.64**	**-0.55**	**-0.62**	**-0.58**	**-0.60**	**-0.54**	**-0.70**
So	**-0.67**	**-0.70**	**-0.44**	**-0.63**	**-0.59**	**-0.71**	**-0.79**
Sc	**-0.58**	**-0.52**	**-0.61**	**-0.72**	**-0.51**	**-0.72**	**-0.71**
Gi	**-0.60**	**-0.56**	**-0.61**	**-0.68**	**-0.50**	**-0.77**	**-0.68**
Cm	0.34	0.25	0.32	0.32	0.27	0.31	0.11
Wb	-0.32	-0.34	-0.27	**-0.53**	-0.29	**-0.53**	**-0.63**
To	-0.23	-0.07	-0.24	**-0.40**	-0.19	-0.25	**-0.45**
Ac	**-0.73**	**-0.60**	**-0.61**	**-0.52**	**-0.44**	**-0.54**	**-0.66**
Ai	-0.34	-0.11	-0.34	-0.32	-0.21	-0.22	**-0.39**
Ie	-0.33	-0.22	-0.34	**-0.36**	-0.29	-0.30	**-0.50**
Py	-0.31	-0.19	-0.32	-0.31	-0.25	-0.20	**-0.35**
Fx	-0.01	0.09	-0.06	-0.10	0.00	0.09	0.00
Leo	-0.32	-0.34	-0.21	-0.16	-0.19	-0.32	**-0.35**
Mp	**-0.43**	-0.31	**-0.38**	**-0.44**	-0.29	**-0.38**	**-0.59**
Wo	**-0.39**	-0.31	**-0.40**	**-0.54**	-0.27	**-0.48**	**-0.61**
Lp	**-0.56**	**-0.47**	**-0.48**	**-0.35**	-0.34	**-0.46**	**-0.61**
Ami	**-0.43**	**-0.35**	**-0.36**	**-0.65**	-0.33	**-0.59**	**-0.69**
Anx	-0.05	0.02	0.02	-0.02	-0.01	0.09	0.13
Nar	0.30	0.26	**0.38**	**0.56**	0.31	**0.42**	**0.47**
Itg	-0.04	-0.09	0.07	-0.27	-0.08	-0.22	**-0.37**

Predictors of Supervisor Rating

Chi-square analysis of supervisor rating (ordinal level) and lifestyle type was not significant (χ^2 (15) = 8.88, $P > 0.05$), most likely due to a number of cells having zero values[15]. One-way ANOVAs comparing the individual CPI scales, special purpose scales and risk estimates to the ordinal level supervisor rating were conducted to examine bivariate mean differences (Table 6-3). Do (F (5, 317) = 2.46, $P < 0.05$), Re (F (5, 317) = 2.57, $P < 0.05$) and Ai (F (5, 317) = 2.37, $P < 0.05$) were significantly different among

[15] There were no officers who were classified as Delta who were given a F, D or C- rating.

supervisor ratings. Tukey post hoc analysis found that those who received a D rating from their supervisor had lower mean scores on Do compared to those who received a C rating ($P < 0.05$). Additionally, those who received a D rating scored lower on Re compared to those who were given an A, B or C rating by their supervisor ($P < 0.05$). Lastly, those who received a D rating scored lower on Ai compared to those given any other rating by their supervisor ($P < 0.05$).

In order to examine which scales and risk estimates were predictors of supervisor rating individually, bivariate ordinal regression was conducted and only found Re to be almost a significant ($\beta = 0.03$, $P = 0.068$) predictor of supervisor rating. No other scales or risk estimates were significant. As with the previous chapter, the introduction of agency led to problems in the model and violated the test of parallel lines (see footnote 13, Chapter 5); therefore, further analyses were conducted with the two-level supervisor rating (0- not satisfactory, 1-satisfactory).

Independent t-tests were conducted to assess mean differences for each of the scales and risk estimates (Table 6-4). As expected, scores on most of the CPI scales and special purpose scales were higher in officers rated satisfactory compared to those unsatisfactory. Those rated unsatisfactory had significantly lower scores on Re (t (316) = -3.03, $P < .01$). Mean risk estimates were generally higher in those rated not satisfactory compared to those rated satisfactory, although there were no significant differences.

Bivariate logistic regressions were conducted in order to determine the association between the predictors and 2-level supervisor rating (Table 6-5). Lifestyle type was not significant. As found earlier examining mean differences, Re was found to be a significant predictor of supervisor rating (OR: 1.07; 95% CI: 1.02, 1.12). Since only one

scale was entered into the model, multicollinearity was not assessed through calculation of VIF. Multiple logistic regression was run using Re controlling for agency. For the final model, Hosmer and Lemeshow goodness of fit was not significant (χ^2 (8) = 7.33, P = 0.502) and the c-statistic was 0.80 indicating good fit of the data. In the final model only agency remained significant, with officers from Agency A (OR: 13.34; 95% CI: 5.49, 32.42) or Agency B (OR: 8.59; 95% CI: 3.50, 21.08) being more likely to be recommended over Agency C. The final variable, Re, was not significant but there was a trend for correctional officers with higher Re scores to be recommended by their supervisor (OR: 1.05; 95% CI: 0.99, 1.11).

Table 6-3. Differences in Means of CPI Scales and Risk Estimates by Supervisor Rating (Ordinal).

	A		**B**		**C**		**C-**		**D**		**F**		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	*F*
Do	**61.84**	7.39	**61.12**	8.03	**63.63**	7.54	**64.25**	6.82	**57.83**	5.38	**63.59**	6.89	**2.46***
Cs	57.55	5.50	57.59	5.51	58.37	4.79	58.17	5.15	54.72	5.28	58.47	4.56	1.51
Sy	58.21	6.90	59.36	5.71	58.93	5.53	58.17	3.69	56.78	4.14	58.18	4.22	0.83
Sp	53.11	5.98	54.19	5.81	53.73	5.01	52.42	5.30	53.67	6.83	54.76	4.63	0.60
Sa	56.02	6.13	55.63	5.63	56.81	5.89	56.08	5.07	54.67	3.77	56.94	5.08	0.66
In	59.50	5.22	59.42	5.49	60.63	4.52	61.17	5.32	57.39	5.61	61.47	5.08	1.86
Em	57.35	7.25	56.75	6.83	57.29	6.46	58.17	5.17	54.67	7.80	56.82	6.52	0.59
Re	**58.00**	6.11	**58.28**	5.90	**58.23**	5.56	**57.50**	6.45	**53.33**	7.91	**55.71**	6.47	**2.57***
So	57.42	5.36	57.94	5.76	56.87	6.32	56.08	4.48	57.89	5.79	56.12	5.28	0.62
Sc	65.55	7.67	65.71	7.15	66.03	6.02	67.83	8.96	62.17	8.59	65.06	5.89	1.13
Gi	68.83	8.01	70.73	7.63	70.13	6.21	70.92	10.26	67.06	10.21	71.29	8.36	1.24
Cm	55.40	4.86	54.22	5.09	55.40	5.54	55.17	5.01	56.39	4.83	54.06	5.89	1.02
Wb	60.80	3.56	61.67	3.17	61.08	3.23	61.17	4.11	60.06	5.70	60.29	5.07	1.05
To	59.84	6.89	60.20	6.76	60.03	5.46	61.17	6.35	57.94	8.05	59.47	7.82	0.46
Ac	60.98	5.52	61.43	5.56	60.76	5.50	63.08	6.20	58.00	5.00	58.82	6.19	2.01
Ai	**60.63**	6.75	**60.28**	6.48	**60.53**	6.12	**61.25**	6.84	**55.39**	7.98	**62.00**	5.88	**2.37***
Ie	57.75	5.45	57.89	5.39	57.92	4.21	59.83	5.29	55.39	5.96	55.88	4.64	1.62
Py	58.40	5.45	58.83	6.59	59.01	5.23	57.92	6.02	54.39	5.97	59.47	5.54	2.10
Fx	50.44	9.08	50.61	10.34	49.40	9.28	48.00	7.21	48.06	10.81	52.88	7.82	0.74
Leo	71.05	6.96	70.76	6.51	71.88	6.38	72.83	4.47	68.33	7.93	72.71	6.53	1.24
Mp	63.67	6.63	64.15	6.58	64.51	6.19	66.33	6.24	61.06	7.61	64.88	6.16	1.25
Wo	62.29	5.38	63.81	4.56	62.69	4.76	63.33	5.21	62.17	5.15	64.82	3.34	1.60
Lp	63.62	4.37	63.51	4.86	64.11	4.40	65.08	4.03	60.94	5.94	64.18	4.93	1.66
Ami	62.57	6.33	63.09	6.26	62.35	6.65	64.42	6.39	62.89	7.83	61.88	5.89	0.35

	A		B		C		C-		D		F		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	***F***
Anx	41.17	5.35	40.02	4.77	40.51	5.84	41.00	3.95	41.56	5.34	40.00	4.99	0.65
Nar	42.48	9.06	41.53	8.81	42.68	8.09	41.58	9.01	43.50	9.22	42.94	7.09	0.29
Itg	76.51	7.32	77.28	7.14	77.07	7.13	74.76	5.64	77.96	8.51	74.53	7.33	0.75
Sub Abuse	37.55	12.68	36.40	12.31	38.20	12.84	36.00	13.29	45.28	9.93	37.00	13.71	1.60
Drug Use	12.96	8.28	11.41	6.61	12.96	7.39	13.00	6.90	15.06	8.40	13.12	6.26	0.98
Alcohol	20.36	8.52	20.16	8.42	19.44	7.86	19.00	11.67	25.17	5.59	18.29	9.60	1.61
Anger	43.15	13.56	42.04	13.64	42.04	13.64	41.08	15.54	45.44	11.69	41.76	14.72	0.39
Integrity	34.32	10.68	33.11	9.93	33.04	10.00	34.75	13.40	38.00	8.66	33.59	10.86	0.84
Job Perform	37.86	12.36	35.21	11.38	37.03	11.86	36.25	12.28	40.00	15.24	36.71	12.19	0.74
Poorly Suited	29.27	16.44	26.87	14.52	28.03	15.24	29.33	16.00	32.83	19.25	29.94	15.50	0.58

*$P < .05$

Table 6-4. Differences in Means of the CPI Scales and Risk Estimates by Supervisor Rating (2-level).

	Satisfactory		Not Satisfactory		
	M	SD	M	SD	*t*
Do	62.08	7.70	61.55	6.87	-0.44
Cs	57.79	5.31	56.96	5.20	-1.00
Sy	58.81	6.13	57.64	4.03	-1.26
Sp	53.66	5.66	53.74	5.68	0.09
Sa	56.10	5.89	55.85	4.62	-0.28
In	59.78	5.14	59.83	5.58	0.06
Em	57.12	6.87	56.34	6.76	-0.72
Re	**58.16**	5.87	**55.26**	7.10	**-3.03***
So	57.45	5.77	56.79	5.26	-0.73
Sc	65.74	7.04	64.66	7.98	-0.95
Gi	69.86	7.44	69.57	9.59	-0.23
Cm	54.99	5.15	55.23	5.26	0.31
Wb	61.18	3.35	60.43	5.02	-1.31
To	60.02	6.46	59.32	7.52	-0.67
Ac	61.08	5.52	59.60	6.01	-1.68
Ai	60.48	6.46	59.28	7.51	-1.15
Ie	57.85	5.10	56.70	5.55	-1.40
Py	58.72	5.80	57.13	6.14	-1.72
Fx	50.21	9.57	49.79	9.08	-0.28
Leo	71.18	6.64	71.06	6.90	-0.11
Mp	64.07	6.48	63.79	7.00	-0.27
Wo	62.93	4.96	63.43	4.64	0.63
Lp	63.72	4.55	63.17	5.35	-0.74
Ami	62.69	6.38	62.91	6.74	0.22
Anx	40.58	5.30	40.85	4.84	0.32
Nar	42.20	8.70	42.81	8.30	0.45
Itg	76.93	7.19	75.90	7.47	-0.90
Sub Abuse	37.33	12.57	39.91	12.75	1.30
Drug Use	12.42	7.49	13.83	7.22	1.20
Alcohol	20.03	8.28	21.11	9.31	0.80
Anger	42.22	13.50	43.00	13.69	0.36
Integrity	33.54	10.22	35.57	10.75	1.25
Job Perform	36.70	11.90	37.85	13.29	0.60
Poorly Suited	28.08	15.44	30.89	16.86	1.14

*$P < 0.01$

Table 6-5. Logistic Regression Results of CPI Scales, Risk Estimates and Agency on Supervisor Rating (Satisfactory^ vs. Not Satisfactory) (n=318).

	Bivariate	**Final Model**
	OR (95% CI)	OR (95% CI)
Agency		
--A	**14.46 (5.98, 34.93)****	**13.34 (5.49, 32.42)****
--B	**9.22 (3.78, 22.48)****	**8.59 (3.50, 21.08)****
Do	1.01 (0.97, 1.05)	
Cs	1.10 (0.97, 1.09)	
Sy	1.03 (0.98, 1.09)	
Sp	1.00 (0.94, 1.05)	
Sa	1.01 (0.96, 1.06)	
In	1.00 (0.94, 1.06)	
Em	1.02 (0.97, 1.06)	
Re	**1.07 (1.02, 1.12)***	1.05 (0.99, 1.11)
So	1.02 (0.97, 1.08)	
Sc	1.02 (0.98, 1.06)	
Gi	1.00 (0.97, 1.04)	
Cm	0.99 (0.93, 1.05)	
Wb	1.05 (0.97, 1.14)	
To	1.02 (0.97, 1.06)	
Ac	1.05 (0.99, 1.10)	
Ai	1.03 (0.98, 1.08)	
Ie	1.04 (0.98, 1.10)	
Py	1.05 (0.99, 1.10)	
Fx	1.00 (0.97, 1.04)	
Leo	1.00 (0.96, 1.05)	
Mp	1.01 (0.96, 1.06)	
Wo	0.98 (0.92, 1.04)	
Lp	1.02 (0.96, 1.09)	
Ami	1.00 (0.95, 1.04)	
Anx	0.99 (0.93, 1.05)	
Nar	0.99 (0.96, 1.03)	
Itg	1.02 (0.98, 1.06)	
Sub Abuse	0.98 (0.96, 1.01)	
Drug Use	0.98 (0.94, 1.02)	
Alcohol	0.99 (0.95, 1.02)	
Anger	1.00 (0.97, 1.02)	
Integrity	0.98 (0.95, 1.01)	
Job Perform	0.99 (0.97, 1.02)	
Poorly Suited	0.99 (0.97, 1.01)	

^Reference category
*$P < 0.01$, **$P < 0.001$

Predictors of Job Status

The next set of analyses concerned officer's job status as measured in 2013. Chi-square analysis was conducted to compare job status by lifestyle type. There were no significant differences found, χ^2 (6) = 10.92, P = 0.09. Conducting one-way ANOVAs, individual CPI scales and risk estimates were examined in order to assess mean differences by officer job status (Table 6-6). There were a few significant differences by job status. Most notably, So and Wb mean T scores were higher among officers who quit compared to officers fired. Officers who quit showed higher mean scores on Sc, To, Ai, Mp, and Ami compared to current employees. Officers who quit had a lower mean probability of anger, being rated poorly suited by the psychologist and job performance problems compared to those who were employed. Lastly, those who quit had a lower mean T score for Nar compared to current employees.

Bivariate multinomial logistic regressions with each predictor were conducted in order to determine how each was associated with job status (Table 6-7). As discussed in Chapter 5, agency was a significant predictor of job status. Correctional officers at Agency A were more likely to quit than be currently employed, while officers at Agency B were more likely to be fired than currently employed. A number of CPI predictors were found to be significant, primarily differentiating between those currently employed and those who quit. In general, higher T scores on Sc, Gi, To, Ai, Ie, Mp, Wo, Ami and Itg were more likely to indicate an officer would quit rather than stay on the job. Conversely, higher T scores on Nar, probability of anger issues, probability of job performance problems and of being poorly suited by the psychologist problems are more likely among

those on the job compared to those who quit. Lastly, lower T scores on So was more indicative of those who had been fired compared to those still on the job.

Multicollinearity was assessed with the significant bivariate predictors through VIF. The three probabilities (anger, job performance & poorly suited) were found to be collinear, therefore the probability of job performance problems was dropped from the final model. All other VIF values were under 5. Multinomial logistic regression was conducted using backwards stepwise for the CPI scales and risk estimates found significant at the bivariate level above (Table 6-7). For the final model, the likelihood ratio test was significant (χ^2 (10) = 53.87, $P < 0.001$), the AIC was reduced from 655.55 to 621.68 and the Pearson goodness-of-fit was not significant (χ^2 (818) = 855.53, P = 0.176) indicating good fit of the data.

The final model included Agency A, Sc, To, Wo and probability of being poorly suited as significant predictors of job status. In general, correctional officers at Agency A were less likely to be fired (OR: 0.36; 95% CI: 0.13, 0.98) and more likely to quit (OR: 1.73; 95% CI: 1.06, 2.82) rather than be currently employed, holding the other variables constant. A higher score on Self-Control (Sc; OR: 1.08; 95% CI: 1.03, 1.14) or Tolerance (To; OR: 1.11; 95% CI: 1.05, 1.16) indicated that an officer was more likely to quit rather than stay on the job. However, the same held true for those who were fired. Lower scores on Work Orientation (Wo; OR: 0.92; 95% CI: 0.85, 0.99) indicated a correctional officer was more likely to quit than stay on the job. Lastly, higher probability of being rated as poorly suited by the psychologist was predictive of those who were fired (OR: 1.05; 95% CI: 1.01, 1.08) rather than currently employed.

Table 6-6. Means and Standard Deviations of CPI Scales and Risk Estimates by Job Status.

	Employed		Fired/Forced Resignation		Voluntary Resignation		
	M	SD	M	SD	M	SD	***F***
Do	61.95	7.67	62.70	7.34	61.00	7.36	0.82
Cs	57.44	5.55	57.67	4.62	58.63	4.64	1.86
Sy	58.44	5.99	57.70	5.70	58.89	5.63	0.50
Sp	53.71	5.87	52.80	6.45	53.20	5.48	0.52
Sa	55.57	5.93	56.77	5.64	56.32	5.67	1.03
In	59.59	5.20	60.57	4.61	60.05	4.66	0.70
Em	56.96	6.79	58.23	6.79	57.20	6.40	0.50
Re	57.53	6.49	56.73	6.21	58.84	5.62	2.04
So	**57.42**	5.76	**55.07**	5.82	**58.34**	5.83	**3.70***
Sc	**64.91**	7.39	**65.87**	8.58	**68.31**	5.86	**8.22*****
Gi	69.69	7.70	69.60	9.48	77.71	7.14	2.61
Cm	55.15	4.69	54.27	6.51	55.01	5.06	0.44
Wb	**61.11**	3.81	**59.90**	4.56	**61.73**	2.72	**3.04***
To	**59.07**	7.04	**61.10**	5.30	**62.66**	5.38	**11.29*****
Ac	60.81	5.65	61.30	6.39	61.82	5.72	1.16
Ai	**59.58**	6.64	**61.17**	4.38	**62.07**	6.06	**5.90****
Ie	57.40	5.40	58.03	3.86	58.86	4.58	2.98
Py	58.21	6.07	58.67	4.68	59.10	5.49	0.89
Fx	49.86	9.41	50.43	10.82	51.02	8.92	0.57
Leo	71.34	7.00	70.23	7.03	71.40	6.00	0.38
Mp	**63.32**	6.59	**65.03**	4.50	**65.67**	5.66	**5.64****
Wo	62.84	5.16	62.83	4.23	63.96	3.86	2.03
Lp	63.49	4.65	64.07	5.38	64.11	4.54	0.77
Ami	**62.16**	6.66	**62.30**	6.38	**64.91**	5.10	**7.07*****
Anx	40.39	5.39	40.43	4.40	41.43	4.86	1.47
Nar	**42.74**	8.89	**41.93**	8.12	**39.62**	7.58	**4.86****
Itg	76.46	7.21	75.95	9.38	78.20	6.82	2.31
Sub Abuse	37.74	13.11	39.10	14.64	35.04	12.45	1.90
Drug Use	12.45	7.68	15.33	11.04	11.78	7.69	2.31
Alcohol	20.27	8.67	20.07	12.11	18.57	8.14	1.37
Anger	**42.57**	13.90	**44.73**	15.25	**38.16**	12.63	**4.56***
Integrity	33.89	10.49	35.60	12.10	31.93	10.08	1.88
Job Perform	**36.79**	12.25	**39.77**	14.46	**33.93**	11.14	**3.31***
Poorly Suited	**28.92**	16.20	**32.67**	18.54	**24.08**	13.89	**4.76****

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

Table 6-7. Multinomial Regression Results of CPI Scales, Risk Estimates and Agency on Job Status^ (N=416).

	Bivariate		Full Model	
	Fired/ Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)
Agency				
--A	0.40 (1.15, 1.08)	**1.70 (1.06, 2.71)***	**0.36 (0.13, 0.98)***	**1.73 (1.06, 2.82)***
--B	**2.27 (1.06, 4.85)***	1.00 (0.61, 1.65)		
Do	1.01 (0.96, 1.07)	0.98 (0.95, 1.01)		
Cs	1.01 (0.94, 1.08)	1.04 (0.99, 1.09)		
Sy	0.98 (0.92, 1.04)	1.01 (0.97, 1.05)		
Sp	0.97 (0.91, 1.04)	0.98 (0.95, 1.02)		
Sa	1.04 (0.97, 1.11)	1.02 (0.98, 1.06)		
In	1.04 (0.96, 1.12)	1.02 (0.97, 1.07)		
Em	1.03 (0.97, 1.09)	1.01 (0.97, 1.04)		
Re	0.98 (0.93, 1.04)	1.04 (0.99, 1.08)		
So	**0.94 (0.88, 0.99)***	1.03 (0.99, 1.07)		
Sc	1.02 (0.97, 1.07)	**1.08 (1.04, 1.11)*****	**1.10 (1.01, 1.19)***	**1.08 (1.03, 1.14)****
Gi	1.00 (0.95, 1.05)	**1.04 (1.00, 1.07)***		
Cm	0.97 (0.90, 1.04)	0.99 (0.95, 1.04)		
Wb	0.93 (0.85, 1.01)	1.06 (0.98, 1.13)		
To	1.05 (0.99, 1.11)	**1.10 (1.05, 1.14)*****	**1.08 (1.01, 1.17)***	**1.11 (1.05, 1.16)*****
Ac	1.02 (0.95, 1.08)	1.03 (0.99, 1.08)		
Ai	1.04 (0.98, 1.11)	**1.07 (1.03, 1.11)*****		
Ie	1.02 (0.95, 1.10)	**1.06 (1.01, 1.11)***		
Py	1.01 (0.95, 1.08)	1.03 (0.99, 1.07)		
Fx	1.01 (0.97, 1.05)	1.01 (0.99, 1.04)		
Leo	0.98 (0.93, 1.03)	1.00 (0.97, 1.04)		
Mp	1.05 (0.98, 1.12)	**1.07 (1.02, 1.11)****		
Wo	1.00 (0.93, 1.08)	**1.05 (1.00, 1.11)***	0.94 (0.83, 1.07)	**0.92 (0.85, 0.99)***
Lp	1.03 (0.95, 1.12)	1.03 (0.98, 1.08)		
Ami	1.00 (0.95, 1.06)	**1.08 (1.04, 1.12)*****		
Anx	1.00 (0.93, 1.08)	1.04 (0.99, 1.08)		
Nar	0.99 (0.95, 1.03)	**0.96 (0.93, 0.98)****		
Itg	0.99 (0.94, 1.04)	**1.03 (1.00, 1.07)***		
Sub Abuse	1.01 (0.98, 1.04)	0.98 (0.97, 1.00)		
Drug Use	1.03 (0.99, 1.07)	0.99 (0.96, 1.02)		
Alcohol	1.00 (0.96, 1.04)	0.98 (0.95, 1.00)		
Anger	1.01 (0.98, 1.04)	**0.98 (0.96, 0.99)****		
Integrity	1.02 (0.98, 1.05)	0.98 (0.96, 1.00)		
Job Perform	1.02 (0.99, 1.05)	**0.98 (0.96, 0.99)***		
Poorly Suited	1.01 (0.99, 1.03)	**0.98 (0.96, 0.99)****	**1.05 (1.01, 1.08)****	1.00 (0.98, 1.03)

^ Currently employed is the reference category.
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

Conclusion

The CPI predicted the two performance measures differently. Only one scale was found to predict supervisor rating: Responsibility (Re). However, Re dropped out of the final model once agency of hire was added. Agency exhibited the strongest influence because each agency had a distinct distribution on the ratings (see Chapter 5). This could have added error into the model and therefore, the influence of the CPI predictors may have been lost. Conversely, the predictive value of Re could be limited. At face value, officers with higher Re scores predicted satisfactory supervisor ratings. This was in the hypothesized direction. It was expected correctional officers would score higher on positive attributes such as Re. High scores on Re indicate a person who is attentive to others and is dependable which are desirable characteristics in an officer.

Four factors were found to predict job status after controlling for agency: Self-Control (Sc), Tolerance (To), Work Orientation (Wo), and probability of being rated poorly suited by the psychologist. Higher scores on Sc and To predicted being fired or voluntary resignation compared to being currently employed, after controlling for other variables. This was not in the expected direction. Persons who score high on Sc are described as patient and reserved while those scoring high on To are described as having an acceptance and concern of others. However, high Sc scores could be reflective of persons described as reserved or possibly withdrawn. Paired with high scores on Independence, a person may be considered an introvert and not comfortable dealing with large groups or new people. A correctional officer in a jail setting comes in contact with a large number of persons and unlike in a prison, the turnover is consistent so the officer is

dealing with new faces day-to-day. Therefore, it is possible that those with high Sc scores who were fired were uncomfortable in the work environment.

To has been found to be a significant predictor of successful law enforcement officers (Aamodt, 2010; Benner, 1991; Hargrave & Hiatt, 1989), with higher scores indicating a person who is trusting, diplomatic and non-judgmental (Gough & Bradley, 1996). The finding that higher scores may predict who quits among correctional officers could also be reflective of the tendency of high To scorers to assume their work will pay off. However, the fact that the same inmates continue to return may make officers feel as though they may be wasting their time and ultimately unmotivated to perform (Finn, 1998). Given the previous research, it was unexpected to see high scores in the fired group. However, if the job is not considered rewarding this could lead to a lack of performance.

In regards to officers who quit, higher scores on Sc and To could be reflective of officers quitting for promotional reasons. Having higher scores on these attributes would be logical since these are generally considered desirable characteristics and may have contributed to obtaining a promotion or a more desirable job outside the agency.

Low scores on Wo were found in those who quit. This could provide evidence that those who quit did so not for promotional purposes but because they were not satisfied in the job. It should be noted that Wo and Re are strongly correlated ($r = 0.57$). They are both measures of dependability and these findings suggest that dependability can predict satisfactory ratings and officers who remain on the job.

Lastly, probability of being rated as poorly suited by the psychologist was predictive of those who were fired compared to on the job, holding the other variables

constant. This was in the hypothesized direction. Fired correctional officers were expected to have higher probabilities of problem behaviors compared to those still employed and those who quit.

CHAPTER 7

PAI RESULTS

Introduction

The last assessment to be evaluated is the Psychological Assessment Inventory (PAI). As discussed in Chapter 3, the PAI was first published in 1991 and is a self-administered test designed to measure personality and psychopathology (Morey, 2003). Unlike the MMPI, the PAI also includes general personality scales in addition to clinical scales. The PAI contains four types of scales: four validity scales, 11 clinical scales and 28 corresponding subscales, five treatment scales and two interpersonal scales (Appendix B). When used with the CPI, the PAI serves as the assessment to capture potentially negative characteristics of the applicant and serves the purpose of screening-out. In addition to the PAI scales, Roberts and Johnson (2001) created algorithms based on items from the PAI and PHQ/PsyQ in order to identify the probability of engaging in problem behaviors on the job or being found poorly suited by the psychologist.

This chapter will evaluate the ability of the PAI scales and risk estimates to predict supervisor rating and job status. A brief summary of the factors will be discussed first with frequencies and descriptive statistics. An examination of the validity scales will be conducted in order to determine if the sample should be split for the predictive analyses. Before analyses of supervisor rating and job status, correlations will be conducted in order to determine the relationship between the PAI scales and risk estimates. Bivariate analyses will follow and finally multivariate analyses will be conducted to predict supervisor rating and job status.

PAI Independent Variables

PAI Validity Scales

As discussed in Chapter 3, there are four validity scales in the PAI: Inconsistency (ICN), Infrequency (INF), Negative Impression (NIM), and Positive Impression (PIM; Morey, 2003).

Inconsistency. Inconsistency (ICN) measures the degree to which a person is inconsistent in their responding. Low scores (below 64T) indicate a person responded consistently, while scores between 64T and 73T indicate some inconsistency. Scores at or above 73T suggest a problem with responding which could be attributed to a number of factors such as carelessness, confusion or failure to follow directions, and should be considered invalid (Morey, 2003). Table 7-1 shows the mean and standard deviations of the T scores based on community norms for each of the validity scales of the correctional officers in this study. The mean score for the entire sample was lower than the community norms, 42.8T (SD = 6.6). Almost all officers (99%) showed consistency in responding with scores below 63T. However, six correctional officers had scores ranging between 64T and 70T, which is still below the cutoff for concern. Therefore, none of the officers were disqualified based on ICN.

Infrequency. INF measures the degree to which a person completes the PAI in an atypical manner and identifies problematic responding regardless of clinical status (Morey, 2003). It is primarily used to determine carelessness in responding. Low scores on INF (< 60T) suggest the person paid attention to the items when responding. Scores between 60T and 75T indicate there is some unusual responding, while high scores (≥ 75T) indicate the person did not pay attention to the items when responding. Those who

are completely random in responding throughout the PAI have on average an INF score of 86T (Morey, 2003). Any scores at or above 75T render the PAI result invalid. In the current sample, one correctional officer scored high (79T) on INF, indicating that his/her results may be invalid. Further examination showed that there was little variation in scale scores (which would have a tendency to be elevated with random responding) compared to the mean scores. Additional, this subject's scores on NIM were not elevated, which is a greater predictor of random responding than elevated scores on INF and INC (Morey, 2003).

Faking Bad/Negative Impressionism. NIM measures the degree to which a person is presenting a negative picture of themselves. In a sample of public safety officers as well as job applicants in general, elevations on this scale would be rare, since the opposite generally holds true (i.e., high elevations on positive impression). Low scores (< 73T) on NIM reflect little negative distortion in the scales, whereas high scores (≥ 92T) would indicate negative impressionism with a possible malingering (Morey, 2003). In the current sample, all correctional officers were below 73T, with the highest score being 59T.

Faking Good/Defensiveness. As mentioned previously, there is a tendency for public safety applicants to be faking good. In regards to the PAI, research has also demonstrated that there is a tendency for public safety applicants to display defensiveness in responding (Lowmaster & Morey, 2012), meaning that they are more guarded with what information they are willing to provide. This could indicate a lack of honesty and trying to demonstrate fewer clinical symptoms on the PAI. Furthermore, there is an argument that defensiveness in responding should be taken into consideration when

examining predictive validity, with greater predictive validity among those officers who are less defensive in responding (Richardson et al., 2007; Caillouet et al., 2007; Lowmaster & Morey, 2012). The PAI validity scale used for defensive responding is PIM. Low scores on PIM (below 44T) indicate a person is being honest in their responding. Scores between 44T and 57T show slight elevations but a person is still not considered to be showing a favorable view of themselves. Scores falling between 57T and 68T suggest a person tried to portray themselves in a positive manner and at this level can impact the interpretation of the clinical scales. Lastly, scores at or above 68T show a high degree of favorable responding and can warrant invalid scores on the other scales (Morey, 2003). The mean for the entire sample was 63.6T, which is the moderate level and similar to other research in public safety applicants (Lowmaster & Morey, 2012; Hays, 1997). Unlike the other validity scales, there was a larger proportion (35%) of correctional officers scoring high on PIM ($\geq$ 68T), with 56 correctional officers scoring 73T or higher. Past studies comparing samples which are coached to positively respond, show that a cut-off score of 57T has a sensitivity of identifying defensiveness between 82% and 93%, whereas using the cut-off of 68T drops the sensitivity to 17% (Morey 2003). A study by Lowmaster & Morey (2012) suggested utilizing the median as a cut-off. In the current sample, only 61 (14%) correctional officers had a score lower than 57T, therefore, high and low PIM scores will be determined utilizing the median[16] (64T). Subsequent analyses of the impact of PAI scales will be analyzed for officers categorized as scoring low on PIM ($\leq$ 64T) compared to those scoring high on PIM (> 64T).

[16] Analyses were conducted using the 57T cutoff; however, the small number of correctional officers in the low PIM category led to a higher frequency of empty cells in the logistic regression analysis. This led to computational errors and a decrease in the maximum likelihood ratio calculations.

In addition to PIM, Morey developed the Defensiveness Index as a supplement to identifying defensive responding. PIM is more apt to measure covert (respondent may not be fully aware they are masking symptoms or even believe they have clinical symptoms) positive responding and be more directly tied to mental status compared to the Defensiveness Index, which balances both covert and overt (purposeful answering) positive responding (Morey, 2003). It is comprised of eight different features within the PAI profile. Seven of these items are weighted as 1, while PIM $\geq$ 50T is weighted as 2 for a total ranging from 0 to 9. Scoring 6 or higher on the Defensiveness Index would demonstrate someone who is purposefully being defensive (Morey, 2003). In the current sample, 101 (24%) correctional officers scored 6 or higher on the Defensiveness Index. As expected, there was overlap between PIM group (Low vs High) and those scoring low (< 6) or high ($\geq$ 6) on the Defensiveness Index. However, the overlap wasn't as high as expected. Of those who scored high on the Defensiveness Index, 66% were also categorized as high on PIM (> 64T), with the remaining 34% scoring low on PIM. The correlation between the Defensiveness Index and PIM scores was 0.34 ($P < 0.001$). Similar to the findings with PIM, there were no significance differences in Defensiveness Index groups by agency, supervisor rating, or job status.

A final indicator of defensive responding is the Cashel Discriminant Function (CDF), which is a score derived from the weighted sum of six full scale T scores. The CDF captures defensiveness independent of mental status and therefore measures overt positive responding. Low scores on the CDF (< 135) indicate honest responding. Scores falling between 145 and 160 demonstrated some positive responding and may distort the PAI scale scores. Lastly, scores above 160 on CDF suggest the person overtly tried to

portray him-/herself in a positive manner and his/her profile is potentially more of a reflection of how he/she wishes to appear rather than what is truth (Morey, 2003). In the current sample, only 3% of correctional officers fell into the high CDF category but 45% of correctional officers fell between 145 and 160. The correlation between CDF and PIM was 0.33 ($P < 0.001$), while the correlation between CDF and Defensiveness Index was also 0.33 ($P < 0.001$). There were no significant differences for CDF groups by agency, supervisor rating, or job status.

Clinical Scales

The clinical scales and coordinating subscales capture psychopathology in the respondent. Table 7-1 shows the means and standard deviations for the clinical scales, which include eleven full scales and their corresponding subscales. The means for the current sample for all full scales were below the means for the community norms (< 50T) and well below the cut-off for determination of potential clinical issues ($\geq$ 70T). The mean T scores ranged from 38.7 (SCZ) to 45.2 (ANT). This was expected as summarizing across the sample will hide any individual clinical elevations. It is also expected that few individuals in the current sample will exhibit any potential clinical issues, which would have generally led to the individual being screened out. Generally, the subscales are only further evaluated if the corresponding full scale has what is considered a high score of 70T or higher (Morey, 2003). Upon examining the range for the full scales, only mania (MAN) and antisocial features (ANT) had maximum values above 70T. The T scores ranged from 28T to 71T for MAN, with only one correctional officer having a score (71T) that would warrant further examination of the subscales. For

ANT, the range was 36T to 71T, with two correctional officers having 70T or higher. There were no differences in full scale scores by agency.

Although almost all correctional officers do not qualify to have the subscales examined, there may still be utility in predicting future behavior. All of the subscales in the current sample were below the community norms, except for MAN-G (M = 52.9), which has been found to be slightly above the community norm in past studies (Lowmaster & Morey, 2012). MAN-G measures grandiosity, with persons scoring high indicating a tendency to be narcissistic. Two of the subscales significantly differed by agency: self-harm (BOR-S) and egocentricity (ANT-E). Correctional officers from Agency A scored higher, on average, on BOR-S compared to officers from Agencies B and C ($F(2,418) = 4.52$, $P < 0.05$). Correctional officers from Agency A also had high ANT-E scores, on average, compared to correctional officers from Agency C ($F(2, 418) = 5.00$, $P < 0.01$.

Treatment Scales

The five treatment scales are related to case management and treatment (Morey, 2003). Table 7-1 also shows the means and standard deviations for the five treatment full scales and the subscales for aggression (AGG). The means for the current sample for the treatment full and subscales were below the means for the community norms (< 50T), with the exception of treatment rejection (RXR) which was 60.5T. This is also in agreement with past research (Lowmaster & Morey, 2012). Elevations on this scale are also typical among defensive responders (Morey, 2003). There were no differences in treatment scale scores by agency.

Interpersonal Scales

The final set of scales was the interpersonal scales. They examine the degree to which a person relates to another. The two scales are warmth (WRM) and dominance (DOM). Means for DOM (56.1T) and WRM (56.9T) were approximately half a standard deviation higher than the community norms (Table 7-1). These slight elevations, although well within the normal range, are also common among those who are defensive (Morey, 2003). There were no differences by agency with the interpersonal scales.

Risk Estimates

The means and standard deviations of the risk estimates are shown in Table 7-1. The majority of the mean risk estimates fell into the moderate range (25% - 49%), with only the probability of illegal drug use problems, alcohol use problems and being poorly rated by the psychologist being in the low range. There were no significant differences in risk estimates by agency.

Table 7-1. Means and Standard Deviations of the PAI Validity, Clinical, Treatment and Interpersonal Scales, and Risk Estimates.

PAI Scale	Mean T Score (SD)
Validity	
Inconsistency (INC)	42.8 (6.6)
Infrequency (INF)	50.6 (7.3)
Negative Impression (NIM)	44.6 (1.9)
Positive Impression (PIM)	63.6 (7.3)
Clinical (High: > 70T)	
Somatic Complaints (SOM)	42.0 (2.5)
Conversion (SOM-C)	43.5 (1.6)
Somatization (SOM-S)	41.2 (3.8)
Health Concerns (SOM-H)	44.3 (3.6)
Anxiety (ANX)	42.0 (2.5)
Cognitive (ANX-C)	42.8 (4.8)
Affective (ANX-A)	39.9 (5.2)
Physiological (ANX-P)	42.6 (4.4)
Anxiety-Related Disorders (ARD)	40.4 (5.2)
Obsessive-Compulsive (ARD-O)	48.0 (8.2)
Phobias (ARD-P)	38.6 (6.2)
Traumatic Stress (ARD-T)	42.6 (3.0)
Depression (DEP)	39.8 (3.9)
Cognitive (DEP-C)	41.6 (4.2)
Affective (DEP-A)	42.6 (3.5)
Physiological (DEP-P)	40.4 (5.1)
Mania (MAN)	44.8 (7.3)
Activity Level (MAN-A)	42.1 (8.1)
Grandiosity (MAN-G)	52.9 (8.8)
Irritability (MAN-I)	44.4 (5.3)
Paranoia (PAR)	43.4 (6.6)
Hypervigilance (PAR-H)	46.4 (8.6)
Persecution (PAR-P)	44.4 (5.3)
Resentment (PAR-R)	42.5 (7.4)
Schizophrenia (SCZ)	38.7 (4.9)
Psychotic Experiences (SCZ-P)	42.3 (6.3)
Social Detachment (SCZ-S)	41.8 (5.0)
Thought Disorder (SCZ-T)	40.2 (4.3)
Borderline Features (BOR)	40.3 (5.2)
Affective Instability (BOR-A)	40.6 (4.5)
Identity Problems (BOR-I)	42.2 (5.2)
Negative Relationships (BOR-N)	43.0 (6.9)
Self-Harm (BOR-S)	43.2 (5.8)
Antisocial Features (ANT)	45.2 (6.1)
Antisocial Behaviors (ANT-A)	47.5 (8.1)
Egocentricity (ANT-E)	45.4 (5.9)
Stimulus-Seeking (ANT-S)	44.8 (6.2)
Alcohol Problems (ALC)	44.8 (4.2)
Drug Problems (DRG)	44.9 (4.3)

PAI Scale	Mean T Score (SD)
Treatment	
Aggression (AGG)	42.3 (5.3)
Aggressive Attitude (AGG-A)	39.3 (5.5)
Verbal Aggression (AGG-V)	47.8 (7.9)
Physical Aggression (AGG-P)	43.4 (3.2)
Suicidal Ideation (SUI)	43.7 (2.2)
Stress (STR)	44.1 (5.6)
Nonsupport (NON)	40.5 (4.9)
Treatment Rejection (RXR)	60.5 (6.1)
Interpersonal (Low < 40T; High > 60T)	
Dominance (DOM)	56.1 (6.8)
Warmth (WRM)	56.9 (7.6)
Risk Estimates (High ≥50, Low ≤ 24)	**M % Likelihood (SD)**
Substance Abuse Problems (Sub Abuse)	37.3 (15.7)
Illegal Drug Use Problems (Drug Use)	10.8 (9.8)
Alcohol Use Problems (Alcohol)	22.1 (14.7)
Anger Management Problems (Anger)	38.1 (16.0)
Integrity Problems (Integrity)	35.6 (21.7)
Job Performance Problems (Job Perform)	37.1 (12.2)
Rated Poorly Suited by Psychologist (Poorly Suited)	20.2 (16.3)

Relationship between PAI Scales and Risk Estimates

In order to determine the relationship between the PAI scales and risk estimates, Pearson product moment correlation coefficients were run (Table 7-2). It was hypothesized that the PAI scales would be related to the risk estimates, with higher clinical scale scores associated with higher risk estimate probabilities.

There were not as many strong correlations between PAI scales and risk estimates as predicted; however, of those that were strongly related ($r > 0.35$) all were in the predicted direction. Only PIM and RXR were negatively related to some of the risk estimates. PIM was negatively related to substance abuse, anger, job performance and poorly suited. PIM is associated with positive responding so if an applicant has higher PIM then one would predict that they would also be defensive in their responding on the PHQ/PsyQ and therefore, their probabilities of problem behaviors could be lower due to a

lack of honesty. RXR was also negatively related to job performance and poorly suited. RXR measures treatment rejection and denial, and can also indicate a lack of honesty in responding or defensiveness.

The ANT, ANT-A and ALC scales were positively related to all of the risk estimates. Correlations for ANT ranged from 0.63 (alcohol use) to 0.85 (poorly suited), while correlations for ANT-A ranged from 0.69 (alcohol use) to 0.94 (integrity). Correlations were also strong for ALC with scores ranging from 0.36 (job performance) to 0.83 (alcohol use). The probability of being rated poorly suited by the psychologist was strongly related to the most PAI scales. All clinical scales were positively related to poorly suited, meaning higher T scores on the clinical scales were related with a higher probability of being rated as poorly suited by the psychologist.

Table 7-2. Correlations between the PAI Scales and Risk Estimates.

	Sub Abuse	Drug Use	Alcohol Use	Anger	Integrity	Job Perform	Poorly Suited
INC	0.12	0.17	0.02	0.05	0.06	0.09	0.15
INF	-0.15	-0.08	-0.11	-0.14	-0.03	-0.19	-0.14
NIM	0.07	0.07	0.06	0.12	0.05	0.21	0.27
PIM	**-0.36**	-0.23	-0.26	**-0.40**	-0.02	**-0.56**	**-0.43**
SOM	0.15	0.10	0.11	0.25	0.00	0.12	0.33
SOM-C	0.14	0.10	0.12	0.24	0.02	0.20	0.30
SOM-S	0.07	0.01	0.04	0.13	-0.04	0.08	0.24
SOM-H	0.14	0.13	0.10	0.21	0.03	0.05	0.22
ANX	0.13	0.09	0.11	0.24	-0.07	0.19	**0.35**
ANX-C	0.10	0.01	0.07	0.19	-0.08	0.12	0.28
ANX-A	0.03	0.08	0.08	0.16	-0.09	0.12	0.27
ANX-P	0.21	0.15	0.14	0.24	0.02	0.23	0.31
ARD	0.06	0.03	0.07	0.26	-0.04	0.17	0.31
ARD-O	-0.13	-0.09	-0.06	0.08	-0.05	-0.03	0.04
ARD-P	0.17	0.10	0.12	0.22	-0.05	0.20	0.25
ARD-T	0.21	0.16	0.17	0.30	0.08	0.29	**0.51**
DEP	0.24	0.18	0.09	0.21	0.02	0.34	**0.40**
DEP-C	0.14	0.05	0.06	0.17	-0.04	0.22	0.22
DEP-A	0.18	0.12	0.11	0.24	0.04	0.28	0.30
DEP-P	0.22	0.20	0.06	0.12	0.05	0.26	**0.37**
MAN	0.11	0.12	0.17	0.29	0.01	0.25	**0.43**
MAN-A	0.24	0.16	0.14	0.26	-0.01	0.28	**0.39**
MAN-G	-0.09	0.05	0.05	0.11	0.05	0.02	0.19
MAN-I	0.16	0.06	0.19	0.28	-0.04	0.30	**0.38**
PAR	0.15	-0.04	0.10	0.26	-0.09	0.23	0.26
PAR-H	0.06	-0.08	0.04	0.18	-0.05	0.15	0.14
PAR-P	0.08	-0.06	0.06	0.16	-0.05	0.14	0.22
PAR-R	0.19	0.03	0.13	0.23	-0.11	0.23	0.26
SCZ	0.27	0.26	0.20	0.32	0.03	**0.38**	**0.46**
SCZ-P	0.15	0.11	0.13	0.21	-0.04	0.21	**0.35**
SCZ-S	0.23	0.25	0.14	0.20	0.06	0.29	0.23
SCZ-T	0.20	0.19	0.17	0.29	0.05	0.32	**0.44**
BOR	0.34	0.17	0.20	**0.38**	0.00	**0.44**	**0.56**
BOR-A	0.24	0.20	0.18	0.29	-0.02	0.30	**0.39**
BOR-I	0.25	0.05	0.13	0.25	-0.03	0.33	**0.45**
BOR-N	0.27	0.14	0.16	**0.38**	0.05	**0.38**	**0.49**
BOR-S	0.22	0.10	0.11	0.17	-0.04	0.25	0.30
ANT	**0.67**	**0.67**	**0.63**	**0.77**	**0.69**	**0.78**	**0.85**
ANT-A	**0.74**	**0.81**	**0.69**	**0.82**	**0.94**	**0.84**	**0.78**
ANT-E	0.17	0.15	0.19	0.26	0.11	0.28	**0.42**
ANT-S	0.31	0.24	0.30	**0.37**	0.12	**0.36**	**0.49**
ALC	**0.81**	**0.61**	**0.83**	**0.50**	**0.38**	**0.36**	**0.51**
DRG	0.19	0.28	0.06	0.00	0.09	0.02	0.12
AGG	0.30	0.22	0.33	**0.53**	0.03	0.30	**0.37**
AGG-A	0.28	0.26	0.25	**0.44**	0.04	0.33	**0.39**
AGG-V	0.16	0.09	0.20	0.32	-0.04	0.13	0.20
AGG-P	0.33	0.28	**0.45**	**0.63**	0.20	0.32	**0.37**
SUI	0.16	0.21	0.10	0.15	0.12	0.23	0.26
STR	0.34	0.23	0.22	**0.39**	0.15	**0.50**	**0.53**
NON	0.22	0.14	0.14	0.23	0.04	**0.44**	**0.37**
RXR	-0.29	-0.24	-0.10	-0.30	-0.07	**-0.38**	**-0.40**
DOM	-0.14	-0.08	-0.03	-0.03	0.00	-0.15	-0.04
WRM	-0.23	-0.15	-0.14	-0.20	-0.06	-0.30	-0.17

Predictors of Supervisor Rating

One-way ANOVAs comparing the PAI scales and risk estimates to the ordinal level supervisor rating for the full sample and by PIM group (low: ≤ 64T vs. high: > 64T) were conducted to examine bivariate mean differences (Tables 7-3 & 7-4). In general, mean T scores for those in the Low PIM group should be higher compared to those in the High PIM group. We assume that those who are defensive in their responding would have suppressed scores and this was supported. Overall, the mean T scores for the Low PIM group were higher compared to those for the High PIM group. For those correctional officers who were classified as Low PIM, mean T scores on ANX-C (Cognitive; F (5,169) = 2.56, $P < 0.05$), ARD-T (Traumatic stress; F (5,169) = 3.14, $P < 0.05$), ALC (Alcohol problems; F (5,169) = 2.48, $P < 0.05$) and STR (Stress; F (5,169) = 2.80, $P < 0.05$) were significantly different by supervisor ratings (Table 7-3). An analysis of post-hoc Tukey results showed that significant individual differences did not exist for ANX-C and ALC. However, for both STR and ARD-T, those whose supervisors rated their performance an F had higher mean T scores compared to those given a B rating ($P < 0.05$).

In examining the means for the high PIM group, there were fewer significant differences by supervisor rating (Table 7-4). ANT-A (Antisocial behaviors; F (5,145) = 2.87, $P < 0.05$), Integrity (Probability of integrity issues; F (5,145) = 2.89, $P < 0.05$), and job problems (Probability of job problems; F (5,145) = 2.72, $P < 0.05$) significantly differed by supervisor rating. Tukey post hoc tests showed that ANT-A scores were significantly higher for those rated D compared to those rated as A ($P < 0.05$). This

pattern was also the same for probability of integrity problems and job performance problems ($P < 0.05$). There were no other individual differences by rating groups.

Table 7-3. Differences in Means of PAI Scales and Risk Estimates by Supervisor Rating (Ordinal) for Officers Scoring Low on PIM (≤ 64T).

	A		B		C		C-		D		F		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	*F*
SOM	42.43	2.77	42.78	2.17	42.0	2.46	42.0	2.94	42.25	2.73	44.17	2.93	1.00
SOM-C	43.98	2.05	43.83	2.23	43.40	1.80	43.00	0.00	43.50	1.73	45.83	4.26	1.67
SOM-S	41.72	4.15	41.52	3.41	40.90	3.13	42.00	5.23	41.83	4.24	42.50	4.42	0.87
SOM-H	44.32	3.21	45.52	3.60	44.45	3.35	43.50	4.04	44.08	3.34	46.17	4.45	1.12
ANX	43.08	4.86	42.43	4.27	41.67	4.12	43.0	3.74	42.67	4.60	45.50	4.23	1.03
ANX-C	**45.35**	5.21	**44.59**	4.36	**42.69**	5.22	**49.25**	7.14	**43.25**	4.27	**46.67**	5.32	**2.56***
ANX-A	41.62	5.41	40.98	4.88	41.81	5.35	39.00	4.08	42.00	6.16	45.17	2.93	0.91
ANX-P	44.40	4.83	43.96	4.65	43.21	3.38	41.75	2.87	45.33	5.31	45.83	5.00	0.97
ARD	42.13	4.91	41.09	5.08	41.07	4.14	42.0	9.63	41.08	5.37	46.17	6.56	1.36
ARD-O	48.13	7.64	47.85	7.37	48.79	7.48	43.75	12.82	45.50	8.98	52.67	7.87	1.01
ARD-P	41.52	6.14	40.74	6.25	38.93	5.42	41.25	9.50	43.08	6.47	41.17	3.19	1.33
ARD-T	**43.53**	3.77	**42.48**	2.16	**43.10**	3.91	**47.00**	2.45	**42.75**	2.26	**47.17**	5.95	**3.14***
DEP	41.75	4.55	40.98	3.30	40.67	3.7	38.75	3.59	42.08	4.29	42.67	5.39	0.95
DEP-C	43.20	4.45	43.13	4.67	42.50	3.80	40.00	2.44	45.50	4.76	42.50	3.51	1.34
DEP-A	43.93	3.60	43.52	3.11	43.40	3.62	42.50	3.32	43.42	4.87	43.00	2.68	0.25
DEP-P	42.30	6.22	41.07	4.29	40.86	4.52	39.50	5.74	41.75	4.86	45.33	9.79	1.15
MAN	48.15	7.35	46.28	7.28	46.57	6.62	48.50	6.14	43.00	6.90	48.67	4.03	1.33
MAN-A	47.00	7.82	44.28	7.83	44.95	8.49	46.25	6.18	43.83	8.97	46.83	5.56	0.82
MAN-G	52.97	9.10	52.30	8.84	51.71	7.46	55.75	10.34	47.50	6.91	55.50	6.28	1.19
MAN-I	45.47	6.55	44.04	6.95	44.83	5.99	43.50	6.40	42.08	5.99	44.00	4.52	0.70
PAR	46.32	6.71	45.04	6.62	44.79	5.30	44.25	4.99	43.33	5.76	46.00	6.32	0.66
PAR-H	48.90	8.14	48.11	8.00	48.14	7.54	40.25	5.25	43.67	5.36	47.17	7.14	1.73
PAR-P	45.85	6.23	44.87	5.40	44.07	4.42	50.25	9.29	45.75	7.90	46.00	3.10	1.17
PAR-R	45.70	7.85	44.20	7.50	44.52	6.11	45.25	4.72	43.25	6.30	46.17	7.03	0.42
SCZ	41.23	5.06	40.70	5.30	40.12	4.22	40.75	3.30	40.25	6.30	41.33	4.88	0.29
SCZ-P	44.57	7.19	44.24	7.35	43.17	5.88	48.75	5.62	42.33	8.24	44.83	4.58	0.74
SCZ-S	44.07	5.39	43.43	5.19	43.19	4.52	39.50	3.11	43.67	4.74	41.17	4.17	0.95
SCZ-T	41.50	5.28	41.24	4.84	40.79	3.92	41.50	1.73	41.25	5.64	45.00	8.83	0.78
BOR	43.05	6.10	42.43	4.76	42.71	4.61	48.00	4.24	42.58	4.48	47.00	3.85	1.60
BOR-A	42.25	4.70	41.80	4.53	42.57	4.51	42.00	5.48	42.50	5.09	48.50	5.17	2.23
BOR-I	44.67	6.14	44.00	5.45	44.07	4.00	47.75	7.89	44.50	6.02	45.67	5.35	0.47
BOR-N	45.52	7.51	45.33	7.10	44.71	7.42	51.50	3.00	43.08	5.28	48.67	5.32	1.17
BOR-S	45.37	6.14	44.63	5.89	45.38	5.36	53.75	11.06	46.25	7.12	47.67	5.46	1.87
ANT	47.40	6.66	47.07	6.34	46.50	6.38	46.25	2.22	46.00	6.63	49.33	3.88	0.33
ANT-A	48.20	7.68	49.00	8.64	49.57	9.73	43.75	3.78	50.33	8.49	50.33	6.56	0.53
ANT-E	48.28	6.67	46.80	5.89	45.83	6.30	48.00	2.00	45.75	6.43	48.83	8.30	0.98
ANT-S	47.35	7.46	46.59	7.10	45.55	5.94	49.50	1.73	43.50	3.26	48.83	5.78	1.16
ALC	**46.32**	4.69	**44.50**	3.42	**44.69**	3.94	**42.50**	1.92	**48.08**	6.80	**45.67**	3.27	**2.48***
DRG	44.87	4.38	44.74	4.07	44.67	4.39	43.50	3.00	45.50	5.66	47.67	5.85	0.63
AGG	43.60	5.36	44.50	5.49	45.00	5.72	44.50	9.95	44.50	4.87	48.00	4.86	0.85

	A		B		C		C-		D		F		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	***F***
AGG-A	40.77	5.90	41.76	5.46	42.21	5.99	43.00	6.32	41.42	6.14	47.83	7.28	1.72
AGG-V	48.98	7.17	49.72	6.76	50.52	8.08	50.75	18.14	50.25	8.48	50.83	5.71	0.25
AGG-P	73.93	3.09	44.35	4.17	44.36	4.42	42.00	0.00	44.33	5.12	45.67	3.14	0.51
SUI	43.72	2.17	43.96	2.10	44.43	3.92	43.00	0.00	45.58	4.68	44.33	3.27	1.08
STR	**45.43**	5.70	**44.46**	4.98	**46.76**	7.17	**50.25**	2.06	**46.08**	7.45	**52.83**	5.49	**2.80***
NON	41.75	5.67	42.00	5.76	40.86	3.89	38.00	1.16	44.00	6.55	44.17	4.17	1.35
RXR	57.83	6.16	58.41	5.83	60.14	6.80	57.00	9.83	59.58	6.97	58.50	4.64	0.78
DOM	55.40	6.85	53.48	6.38	56.60	6.66	62.00	6.22	54.58	5.52	52.50	2.59	2.16
WRM	53.17	8.08	54.07	6.70	54.05	6.78	61.75	7.89	54.25	6.90	51.83	6.62	0.33
Sub Abuse	42.53	15.96	39.07	13.56	41.26	15.67	32.25	10.28	49.17	21.73	44.17	12.86	1.18
Drug Use	12.27	10.68	11.46	9.48	13.12	11.87	4.25	1.26	17.25	14.80	13.50	4.23	1.06
Alcohol	25.60	16.25	22.00	12.00	24.79	15.40	13.25	4.27	32.33	22.75	26.50	14.18	1.38
Anger	41.73	16.03	43.65	16.16	44.90	17.53	36.25	12.15	45.17	18.22	52.50	19.64	0.72
Integrity	35.92	22.18	34.98	22.46	38.02	25.64	17.25	4.92	41.75	24.18	39.33	20.24	0.78
Job Perform	41.82	11.12	41.54	11.50	43.00	13.97	39.25	10.34	44.50	15.61	49.17	13.70	0.57
Poorly Suited	25.30	19.24	23.15	16.49	24.43	19.73	23.75	6.18	28.50	24.51	37.83	14.72	0.74

Table 7-4. Differences in means of PAI scales and risk ratings by supervisor ratings at the ordinal level for those scoring high on PIM (> 64 T).

	A		B		C		C-		D		F		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	***F***
SOM	41.51	2.95	41.35	2.05	41.45	2.09	39.88	0.99	40.83	1.47	41.36	2.46	0.76
SOM-C	43.31	1.15	43.00	0.00	43.36	0.99	43.00	0.00	43.00	0.00	43.00	0.00	1.40
SOM-S	40.10	3.87	40.78	3.85	40.39	3.04	38.00	0.00	39.83	3.25	40.09	3.30	0.92
SOM-H	44.08	4.75	43.41	3.28	43.67	4.13	42.38	2.39	43.17	1.84	44.09	3.86	0.35
ANX	38.36	3.28	38.29	3.16	39.15	3.23	37.38	2.62	37.50	2.59	39.45	3.11	0.86
ANX-C	40.49	4.01	40.71	3.87	41.24	3.84	39.25	2.60	39.33	3.20	41.45	3.98	0.62
ANX-A	37.85	4.43	37.57	4.34	38.39	4.75	36.38	2.82	36.50	3.33	39.73	4.03	0.85
ANX-P	40.67	3.65	40.51	2.96	41.42	3.51	41.00	2.27	41.00	3.80	40.45	3.24	0.36
ARD	37.79	5.17	38.78	4.57	38.94	5.06	39.38	3.29	38.33	3.27	38.18	4.92	0.32
ARD-O	46.05	8.63	47.29	8.85	46.79	8.63	49.63	5.78	47.67	4.27	44.82	9.91	0.40
ARD-P	35.77	5.54	36.33	5.18	37.61	6.82	35.00	7.19	35.00	2.45	37.45	4.44	0.64
ARD-T	41.64	1.56	42.00	2.18	41.76	1.60	41.75	1.49	42.00	1.67	42.18	2.14	0.26
DEP	38.13	2.98	38.39	2.56	38.39	2.77	37.50	2.56	37.33	1.75	3827	2.87	0.31
DEP-C	40.31	3.21	40.31	3.37	39.36	3.07	40.38	4.93	42.00	3.10	39.18	3.03	0.96
DEP-A	41.10	2.62	41.94	3.36	42.03	3.73	40.75	1.98	39.83	2.04	41.18	2.82	0.96
DEP-P	38.82	4.34	38.78	3.76	39.39	3.35	37.75	2.19	36.67	1.03	40.00	3.61	0.91
MAN	42.49	6.23	41.39	6.02	42.94	6.36	43.13	5.52	38.67	6.06	41.64	5.32	0.73
MAN-A	40.46	6.34	36.71	5.49	38.70	7.55	39.00	7.17	36.00	2.45	38.00	5.85	1.76
MAN-G	52.77	9.00	52.84	9.78	54.55	8.63	54.50	6.12	48.33	7.76	53.91	8.03	0.58
MAN-I	38.15	6.95	38.27	5.79	38.64	5.66	38.63	4.96	36.67	5.01	37.09	3.15	0.20
PAR	40.28	5.40	41.12	5.92	40.79	6.29	43.50	6.97	37.33	6.68	41.55	5.13	0.87
PAR-H	43.18	6.95	44.20	8.22	43.48	8.76	47.88	10.22	40.83	8.80	46.55	8.57	0.78
PAR-P	43.31	4.34	43.84	4.97	43.73	4.80	43.13	3.56	40.50	2.51	42.27	4.12	0.75
PAR-R	39.05	6.12	39.55	6.99	39.48	6.96	43.00	6.30	36.67	7.28	39.73	5.06	0.71
SCZ	36.44	3.66	36.29	3.34	36.00	3.42	38.25	3.92	35.00	2.10	36.82	4.22	0.76
SCZ-P	39.79	4.75	40.29	4.54	40.82	5.28	42.88	8.13	39.00	3.95	42.91	7.75	1.06
SCZ-S	40.08	3.92	40.02	4.70	38.94	3.42	42.25	5.18	38.33	3.01	39.45	3.53	1.09
SCZ-T	39.08	3.31	38.47	2.75	38.55	2.92	38.13	2.23	38.50	1.64	38.09	2.02	0.36
BOR	37.03	2.84	37.49	2.84	37.97	3.23	37.50	3.30	37.00	2.83	38.45	5.30	0.54
BOR-A	38.15	3.22	38.76	2.86	39.00	3.27	37.88	2.23	38.00	2.45	40.09	5.41	0.83
BOR-I	39.41	2.73	39.57	3.08	39.97	3.11	41.75	3.62	40.00	2.68	40.00	4.27	0.84
BOR-N	39.62	4.81	40.94	5.18	41.15	6.02	39.75	5.90	39.00	3.63	41.55	8.43	0.54
BOR-S	41.79	5.64	41.00	4.08	41.73	4.63	40.50	3.34	41.67	3.01	41.73	3.50	0.24
ANT	42.05	4.10	43.35	5.15	43.27	5.13	43.63	5.71	47.00	6.29	42.73	3.95	1.19
ANT-A	**43.54**	5.42	**46.41**	7.18	**47.12**	8.50	**48.88**	10.90	**54.67**	8.69	**47.00**	8.20	**2.87***
ANT-E	44.08	5.56	43.84	5.23	42.67	3.73	42.88	3.36	43.67	4.89	42.73	4.54	0.43
ANT-S	42.95	4.35	43.24	4.92	42.91	5.30	41.63	5.34	42.17	4.66	41.55	3.86	0.36
ALC	44.87	4.41	44.33	3.66	43.91	3.49	42.75	2.71	45.83	4.83	43.64	6.70	0.75
DRG	44.97	4.08	45.39	4.00	44.55	3.98	43.50	2.78	44.00	4.90	46.91	7.97	0.80
AGG	41.15	4.28	40.59	4.56	39.91	3.60	41.25	3.66	38.83	2.99	40.82	3.89	0.59
AGG-A	36.67	2.74	37.20	4.48	36.88	3.26	38.38	4.41	36.67	2.25	38.09	3.62	0.51
AGG-V	48.69	9.42	46.10	8.14	45.42	7.55	46.88	10.41	43.17	5.00	46.64	7.92	0.85
AGG-P	42.46	1.80	43.14	2.82	42.55	1.95	42.50	1.41	42.00	0.00	42.00	0.00	0.92
SUI	43.15	0.96	43.24	1.20	43.61	1.77	43.00	0.00	43.33	0.82	43.00	0.00	0.77
STR	41.59	3.31	41.39	3.81	43.33	4.98	43.13	4.09	42.17	4.96	40.55	4.01	1.41
NON	38.23	2.18	39.16	3.53	38.97	3.52	39.25	3.24	37.33	0.82	38.91	3.36	0.71
RXR	62.23	6.58	63.43	4.55	61.52	5.48	61.38	4.75	66.67	3.67	63.27	6.23	1.28

	A		B		C		C-		D		F		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	***F***
DOM	57.41	6.67	56.63	7.66	58.45	7.23	58.38	7.15	56.50	5.92	57.27	4.92	0.32
WRM	59.46	5.75	59.82	7.14	60.12	6.70	59.75	6.65	60.50	7.18	62.91	5.47	0.50
Sub Abuse	32.72	14.46	33.71	14.44	33.79	15.11	34.00	14.88	46.50	10.75	32.18	11.24	1.02
Drug Use	8.10	6.97	8.94	7.58	9.88	8.78	8.50	6.28	15.67	9.03	9.73	7.09	1.10
Alcohol	18.92	12.49	20.22	12.98	19.55	14.64	19.38	14.01	31.67	12.86	17.45	8.63	1.11
Anger	29.77	10.58	34.16	14.04	34.09	15.03	36.50	17.41	44.33	7.34	30.55	7.45	1.69
Integrity	**29.23**	15.39	**36.90**	20.65	**36.85**	24.06	**40.50**	24.44	**62.17**	25.45	**32.82**	22.15	**2.89***
Job Perform	**28.77**	7.11	**31.76**	8.36	**33.09**	10.42	**36.75**	13.45	**40.50**	9.65	**30.64**	7.68	**2.72***
Poorly Suited	12.03	8.01	14.41	10.49	17.06	11.31	17.63	15.41	22.17	9.74	14.73	8.90	1.64

In order to examine which scales and risk estimates were predictors of supervisor rating individually, bivariate ordinal regression was conducted (Table 7-5). For correctional officers in the low PIM group, STR ($\beta = -0.049$, $P < 0.05$) was found to be a significant predictor of supervisor rating, where higher STR scores were associated with lower supervisor ratings. The other three scales found significant through ANOVA, ANX-C, ARD-T and ALC, were not found to be significant through ordinal logistic. However, another scale, AGG-A ($\beta = -0.049$, $P < 0.05$) was found significant, with higher AGG-A scores predicting lower supervisor rating. For those correctional officers who had high PIM scores, results were more consistent with ANT-A, integrity and job problems found to be significant predictors of supervisor rating. Additionally, being rated poorly by the psychologist was also found significant. Correctional officers who scored higher on ANT-A ($\beta = -0.057$, $P < 0.05$), probability of job problems ($\beta = -0.042$, $P < 0.05$), probability of integrity problems ($\beta = -0.015$, $P < 0.05$), or probability of being poorly rated by the psychologist ($\beta = -0.032$, $P < 0.05$) were predictive of lower supervisor ratings.

In order to compare the predictors for low PIM and high PIM groups, Chow test analog for logistic regression (DeMaris, 2004) was calculated. The Chow test analog requires estimating a full model, which includes PIM as an independent dummy variable (Low PIM=1; High PIM=0) and produces an unconstrained log-likelihood value. Then a model is run for each PIM sample for comparison. The Chow test analog chi-square test statistic relies on examining differences in the fitted log-likelihood values using the following equation: $\chi^2 = -2 \ln L_f - [\, -2 \ln L_1 + -2 \ln L_2 \,]$, where L_c is the fitted log-likelihood for the full model, L_1 is the fitted log-likelihood for Low PIM group, and L_2 is

the fitted log-likelihood for the High PIM group. The degrees of freedom for each model are the total number of parameters, including the intercept. For ordinal regression, there are multiple intercepts which are equivalent to the negative values of the thresholds. The thresholds mark where the dependent variable is cut to make the levels of the ordinal variable. For supervisor rating each model has five thresholds and is added to the number of independent variables in order to obtain the total degrees of freedom. For example, the full model has a total degrees of freedom of seven (Table 7-5), five thresholds plus one for SOM, and one for PIM group. At the bivariate level, the Chow test analogue results were not significant for any predictor. This was most likely due to the lack of overlap of significant predictors for the Low PIM and High PIM groups.

Multivariate ordinal logistic regression was run including the significant bivariate predictors as shown in Table 7-5. Rather than running three separate models (full, Low PIM and High PIM), one model was run utilizing slope dummy variables for the included independent variables (i.e., ANT-A, ANT-E, AGG-A, STR and Job Problem) based on the PIM variable (Hanushek and Jackson, 1977). Probability of integrity issues and being rated poorly suited by the psychologist were not included even though they were found significant under the High PIM model. These two variables were dropped due to the high correlation with probability of job problems ($r = 0.74$ with integrity, $r = 0.89$ with poorly suited). Agency was also included in the final model. As with the CPI, the test of parallel lines (χ^2 (28) = 406.00, $P < 0.001$) was violated for the final model and running the model as multinomial logistic did not remedy this error (see footnote 13, Chapter 5). Therefore, supervisor rating was analyzed as a dichotomous variable.

Table 7-5. Bivariate Ordinal Logistic Regression Results for PAI Scales and Risk Estimates on Supervisor Rating by PIM Group (n=316).

	Full Model				Low PIM (≤ 64T)				High PIM (> 64T)				*Chow*
	β	SE	- 2 ln L	*df*	β	SE	- 2 ln L	*df*	β	SE	- 2 ln L	*df*	χ^2
SOM	0.03	0.04	258.314	7	0.01	0.06	136.345	6	0.06	0.06	114.514	6	7.46
SOM-C	0.06	0.06	100.895	7	0.04	0.07	57.932	6	0.15	0.20	35.690	6	7.27
SOM-S	0.02	0.03	168.218	7	0.02	0.04	85.654	6	0.02	0.04	75.498	6	7.07
SOM-H	0.01	0.03	195.974	7	-0.01	0.04	96.203	6	0.02	0.04	92.270	6	7.50
ANX	0.01	0.03	336.198	7	0.02	0.03	185.545	6	-0.03	0.05	142.862	6	7.79
ANX-C	0.03	0.02	242.202	7	0.04	0.03	136.528	6	-0.01	0.04	97.441	6	8.23
ANX-A	-0.02	0.02	222.088	7	-0.02	0.03	123.878	6	-0.02	0.03	91.124	6	7.09
ANX-P	0.00	0.03	185.071	7	0.01	0.03	105.909	6	-0.03	0.05	71.515	6	7.65
ARD	-0.01	0.02	385.854	7	0.01	0.03	196.152	6	-0.03	0.03	182.003	6	7.70
ARD-O	-0.00	0.01	339.117	7	0.00	0.02	163.485	6	-0.01	0.02	168.499	6	7.13
ARD-P	-0.03	0.04	234.033	7	0.02	0.02	122.411	6	-0.02	0.03	103.096	6	8.53
ARD-T	0.01	0.03	162.921	7	-0.03	0.04	100.216	6	-0.05	0.08	55.538	6	7.17
DEP	0.02	0.03	323.658	7	0.03	0.04	177.300	6	0.01	0.06	139.278	6	7.08
DEP-C	0.01	0.03	175.440	7	0.01	0.03	94.008	6	0.03	0.04	74.098	6	7.33
DEP-A	0.02	0.03	172.078	7	0.04	0.04	91.133	6	-0.00	0.05	73.410	6	7.53
DEP-P	0.01	0.02	220.196	7	0.02	0.03	121.895	6	-0.01	0.04	90.984	6	7.32
MAN	0.02	0.02	461.598	7	0.03	0.02	225.972	6	0.01	0.02	227.993	6	7.63
MAN-A	0.03	0.01	274.623	7	0.02	0.02	142.667	6	0.03	0.02	124.830	6	7.13
MAN-G	0.01	0.01	363.952	7	0.02	0.02	180.856	6	-0.01	0.02	175.108	6	7.99
MAN-I	0.02	0.02	287.119	7	0.03	0.02	146.714	6	0.01	0.03	132.939	6	7.47
PAR	0.01	0.02	424.161	7	0.03	0.02	213.549	6	-0.01	0.02	201.696	6	8.92
PAR-H	0.01	0.01	323.430	7	0.03	0.02	150.663	6	-0.02	0.02	162.028	6	10.74
PAR-P	0.02	0.02	208.029	7	0.01	0.02	118.058	6	0.02	0.03	82.920	6	7.05
PAR-R	0.01	0.02	279.960	7	0.02	0.02	141.708	6	-0.01	0.02	130.298	6	7.95
SCZ	0.02	0.02	307.413	7	0.03	0.03	169.080	6	-0.00	0.04	130.941	6	7.39
SCZ-P	-0.01	0.02	215.868	7	0.02	0.02	113.315	6	-0.05	0.03	92.219	6	10.33
SCZ-S	0.03	0.02	222.306	7	0.04	0.03	119.933	6	0.02	0.04	95.150	6	7.22
SCZ-T	0.01	0.02	161.135	7	-0.00	0.03	94.277	6	0.06	0.05	58.681	6	8.18
BOR	-0.03	0.02	380.976	7	-0.02	0.03	208.401	6	-0.07	0.05	164.733	6	7.84
BOR-A	-0.05	0.02	175.695	7	-0.04	0.03	96.196	6	-0.06	0.05	72.263	6	7.24
BOR-I	-0.02	0.02	204.794	7	-0.00	0.02	122.725	6	-0.07	0.05	73.467	6	8.60
BOR-N	-0.01	0.02	240.748	7	0.00	0.02	127.704	6	-0.02	0.03	105.384	6	7.66
BOR-S	-0.02	0.02	174.683	7	-0.03	0.02	98.478	6	0.01	0.03	68.535	6	7.67
ANT	-0.01	0.02	397.023	7	0.01	0.02	211.917	6	-0.04	0.03	175.765	6	9.34
ANT-A	**-0.03***	0.01	307.948	7	-0.01	0.02	153.011	6	**-0.06***	0.02	144.698	6	10.24
ANT-E	**0.04***	0.02	207.002	7	0.04	0.02	109.671	6	0.04	0.03	87.558	6	9.77
ANT-S	0.03	0.02	236.327	7	0.03	0.02	125.947	6	0.03	0.03	103.391	6	6.99
ALC	0.04	0.02	220.284	7	0.03	0.03	115.058	6	0.05	0.04	98.150	6	7.08
DRG	-0.01	0.02	158.572	7	-0.02	0.03	87.259	6	0.00	0.03	64.097	6	7.22
AGG	-0.02	0.02	377.796	7	-0.04	0.02	198.972	6	0.04	0.04	168.668	6	10.16
AGG-A	**-0.05***	0.02	213.830	7	**-0.05***	0.02	124.675	6	-0.04	0.04	82.068	6	7.09
AGG-V	0.00	0.01	320.500	7	-0.02	0.02	148.317	6	0.03	0.02	161.425	6	10.76
AGG-P	-0.01	0.03	122.063	7	-0.02	0.04	73.755	6	0.04	0.07	40.543	6	7.77
SUI	-0.07	0.04	114.358	7	-0.08	0.05	70.136	6	-0.06	0.12	37.107	6	7.12
STR	**-0.04***	0.02	258.460	7	**-0.05***	0.02	148.806	6	-0.03	0.04	102.358	6	7.30
NON	-0.01	0.02	200.399	7	-0.01	0.03	119.042	6	-0.03	0.05	74.078	6	7.28

	Full Model				Low PIM (≤ 64T)				High PIM (> 64T)				*Chow*
	β	SE	- 2 ln L	*df*	β	SE	- 2 ln L	*df*	β	SE	- 2 ln L	*df*	χ^2
RXR	-0.02	0.02	310.286	7	-0.03	0.02	158.256	6	-0.01	0.03	144.543	6	7.49
DOM	-0.01	0.02	360.319	7	-0.01	0.02	178.435	6	-0.01	0.02	174.807	6	7.08
WRM	-0.02	0.02	391.340	7	-0.02	0.02	209.781	6	-0.02	0.02	174.474	6	7.08
Sub Abuse	-0.01	0.01	647.735	7	-0.00	0.01	331.370	6	-0.01	0.01	309.058	6	7.31
Drug Use	-0.02	0.01	464.398	7	-0.01	0.01	247.804	6	-0.03	0.02	208.843	6	7.75
Alcohol	-0.00	0.01	544.809	7	-0.00	0.01	293.523	6	-0.01	0.01	244.112	6	7.17
Anger	-0.01	0.01	619.384	7	-0.01	0.01	326.192	6	-0.02	0.01	285.796	6	7.40
Integrity	-0.01	0.01	682.286	7	-0.00	0.01	355.220	6	**-0.02***	0.01	317.953	6	9.11
Job Perform	**-0.02***	0.01	579.933	7	-0.01	0.01	294.472	6	**-0.04***	0.02	275.768	6	9.69
Poorly Suited	-0.01	0.01	558.855	7	-0.01	0.01	297.395	6	**-0.03***	0.02	251.305	6	10.15

*$P < 0.05$

As in Chapters 5 and 6, supervisor rating was recoded into not satisfactory (0: F,D, or C-) and satisfactory (1: C, B, A). Independent t-tests were conducted to assess mean differences for each of the scales and risk estimates separately for the two PIM groups (Table 7-6). As expected, scores on many of the PAI scales and risk estimates were higher in correctional officers rated unsatisfactory compared to those rated satisfactory regardless of PIM group. There were more significant differences across supervisor rating groups for those correctional officers who had low PIM scores. Those rated satisfactory had significantly lower scores on traumatic stress (ARD-T; t (168) = 2.06, $P < 0.05$), self-harm (BOR-S; t (168) = 2.05, $P < 0.05$) and STR (t (168) = 2.283, $P < 0.05$). However, those rated satisfactory had significantly higher scores on hypervigilance (PAR-H; t (168) = -2.53, $P < 0.05$). Among High PIM correctional officers, only ANT-A was found to be significantly lower in those rated satisfactory (t(168) = 2.26, $P < 0.05$).

Bivariate logistic regressions were conducted in order to determine the association between the predictors and 2-level supervisor rating (Table 7-7) for each PIM group. As found earlier examining mean differences, for the Low PIM group, ARD-T, PAR-H, BOR-S and STR were found to be significant predictors of supervisor rating. Additionally, for the High PIM group only ANT-A was found to be a significant predictor of supervisor rating. Chow test analog was significant for PAR-H and PAR-P, which indicates that the regression effects differ based on PIM group. Scoring on PAR-H (hypervigilance) was different based on PIM group and supervisor rating: those officers rated as satisfactory, on average, scored higher on PAR-H in the Low PIM group but scored lower on PAR-H in the High PIM group. Therefore, correctional officers who

were not defensive in their responding and considered satisfactory on the job had higher scores on hypervigilance, whereas defensive responding masked the inflated scores. The opposite pattern was seen with PAR-P (persecution), which was not found to be a significant predictor of supervisor ratings for any of the three models. There was a trend for correctional officers considered satisfactory in the High PIM group to have higher scores on PAR-P compared to those unsatisfactory, while those in the Low PIM group rated satisfactory had lower PAR-P scores than those rated unsatisfactory. Overall, mean scores on PAR-P in the High PIM groups were muted compared to the Low PIM group. It is possible that those who were rated not satisfactory in the High PIM group may have been overly defensive in their responding for this scale, which further deflated their scores.

Three multiple binary logistic regression models based on PIM sample were run utilizing the included independent variables (ARD-T, PAR-H, PAR-P, BOR-S, STR, ANT-A) as shown in Table 7-7. PAR-P was included since it was shown through the Chow test analog to vary by PIM group. Multicollinearity was assessed on these predictors through calculation of VIF. All VIF values were under 2, well under the recommendation of 10. Multiple logistic regression using enter method was run using these significant predictors controlling for agency. The Chow test analog was significant ($P < 0.01$) indicating that there was a difference from the full model based on PIM group. For the final model, Hosmer and Lemeshow goodness of fit was not significant for all three models and the c-statistics were over 0.80 indicating good fit of the data. Only agency was significant across all three models, with officers from Agency A or Agency B more likely to be rated satisfactory compared to Agency C. The Low PIM sample

produced significant predictors of supervisor rating, while the full model and High PIM model did not. In the Low PIM sample, PAR-H, PAR-P and BOR-S were found to be significant predictors of supervisor rating. Correctional officers with higher hypervigilance scores (PAR-H; OR: 1.13; 95% CI: 1.03, 1.23), lower scores on self-harm (BOR-S; OR: 0.88; 95% CI: 0.80, 0.98) or persecution (PAR-P; OR: 0.89; 95% CI: 0.79, 1.00) were more predictive of satisfactory ratings.

Table 7-6. Differences in Means of PAI Scales and Risk Estimates by Supervisor Ratings (2-level) by PIM Group.

	Full Model					Low PIM (≤ 64T)					High PIM (> 64T)				
	Satisfactory		Not Satisfactory			Satisfactory		Not Satisfactory			Satisfactory		Not Satisfactory		
	M	SD	M	SD	*t*	M	SD	M	SD	*t*	M	SD	M	SD	*t*
SOM	41.97	2.49	41.68	2.56	-0.74	42.42	2.51	42.73	2.83	0.53	41.43	2.34	40.76	1.92	-1.33
SOM-C	43.51	1.64	43.49	1.89	-0.09	43.77	2.04	44.05	2.68	0.56	43.20	0.84	43.00	0.00	-1.17
SOM-S	40.99	3.67	40.62	3.75	-0.64	41.43	3.65	42.05	4.25	0.73	40.45	3.64	39.36	2.77	-1.42
SOM-H	4426	3.71	43.89	3.40	-0.64	44.73	3.39	44.55	3.74	-0.24	43.69	4.01	43.32	3.02	-0.44
ANX	40.71	4.42	40.74	4.46	0.05	42.48	4.48	43.50	4.35	1.00	38.55	3.22	38.32	2.91	-0.32
ANX-C	42.75	4.89	42.60	5.11	-0.20	44.36	5.06	45.27	5.43	0.78	40.79	3.88	40.24	3.46	-0.65
ANX-A	39.86	5.20	39.96	5.06	0.12	41.74	5.21	42.32	5.37	0.71	37.88	4.46	37.88	3.78	-0.00
ANX-P	42.52	4.25	42.66	4.46	0.20	43.93	4.41	44.82	4.92	0.87	40.81	3.34	40.76	2.99	-0.07
ARD	40.16	5.04	40.49	5.68	0.41	41.51	4.76	42.64	6.60	0.98	38.50	4.89	38.60	3.97	0.09
ARD-O	47.57	8.04	47.09	8.56	-0.37	48.23	7.47	47.14	9.64	-0.62	46.75	8.66	47.04	7.68	0.15
ARD-P	38.72	6.24	38.96	6.38	0.24	40.54	6.04	42.23	6.18	1.22	36.50	5.78	36.08	5.11	-0.33
ARD-T	42.51	2.88	43.28	3.35	1.64	**43.08**	3.41	**44.73**	4.11	**2.06***	41.82	1.84	42.00	1.78	0.45
DEP	39.90	3.76	39.60	4.04	-0.51	41.20	3.98	41.64	4.52	0.47	38.31	2.74	37.80	2.48	-0.85
DEP-C	41.66	4.14	41.85	4.45	0.29	42.98	4.34	43.68	4.53	0.70	40.05	3.24	40.24	3.77	0.26
DEP-A	42.77	3.49	41.85	3.41	-1.68	43.66	3.45	43.14	3.98	-0.65	41.69	3.25	40.72	2.37	-1.42
DEP-P	40.39	4.81	40.28	5.36	-0.11	41.51	5.23	42.32	6.65	0.66	38.96	3.83	38.48	3.02	-0.59
MAN	44.89	7.14	43.34	6.32	-1.40	47.12	7.13	45.55	6.51	-0.98	42.17	6.17	41.40	5.58	-0.57
MAN-A	42.38	8.20	41.23	7.48	-0.89	45.57	8.05	45.09	7.55	-0.26	38.46	6.52	37.84	5.64	-0.44
MAN-G	52.80	8.83	52.02	7.80	-0.57	52.41	8.54	51.18	8.17	-0.63	53.28	9.19	52.76	7.54	-0.26
MAN-I	41.91	7.10	40.00	5.49	-1.76	44.84	6.51	42.86	5.51	-1.36	38.33	6.10	37.48	4.14	-0.66
PAR	43.36	6.53	42.60	6.15	-0.75	45.49	6.31	44.23	5.64	-0.88	40.76	5.83	41.16	6.32	0.31
PAR-H	**46.30**	**8.45**	**44.85**	**7.86**	**-1.09**	**48.44**	6.51	**42.86**	5.51	**-2.53***	43.68	8.41	45.60	9.22	1.02
PAR-P	44.41	5.20	44.23	5.92	-0.21	45.04	5.52	46.64	7.10	1.22	43.64	4.70	42.12	3.62	-1.52
PAR-R	42.41	7.51	42.09	6.51	-0.28	44.90	7.27	44.41	6.12	-0.30	39.37	6.66	40.04	6.26	0.46
SCZ	38.73	4.85	38.62	4.90	-0.14	40.75	4.91	40.64	5.31	-0.10	36.26	3.44	36.84	3.78	0.76
SCZ-P	42.36	6.31	43.00	7.14	0.63	44.07	6.87	44.18	7.15	0.07	40.27	4.79	41.96	7.10	1.46
SCZ-S	41.88	5.05	41.09	4.41	-1.01	43.62	5.07	42.23	4.49	-1.22	39.74	4.13	40.08	4.17	0.37
SCZ-T	40.08	4.25	40.13	4.88	0.07	41.22	4.77	42.32	6.21	0.97	38.69	2.97	38.20	1.94	-0.78

	Full Model					Low PIM (≤ 64T)					High PIM (> 64T)				
	Satisfactory		Not Satisfactory			Satisfactory		Not Satisfactory			Satisfactory		Not Satisfactory		
	M	SD	M	SD	*t*	M	SD	M	SD	*t*	M	SD	M	SD	*t*
BOR	40.38	5.11	41.06	5.62	0.83	42.76	5.28	44.77	4.77	1.68	37.47	2.95	37.80	4.11	0.47
BOR-A	40.59	4.35	41.30	5.46	0.98	42.20	4.57	44.05	5.66	1.71	38.63	3.09	38.88	4.01	0.35
BOR-I	42.19	5.01	42.83	5.44	0.79	44.29	5.37	45.41	6.02	0.90	39.63	2.96	40.56	3.69	1.37
BOR-N	43.13	6.88	43.06	6.88	-0.06	45.23	7.32	46.14	5.94	0.55	40.57	5.30	40.36	6.61	-0.17
BOR-S	43.48	5.66	44.45	6.63	1.05	**45.14**	5.82	**48.00**	7.70	**2.05***	41.45	4.75	41.32	3.25	-0.14
ANT	45.18	6.12	45.40	5.47	0.23	47.04	6.45	46.95	5.44	-0.06	42.91	4.83	44.04	5.22	1.05
ANT-A	47.42	8.11	49.30	8.48	1.46	48.84	8.56	49.14	7.54	0.16	**45.68**	7.17	**49.44**	9.38	**2.26***
ANT-E	45.54	6.04	44.87	5.61	-0.70	47.13	6.37	47.00	6.38	-0.09	43.60	4.98	43.00	4.12	-0.56
ANT-S	45.01	6.32	43.74	4.98	-1.30	46.60	6.94	46.05	4.71	-0.36	43.06	4.82	41.72	4.37	-1.28
ALC	44.88	4.06	45.06	4.86	0.27	45.29	4.18	46.41	5.65	1.12	44.39	3.86	43.88	3.76	-0.60
DRG	44.88	4.14	45.40	5.66	0.75	44.77	4.26	45.73	5.32	0.95	45.02	4.00	45.12	6.03	0.10
AGG	42.62	5.28	42.81	5.38	0.23	44.28	5.50	45.45	5.89	0.93	40.59	4.22	40.48	3.61	-0.12
AGG-A	39.44	5.43	40.47	5.97	1.18	41.19	5.79	43.45	6.78	1.45	36.94	3.64	37.84	3.56	1.13
AGG-V	48.35	7.96	48.04	9.04	-0.24	49.65	7.30	50.50	9.62	0.49	46.75	8.46	45.88	8.08	-0.47
AGG-P	43.54	3.31	43.15	3.09	-0.76	44.18	3.83	44.27	4.20	0.10	42.76	2.31	42.16	0.80	-1.28
SUI	43.69	5.25	43.87	2.77	0.50	43.99	2.76	44.77	3.88	1.17	43.31	1.32	43.08	0.40	-0.88
STR	43.92	5.49	45.00	6.53	1.21	**45.51**	5.98	**48.68**	6.79	**2.28***	41.98	4.08	41.76	4.25	-0.25
NON	40.33	4.63	40.66	4.90	0.44	41.57	5.24	42.95	5.70	1.14	38.81	3.16	38.64	2.91	-0.25
RXR	60.40	6.25	61.30	6.46	0.90	58.67	6.28	58.82	6.74	0.10	62.52	5.54	63.48	5.44	0.79
DOM	56.15	7.02	56.47	5.82	0.30	55.14	6.72	55.36	5.84	0.15	57.38	7.22	57.44	5.73	0.04
WRM	56.43	7.58	58.34	7.48	1.59	53.70	7.28	54.95	7.49	0.75	59.79	6.55	61.32	6.18	1.08
Sub Abuse	37.64	15.32	40.19	16.35	1.04	41.09	15.14	44.73	18.51	1.02	33.41	14.51	36.20	13.30	0.89
Drug Use	10.76	9.56	12.21	9.90	0.96	12.26	10.63	13.86	11.98	0.65	8.93	7.71	10.76	7.59	1.09
Alcohol	22.17	14.26	24.19	16.17	0.88	24.25	14.78	27.27	19.34	0.86	19.62	13.20	21.48	12.55	0.65
Anger	38.51	15.99	40.34	15.79	0.73	43.23	16.45	45.55	17.81	0.61	32.73	13.37	35.76	12.40	1.04
Integrity	35.41	21.91	39.66	23.98	1.21	36.22	23.16	36.64	22.27	0.08	34.41	20.32	42.32	25.54	1.69
Job Perform	37.16	11.96	39.57	13.23	1.26	42.07	12.04	44.82	14.10	0.98	31.16	8.72	34.96	10.68	1.91
Poorly Suited	19.88	16.06	23.40	17.07	1.38	24.39	18.47	30.18	19.95	1.36	14.36	10.11	17.44	11.45	1.35

*$P < 0.05$

Table 7-7. Bivariate Logistic Regression Results of PAI Scales and Risk Estimates on Supervisor Rating (Satisfactory^ vs. Not Satisfactory) by PIM Group (n=316).

	Full Model				Low PIM (≤ 64T)				High PIM (> 64T)				*Chow*
	OR	95% CI	- 2 ln L	*df*	OR	95% CI	- 2 ln L	*df*	OR	95% CI	- 2 ln L	*df*	χ^2
SOM	1.04	0.91, 1.18	264.400	3	0.96	0.80, 1.13	130.714	2	1.16	0.93, 1.45	131.746	2	1.94
SOM-C	0.99	0.82, 1.20	264.665	3	0.95	0.78, 1.14	130.695	2	--[b]	--	--	--	--
SOM-S	1.02	0.93, 1.12	264.448	3	0.96	0.86, 1.07	130.478	2	1.12	0.95, 1.32	131.335	2	2.63
SOM-H	1.02	0.94, 1.12	264.434	3	1.02	0.89, 1.16	130.935	2	1.03	0.91, 1.16	133.485	2	0.01
ANX	0.98	0.90, 1.06	264.306	3	0.95	0.86, 1.05	130.012	2	1.02	0.89, 1.18	133.580	2	0.71
ANX-C	0.99	0.93, 1.06	264.630	3	0.97	0.89, 1.05	130.384	2	1.04	0.92, 1.17	133.246	2	1.00
ANX-A	0.98	0.92, 1.05	264.396	3	0.97	0.89, 1.06	130.494	2	1.00	0.90, 1.10	133.688	2	0.21
ANX-P	0.97	0.90, 1.05	264.258	3	0.96	0.87, 1.06	130.246	2	1.00	0.88, 1.15	133.683	2	0.33
ARD	0.98	0.92, 1.04	264.091	3	0.96	0.88, 1.04	130.026	2	1.00	0.91, 1.09	133.679	2	0.39
ARD-O	1.01	0.97, 1.04	264.593	3	1.02	0.96, 1.08	130.606	2	1.00	0.95, 1.05	133.664	2	0.32
ARD-P	0.98	0.93, 1.04	264.273	3	0.96	0.89, 1.03	129.515	2	1.01	0.94, 1.10	133.572	2	1.19
ARD-T	**0.91***	**0.83, 0.99**	261.193	3	**0.90***	**0.81, 0.99**	127.511	2	0.95	0.76, 1.18	133.493	2	0.19
DEP	1.01	0.92, 1.10	264.669	3	0.98	0.88, 1.08	130.774	2	1.08	0.91, 1.28	132.919	2	0.98
DEP-C	0.97	0.90, 1.05	264.173	3	0.96	0.87, 1.07	130.501	2	0.98	0.86, 1.12	133.620	2	0.05
DEP-A	1.08	0.97, 1.20	262.466	3	1.05	0.91, 1.20	130.556	2	1.13	0.95, 1.33	131.435	2	0.48
DEP-P	0.99	0.93, 1.06	264.641	3	0.97	0.90, 1.05	130.573	2	1.04	0.92, 1.18	133.324	2	0.74
MAN	1.03	0.98, 1.08	263.417	3	1.03	0.97, 1.10	130.009	2	1.02	0.95, 1.10	133.353	2	0.06
MAN-A	1.01	0.97, 1.06	264.436	3	1.01	0.95, 1.07	130.919	2	1.02	0.95, 1.09	133.486	2	0.03
MAN-G	1.01	0.98, 1.05	264.285	3	1.02	0.96, 1.07	130.588	2	1.01	0.96, 1.06	133.616	2	0.08
MAN-I	1.04	0.99, 1.10	262.514	3	1.05	0.98, 1.13	129.104	2	1.03	0.95, 1.11	133.225	2	0.19
PAR	1.01	0.96, 1.06	264.505	3	1.03	0.96, 1.11	130.189	2	0.99	0.92, 1.06	133.592	2	0.72
PAR-H	1.02	0.98, 1.06	263.900	3	**1.09***	**1.02, 1.16**	124.245	2	0.97	0.93, 1.02	132.650	2	**7.00****
PAR-P	1.00	0.94, 1.06	264.678	3	0.96	0.89, 1.03	129.625	2	1.09	0.98, 1.21	131.197	2	**3.86***
PAR-R	1.00	0.95, 1.04	264.668	3	1.01	0.95, 1.08	130.899	2	0.98	0.92, 1.05	133.473	2	0.30
SCZ	0.99	0.92, 1.06	264.543	3	1.01	0.92, 1.10	130.981	2	0.96	0.85, 1.08	133.120	2	0.44
SCZ-P	0.98	0.93, 1.02	263.779	3	1.00	0.94, 1.06	130.985	2	0.95	0.88, 1.02	131.722	2	1.07
SCZ-S	1.02	0.96, 1.10	264.197	3	1.06	0.96, 1.17	129.416	2	0.98	0.89, 1.09	133.552	2	1.23
SCZ-T	0.98	0.91, 1.06	264.492	3	0.96	0.88, 1.04	130.114	2	1.07	0.90, 1.28	133.017	2	1.36
BOR	0.94	0.88, 1.01	261.962	3	0.93	0.86, 1.01	128.282	2	0.97	0.85, 1.11	133.466	2	0.21

	Full Model				Low PIM (≤ 64T)				High PIM (> 64T)				*Chow*
	OR	95% CI	- 2 ln L	*df*	OR	95% CI	- 2 ln L	*df*	OR	95% CI	- 2 ln L	*df*	χ^2
BOR-A	0.94	0.88, 1.01	262.233	3	0.92	0.84, 1.01	128.185	2	0.98	0.86, 1.11	133.566	2	0.48
BOR-I	0.95	0.89, 1.02	262.621	3	0.96	0.89, 1.04	130.218	2	0.91	0.80, 1.04	131.870	2	0.53
BOR-N	0.99	0.94, 1.04	264.574	3	0.98	0.92, 1.04	130.686	2	1.01	0.93, 1.09	133.658	2	0.23
BOR-S	0.96	0.91, 1.01	262.418	3	**0.93***	**0.87, 0.99**	127.079	2	1.01	0.91, 1.11	133.669	2	1.67
ANT	0.98	0.93, 1.04	264.308	3	1.00	0.93, 1.08	130.987	2	0.96	0.88, 1.04	132.627	2	0.69
ANT-A	0.97	0.94, 1.01	262.074	3	1.00	0.94, 1.05	130.967	2	**0.94***	**0.90, 0.99**	129.079	2	2.03
ANT-E	1.01	0.96, 1.07	264.501	3	1.00	0.93, 1.08	130.983	2	1.03	0.93, 1.13	133.358	2	0.16
ANT-S	1.03	0.97, 1.09	263.509	3	1.01	0.94, 1.09	130.855	2	1.07	0.96, 1.18	131.910	2	0.74
ALC	0.98	0.91, 1.06	264.505	3	0.95	0.86, 1.04	129.833	2	1.04	0.92, 1.17	133.309	2	1.36
DRG	0.98	0.91, 1.04	264.161	3	0.96	0.87, 1.05	130.144	2	0.99	0.90, 1.10	133.678	2	0.34
AGG	0.98	0.92, 1.04	264.240	3	0.96	0.89, 1.04	130.138	2	1.01	0.91, 1.12	133.674	2	0.43
AGG-A	0.95	0.89, 1.01	261.492	3	0.95	0.88, 1.02	128.965	2	0.94	0.84, 1.05	132.510	2	0.02
AGG-V	1.00	0.96, 1.04	264.678	3	0.98	0.93, 1.04	130.750	2	1.01	0.96, 1.07	133.459	2	0.47
AGG-P	1.03	0.92, 1.15	264.358	3	0.99	0.89, 1.11	130.980	2	1.28	0.84, 1.95	131.360	2	2.02
SUI	0.96	0.85, 1.08	264.206	3	0.93	0.82, 1.05	129.852	2	1.30	0.69, 2.45	132.656	2	1.70
STR	0.95	0.90, 1.01	261.933	3	**0.93***	**0.87, 0.99**	126.481	2	1.01	0.91, 1.13	133.625	2	1.83
NON	0.97	0.91, 1.04	263.997	3	0.96	0.88, 1.03	129.778	2	1.02	0.88, 1.18	133.624	2	0.60
RXR	0.98	0.93, 1.04	264.300	3	1.00	0.93, 1.07	130.980	2	0.97	0.89, 1.05	133.036	2	0.28
DOM	1.00	0.95, 1.04	264.662	3	1.00	0.93, 1.06	130.969	2	1.00	0.94, 1.06	133.686	2	0.01
WRM	0.97	0.92, 1.02	262.981	3	0.98	0.92, 1.04	130.408	2	0.96	0.90, 1.03	132.489	2	0.08
Sub Abuse	0.99	0.97, 1.01	262.906	3	0.99	0.96, 1.01	129.986	2	0.99	0.96, 1.02	132.918	2	0.00
Drug Use	0.98	0.95, 1.01	263.393	3	0.99	0.95, 1.03	130.588	2	0.97	0.92, 1.02	132.577	2	0.23
Alcohol	0.99	0.97, 1.01	263.586	3	0.99	0.96, 1.02	130.299	2	0.99	0.96, 1.02	133.284	2	0.00
Anger	0.99	0.97, 1.01	263.418	3	0.99	0.97, 1.02	130.622	2	0.98	0.95, 1.01	132.647	2	0.15
Integrity	0.99	0.98, 1.01	263.216	3	1.00	0.98, 1.02	130.985	2	0.98	0.97, 1.00	131.010	2	1.22
Job Perform	0.97	0.95, 1.00	261.091	3	0.98	0.95, 1.02	130.059	2	0.96	0.92, 1.00	130.298	2	0.73
Poorly Suited	0.98	0.96, 1.00	261.556	3	0.99	0.96, 1.01	129.309	2	0.98	0.94, 1.01	131.994	2	0.25

^Reference category
[b]Lack of variability led to model not being run (95% of officers scored 43T)
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

Table 7-8. Multiple Logistic Regression Results of PAI Scales and Risk Estimates on Supervisor Rating (Satisfactory^ vs. Not Satisfactory) by PIM Group (n=316).

	Full Model		**Low PIM (≤ 64T)**		**High PIM (> 64T)**	
	OR	95% CI	OR	95% CI	OR	95% CI
Intercept	473.68*	--	8513.86*	--	0.28	--
Agency A	**15.46*** **	**6.11, 39.11**	**73.94*** **	**9.96, 549.04**	**7.56*** **	**2.34, 24.41**
Agency B	**8.78*** **	**3.48, 22.15**	**11.62*** **	**2.57, 52.65**	**10.40*** **	**2.54, 42.62**
ARD-T	0.98	0.87, 1.10	0.99	0.84, 1.17	1.03	0.81, 1.31
PAR-H	1.01	0.97, 1.06	**1.13****	**1.03, 1.23**	0.95	0.89, 1.01
PAR-P	0.99	0.92, 1.07	**0.89***	**0.79, 1.00**	1.10	0.97, 1.24
BOR-S	0.94	0.88, 1.00	**0.88***	**0.80, 0.98**	1.02	0.90, 1.15
ANT-A	0.97	0.93, 1.01	0.99	0.92, 1.06	0.95	0.89, 1.01
STR	0.98	0.91, 1.04	0.96	0.87, 1.06	1.01	0.90, 1.14
PIM group	1.77	0.78, 4.01	**--**	**--**	--	--
Hosmer & Lemeshow	χ^2 (8) = 6.90, P = .547		χ^2 (8) = 11.318, P = .184		χ^2 (8) = 7.26, P = .508	
c-statistic	0.83		0.92		0.80	
- 2 ln L	204.476		76.439		104.977	
df	10		9		9	
Chow χ^2	df = 8, 23.06**					

^ Reference category.
*P < .05, **P < .01, ***P < .001

Predictors of Job Status

The next set of analyses concerned officer's job status as measured in 2013. Conducting one-way ANOVAs, PAI scales and risk estimates were examined in order to assess mean differences by officer job status (Table 7-9). As predicted, there were more significant differences in scale and risk estimate means by job status for the Low PIM group compared to the High PIM group. Additionally, the patterns for correctional officers in the Low PIM group were as expected (i.e., those who were fired displayed higher PAI scores), whereas in the High PIM group differences by job status type varied by scale. Correctional officers in the High PIM group showed significant differences on MAN-A ($F (2, 200) = 4.52$, $P < 0.05$), with correctional officers currently employed having higher mean T scores, on average, compared to those who were fired or quit. The same pattern was found with ANT-S ($F (2, 200) = 3.23$, $P < 0.05$) and ANT-A ($F (2, 200) = 4.13$, $P < 0.05$), with currently employed correctional officers scoring higher than officers who were fired or quit. Lastly, fired correctional officers had higher DRG scores, on average, compared to those who quit or were currently employed ($F (2, 200) = 3.04$, $P < 0.05$). Tukey post hoc did not show individual differences for MAN-A, ANT-S or DRG, but did so for ANT-A, where fired correctional officers had higher scores compared to those who were currently employed ($P < 0.05$).

Low PIM correctional officers demonstrated a number of significant mean differences by job status. Mean T scores on BOR, BOR-I, BOR-S, ANT, ALC, AGG, STR, Sub Abuse, Alcohol, Anger, Job Perform and Poorly Suited were significantly different by job status, with fired correctional officers having higher mean T scores, on average, compared to those who had quit or were currently employed. Surprisingly, there

were larger differences between the fired and quit groups compared to the fired and currently employed groups. In general, those currently employed had slightly higher mean T scores compared to correctional officers who had quit. RXR was also significantly different by job status (F (2, 213) = 7.59, $P < 0.001$), however the direction shifted. Correctional officers who were fired (M = 55.83) had significantly lower RXR scores compared to those who had quit (M = 61.32) or were currently employed (M = 57.75).

Tukey post hoc did not show significant individual differences for ANT and ALC. However, individual differences were displayed among the other scales and risk estimates. Correctional officers who were fired had higher scores on BOR or AGG than those who quit ($P < 0.05$). BOR-I scores for those currently employed were higher than for those who quit ($P < 0.05$). Scores on STR or BOR-S were higher for those fired than those who quit ($P < 0.01$) or currently employed ($P < 0.01$). Probability of Substance Abuse was higher for those fired than quit ($P < 0.01$) or current employed ($P< 0.05$). Likewise, the probability of being poorly suited by the psychologist was higher in those fired than quit ($P < 0.05$) or currently employed ($P < 0.05$). Probability of Alcohol or Anger was higher in fired correctional officers than those who quit ($P < 0.05$). Lastly, probability of Job Problems was higher in fired correctional officers than those who quit ($P < 0.01$).

Table 7-9. Means and Standard Deviations of PAI Scales and Risk Estimates by Job Status by PIM Group.

	Full Model							Low PIM (≤ 64T)							High PIM (64T)						
	Employed		Fired/Forced Resignation		Voluntary Resignation			Employed		Fired/Forced Resignation		Voluntary Resignation			Employed		Fired/Forced Resignation		Voluntary Resignation		
	M	SD	M	SD	M	SD	*F*	M	SD	M	SD	M	SD	*F*	M	SD	M	SD	M	SD	*F*
SOM	42.21	2.67	42.00	1.95	41.59	2.21	2.25	42.85	2.84	42.17	1.70	42.06	2.17	1.76	41.46	2.25	41.89	2.14	41.15	2.18	0.79
SOM-C	43.59	1.84	43.20	0.76	43.27	1.06	1.86	43.97	2.35	43.50	1.17	43.45	1.40	1.23	43.14	0.73	43.00	0.00	43.12	0.58	0.34
SOM-S	41.31	3.94	40.63	3.09	40.90	3.52	0.76	41.97	4.18	41.08	2.64	41.28	1.40	0.75	40.53	3.51	40.33	3.40	40.56	3.65	0.03
SOM-H	44.48	3.81	44.83	3.42	43.60	3.20	2.52	45.07	3.71	44.50	3.58	44.32	3.12	0.86	43.79	3.83	45.06	3.39	42.94	3.16	2.42
ANX	41.00	4.69	40.63	3.76	40.41	3.75	0.69	43.07	4.80	43.08	3.87	41.87	3.84	1.27	38.56	3.14	39.00	2.70	39.10	3.16	0.63
ANX-C	43.00	5.13	42.67	4.09	42.28	3.99	0.83	44.88	5.39	45.08	4.34	43.57	4.01	1.25	40.78	3.76	41.06	3.08	41.12	3.63	0.18
ANX-A	40.00	5.39	40.07	4.50	39.92	4.78	0.01	41.97	5.54	41.75	4.94	40.94	4.84	0.67	37.67	4.15	38.94	3.93	39.00	4.58	2.18
ANX-P	42.88	4.49	42.27	3.82	42.18	4.16	1.07	44.41	4.78	44.67	3.89	43.77	4.34	0.40	41.06	3.67	40.67	2.89	40.75	3.44	0.23
ARD	40.44	5.24	41.47	6.63	39.97	4.58	0.98	42.05	5.20	42.83	7.79	41.47	4.69	0.39	38.53	4.62	40.56	5.78	38.62	4.07	1.56
ARD-O	47.70	8.08	49.53	10.74	48.31	8.00	0.78	48.45	7.90	48.92	11.32	49.06	8.28	0.11	46.80	8.23	49.94	10.64	47.63	7.75	1.18
ARD-P	38.95	6.39	39.07	5.97	37.71	5.75	1.55	41.05	6.24	41.42	6.32	39.85	5.81	0.75	36.47	5.65	37.50	5.34	35.77	5.00	0.72
ARD-T	42.75	3.16	42.87	3.13	42.32	2.55	0.80	43.53	3.77	44.08	4.19	42.83	3.26	0.86	41.82	1.88	42.06	1.89	41.87	1.57	0.13
DEP	**40.19**	3.94	**39.33**	3.92	**39.09**	3.60	**3.28***	41.71	4.08	40.42	5.07	40.49	3.93	1.93	38.39	2.88	38.61	2.85	37.38	2.74	0.89
DEP-C	**42.08**	4.22	**40.40**	3.67	**40.85**	3.95	**4.78****	43.27	4.28	41.75	4.14	42.17	4.28	1.70	40.66	3.71	39.50	3.13	39.65	3.23	2.01
DEP-A	42.78	3.61	42.17	3.53	42.11	3.26	1.54	43.83	3.80	42.67	2.54	43.30	3.26	0.86	41.53	2.93	41.83	4.10	41.04	2.90	0.67
DEP-P	40.66	5.21	40.50	5.17	39.69	4.70	1.36	42.27	5.75	41.25	7.28	40.1	5.31	1.25	38.76	3.70	40.00	3.27	38.67	3.85	0.96
MAN	44.87	7.32	44.33	7.18	44.52	7.45	0.14	47.25	7.41	47.58	6.16	47.66	7.74	0.06	42.05	6.14	42.17	7.14	41.67	5.93	0.08
MAN-A	**42.79**	8.04	**39.83**	8.18	**40.85**	7.93	**3.45***	45.69	8.13	46.00	7.27	45.15	7.70	0.10	**39.35**	6.44	**35.72**	5.93	**36.96**	5.91	**4.52***
MAN-G	52.40	8.90	54.63	9.56	53.57	8.31	1.31	52.37	8.83	53.25	6.84	53.66	8.41	0.43	52.44	9.01	55.56	11.11	53.48	8.29	1.04
MAN-I	41.95	7.28	40.70	6.17	41.40	7.48	0.54	45.05	6.90	44.75	6.89	45.00	7.62	0.01	38.30	5.92	38.00	3.86	38.15	5.69	0.03
PAR	**43.97**	6.60	**43.63**	5.92	**42.04**	6.22	**3.23***	45.95	6.23	45.00	6.32	44.06	5.86	1.74	41.61	6.40	42.72	5.62	40.21	6.01	1.42
PAR-H	46.78	8.57	46.67	10.08	45.15	8.11	1.34	48.30	8.03	46.75	9.21	47.15	7.47	0.52	44.98	8.87	46.61	10.89	43.35	8.32	1.08
PAR-P	44.65	5.53	44.80	4.52	43.85	4.79	0.91	45.64	5.95	45.00	2.86	44.74	5.26	0.48	43.49	4.76	44.67	5.43	43.04	4.20	0.81
PAR-R	**43.19**	7.58	**42.33**	7.08	**40.80**	6.58	**3.93***	45.59	7.11	45.50	6.54	42.96	6.27	2.65	40.34	7.15	40.22	6.78	38.85	6.30	0.89
SCZ	38.99	4.96	38.87	4.75	37.98	4.65	1.58	41.18	5.05	41.33	4.96	39.83	4.82	1.37	36.39	3.33	37.22	3.92	36.31	3.82	0.50
SCZ-P	42.54	6.39	42.90	7.01	41.06	5.61	2.24	44.30	7.06	46.67	6.40	43.26	6.36	1.23	40.46	4.73	40.39	6.38	39.08	3.94	1.64
SCZ-S	42.01	5.14	41.47	5.01	41.66	4.74	0.30	43.72	5.17	41.92	5.44	42.68	4.70	1.29	39.99	4.32	41.17	4.84	40.73	4.62	0.90
SCZ-T	40.39	4.43	40.30	4.82	39.64	3.74	1.13	41.90	4.93	42.25	6.41	40.77	4.40	1.05	38.60	2.89	39.00	2.91	38.62	2.69	0.16

	Full Model							Low PIM (≤ 64T)							High PIM (64T)						
	Employed		**Fired/Forced Resignation**		**Voluntary Resignation**			**Employed**		**Fired/Forced Resignation**		**Voluntary Resignation**			**Employed**		**Fired/Forced Resignation**		**Voluntary Resignation**		
	M	SD	M	SD	M	SD	**F**	M	SD	M	SD	M	SD	**F**	M	SD	M	SD	M	SD	**F**
BOR	**40.65**	5.27	**40.83**	5.28	**39.04**	4.79	**3.78***	**43.33**	5.18	**45.33**	4.42	**41.40**	5.06	**3.85***	37.49	3.23	37.83	3.33	36.90	3.34	0.80
BOR-A	40.62	4.14	41.70	4.94	40.24	4.81	1.18	42.48	4.53	44.25	3.65	42.00	5.77	1.06	38.40	3.06	40.00	5.004	38.65	3.01	1.90
BOR-I	42.53	5.48	42.10	5.10	41.11	4.09	2.78	**44.97**	5.86	**45.67**	5.85	**42.74**	4.52	**3.12***	39.64	3.10	39.72	2.68	39.63	2.99	0.01
BOR-N	43.57	7.20	43.07	5.83	41.67	6.36	2.79	45.96	7.51	45.50	6.24	43.94	6.56	1.41	40.75	5.66	41.44	5.08	39.62	5.48	1.05
BOR-S	43.49	5.62	44.17	7.92	42.00	5.36	2.94	**45.16**	5.72	**50.58**	8.75	**43.79**	5.88	**6.24****	41.51	4.81	39.89	3.01	40.38	4.29	1.81
ANT	**45.49**	6.18	**46.73**	6.67	**43.82**	5.49	**3.86***	**47.46**	6.51	**50.25**	8.09	**45.38**	5.94	**3.30***	43.16	4.84	44.39	4.37	42.40	4.66	1.22
ANT-A	**47.53**	8.10	**51.43**	8.72	**46.41**	7.54	**4.52***	49.28	8.60	52.48	9.94	46.83	7.56	2.70	**45.47**	6.94	**50.67**	8.01	**46.04**	7.58	**4.13***
ANT-E	**45.95**	5.98	**44.70**	6.25	**44.14**	5.57	**3.72***	47.51	6.56	47.33	7.33	45.53	5.52	1.74	44.11	4.59	42.94	4.87	42.88	5.35	1.45
ANT-S	45.28	6.35	44.50	6.50	43.90	5.73	1.89	46.82	6.81	49.33	7.13	46.21	6.39	1.02	**43.47**	5.23	**41.28**	3.43	**41.81**	4.10	**3.23***
ALC	**45.11**	4.38	**45.80**	5.35	**43.85**	3.17	**4.19***	**45.90**	4.64	**47.17**	5.24	**44.32**	3.47	**3.04***	44.18	3.76	44.89	5.37	43.42	2.83	1.28
DRG	45.22	4.50	45.40	4.21	44.04	3.71	2.93	45.02	4.40	44.50	3.53	44.26	4.18	0.60	**45.45**	4.61	**46.00**	4.60	**43.85**	3.26	**3.04***
AGG	**42.69**	5.20	**42.23**	6.75	**41.09**	4.89	**3.41***	**44.46**	5.38	**47.50**	6.27	**43.02**	5.22	**3.49***	40.60	4.09	38.72	4.43	39.35	3.84	2.91
AGG-A	39.66	5.59	39.73	6.22	38.33	4.98	2.23	41.88	5.93	44.83	6.44	40.38	5.71	2.92	37.05	3.76	36.33	2.95	36.48	3.31	0.66
AGG-V	48.38	7.85	47.17	9.49	46.19	7.42	2.92	49.77	7.35	52.83	8.76	48.15	7.04	2.11	46.73	8.13	43.39	8.15	44.42	7.38	2.51
AGG-P	43.42	3.24	43.53	3.78	43.17	2.81	0.26	44.16	3.85	45.50	5.42	43.64	3.25	1.16	42.53	2.01	42.22	0.94	42.75	2.29	0.49
SUI	43.80	2.44	43.93	2.27	43.46	1.48	0.98	44.14	2.99	43.83	2.33	43.85	1.90	0.23	43.41	1.46	44.00	2.30	43.12	0.83	2.62
STR	**44.61**	5.74	**44.93**	6.69	**42.30**	4.20	**6.88*****	**46.44**	6.24	**49.75**	5.82	**43.49**	4.11	**7.31*****	42.45	4.19	41.72	5.22	41.23	4.02	1.60
NON	40.55	5.14	41.73	5.20	39.98	4.19	1.50	42.11	5.66	43.83	6.35	40.94	4.59	1.58	38.70	3.70	40.33	3.85	39.12	3.62	1.61
RXR	**60.03**	6.26	**58.47**	6.18	**62.42**	5.07	**7.69*****	**57.75**	6.30	**55.83**	5.24	**61.32**	5.04	**7.59*****	62.74	5.02	60.22	6.26	63.24	4.93	2.63
DOM	55.57	6.67	57.80	6.95	56.67	6.81	2.14	54.83	6.69	54.58	5.38	55.49	6.37	0.20	56.46	6.57	59.94	7.17	57.73	7.08	2.41
WRM	56.38	7.49	58.10	7.91	57.75	7.74	1.64	53.88	7.46	54.75	7.62	55.34	7.63	0.71	59.34	6.39	60.33	7.48	59.92	7.24	0.26
Sub Abuse	**38.45**	16.00	**42.80**	16.70	**36.60**	12.82	**7.36*****	**42.75**	16.29	**50.83**	18.34	**35.36**	13.29	**6.12****	33.36	14.10	37.44	13.49	30.10	11.96	2.21
Drug Use	**11.10**	10.29	**14.23**	11.85	**8.94**	6.91	**3.82***	13.11	11.68	17.58	17.00	9.66	7.20	2.96	8.73	7.75	12.00	6.25	8.29	6.64	1.82
Alcohol	**22.53**	14.86	**27.10**	20.60	**19.28**	10.94	**3.78***	**25.52**	15.99	**33.83**	26.31	**21.06**	12.40	**3.33***	19.00	12.56	22.61	14.94	17.7	9.26	1.13
Anger	**38.79**	16.22	**43.83**	17.68	**34.42**	13.91	**4.92****	**44.34**	17.18	**53.67**	20.34	**37.79**	14.81	**5.06****	32.21	12.10	37.28	12.33	31.38	12.41	1.63
Integrity	35.56	21.69	43.93	23.58	33.11	20.26	2.92	36.90	23.28	41.83	27.31	31.23	19.97	1.53	33.97	19.62	45.33	21.46	34.81	20.57	2.56
Job Perform	**37.46**	12.47	**41.97**	12.14	**34.71**	10.52	**4.56***	**43.03**	12.58	**51.75**	8.78	**38.49**	11.14	**6.23****	30.88	8.55	35.44	9.43	31.29	8.69	2.20
Poorly Suited	**21.06**	17.12	**26.23**	16.73	**16.07**	12.17	**5.81****	**26.97**	19.65	**36.25**	19.31	**18.81**	14.71	**5.48****	14.07	9.69	19.56	10.87	13.60	8.74	2.88

*P < .05, **P < .01, ***P < .001

Bivariate multinomial logistic regressions with each predictor were conducted in order to determine how each was associated with job status (Table 7-10). A number of PAI scales and risk estimates were found to be significant for the full model while controlling for PIM group. The patterns continued in the same direction with lower scores more predictive of quitting compared to staying employed and higher scores more predictive of being fired compared to being currently employed. There were a few scales that did not share this overall pattern. Lower scores on DEP-C and RXR were more predictive of those who were fired rather than currently employed and higher scores on RXR were more predictive of quitting rather than being currently employed. For correctional officers in either the Low PIM or High PIM group, the same patterns emerged, with the exception of lower scores on MAN-A in the High PIM group more predictive of being fired than currently employed. For the Low PIM group, lower scores on PAR-R, BOR, BOR-I, ALC, and STR as well as lower probabilities on Substance Abuse, Anger, Job Perform and Poorly Suited were more predictive of quitting compared to staying employed. Additionally, higher scores on BOR-S and higher probability of Job Performance problems were more predictive of being fired than employed. Correctional officers in High PIM showed greater significant differences between the fired and currently employed groups. In general, higher scores on ANT-A and DOM as well as higher probabilities on Integrity, Job Performance and Poorly Suited were more likely to indicate an officer would be fired rather than stay on the job. Conversely, a lower score on MAN-A was more likely among those fired compared to currently employed. Lastly, lower scores on MAN-A, ANT-S and DRG were more likely among those who quit compared to those currently employed. Chow test analog only found significant

differences for BOR-S, DRG and AGG, meaning there are group differences based on PIM score.

Multicollinearity was assessed with the significant bivariate predictors through VIF. Due to the overlap of PAI items on some of the full scales and subscales, a number of VIF values were above the cut off of 10 particularly when the full scale and respective subscales were included in the model. Therefore, BOR was excluded so the subscales could be retained. Additionally, ANT-A was dropped because it was highly correlated to all the risk estimates. Lastly, ALC was dropped due to the high correlation with Sub Abuse. There were 14 predictors retained for the final model, which are shown in Table 7-11. Additionally, agency was included.

Multinomial logistic regression was calculated for the three models and Chow test analog was calculated to determine if PIM group had an effect on final results (Table 7-11). The Chow test analog was significant ($P < 0.05$) indicating that there was a difference from the full model based on PIM group. Unlike what was found for supervisor rating, only one predictor was significant in the Low PIM model: RXR, with officers who quit having higher RXR scores compared to those who were still employed. The High PIM model produced additional significant predictors but the model fit statistics indicated there were issues. The Pearson goodness-of-fit was significant and the AIC increased from 343.64 to 351.71, which indicates the High PIM model is a poor fit of the data.

For the full model, the likelihood ratio test was significant (χ^2 (34) = 78.96, $P < 0.001$) and the AIC was reduced from 658.34 to 647.38 indicating good fit of the data.

Additionally, the Pearson goodness-of-fit was not significant (χ^2 (794) = 775.66, P = 0.673).

Due to the inconsistency and potential for the results of the high PIM model to repress actual scores (i.e., faking good), only the full model will be discussed further. The final full model included Agency A, MAN-A, STR, RXR, DOM and PIM group as significant predictors of job status. PIM group was only significantly different in predicting those who would be fired compared to staying currently employed, with those having high PIM scores more likely to be fired. In general, correctional officers at Agency A were more likely to quit than be currently employed, holding the other variables constant. A lower score on MAN-A (OR: 0.93; 95% CI: 0.87, 0.99) indicated a correctional officer was more likely to be fired rather than be currently employed. However, a higher score on DOM (OR: 1.08; 95% CI: 1.01, 1.15) was more predictive of an officer being fired than currently employed. Both RXR and STR showed significant differences between those who quit and who were currently employed. Officers who quit were more likely to have lower STR scores (OR: 0.93; 95% CI: 0.87, 0.99) or higher RXR scores (OR: 1.06; 95% CI: 1.00, 1.12) than those currently employed.

Conclusion

PIM group had an impact on which factors significantly predicted supervisor rating (2-level) with PAR-H, PAR-P and BOR-S significant predictors of supervisor rating in the Low PIM group. In the full model and High PIM model, none of the PAI factors were significant, only agency. For those in the Low PIM group, higher scores on Hypervigilance (PAR-H) predicted satisfactory supervisory ratings, controlling for the other factors, whereas higher scores on Persecution (PAR-P) and Self-Harm (BOR-S)

predicted unsatisfactory supervisor ratings. Scoring high on PAR-H indicates a person who is suspicious but also careful of their surroundings. Correctional officers work in an environment in which the client may be unpredictable and dangerous so displaying caution and carefulness would be considered a desirable trait. A high score on PAR-P indicates a person may feel treated inequitably and that others are against them, while high scores on BOR-S reflect persons who may engage in impulsive activities that can cause harm to others. Both of these could be considered undesirable traits for correctional officers and therefore, it is not surprising that those officers who were rated as not satisfactory scored higher on these factors. High scores on BOR-S were also found to predict officers who were fired compared to those still employed, which was expect.

PIM group also had an impact on which factors predicted job status. The Chow test analog was significant indicating that the PIM group models were different. However, unlike supervisor rating, the High PIM group model had more significant predictors than the Low PIM group model. In the High PIM model the majority of factors predicted being fired with most indicating that lower PAI scores were more likely to predict being fired. This would be the opposite of what was predicted. However, given that the High PIM group was faking good at even higher levels than the Low PIM group (still elevated compared to norms) it is not surprising that the scores would be lower and essentially suppressed. Therefore, the results of the High PIM model should be evaluated with caution. The full model demonstrated better consistency across job status.

In the full model, high scores on DOM predicted being fired, holding other variables constant. Higher scores on DOM indicate a person with confidence and ambition. These traits would be considered positive traits for a correctional officer and it

was unexpected that the higher score would predict being fired. However, persons scoring high on this scale can also be described as controlling, particularly in personal relationships, as well as domineering, which would be problematic in this position. Lastly, higher probability of job problems for those fired was expected.

Lower scores on activity level (MAN-A) was also predictive of being fired, holding other variables constant. Low scores on MAN-A mean low in activity and very low scores can be a sign of apathy and indifference. One could expect that these two characteristics would have a negative impact on job performance.

Voluntary resignation was predicted by higher scores on treatment rejection (RXR) and lower scores on stress (STR). High scores indicate someone not in psychological treatment and having no interest in this type of treatment. Lowmaster & Morey (2012) found higher scores on RXR were associated with better job performance. Therefore, one could argue that a higher score may be reflective of officers who quit for promotional reasons. Additionally, there is research that shows RXR scores are elevated in public safety candidates (Hargrave et al., 1994). It should be noted that interpretation of RXR depends on examining the full profile in order to determine if this is a positive or negative indicator (Morey, 2003). If none of the clinical scales are elevated then a score less than 70T on RXR is expected. Therefore, differences on job status are difficult to interpret based on this measure alone.

Stress measures recent stress in major life areas such as home, work and school (Turner, 2014). Therefore, at the time of testing having less life stress was more predictive of officers who quit rather than stayed employed. Being able to handle stress is a desirable trait in public safety particularly in corrections, which is a highly stressful

occupation (Castle & Martin, 2006; Summerlin et al., 2010). If the majority of officers who quit went on for promotional reasons this could indicate that they may have better ability in handling stress. However, if the majority of officers quit because they didn't like the job or other similar reasons, then this could indicate that the job may have been too stressful particularly if they had not experienced high levels of stress before employment.

Table 7-10. Bivariate Multinomial Logistic Regression of PAI Scales and Risk Estimates on Job Status^ by PIM Group (n=415).

	Full Model				Low PIM				High PIM				
	Fired/ Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)	- 2 ln L	*df*	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)	- 2 ln L	*df*	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)	- 2 ln L	*df*	*Chow* χ^2
SOM	0.99 (0.85, 1.16)	**0.91 (0.82, 1.00)**	126.92	6	0.90 (0.71, 1.15)	0.89 (0.78, 1.02)	59.73	4	1.08 (0.88, 1.33)	0.94 (0.80, 1.09)	65.76	4	1.42
SOM-C	0.84 (0.57, 1.23)	0.88 (0.73, 1.06)	34.82	6	0.88 (0.61, 1.27)	0.86 (0.70, 1.06)	20.79	4	--[b]	0.95 (0.58, 1.55)	12.98	4	1.05
SOM-S	0.96 (0.86, 1.07)	0.98 (0.92, 1.04)	72.42	6	0.94 (0.80, 1.11)	0.95 (0.87, 1.04)	36.50	4	0.98 (0.85, 1.14)	1.00 (0.91, 1.10)	35.26	4	0.66
SOM-H	1.04 (0.94, 1.14)	**0.94 (0.87, 1.00)**	92.08	6	0.96 (0.81, 1.13)	0.94 (0.86, 1.04)	42.16	4	1.08 (0.96, 1.22)	0.93 (0.84, 1.03)	48.37	4	1.55
ANX	1.02 (0.92, 1.12)	0.98 (0.92, 1.04)	168.03	6	1.00 (0.88, 1.14)	0.94 (0.87, 1.02)	84.54	4	1.05 (0.89, 1.22)	1.06 (0.95, 1.17)	80.24	4	3.25
ANX-C	1.01 (0.93, 1.10)	0.98 (0.92, 1.03)	104.45	6	1.01 (0.90, 1.13)	0.95 (0.88, 1.02)	54.92	4	1.02 (0.89, 1.17)	1.02 (0.94, 1.12)	47.58	4	1.95
ANX-A	1.02 (0.95, 1.11)	1.01 (0.96, 1.06)	111.59	6	0.99 (0.89, 1.11)	0.96 (0.90, 1.03)	59.20	4	1.07 (0.96, 1.20)	1.07 (0.99, 1.16)	47.19	4	5.21
ANX-P	0.99 (0.90, 1.09)	0.97 (0.92, 1.03)	77.04	6	1.01 (0.89, 1.15)	0.97 (0.90, 1.04)	42.13	4	0.96 (0.83, 1.12)	0.97 (0.88, 1.07)	34.66	4	0.25
ARD	1.06 (0.99, 1.14)	0.99 (0.94, 1.04)	207.46	6	1.03 (0.92, 1.15)	0.98 (0.92, 1.04)	104.40	4	1.10 (0.99, 1.22)	1.00 (0.94, 1.08)	102.19	4	0.88
ARD-O	1.03 (0.98, 1.08)	1.01 (0.98, 1.04)	179.39	6	1.01 (0.94, 1.08)	1.01 (0.97, 1.05)	84.88	4	1.05 (0.99, 1.11)	1.01 (0.97, 1.05)	93.87	4	0.65
ARD-P	1.02 (0.96, 1.09)	0.97 (0.93, 1.01)	105.03	6	1.01 (0.92, 1.11)	0.97 (0.92, 1.02)	56.37	4	1.03 (0.95, 1.12)	0.97 (0.92, 1.04)	48.54	4	0.12
ARD-T	1.04 (0.92, 1.17)	0.96 (0.88, 1.05)	78.50	6	1.03 (0.90, 1.18)	0.94 (0.85, 1.04)	49.93	4	1.07 (0.83, 1.36)	1.01 (0.85, 1.21)	28.07	4	0.49
DEP	0.97 (0.86, 1.08)	0.92 (0.86, 0.99)	160.98	6	0.92 (0.78, 1.08)	0.92 (0.85, 1.01)	85.01	4	1.03 (0.87, 1.21)	0.93 (0.82, 1.05)	75.10	4	0.88
DEP-C	**0.91 (0.82, 1.01)**	**0.93 (0.88, 0.99)***	71.07	6	0.91 (0.79, 1.06)	0.94 (0.87, 1.02)	39.48	4	0.91 (0.78, 1.06)	0.92 (0.84, 1.01)	31.48	4	0.11
DEP-A	0.97 (0.86, 1.09)	0.95 (0.89, 1.02)	76.40	6	0.91 (0.76, 1.09)	0.96 (0.87, 1.05)	36.91	4	1.03 (0.88, 1.20)	0.94 (0.84, 1.06)	38.22	4	1.28
DEP-P	1.01 (0.94, 1.09)	0.96 (0.92, 1.01)	108.27	6	0.97 (0.87, 1.08)	0.95 (0.89, 1.02)	57.90	4	1.08 (0.96, 1.21)	0.99 (0.91, 1.09)	48.27	4	2.09
MAN	1.00 (0.95, 1.06)	1.00 (0.97, 1.04)	252.16	6	1.01 (0.93, 1.09)	1.01 (0.96, 1.05)	118.96	4	1.00 (0.93, 1.09)	0.99 (0.94, 1.04)	132.95	4	0.25
MAN-A	0.96 (0.91, 1.02)	**0.97 (0.94, 1.00)**	127.26	6	1.00 (0.93, 1.08)	0.99 (0.95, 1.03)	66.87	4	**0.90 (0.83, 0.99)***	**0.94 (0.89, 0.99)***	55.50	4	4.89
MAN-G	1.03 (0.99, 1.07)	1.02 (0.99, 1.04)	199.28	6	1.01 (0.95, 1.08)	1.02 (0.98, 1.06)	92.34	4	1.04 (0.98, 1.10)	1.01 (0.98, 1.05)	106.53	4	0.40
MAN-I	0.99 (0.93, 1.06)	1.00 (0.96, 1.03)	144.48	6	0.99 (0.91, 1.08)	1.00 (0.95, 1.05)	78.26	4	0.99 (0.91, 1.08)	1.00 (0.94, 1.05)	66.20	4	0.01
PAR	1.01 (0.96, 1.07)	**0.96 (0.92, 0.99)***	221.65	6	0.98 (0.88, 1.08)	0.95 (0.90, 1.00)	105.02	4	1.03 (0.95, 1.11)	0.96 (0.91, 1.02)	115.88	4	0.75
PAR-H	1.00 (0.96, 1.05)	0.98 (0.95, 1.01)	152.77	6	0.98 (0.90, 1.05)	0.98 (0.94, 1.02)	73.53	4	1.02 (0.97, 1.07)	0.98 (0.94, 1.02)	78.29	4	0.95
PAR-P	1.02 (0.95, 1.09)	0.97 (0.93, 1.02)	98.95	6	0.98 (0.88, 1.09)	0.97 (0.91, 1.03)	49.94	4	1.05 (0.95, 1.16)	0.98 (0.91, 1.05)	48.11	4	0.90
PAR-R	1.00 (0.94, 1.05)	**0.96 (0.92, 0.99)***	132.89	6	1.00 (0.92, 1.09)	**0.94 (0.90, 0.99)***	69.44	4	1.00 (0.93, 1.07)	0.97 (0.92, 1.02)	64.78	4	-1.33
SCZ	1.03 (0.94, 1.12)	0.96 (0.91, 1.02)	155.41	6	1.01 (0.90, 1.13)	0.94 (0.88, 1.01)	78.60	4	1.07 (0.93, 1.22)	0.99 (0.90, 1.09)	75.82	4	0.98
SCZ-P	1.03 (0.97, 1.09)	**0.96 (0.92, 1.00)**	94.38	6	1.05 (0.97, 1.13)	0.98 (0.93, 1.03)	53.30	4	1.00 (0.90, 1.10)	0.93 (0.86, 1.01)	39.70	4	1.38
SCZ-S	0.99 (0.92, 1.08)	0.99 (0.95, 1.04)	111.53	6	0.93 (0.82, 1.05)	0.96 (0.90, 1.03)	55.64	4	1.06 (0.95, 1.17)	1.04 (0.97, 1.11)	51.51	4	4.38
SCZ-T	1.02 (0.93, 1.12)	0.96 (0.90, 1.02)	90.40	6	1.01 (0.91, 1.13)	0.95 (0.88, 1.02)	52.22	4	1.05 (0.89, 1.23)	1.00 (0.89, 1.23)	37.55	4	0.63
BOR	1.06 (0.97, 1.15)	**0.93 (0.88, 0.98)***	206.01	6	1.07 (0.96, 1.19)	**0.92 (0.86, 0.99)***	117.50	4	1.03 (0.89, 1.19)	0.94 (0.85, 1.05)	88.16	4	0.34
BOR-A	**1.10 (1.01, 1.20)***	0.99 (0.94, 1.05)	84.49	6	1.07 (0.96, 1.20)	0.98 (0.91, 1.05)	48.84	4	1.13 (0.99, 1.29)	1.02 (0.93, 1.13)	34.85	4	0.79

	Full Model				Low PIM				High PIM				
	Fired/ Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)	- 2 ln L	***df***	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)	- 2 ln L	***df***	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)	- 2 ln L	***df***	***Chow*** χ^2
BOR-I	1.02 (0.93, 1.10)	**0.94 (0.89, 0.99)***	104.64	6	1.02 (0.93, 1.12)	**0.92 (0.86, 0.99)***	59.58	4	1.01 (0.86, 1.19)	1.00 (0.90, 1.11)	43.35	4	1.71
BOR-N	1.00 (0.95, 1.06)	**0.96 (0.92, 0.99)***	120.02	6	0.99 (0.91, 1.08)	0.96 (0.92, 1.01)	63.97	4	1.02 (0.94, 1.11)	0.96 (0.90, 1.02)	55.81	4	0.25
BOR-S	1.04 (0.98, 1.11)	**0.95 (0.91, 1.00)***	97.43	6	**1.13 (1.04, 1.23)****	0.96 (0.90, 1.02)	51.34	4	0.91 (0.80, 1.04)	0.94 (0.87 1.02)	37.77	4	**8.32***
ANT	1.05 (0.99, 1.12)	**0.95 (0.91, 0.99)***	205.82	6	1.06 (0.98, 1.14)	0.94 (0.89, 1.00)	105.21	4	1.05 (0.96, 1.15)	0.96 (0.90, 1.04)	100.39	4	0.21
ANT-A	**1.06 (1.02, 1.11)****	0.98 (0.95, 1.02)	150.32	6	1.04 (0.98, 1.11)	0.96 (0.92, 1.00)	76.10	4	**1.09 (1.02, 1.16)****	1.01 (0.97, 1.06)	71.16	4	3.05
ANT-E	0.98 (0.91, 1.05)	**0.95 (0.91, 0.99)***	106.18	6	1.00 (0.91, 1.09)	0.95 (0.90, 1.00)	47.86	4	0.95 (0.84, 1.06)	0.94 (0.88, 1.02)	57.86	4	0.46
ANT-S	0.99 (0.93, 1.06)	0.97 (0.93, 1.01)	119.88	6	1.05 (0.97, 1.14)	0.99 (0.94, 1.04)	73.88	4	0.90 (0.79, 1.01)	**0.92 (0.86, 0.99)***	39.99	4	**6.00***
ALC	1.05 (0.97, 1.14)	**0.92 (0.86, 0.98)***	112.83	6	1.05 (0.94, 1.18)	**0.91 (0.83, 0.99)***	60.90	4	1.05 (0.93, 1.18)	0.94 (0.85, 1.04)	51.64	4	0.28
DRG	1.01 (0.93, 1.09)	**0.93 (0.87, 0.99)***	76.06	6	0.97 (0.84, 1.12)	0.96 (0.88, 1.04)	41.83	4	1.02 (0.92, 1.14)	**0.90 (0.82, 0.99)***	32.76	4	1.47
AGG	1.01 (0.93, 1.09)	**0.94 (0.90, 0.99)***	216.05	6	1.10 (0.99, 1.22)	0.95 (0.89, 1.01)	104.73	4	0.89 (0.78, 1.01)	0.92 (0.85, 1.00)	104.63	4	**6.69***
AGG-A	1.03 (0.96, 1.11)	0.96 (0.91, 1.00)	100.08	6	1.08 (0.98, 1.18)	0.96 (0.90, 1.01)	59.84	4	0.94 (0.80, 1.10)	0.95 (0.87, 1.05)	37.76	4	2.48
AGG-V	0.99 (0.94, 1.04)	**0.97 (0.94, 1.00)***	151.54	6	1.06 (0.98, 1.14)	0.97 (0.93, 1.02)	69.36	4	0.94 (0.88, 1.01)	0.96 (0.92, 1.00)	77.62	4	4.56
AGG-P	1.04 (0.92, 1.16)	0.98 (0.91, 1.06)	53.49	6	1.07 (0.95, 1.21)	0.96 (0.87, 1.06)	31.22	4	0.88 (0.59, 1.30)	1.05 (0.91, 1.21)	19.62	4	2.66
SUI	1.04 (0.90, 1.21)	0.92 (0.81, 1.05)	50.31	6	0.96 (0.74, 1.23)	0.96 (0.84, 1.10)	30.25	4	1.19 (0.94, 1.51)	0.79 (0.54, 1.14)	16.70	4	3.35
STR	1.03 (0.96, 1.10)	**0.91 (0.86, 0.96)*****	128.56	6	1.07 (0.99, 1.16)	**0.89 (0.83, 0.96)****	61.86	4	0.96 (0.85, 1.08)	0.93 (0.86, 1.01)	63.46	4	3.24
NON	1.06 (0.99, 1.14)	0.98 (0.93, 1.04)	101.67	6	1.05 (0.96, 1.15)	0.96 (0.90, 1.02)	56.10	4	1.09 (0.98, 1.21)	1.03 (0.95, 1.13)	43.67	4	1.90
RXR	**0.94 (0.88, 1.00)***	**1.08 (1.03, 1.13)*****	146.93	6	0.95 (0.87, 1.04)	**1.12 (1.05 1.20)*****	67.65	4	0.92 (0.84, 1.00)	1.03 (0.96, 1.10)	75.77	4	3.51
DOM	1.04 (0.99, 1.11)	1.02 (0.99, 1.06)	185.83	6	0.99 (0.91, 1.09)	1.02 (0.97, 1.07)	89.20	4	**1.08 (1.00, 1.16)***	1.03 (0.98, 1.08)	94.71	4	1.92
WRM	1.02 (0.97, 1.08)	1.02 (0.99, 1.06)	187.12	6	1.02 (0.94, 1.10)	1.03 (0.98, 1.07)	93.86	4	1.02 (0.95, 1.10)	1.01 (0.96, 1.06)	93.06	4	0.20
Sub Abuse	1.02 (1.00, 1.05)	**0.97 (0.96, 0.99)****	346.59	6	1.03 (0.99, 1.06)	**0.97 (0.94, 0.99)****	163.50	4	1.02 (0.99, 1.05)	0.98 (0.96, 1.01)	182.25	4	0.84
Drug Use	**1.03 (1.00, 1.07)***	0.97 (0.95, 1.00)	258.66	6	1.03 (0.98, 1.07)	0.96 (0.93, 1.00)	131.82	4	1.05 (0.99, 1.11)	0.99 (0.95, 1.04)	125.80	4	1.04
Alcohol	1.02 (1.00, 1.04)	0.98 (0.96, 1.00)	310.41	6	1.02 (0.99, 1.05)	0.98 (0.95, 1.00)	145.50	4	1.02 (0.99, 1.06)	0.99 (0.96, 1.02)	164.53	4	0.39
Anger	**1.03 (1.00, 1.05)***	**0.98 (0.96, 0.99)***	355.83	6	1.03 (0.99, 1.06)	**0.97 (0.95, 0.99)***	179.24	4	1.03 (0.99, 1.07)	0.99 (0.97, 1.02)	175.37	4	1.22
Integrity	**1.02 (1.00, 1.03)***	0.99 (0.98, 1.01)	428.04	6	1.01 (0.98, 1.03)	0.99 (0.97, 1.00)	208.66	4	**1.02 (1.00, 1.05)***	1.00 (0.99, 1.20)	217.29	4	2.09
Job Perform	**1.05 (1.02, 1.09)****	**0.98 (0.96, 1.00)**	315.93	6	**1.05 (1.01, 1.10)***	**0.97 (0.94, 1.00)***	162.41	4	**1.06 (1.00, 1.11)***	1.01 (0.97, 1.04)	150.85	4	2.67
Poorly Suited	**1.03 (1.00, 1.04)***	**0.98 (0.96, 0.99)***	313.33	6	1.02 (0.99, 1.05)	**0.97 (0.95, 0.99)****	159.73	4	**1.05 (1.00, 1.10)***	0.99 (0.96, 1.03)	151.40	4	2.20

^Currently employed is the reference category.
[b]Lack of variability led to model not being run (100% fired officers scored 43T)
*P < .05, **P < .01, ***P < .001

Table 7-11. Multiple Multinomial Logistic Regression Results of PAI Scales and Risk Estimates on Job Status^ by PIM Group (n=415).

	Full Model		Low PIM (≤ 64T)		High PIM (> 64T)	
	Fired/ Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)	**Fired/ Forced Resignation** OR (95% CI)	**Voluntary Resignation** OR (95% CI)
Agency A	0.49 (0.15, 1.64)	**2.49 (1.35, 4.61)****	0.26 (0.02, 2.85)	**4.99 (1.78, 13.99)****	0.38 (0.07, 2.03)	1.57 (0.66, 3.73)
Agency B	1.91 (0.76, 4.80)	1.39 (0.74, 2.64)	3.06 (0.53, 17.59)	2.13 (0.71, 6.38)	2.12 (0.57, 7.93)	1.28 (0.54, 3.04)
MAN-A	**0.93 (0.87, 0.99)***	1.01 (0.97, 1.05)	0.97 (0.88, 1.07)	1.04 (0.98, 1.10)	**0.87 (0.78, 0.98)***	0.96 (0.90, 1.02)
PAR-R	1.00 (0.94, 1.07)	0.97 (0.92, 1.01)	0.93 (0.81, 1.06)	0.94 (0.88, 1.00)	1.11 (0.99, 1.23)	0.99 (0.93, 1.06)
BOR-I	0.99 (0.89, 1.11)	1.01 (0.94, 1.08)	1.01 (0.86, 1.18)	0.98 (0.89, 1.08)	1.01 (0.82, 1.25)	1.09 (0.96, 1.24)
BOR-S	1.06 (0.99, 1.15)	0.97 (0.92, 1.03)	1.11 (0.99, 1.24)	0.97 (0.90, 1.05)	0.94 (0.81, 1.09)	0.96 (0.89, 1.05)
ANT-S	0.96 (0.88, 1.05)	0.97 (0.92, 1.02)	1.04 (0.91, 1.19)	0.98 (0.91, 1.06)	0.92 (0.80, 1.07)	0.92 (0.83, 1.05)
DRG	1.02 (0.93, 1.13)	0.95 (0.88, 1.01)	1.02 (0.83, 1.24)	0.98 (0.88, 1.08)	1.01 (0.89, 1.14)	**0.89 (0.80, 0.99)***
STR	0.97 (0.89, 1.06)	**0.93 (0.87, 0.99)***	1.08 (0.94, 1.26)	0.91 (0.83, 1.01)	**0.82 (0.70, 0.97)***	0.92 (0.84, 1.02)
RXR	0.96 (0.89, 1.04)	**1.06 (1.00, 1.12)***	1.08 (0.93, 1.24)	**1.13 (1.04, 1.23)****	**0.82 (0.71, 0.94)****	1.00 (0.93, 1.09)
DOM	**1.08 (1.01, 1.15)***	1.00 (0.97, 1.04)	1.02 (0.90, 1.16)	0.98 (0.92, 1.04)	**1.13 (1.02, 1.26)***	1.03 (0.97, 1.09)
Sub Abuse	1.02 (0.97, 1.07)	0.97 (0.94, 1.04)	1.07 (0.98, 1.17)	0.96 (0.91, 1.02)	1.03 (0.96, 1.11)	0.97 (0.92, 1.02)
Anger	1.00 (0.95, 1.06)	1.00 (0.97, 1.04)	1.03 (0.95, 1.11)	1.01 (0.97, 1.06)	0.96 (0.86, 1.06)	0.99 (0.92, 1.06)
Integrity	0.97 (0.93, 1.02)	0.99 (0.96, 1.02)	0.94 (0.86, 1.02)	0.98 (0.93, 1.02)	1.01 (0.94, 1.09)	0.99 (0.94, 1.05)
Job Perform	1.09 (0.99, 1.20)	1.03 (0.97, 1.09)	1.16 (0.99, 1.34)	1.02 (0.93, 1.10)	1.02 (0.89, 1.18)	1.04 (0.95, 1.14)
Poorly Suited	1.00 (0.94, 1.07)	1.01 (0.97, 1.06)	0.94 (0.83, 1.06)	1.03 (0.96, 1.10)	1.05 (0.91, 1.22)	1.05 (0.94, 1.16)
PIM group	**0.25 (0.07, 0.91)***	1.19 (0.59, 2.39)	--	--	--	--
Likelihood ratio test	χ^2 (34) = 78.96, $P < 0.001$		χ^2 (32) = 67.66, $P < 0.001$		χ^2 (32) = 55.93, $P < 0.01$	
Pearson goodness-of-fit	χ^2 (794) = 775.66, $P = 0.673$		χ^2 (394) = 289.37, $P = 1.00$		χ^2 (368) = 588.63, $P < 0.001$	
AIC	Intercept only: 658.34	Final model: 647.38	Intercept only: 315.62	Final model: 311.97	Intercept only: 343.64	Final model: 351.71
- 2 ln L	575.375		243.970		283.71	
df	36		34		34	
Chow χ^2	df = 32, 47.695, $P < 0.05$					

^Currently employed is the reference category.
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

CHAPTER 8

PSYCHOLOGIST RATING & COMBINED MODEL

The final results chapter examined the predictive validity of the psychologist's overall recommendation rating. Additionally, the significant variables from the individual assessments were combined in order to determine how the battery performed at predicting supervisor rating at the dichotomous level and job status.

Psychologist's Rating

Description

The overall recommendation of the psychologist to the hiring agency was evaluated. This is the final and overall recommendation based on the entire psychological battery. The ordinal scale of the psychologist's rating was the basis for the supervisor rating outcome and scored similarly with: A (Well Suited), B (Suitable: no concerns), C (Suitable: mild concerns), C- (Marginally Suitable), D (Poorly Suited) and F (Not psychologically suited for public safety employment). This rating can also be broken into two general recommendation categories, where correctional officers graded A through C are considered recommended for employment, while those graded C-, D or F are not typically recommended.

Table 8-1 shows the frequency of the psychologist's overall recommendation rating. While the rating scale has values from A to F, there were no correctional officers graded F that were hired and in the study. The lowest grade was D and approximately 4% of officers received this grade. The majority of officers received either a B (38%) or C (39%) rating.

Table 8-1. Psychologist's Ratings for the Total Sample (N=421).

	N (%)
A	7 (1.7%)
B	160 (38.0%)
C	165 (39.2%)
Recommended	*332 (78.9%)*
C-	73 (17.5%)
D	16 (3.8%)
F	0 (0.0%)
Not Recommended	*89 (21.1%)*

Predicting Supervisor Rating

Chi-square analysis demonstrated that psychologist's rating was not significantly different across supervisor rating at the ordinal level (Table 8-2). The majority of all the psychologist's ratings fell into the A and B ratings of the supervisor. However, when supervisor rating was dichotomized, psychologist's rating was significantly different between the two groups, χ^2 (1) = 13.89, $P < 0.01$. All officers rated as an A, 90% rated B and 86% rated C by the psychologist were recommended by their supervisor. Officers not recommended were more likely to have a lower rating by the psychologist.

In order to examine if psychologist's rating was a predictor of supervisor rating bivariate ordinal regression was conducted. Psychologist's rating[17] ($\beta = 0.41$, $P < 0.001$) was found to be a significant predictor of supervisor rating at the ordinal level. With the 2-level supervisor rating, psychologist's rating remained significant (OR: 1.84; 95% CI: 1.29, 2.60), with higher ratings by the psychologist predictive of satisfactory supervisor ratings.

[17] Psychologist's rating was first analyzed as an ordinal variable, converting values for B, C, C- and D into dummy variables and using A as a reference category. However with A as the reference category OR could not be calculated for the dummy variables and the Hosmer and Lemshow statistic was significant indicating there was a poor fit. The reference category was changed to D and all the dummy variables had OR values except A which also could not be calculated. Hosmer and Lemshow continued to be significant. Treating psychologist's as a continuous variable in the model eliminated the errors.

Table 8-2. Differences in Psychologist's Rating by Supervisor Rating (n=318).

	Supervisor Rating (ordinal)													Supervisor Rating (2-level)				
	A		B		C		C-		D		F		χ^2	Satisfactory		Not Satisfactory		χ^2
Psych. Rating	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*		*N*	*%*	*N*	*%*	
A	2	33.3%	2	33.3%	2	33.3%	0	0.0%	0	0.0%	0	0.0%		6	100%	0	0.0%	
B	49	39.8%	37	30.1%	25	20.3%	3	2.4%	5	4.1%	4	3.3%		111	90.2%	12	9.8%	
C	35	28.7%	37	30.3%	33	27.0%	5	4.1%	6	4.9%	6	4.9%	26.96	105	86.1%	17	13.9%	**13.89***
C-	11	20.0%	17	30.9%	14	25.5%	4	7.3%	5	9.1%	4	7.3%		42	76.4%	13	23.6%	
D	4	33.3%	2	16.7%	1	8.3%	0	0.0%	2	16.7%	3	25.0%		7	58.3%	5	41.7%	

*$P < 0.01$

Predicting Job Status

Psychologist's rating was significantly different across job status categories, χ^2 (2) = 22.16, $P < 0.01$ (Table 8-3). Of those given an A rating by the psychologist, 71% quit compared to approximately 25% of officers rated as B, C or C-. Of those given a D rating, even fewer quit (6.3%) and the majority were currently employed (81%). Further analysis of the five officers given an A rating revealed that they left for promotions to either deputy sheriff or were hired as police officers at area departments.

Table 8-3. Differences in Psychologist's Rating by Job Status.

	Employed		Fired/Forced Resignation		Voluntary Resignation		
	N	%	N	%	N	%	χ^2
Psychologist's rating							
A	2	28.6%	0	0.0%	5	71.4%	
B	114	72.6%	4	2.5%	39	24.8%	
C	111	67.7%	14	8.5%	39	23.8%	**22.16***
C-	48	38.5%	10	13.7%	15	20.5%	
D	13	81.3%	2	12.5%	1	6.3%	

*$P < 0.01$

In order to examine if psychologist's rating was a predictor of job status, bivariate multinomial regression was conducted. Correctional officers with lower ratings by the psychologist were more likely to be fired than currently employed (OR: 0.55; 95% CI: 0.36, 0.83). There was not a significant difference between those who quit and were currently employed. There was a trend for officers who quit to have higher psychologist ratings[18] (OR: 1.28; 95% CI: 0.97, 1.69).

[18] Given that psychologist's rating is the overall recommendation for hire, it is expected that the PHQ/PsyQ, CPI and PAI would impact psychologist's rating. An analysis was conducted in order to demonstrate which of the factors from the previous chapters predicted overall psychologist's rating. Analyses were conducted in the event that psychologist's rating washes out other predictors in the final

Complete Models

Predictor Variables

Table 8-4 provides a breakdown of the predictor variables from the previous analyses that were included in the final data models. The predictors included were those found significant from the bivariate regression analyses in the previous chapters. In both the PAI and PHQ/PsyQ chapters, there were issues that required further splitting of the sample. PIM group impacted job performance results in the PAI analyses and the utilization of both the PHQ & PsyQ required analyzing these tests separately. Therefore, the analyses of supervisor rating (2-level) and job status were conducted utilizing different subsamples of the data. For supervisor rating, the Low PIM group in Chapter 7 demonstrated an increase in significant factors. Therefore, in order to evaluate supervisor ratings, significant demographic, CPI, PAI variables as well as psychologist's rating were evaluated for the entire sample who had a supervisor rating (N=318) and for those officers in the Low PIM group (n=170). In order to evaluate the impact of problem points in addition to the other factors, a model was also be run for all officers who took the PsyQ[19, 20] (n=154).

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complete models. Due to the large number of predictors, the same factors found to be significant at the bivariate levels for supervisor rating and job status were used to predict psychologist's rating (see Table 8-4). Multivariate ordinal regression was conducted and only Psychological Mindedness (Py) from the CPI was found to be significant predictor of psychologist's recommendation, with higher scores on Py predicting a better rating by the psychologist. It was assumed the greatest predictors would have been the risk estimates based on discussions with the psychologist. Additionally, examination of the correlations between the PAI risk estimates and psychologist's rating were over 0.30 (see Table 8-10).

[19] Analysis with the PHQ sample was not included for three reasons: 1) The sample size was smaller than the PsyQ sample; 2) None of the factors from the PHQ were found to be significant predictors; and 3) The PsyQ is an improvement upon the PHQ and therefore, the PHQ is no longer utilized in pre-employment screening so the utility of the results would be limited.

[20] An additional model was to be run using a subsample of officers who scored low on PIM and only took the PsyQ (n=75); however, this only left 6 officers who received an unsatisfactory rating and left many cells empty.

For job status, although the Chow analog test was significant, there were problems with model fit in the High PIM model and none of the factors in the Low PIM model were significant. Therefore, in the final models for job status, the PIM group variable (0=High PIM, 1=Low PIM) will be added but the sample will not be split. The models examining job status will consist of one including the demographic, CPI and PAI significant variables for the full sample (N=417) and then another including General problem points for the subsample of officers who took the PsyQ (n=245).

Demographics. Agency will be included in all models (Table 8-4). Gender was a significant predictor for supervisor rating and will be included for both samples. Lastly, age, race, education and prior law enforcement experience will be included in the models predicting job status.

CPI Scales & Risk Estimates. For both samples predicting supervisor rating, only two CPI scales will be used: Responsibility (Re) and Psychological Mindedness (Py; Table 8-4). For both samples predicting job status, there were a number of CPI scales and risk estimates that will be included. The following primary scales were included: Socialization (So), Self-Control (Sc), Good Impression (Gi), Tolerance (To), Achievement via Independence (Ai), and Intellectual Efficiency (Ie). Additionally, the following special purpose scales were included: Managerial Potential (Mp), Work Orientation (Wo), Amicability (Ami), Narcissism (Nar) and Integrity (Itg). Lastly, probabilities of anger management problems, job problems and being rating as poorly suited by the psychologist were also included in the analyses.

PAI Scales & Risk Estimates. For both the full sample and subsample of officers who took the PsyQ, Traumatic Stress (ARD-T), Hypervigilance (PAR-H), Persecution

(PAR-P), Self-Harm (BOR-S), Antisocial Behaviors (ANT-A) and Stress (STR) were found to be significant predictors of supervisor rating (2-level) and included in the final model (Table 8-4). There were a number of PAI scales that significantly predicted job status at the bivariate level which were further examined for the final models: Activity Level (MAN-A), Resentment (PAR-R), Identity Problems (BOR-I), BOR-S, Stimulus Seeking (ANT-S), Drug Problems (DRG), STR, Treatment Rejection (RXR), and Dominance (DOM). Additionally, probabilities of substance abuse problems, integrity issues, anger management problems, job performance problems and being rated poorly suited by the psychologist were included. Lastly, PIM group will be included in order to account for differences in positive responding.

PsyQ Problem Points. For the subset of correctional officers who took the PsyQ, only certain categories of problem points were found to be significant. In the model predicting supervisor rating, Legal and Adult Relationships will be included. Lastly, in the model predicting job status, General problem points will be included (Table 8-4). Overall problem points and DQ admissions were also included even though they were not significant at the bivariate level. The main reason for inclusion is that these serve as the summary values that guide the psychologist in his/her decision.

Table 8-4. Variables to be Included in the Final Regression Analyses.

	Supervisor Rating Models			Job Status Models	
	Model 1: Full Sample (N=318)	Model 2: Low PIM (n=170)	Model 3: PsyQ Sample (n=152)	Model 1: Full Sample (N=417)	Model 2: PsyQ Sample (n=245)
Demographics	Agency Gender	Agency Gender	Agency Gender	Agency Age Race Education LE experience	Agency Age Race Education LE experience
PsyQ	____	_____	Legal PP Adult Rel PP Overall PP DQ Admission	____	General PP Overall PP DQ Admission
CPI	Re Py	Re Py	Re Py	So Sc Gi To Ai Ie Mp Wo Ami Nar Itg Anger Job problems Poorly suited	So Sc Gi To Ai Ie Mp Wo Ami Nar Itg Anger Job problems Poorly suited
PAI	ARD-T PAR-H PAR-P BOR-S ANT-A STR PIM group	ARD-T PAR-H PAR-P BOR-S ANT-A STR	ARD-T PAR-H PAR-P BOR-S ANT-A STR PIM group	MAN-A PAR-R BOR-I BOR-S ANT-S DRG STR RXR DOM Sub abuse Integrity Anger Job problems Poorly suited PIM group	MAN-A PAR-R BOR-I BOR-S ANT-S DRG STR RXR DOM Sub abuse Integrity Anger Job problems Poorly suited PIM group
Psych Rating	Psych Rating	Psych Rating	Psych Rating	Psych Rating	Psych Rating

Supervisor Rating Models

Model 1: Full Sample. Correlations for the predictors to be included in the multiple binary logistic regression model are shown in Table 8-5. All of the correlations were under 0.5, with Re and Py having a correlation of 0.45. To further check for multicollinearity, VIF values were obtained and all were below 2. Backward stepwise logistic regression was conducted for the remaining predictors setting probability of inclusion at 0.10 and exclusion at 0.15. For the final model, Hosmer and Lemeshow goodness of fit was not significant (χ^2 (8) = 13.97, P = 0.083) and the c-statistic was 0.84 which indicated good fit of the data. The final model included agency, Re, BOR-S, PIM group and the psychologist's rating (Table 8-6). All other predictors dropped out of the model. Only agency and psychologist's rating were significant in the final model. Correctional officers at Agency A (OR: 16.58; 95% CI: 6.32, 43.46) or Agency B (OR: 9.29; 95% CI: 3.65, 23.66) had a greater likelihood of being rated satisfactory by their supervisors. Additionally, correctional officers rated higher by the psychologist (OR: 2.03; 95% CI: 1.33, 3.10) were also more likely to be rated satisfactory.

Table 8-5. Correlations between Predictors Examining Supervisor Ratings for Model 1.

	Gender	Agency	Re	Py	ARD-T	PAR-H	PAR-P	BOR-S	ANT-A	STR	PIM
Agency	-0.21										
Re	0.17	-0.14									
Py	0.03	-0.07	0.45								
ARD-T	-0.10	0.03	-0.22	-0.08							
PAR-H	-0.06	-0.10	-0.13	-0.19	0.15						
PAR-P	-0.06	-0.08	-0.20	-0.17	0.23	0.33					
BOR-S	-0.06	-0.09	-0.25	-0.12	0.23	0.20	0.28				
ANT-A	0.17	0.00	-0.33	-0.02	0.13	0.04	0.01	0.02			
STR	0.00	-0.01	-0.31	-0.16	0.36	0.21	0.22	0.28	0.21		
PIM Group	-0.01	-0.10	-0.29	-0.17	0.24	0.23	0.18	0.35	0.16	0.35	
Psych. Rating	0.01	-0.01	0.23	0.10	-0.10	-0.03	-0.02	-0.12	-0.34	-0.19	-0.10

Table 8-6. Logistic Regression Results Predicting Supervisor Rating (2-level) for Model 1 (N=318).

	OR (95% CI)
Agency	
--A	**16.58 (6.32, 43.46)***
--B	**9.29 (3.65, 23.66)***
Re	1.04 (0.98, 1.11)
BOR-S	0.95 (0.89, 1.02)
Low PIM	1.90 (0.84, 4.31)
Psych. Rating	**2.03 (1.33, 3.10)***

*$P < 0.001$

Model 2: Low PIM. The same factors in the correlation table above (Table 8-5) were examined only using the officers who had low PIM scores on the PAI. Multiple logistic regression was conducted using backwards stepwise including all predictors. For the final model, Hosmer and Lemeshow goodness of fit was not significant (χ^2 (8) = 6.15, $P = 0.63$) and the c-statistic was 0.95 which indicates that there was superior fit of the data. The final model included more PAI variables in addition to what was found in Model 1: PAR-H, PAR-P and ANT-A (Table 8-7). For the final model, agency and psychologist's rating remained significant with the addition of PAR-H. As previously found, correctional officers at Agency A (OR: 115.36; 95% CI: 10.89, 1222.25) or Agency B (OR: 12.38; 95% CI: 2.41, 63.74) had a greater likelihood of being rated satisfactory by their supervisors. As with Model 1, correctional officers rated higher by the psychologist (OR: 3.87; 95% CI: 1.58, 9.49) were also more likely to be rated satisfactory. Lastly, officers with higher scores on PAR-H were more likely to be rated satisfactory.

Table 8-7. Logistic Regression Results Predicting Supervisor Rating (2-level) for Model 2 (n=170).

	OR (95% CI)
Agency	
--A	**115.36 (10.89, 1222.25)****
--B	**12.38 (2.41, 63.74)****
Gender	0.34 (0.06, 1.98)
Re	1.08 (0.97, 1.20)
BOR-S	0.89 (0.79, 1.01)
PAR-H	**1.19 (1.06, 1.34)***
PAR-P	0.86 (0.74, 1.00)
ANT-A	1.06 (0.97, 1.17)
Psych. Rating	**3.87 (1.58, 9.49)***

*$P < 0.01$, **$P < 0.001$

Model 3: PsyQ sample. The next model examined the impact of the significant predictors and problem points for officers who took the PsyQ. Correlations for the predictors to be included in the final logistic regression model for correctional officers who took the PsyQ are shown in Table 8-8. All but one correlation were under 0.5, with Legal problem points and Overall problem points having a correlation of 0.60. To further check for multicollinearity, VIF values were obtained and all were below 2.

Table 8-8. Correlations between Predictors Examining Supervisor Ratings for Model 3 (n=152).

	Gender	Agency	Re	Py	ARD-T	PAR-H	PAR-P	BOR-S	ANT-A	STR	Legal PP	Adult Rel. PP	Overall PP	DQ Adm.	PIM
Agency	-0.24														
Re	0.11	-0.11													
Py	0.04	-0.01	0.46												
ARD-T	-0.11	0.02	-0.31	-0.14											
PAR-H	-0.06	-0.26	-0.20	-0.25	0.06										
PAR-P	0.00	-0.14	-0.21	-0.17	0.26	0.23									
BOR-S	-0.06	-0.09	-0.29	-0.18	0.23	0.17	0.24								
ANT-A	0.23	0.05	-0.29	-0.02	0.14	0.00	-0.05	-0.01							
STR	0.07	-0.05	-0.28	-0.15	0.43	0.08	0.22	0.26	0.19						
Legal	0.10	-0.12	0.05	0.03	-0.04	0.01	-0.01	0.03	0.07	0.05					
Adult Rel	-0.11	0.13	0.09	0.20	0.04	-0.06	-0.05	-0.07	-0.04	-0.06	0.24				
Overall	0.01	0.16	0.08	0.06	-0.09	-0.15	-0.11	0.07	-0.01	0.01	0.60	0.31			
DQ Admission	0.05	-0.12	0.12	0.12	-0.03	0.06	-0.01	-0.14	-0.02	-0.03	0.32	-0.01	0.28		
PIM Group	0.03	-0.24	-0.33	-0.32	0.25	0.18	0.16	0.37	0.14	0.32	0.03	-0.12	0.00	-0.03	
Psych. Rating	-0.02	0.04	0.23	0.06	-0.05	-0.09	-0.01	-0.14	-0.35	-0.10	-0.13	-0.13	-0.07	-0.09	0.00

Multiple logistic regression was conducted using backwards stepwise including all predictors (Table 8-9). For the final model, Hosmer and Lemeshow goodness of fit was not significant (χ^2 (8) = 7.24, P = 0.511) and the c-statistic was 0.89 which indicates good model fit. The final model included agency, gender, Re, BOR-S, PAR-H, STR, Legal problem points, Adult Relationship problem points, Overall problem points, PIM group and psychologist's rating. Similar to Models 1 & 2, agency and psychologist's rating were significant in the final model. Additionally, PAR-H and BOR-S were significant. None of the problem point categories or DQ admission were significant. Correctional officers at Agency A (OR: 11.86; 95% CI: 1.20, 117.57) or Agency B (OR: 5.42; 95% CI: 1.18, 24.87) had a greater likelihood of being rated satisfactory by their supervisors. Additionally, correctional officers rated higher by the psychologist (OR: 2.64; 95% CI: 1.20, 5.80) were also more likely to be rated satisfactory. Lastly, higher scores on PAR-H (OR: 1.08; 95% CI: 1.00, 1.18) and lower scores on BOR-S (OR: 0.89; 95% CI: 0.79, 0.99) predicted satisfactory supervisor ratings.

Table 8-9. Logistic Regression Results Predicting Supervisor Rating for Model 3 (n=152).

	OR (95% CI)
Agency	
--A	**11.86 (1.20, 117.57)***
--B	**5.42 (1.18, 24.87)***
Gender	2.88 (0.69, 12.00)
Re	1.08 (0.97, 1.19)
PAR-H	**1.08 (1.00, 1.18)***
BOR-S	**0.89 (0.80, 0.99)***
STR	1.08 (0.94, 1.25)
Legal PP	0.73 (0.49, 1.08)
Adult Rel. PP	0.69 (0.47, 1.02)
Overall PP	1.08 (0.97, 1.21)
Psych. Rating	**2.64 (1.20, 5.80)***
Low PIM	3.40 (0.65, 17.77)

*$P < 0.05$

Job Status Models

Model 1: Full Sample. Correlations for the predictors included in the multinomial logistic regression model are shown in Table 8-10. There were a few correlations whose values were above 0.70 which could have potentially led to collinearity issues. The majority of the high correlations were related to the CPI and PAI risk estimates. However, Sc was also highly correlated with other CPI scales. To further check for multicollinearity, VIF values were obtained and all but CPI job performance (VIF = 18.65), CPI poorly suited (VIF = 14.32), and PAI poorly suited (VIF = 10.01) were under 10. Therefore, these three risk estimates were dropped from the final analysis. PAI job performance problems probability was also high (VIF = 8.26) and impacting PAI integrity so it was also dropped.

Backward stepwise multinomial regression was conducted for the remaining predictors setting probability of inclusion at 0.10 and exclusion at 0.15. For the final model, the likelihood ratio test was significant (χ^2 (30) = 129.53, $P < 0.001$), the AIC was reduced from 635.34 to 565.82 and the Pearson goodness-of-fit was not significant (χ^2 (772) = 784.24, $P = 0.372$) indicating good fit of the data.

A number of predictors were retained in the model (Table 8-11). Compared to currently employed correctional officers, officers who were fired were not White (OR: 0.17; 95% CI: 0.06, 0.47) and had lower ratings by the psychologist (OR: 0.58; 95% CI: 0.35, 0.98). Additionally, fired officers were more likely to have higher scores on To (OR: 1.11; 95% CI: 1.02, 1.22).

Compared to officers who were currently employed, those officers who quit were more likely to be from Agency A (OR: 2.04; 95% CI: 1.06, 3.94), be younger (OR: 0.91;

95% CI: 0.86, 0.96) and have prior law enforcement experience (OR: 3.42; 95% CI: 1.63, 7.17). Correctional officers who quit were more likely to have lower scores on So (OR: 0.94; 95% CI: 0.89, 0.99), Gi (OR: 0.93; 95% CI: 0.88, 0.99), and Wo (OR: 0.90; 95% CI: 0.82, 0.99) compared to those currently employed. Additionally, those who quit were more likely to have higher scores on Sc (OR: 1.15; 95% CI: 1.07, 1.23) and To (OR: 1.12; 95% CI: 1.06, 1.18) and a lower probability of risk of substance abuse as determined through the PAI (OR: 0.97; 95% CI: 0.95, 0.99) compared to officer still employed.

Table 8-10. Correlations between the Predictors Examining Job Status for Model 1 (N=417).

	Agency	Age	Race	Education	LE Exp.	So	Sc	Gi	To	Ai	Ie	Mp	Wo	Ami	Nar	Itg	CPI Anger	CPI Job Perform	CPI Poorly Suited
Age	-0.01																		
Race	-0.01	-0.10																	
Education	0.04	-0.16	-0.06																
LE Experience	-0.03	0.12	-0.05	-0.06															
So	0.00	-0.19	0.06	0.11	0.04														
Sc	-0.01	0.08	-0.07	-0.01	0.08	0.40													
Gi	0.03	0.02	-0.05	-0.04	0.04	0.38	**0.81**												
To	0.01	0.02	0.00	0.07	0.09	0.26	0.45	0.38											
Ai	-0.03	-0.08	-0.02	0.11	0.09	0.17	0.36	0.34	0.63										
Ie	0.01	0.01	0.03	0.08	0.14	0.30	0.36	0.33	0.61	0.64									
Mp	0.00	0.04	0.01	0.06	0.14	0.35	0.56	0.52	**0.70**	0.58	0.62								
Wo	0.05	0.07	0.01	0.01	0.07	0.34	0.65	0.62	0.58	0.46	0.48	0.60							
Ami	0.00	-0.01	-0.02	0.00	0.12	0.52	**0.73**	0.66	**0.70**	0.47	0.48	0.66	**0.71**						
Nar	0.01	-0.16	0.06	0.04	-0.11	-0.18	**-0.72**	-0.56	-0.53	-0.41	-0.29	-0.42	-0.56	-0.69					
Itg	0.00	0.08	0.12	0.00	0.12	0.21	0.35	0.17	0.49	0.38	0.31	0.39	0.37	0.53	-0.56				
CPI Anger	-0.03	0.07	0.09	-0.10	-0.04	-0.63	**-0.72**	-0.68	-0.40	-0.32	-0.36	-0.44	-0.54	-0.65	0.56	-0.27			
CPI Job Perform	-0.03	0.08	0.05	-0.06	-0.06	**-0.71**	**-0.72**	**-0.77**	-0.25	-0.22	-0.30	-0.38	-0.48	-0.59	0.42	-0.22	**0.88**		
CPI Poorly Suited	-0.02	0.08	0.00	-0.11	-0.08	**-0.79**	**-0.71**	-0.68	-0.45	-0.39	-0.50	-0.59	-0.61	-0.69	0.47	-0.37	**0.86**	**0.88**	
MAN-A	-0.05	-0.08	0.05	0.02	-0.12	-0.21	-0.49	-0.44	-0.33	-0.25	-0.26	-0.41	-0.44	-0.46	0.43	-0.32	0.36	0.35	0.37
PAR-R	-0.04	0.00	0.02	-0.09	-0.07	-0.19	-0.31	-0.35	-0.33	-0.28	-0.26	-0.33	-0.31	-0.39	0.29	-0.17	0.36	0.26	0.32
BOR-I	-0.01	-0.13	0.05	0.03	-0.14	-0.24	-0.50	-0.49	-0.34	-0.28	-0.29	-0.41	-0.45	-0.45	0.38	-0.26	0.36	0.41	0.43
BOR-S	-0.13	0.00	0.02	-0.04	-0.05	-0.18	-0.40	-0.41	-0.21	-0.19	-0.14	-0.27	-0.31	-0.34	0.32	-0.13	0.32	0.32	0.32
ANT-S	-0.07	-0.12	0.11	0.10	-0.06	-0.25	-0.46	-0.40	-0.20	-0.13	-0.11	-0.29	-0.35	-0.35	0.35	-0.11	0.40	0.38	0.38
DRG	-0.04	0.03	-0.06	-0.04	-0.09	-0.12	-0.11	-0.11	-0.13	-0.13	-0.20	-0.15	-0.13	-0.14	0.06	-0.15	0.11	0.13	0.17
STR	-0.04	0.02	-0.01	-0.05	-0.07	-0.35	-0.39	-0.38	-0.28	-0.23	-0.27	-0.35	-0.36	-0.42	0.28	-0.23	0.43	0.43	0.45
RXR	0.08	-0.11	0.05	0.01	0.11	0.31	0.40	0.40	0.23	0.18	0.19	0.30	0.40	0.42	-0.26	0.23	-0.39	-0.42	-0.40
DOM	-0.02	-0.03	-0.08	0.03	0.06	0.14	0.05	0.14	0.02	0.08	0.19	0.21	-0.02	-0.01	0.23	-0.25	-0.11	-0.18	-0.16
PAI Sub Abuse	-0.08	0.10	0.02	-0.01	-0.05	-0.40	-0.37	-0.42	-0.16	-0.09	-0.19	-0.22	-0.28	-0.29	0.19	-0.10	0.52	0.58	0.50
PAI Integrity	0.01	0.03	-0.02	-0.03	0.00	-0.29	-0.09	-0.12	-0.04	0.06	-0.08	-0.03	-0.08	-0.04	0.01	-0.04	0.31	0.38	0.32
PAI Anger	-0.01	0.00	0.00	-0.02	-0.01	-0.40	-0.44	-0.45	-0.26	-0.13	-0.20	-0.27	-0.34	-0.37	0.34	-0.20	0.58	0.59	0.52
PAI Job Perform	-0.04	0.02	0.01	-0.02	-0.03	-0.46	-0.42	-0.49	-0.23	-0.15	-0.21	-0.27	-0.34	-0.36	0.27	-0.12	0.60	0.65	0.58
PAI Poorly Suited	-0.03	0.00	-0.01	0.02	-0.07	-0.48	-0.52	-0.51	-0.32	-0.21	-0.30	-0.37	-0.45	-0.48	0.38	-0.30	0.59	0.66	0.65
PIM Group	-0.07	-0.05	0.06	0.04	-0.07	-0.25	-0.49	-0.55	-0.29	-0.27	-0.22	-0.37	-0.39	-0.43	0.37	-0.16	0.44	0.43	0.40
Psych. Rating	-0.05	0.05	0.04	0.08	0.10	0.26	0.22	0.21	0.14	0.14	0.18	0.16	0.15	0.22	-0.18	0.18	-0.28	-0.30	-0.29

	MAN-A	PAR-R	BOR-I	BOR-S	ANT-S	DRG	STR	RXR	DOM	PAI Sub Abuse	PAI Integrity	PAI Anger	PAI Job Perform	PAI Poorly Suited	PIM Group
PAR-R	0.25														
BOR-I	0.43	0.41													
BOR-S	0.40	0.28	0.36												
ANT-S	0.43	0.22	0.30	0.32											
DRG	0.09	0.04	0.10	0.06	-0.01										
STR	0.38	0.32	0.48	0.26	0.24	0.05									
RXR	-0.38	-0.17	-0.42	-0.32	-0.21	-0.08	-0.43								
DOM	-0.01	-0.26	-0.15	-0.17	-0.05	-0.04	-0.11	0.07							
PAI Sub Abuse	0.24	0.19	0.25	0.22	0.31	0.19	0.34	-0.29	-0.14						
PAI Integrity	-0.01	-0.11	-0.03	-0.04	0.12	0.09	0.15	-0.07	0.00	**0.74**					
PAI Anger	0.26	0.23	0.25	0.17	0.37	0.00	0.39	-0.30	-0.03	**0.80**	**0.73**				
PAI Job Perform	0.28	0.23	0.33	0.25	0.36	0.02	0.50	-0.38	-0.15	**0.75**	**0.74**	**0.81**			
PAI Poorly Suited	0.39	0.26	0.45	0.30	0.49	0.12	0.53	-0.40	-0.04	**0.77**	0.69	**0.82**	**0.85**		
PIM Group	0.44	0.34	0.47	0.36	0.32	-0.03	0.35	-0.34	-0.16	0.28	0.01	0.34	0.45	0.34	
Psych. Rating	-0.07	-0.08	-0.18	-0.12	-0.15	-0.07	-0.18	0.13	-0.02	-0.33	-0.30	-0.33	-0.33	-0.36	-0.09

Table 8-11. Multinomial Logistic Regression Results Predicting Job Status for Model 1 (n=402).

	Fired/ Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)
Agency		
--A	0.44 (0.13, 1.54)	**2.04 (1.06, 3.94)***
--B	1.60 (0.59, 4.35)	1.35 (0.68, 2.67)
Race (white)	**0.17 (0.06, 0.47)****	0.95 (0.36, 2.48)
LE experience	1.79 (0.50, 6.35)	**3.42 (1.63, 7.17)****
Some college or higher	0.64 (0.25, 1.62)	1.74 (0.91, 3.33)
Age	0.96 (0.90, 1.04)	**0.91 (0.86, 0.96)****
So	0.93 (0.85, 1.02)	**0.94 (0.89, 0.99)***
Sc	1.08 (0.97, 1.22)	**1.15 (1.07, 1.23)****
Gi	0.96 (0.86, 1.06)	**0.93 (0.88, 0.99)***
To	**1.11 (1.02, 1.22)***	**1.12 (1.06, 1.18)****
Wo	0.97 (0.85, 1.11)	**0.90 (0.82, 0.99)***
RXR	0.95 (0.89, 1.03)	1.05 (0.99, 1.10)
DOM	1.07 (0.99, 1.15)	1.02 (0.98, 1.07)
PAI Sub. Abuse	1.01 (0.98, 1.05)	**0.97 (0.95, 0.99)***
Psych. Rating	**0.58 (0.35, 0.98)***	1.02 (0.73, 1.44)

*$P < 0.05$, **$P < 0.001$

Model 2: PsyQ Sample. Correlations for the predictors to be included in the multinomial logistic regression model are shown in Table 8-12. There were a few correlations whose values were above 0.70 which may have led to collinearity issues. As found with the full sample, the majority of the high correlations were related to the CPI and PAI risk estimates. Similarly, Sc was also highly correlated with other CPI scales. To further check for multicollinearity, VIF values were obtained and all but CPI anger management issues (VIF = 11.76), CPI job performance (VIF = 21.67), CPI poorly suited (VIF = 17.57), and PAI poorly suited (VIF = 11.08) were under 10. Therefore, these four risk estimates were dropped from the final analysis. PAI job performance problems probability was also high (VIF = 7.94) and impacting PAI integrity so it was also dropped consistent with the full sample model.

Table 8-12. Correlations between Predictors Examining Job Status for Model 2 (n=245).

	Agency	Age	Race	Education	LE Exp.	So	Sc	Gi	To	Ai	Ie	Mp	Wo	Ami	Nar	Itg	CPI Anger	CPI Job Perform	CPI Poorly Suited
Age	0.02																		
Race	0.04	-0.08																	
Education	-0.03	-0.12	-0.07																
LE Experience	-0.08	0.13	-0.02	-0.09															
So	0.06	-0.16	0.05	0.07	0.08														
Sc	0.09	0.16	-0.01	-0.05	0.10	0.36													
Gi	0.14	0.07	-0.01	-0.11	0.13	0.34	**0.81**												
To	0.12	0.04	0.02	0.04	0.09	0.27	0.48	0.39											
Ai	0.07	-0.11	-0.01	0.08	0.04	0.14	0.37	0.34	0.60										
Ie	0.01	-0.04	0.00	0.05	0.11	0.31	0.35	0.29	0.59	0.64									
Mp	0.10	0.08	0.06	0.03	0.23	0.34	0.57	0.52	**0.73**	0.59	0.65								
Wo	0.16	0.11	0.02	-0.02	0.08	0.32	0.67	0.68	0.58	0.46	0.47	0.63							
Ami	0.12	0.07	0.02	-0.07	0.17	0.53	**0.73**	0.65	**0.70**	0.46	0.47	0.68	**0.70**						
Nar	-0.10	-0.26	0.00	0.08	-0.15	-0.19	**-0.74**	-0.58	-0.52	-0.42	-0.27	-0.47	-0.55	-0.67					
Itg	0.04	0.13	0.15	-0.01	0.15	0.21	0.35	0.18	0.43	0.35	0.27	0.41	0.34	0.54	-0.56				
CPI Anger	-0.15	0.01	0.11	-0.09	-0.08	-0.64	**-0.72**	-0.69	-0.43	-0.35	-0.36	-0.51	-0.59	-0.68	0.56	-0.26			
CPI Job Perform	-0.13	0.02	0.07	-0.01	-0.09	**-0.71**	**-0.71**	**-0.75**	-0.26	-0.21	-0.28	-0.40	-0.53	-0.61	0.44	-0.22	**0.89**		
CPI Poorly Suited	-0.11	0.01	0.01	-0.07	-0.13	**-0.78**	-0.69	-0.65	-0.45	-0.39	-0.50	-0.62	-0.62	**-0.71**	0.48	-0.38	**0.87**	**0.89**	
MAN-A	-0.12	-0.05	0.02	0.02	-0.11	-0.24	-0.53	-0.49	-0.32	-0.29	-0.27	-0.43	-0.43	-0.45	0.43	-0.28	0.39	0.42	0.42
PAR-R	-0.02	0.01	0.07	-0.07	-0.14	-0.19	-0.30	-0.38	-0.31	-0.22	-0.23	-0.36	-0.29	-0.36	0.28	-0.09	0.40	0.29	0.34
BOR-I	-0.06	-0.13	0.04	0.04	-0.15	-0.27	-0.54	-0.54	-0.33	-0.25	-0.27	-0.38	-0.48	-0.46	0.42	-0.24	0.42	0.49	0.48
BOR-S	-0.10	-0.03	-0.05	-0.03	-0.13	-0.16	-0.40	-0.41	-0.16	-0.16	-0.11	-0.22	-0.27	-0.31	0.32	-0.11	0.31	0.33	0.30
ANT-S	-0.19	-0.15	0.11	0.07	-0.13	-0.24	-0.46	-0.45	-0.28	-0.18	-0.17	-0.34	-0.39	-0.38	0.37	-0.12	0.44	0.43	0.41
DRG	0.10	0.11	-0.11	-0.02	-0.11	-0.10	-0.06	-0.07	-0.13	-0.12	-0.22	-0.14	-0.09	-0.15	0.06	-0.18	0.09	0.08	0.14
STR	-0.01	0.04	-0.06	0.04	-0.07	-0.37	-0.37	-0.39	-0.24	-0.18	-0.23	-0.30	-0.35	-0.39	0.29	-0.19	0.44	0.45	0.45
RXR	0.08	-0.13	0.08	-0.06	0.13	0.32	0.40	0.44	0.19	0.14	0.13	0.24	0.36	0.37	-0.23	0.17	-0.41	-0.48	-0.40
DOM	-0.03	-0.04	-0.13	0.02	0.09	0.15	0.07	0.15	0.02	0.07	0.18	0.17	0.02	-0.01	0.19	-0.30	-0.15	-0.18	-0.16
PAI Sub Abuse	-0.07	0.06	0.04	0.02	-0.04	-0.36	-0.30	-0.37	-0.14	-0.04	-0.20	-0.22	-0.27	-0.23	0.12	-0.03	0.49	0.54	0.46
PAI Integrity	-0.02	-0.03	0.00	-0.05	0.07	-0.24	-0.05	-0.07	-0.03	0.05	-0.10	-0.06	-0.08	-0.02	0.00	-0.02	0.28	0.34	0.27
PAI Anger	-0.08	-0.07	0.00	0.02	0.02	-0.35	-0.39	-0.42	-0.28	-0.11	-0.20	-0.29	-0.33	-0.34	0.31	-0.16	0.56	0.57	0.48
PAI Job Perform	-0.10	-0.03	0.03	-0.03	0.01	-0.45	-0.39	-0.46	-0.22	-0.11	-0.18	-0.28	-0.33	-0.33	0.26	-0.06	0.62	0.64	0.56
PAI Poorly Suited	-0.08	-0.05	0.00	0.05	-0.04	-0.46	-0.48	-0.49	-0.29	-0.18	-0.30	-0.36	-0.42	-0.44	0.38	-0.27	0.60	0.67	0.64
PIM Group	-0.16	-0.06	0.09	0.04	-0.07	-0.27	-0.49	-0.57	-0.28	-0.24	-0.16	-0.34	-0.41	-0.41	0.37	-0.12	0.48	0.47	0.41
Psych. Rating	0.13	0.13	0.07	0.04	0.07	0.29	0.21	0.19	0.13	0.11	0.19	0.17	0.18	0.24	-0.21	0.22	-0.29	-0.28	-0.30
General PP	-0.11	-0.07	0.02	-0.07	-0.01	0.05	0.02	0.05	0.03	0.00	0.02	0.04	0.00	0.02	-0.04	-0.04	-0.04	-0.03	-0.01
Overall PP	0.15	0.11	0.06	0.01	0.11	-0.09	0.01	0.03	0.04	0.02	0.05	0.09	0.04	0.00	0.01	0.01	0.05	0.07	0.05
DQ Admission	-0.08	-0.01	0.00	0.08	-0.03	-0.11	-0.03	-0.03	-0.04	0.00	-0.04	-0.06	-0.07	-0.11	0.08	-0.11	0.08	0.07	0.07

	MAN-A	PAR-R	BOR-I	BOR-S	ANT-S	DRG	STR	RXR	DOM	PAI Sub Abuse	PAI Integrity	PAI Anger	PAI Job Perform	PAI Poorly Suited	PIM Group	Psych. Rating	General PP	Overall PP
PAR-R	0.22																	
BOR-I	0.41	0.37																
BOR-S	0.37	0.31	0.42															
ANT-S	0.41	0.28	0.36	0.34														
DRG	0.03	-0.03	0.01	0.01	-0.07													
STR	0.40	0.31	0.49	0.26	0.26	-0.01												
RXR	-0.35	-0.11	-0.41	-0.31	-0.25	-0.02	-0.41											
DOM	-0.04	-0.29	-0.11	-0.24	-0.14	0.00	-0.06	0.09										
PAI Sub Abuse	0.26	0.23	0.30	0.22	0.35	0.18	0.37	-0.32	-0.24									
PAI Integrity	0.00	-0.05	0.03	-0.07	0.11	0.13	0.14	-0.08	-0.04	**0.72**								
PAI Anger	0.26	0.26	0.30	0.15	0.39	-0.01	0.41	-0.31	-0.09	**0.75**	**0.73**							
PAI Job Perform	0.29	0.26	0.36	0.26	0.37	-0.01	0.48	-0.39	-0.18	**0.72**	**0.72**	**0.79**						
PAI Poorly Suited	0.38	0.27	0.50	0.29	0.50	0.08	0.53	-0.39	-0.07	**0.75**	0.69	**0.83**	**0.84**					
PIM Group	0.42	0.29	0.45	0.36	0.33	-0.05	0.34	-0.36	-0.16	0.25	-0.01	0.31	0.44	0.32				
Psych. Rating	-0.07	-0.13	-0.21	-0.13	-0.20	-0.07	-0.10	0.11	-0.06	-0.31	-0.30	-0.30	-0.31	-0.36	-0.01			
General PP	0.04	-0.02	0.02	0.04	-0.06	-0.06	-0.05	0.00	0.07	0.03	0.07	0.04	0.04	0.04	-0.04	-0.03		
Overall PP	0.05	-0.07	0.01	0.12	-0.07	0.08	0.05	-0.01	0.02	0.04	0.08	0.04	0.05	0.04	-0.01	-0.06	0.27	
DQ Admission	0.02	0.01	0.04	-0.10	-0.07	0.07	0.06	-0.02	0.12	-0.01	0.05	0.05	0.01	0.05	0.02	-0.15	0.06	0.33

Backward stepwise multinomial regression was conducted for the remaining predictors setting probability of inclusion at 0.10 and exclusion at 0.15. However, there was an error running the model because there were no officers in the fired category who had previous law enforcement experience. Therefore this variable was dropped. For the final model, the likelihood ratio test was significant (χ^2 (24) = 82.07, $P < 0.001$), the AIC was reduced from 351.85 to 317.78 and the Pearson goodness-of-fit was not significant (χ^2 (460) = 421.56, $P = 0.90$) indicating good fit of the data.

The final model for officers who took the PsyQ is shown in Table 8-13. The results differ slightly from what was found with the full sample. As with Model 1, officers who were fired were not White (OR: 0.08; 95% CI: 0.02, 0.32) and received lower ratings from the psychologist (OR: 0.39; 95% CI: 0.18, 0.83) compared to those currently employed. To was no longer significant in the PsyQ subsample, however, other variables emerged as significant predictors. Compared to officers currently employed, fired officers had lower So scores (OR: 0.84; 95% CI: 0.75, 0.96) and ANT-S scores (OR: 0.83; 95% CI: 0.70, 0.98). Lastly, officers who were fired were more likely to have higher Ai scores (OR: 1.01; 95% CI: 1.01, 1.36) and more General problem points (OR: 1.87; 95% CI: 1.18, 2.97) compared to those currently employed.

The results comparing officers who quit to those currently employed, differed more substantially between the two samples. Law enforcement experience had to be excluded from the model, and age, Sc and Wo dropped out of the final model. Agency and So were also no longer significant in the final model for those who had quit. Similar to Model 1, correctional officers who quit were more likely to have lower scores on Gi (OR: 0.93; 95% CI: 0.87, 0.99) and higher scores on To (OR: 1.08; 95% CI: 1.00, 1.17)

compared to officers still employed. Additionally, the risk of substance abuse based on the PAI was lower in those who quit compared to those on the job (OR: 0.96; 95% CI: 0.93, 0.99). Lastly, unlike Model 1, officers who quit had lower MAN-A scores (OR: 0.94; 95% CI: 0.88, 0.99) compared to those currently employed.

Table 8-13. Multinomial Logistic Regression Results Predicting Job Status for Model 2 (n=243).

	Fired/ Forced Resignation OR (95% CI)	**Voluntary Resignation** OR (95% CI)
Agency		
--A	0.44 (0.04, 5.54)	1.34 (0.50, 3.64)
--B	2.83 (0.72, 11.08)	0.96 (0.42, 2.21)
Race (white)	**0.08 (0.02, 0.32)*** **	0.72 (0.22, 2.39)
So	**0.84 (0.75, 0.96)** **	0.98 (0.91, 1.06)
Ai	**1.17 (1.01, 1.36)***	1.04 (0.97, 1.12)
Gi	0.98 (0.88, 1.09)	**0.93 (0.87, 0.99)***
To	1.00 (0.87, 1.15)	**1.08 (1.00, 1.17)***
MAN-A	0.93 (0.84, 1.02)	**0.94 (0.88, 0.99)***
ANT-S	**0.83 (0.70, 0.98)***	0.94 (0.87, 1.02)
PAI Sub. Abuse	1.03 (0.98, 1.07)	**0.96 (0.93, 0.99)***
General PP	**1.87 (1.18, 2.97)** **	0.96 (0.68, 1.36)
Psych. Rating	**0.39 (0.18, 0.83)***	0.84 (0.53, 1.33)

*$P < 0.05$, **$P < 0.01$, *** $P < 0.001$

Conclusion

The impact of demographic, background and psychological predictors differed by job performance outcome. However, both agency and psychologist's rating had an impact on both supervisor rating and job status. Supervisor rating was best predicted by agency and the psychologist's overall rating which remained significant across all three models. Agency of hire had the biggest impact overall, due to the unique distributions in ratings by the three supervisors representing each agency. As discussed in Chapter 5, while it is possible that the general performance of the officers at each agency could be different, it is likely that the individual rater demonstrated more influence over the distribution. Officers at Agency A and B were more likely to be rated satisfactory compared to officers at Agency C. In regards to job status, officers from Agency A were more likely to quit rather than stay on the job. Further examination of those who quit from Agency A revealed that the majority went on to become deputies and in essence were promoted. It was also discovered that this agency requires officers to be on jail detail before being promoted to deputy; therefore, the high number of promotions could be expected.

The psychologist's overall rating also was significant across all models, with results in the predicted directions. Higher ratings by the psychologist were associated with satisfactory supervisor ratings, while lower ratings by the psychologist were more predictive of officers who were fired rather than currently employed.

There were also some predictors that varied by job performance outcome. For supervisor ratings no demographic variables were found to be significant. However, for job status, race, past law enforcement experience and age were significant in the full sample model. Only race remained significant in both job status models. These were the

same patterns that emerged in Chapter 5. Officers who had prior law enforcement experience were more likely to quit than stay on the job. This was expected particularly if officers were using this position as a stepping stone for a law enforcement career. Before adding in the other psychological variables, education (some college or higher) was found significant; however in the final combined model it was no longer significant. Younger officers were also more likely to quit than stay on the job, which would be expected. Officers who are older are more likely to be farther along in their career and therefore have more invested in staying. However, age only stayed in the full model and dropped out of the PsyQ subset. Lastly, non-white officers were more likely to be fired than currently employed. As discussed in Chapter 5, this was an unexpected finding. Similar to gender, there were very few non-white officers in the sample (n=28). Only 6% (n=21) of White officers were fired compared to 23% (n=9) of non-White officers. Across all agencies, non-White officers were more likely to be fired compared to white officers. Past research has shown similar results (Fyfe & Kane, 2006).

The only factors from the CPI, PAI and PsyQ to emerge as significant predictors of supervisor rating were PAR-H and BOR-S, which was consistent with the findings from Chapter 7. In the Low PIM and PsyQ models, higher scores on PAR-H were associated with satisfactory supervisor ratings, whereas in the PsyQ model lower scores on BOR-S were associated with satisfactory ratings. None of the PsyQ variables were significant in that model. While none of the PAI variables were expected to be in a direct relationship with supervisor ratings, the higher score on PAR-H can be justified. High scores on PAR-H are associated with suspiciousness and carefulness of one's surroundings. Given the potentially volatile surroundings of working in a jail, an officer

needs to be cautious in the working environment. It could be interpreted that officers were given satisfactory ratings because they have an increased awareness of the environment and may be better prepared to act when necessary. Conversely, BOR-S measures self-harm and the tendency for someone to engage in behaviors that may put them in harm's way. This is the opposite of PAR-H and therefore, it is logical that lower scores on BOR-S would be associated with satisfactory supervisor ratings.

One of the models for supervisor ratings was based on those who had Low PIM scores on the PAI. It was assumed by examining this subset that more PAI variables would be found to be significant predictors of supervisor rating, but only PAR-H was significant. This result was also consistent with the PsyQ model adding PIM as a dummy variable. It is difficult to not argue the importance of PIM when examining the results of PAI separately (see Chapter 7); however, when combined with other variables in the psychological battery, it may not be as important to examine. This could be due to the fact that the majority of officers in this sample were well above the community norms on PIM and even those categorized as Low PIM were mostly above the 57T cutoff.

A number of variables predicted job status and the directions of these relationships were mostly as expected. Interpretation of the quit group is difficult because officers could have quit for positive reasons (e.g., promotion) or negative reasons (e.g., did not like the job). It is known that about half of the officers who quit had gone on to promotions and so there is a potential for those officers to have more desirable characteristics and perhaps higher scores on scales that could screen in or lower scores on scales that would screen out compared to those who stayed employed. For the other half of the quit subset, I was unable to obtain the reason for departure so there is a potential

that there were even more who quit for positive reasons but some or all of these correctional officers could have quit for negative reasons.

The final regression models using both the full sample and PsyQ subsample found the relationships of the predictors for the fired and quit groups were different compared to those on the job on all variables except Tolerance (To) and Socialization (So). Both fired and quit groups had higher To scores compared to the employed group which was consistent with Chapter 6. To measures acceptance and concern for others. To has been found to be a significant predictor of successful law enforcement officers (Aamodt, 2004; Benner, 1991; Hargrave & Hiatt, 1989), with higher scores indicating a person who is trusting, diplomatic and non-judgmental (Gough & Bradley, 1996). The finding that higher scores may predict who quits in correctional officers could also be reflective of the tendency of high To scorers to assume their work will pay off and therefore find correctional work not very rewarding (Finn, 1998). Conversely, for officers who quit due to promotions, we would expect To to be higher in this group. Given the previous research, we would not expect To to be higher in those who were fired. However, if the job is not considered rewarding or fulfilling, this could lead to lack of performance success.

Both quit and fired groups also had lower So scores compared to those currently employed, however the significance varied by the sample used. In the full sample, So was significantly lower for those who quit but not for those who were fired. The opposite was true in the PsyQ model, although the odds ratios remained in the same direction in the models in which they had no significance. In Chapter 6, So was only found to be significantly lower for the fired group at the bivariate level and it dropped out of the final

model. Persons who score high on So display self-discipline and rule following. Therefore it would be expected that officers who were fired would have lower scores. It was less expected in the quit group, considering the results so far indicate a tendency for this group to have positive characteristics reflective of moving on for better opportunities. One would expect higher scores in this group if they quit for promotional reasons or to obtain a law enforcement position, particularly since one could argue a law enforcement position would have more rules and a higher tendency toward militarization. For this group to have lower scores on So compared to those still on the job could reflect that those currently employed show a greater loyalty to the position and may be more apt to stick with the job rather than moving on for positive or negative reasons. It is also possible that the lower scores on So in those who quit could be representative of those officers who did not follow in a public safety field after leaving.

There were some differences found between officers who quit and were fired. In the PsyQ model, high scores on Achievement via Independence (Ai), higher number of General problem points and lower scores on Stimulus Seeking (ANT-S) were more predictive of being fired than currently employed. A higher number of General problem points was in the expected direction and consistent with the findings in Chapter 5. High scores on Ai were unexpected. In Chapter 6, Ai was significantly higher in those who quit at the bivariate level but dropped out of the final model. High scores on Ai are reflective of persons who have independent beliefs and are able to set new goals. These are traits that would be expected in persons who quit, not those who were fired. However, high scores on Ai are reflective of persons who find motivation in unstructured settings (CPP, Inc., 2002). The correctional environment would not be described as an

unstructured setting and therefore, persons who are unable to adapt to this setting would likely perform poorly on the job.

Research has shown that high sensation-seekers are attracted to high stress careers, such as public safety (Zuckerman, 2007). ANT-S can be considered a positive and negative trait. Scoring too high on this measure can indicate reckless behavior and lead to potential problems on the job as well as participating in substance use. However, moderately high scores on this scale can indicate drive in the individual. Lower scores on ANT-S among those fired might suggest a lack of motivation. It should be noted that significant low scores on ANT-S for those who were fired were not found in Chapter 7 in the bivariate or multivariate models. There was only a trend for officers who were fired or quit to have lower scores on this scale compared to those who stayed on the job.

For officers who quit, a number of predictors came forth, many of which were consistent with the previous chapters but some that were not. In both the full sample and PsyQ sample, lower scores on Good Impression (Gi) were found among those who quit compared to still employed. The same pattern emerged in Chapter 6 at the bivariate level but Gi fell out of the final model. High scores on Gi are indicative of persons who deny self-serving motives and hence would be better reflective of persons staying on the job. This indicates a certain loyalty to the employer and those who quit demonstrated a lack of loyalty, unless they are promoted within. Similarly, Work Orientation (Wo) was found lower in those who quit compare to those currently employed in the PsyQ sample. Wo could also be a measure of loyalty and dependability to the employer. Other than persons who are promoted within, a lack of loyalty would be expected on those who left their agency.

In the full sample, high scores on Self-Control (Sc) significantly predicted those who quit compared to stayed on the job, which was consistent with Chapter 6. However, this did not remain in the model for the PsyQ sample. High scores on Sc describe someone who is patient and reserved. Having higher scores on Sc is considered a desirable characteristic and may be reflective of officers quitting for promotional reasons. In the PsyQ sample, low scores on MAN-A were more likely in those that quit in the final model. However the bivariate results in Chapter 7 demonstrated that low scores on MAN-A were more likely among those who were fired or quit compared to those currently employed. MAN-A is a measure of activity level, with low scores showing lack of activity. There can also be an indifference which may present itself as a dissatisfaction with the job which would be reflective of those who quit for positive or negative reasons.

The last variable that significantly predicted quitting versus staying on the job was the probability of substance abuse as measured on the PAI, which was significant at the bivariate level in Chapter 7 but fell out of the final model. This was significantly lower in both the full model and PsyQ model for those who quit. Therefore, there was a lower probability that officers who quit would engage in substance abuse compared to those employed. This would be expected particularly among those who quit for positive reasons.

CHAPTER 9

DISCUSSION

Research examining the validity of psychological testing for pre-employment in correctional officers is limited. This study attempted to partially fill this gap by examining the utilization of the JR&A psychological screen to predict future performance. Upon the examination of supervisor ratings, after controlling for agency of hire, the psychologist's rating, PAR-H and BOR-S were found as significant predictors. Higher rating by the psychologist, higher PAR-H scores and lower BOR-S scores were predictive of satisfactory supervisor rating. Therefore, officers who received a favorable rating by the psychologist, are careful in their surroundings (PAR-H) and do not place themselves in harm (BOR-S) were likely to be rated favorable by their supervisors.

Previous research tends to focus on differences between officers still on the job to those forced to leave, with fired officers displaying less desirable characteristics compared to employed officers (Benner, 1991; Inwald, 1988; Bartol, 1991). The high turnover rate in correctional officers (Minor et al., 2009; Jurik & Winn, 1987) makes the voluntary departure category important here. However, interpretation of those who quit is less clear. It could be hypothesized that those who quit could be viewed as undesirable primarily if they quit earlier on the job and therefore did not possess characteristics needed to be successful on the job. However, this could also indicate the officer was just in the position temporarily until he/she could apply for a law enforcement position (Jacobs & Grear, 1977). With either reason, those who are on the job less time are more costly for the agency. Conversely, those who quit after some time on the job would not

likely be considered undesirable. A number of officers who quit did so for promotional purposes or to work for a law enforcement agency. However, I was unable to obtain a reason for departure on a little less than half the officers and therefore it is difficult to determine how many truly quit for negative and positive reasons. Many of the factors that predicted an officer would quit would have been in the direction of a desirable correctional officer. These included past law enforcement experience, high Self-Control (Sc) scores, high Tolerance (To) scores, low MAN-A scores and low probability of substance abuse problems. This could make it difficult for psychological screening to weed out those who may quit and those who may stay on the job. The only predictors expected to indicate a person quit for negative reasons would be low Socialization (So), Good Impression (Gi), and Work Orientation (Wo) scores. However, since Gi is also an indicator of faking good, these officers could have been more honest in responding.

Predicting who would be fired was more straightforward. These officers tended to display less desirable characteristics including lower psychologists' ratings, lower So scores, and higher Achievement via Independent (Ai) scores. The only exception here was the high To scores, which were found higher for both those who were fired and quit compared to those still on the job. To measures concern for others and the correctional environment may make it difficult for high To scores to gain fulfillment in this area.

Limitations and Future Directions

This study is not without limitations. Supervisor rating was problematic across agencies. While it was expected the rating may be skewed in a positive direction (but less so than when the rating is done for annual review), it was unexpected that the agencies

would be skewed in different directions. This made the primary outcome variable unstable as it was originally designed. While previous studies have used multiple agency analysis, others have used ratings conducted by the same academy training instructors across agencies (Hargrave & Hiatt, 1989; Hargrave et al., 1986). Going forward a measure of multiple items (i.e., a scale) on overall job performance versus one item may eliminate some of this variability. Additionally, use of multiple raters could also eliminate bias and improve accuracy of supervisor ratings. Lastly, while each rater was given a standard set of instructions to follow, the overall subjectivity of supervisor ratings has been cited as an issue in previous literature (Spielberger et al, 1979). Focusing on job status, which is less subjective, in this group is the recommended solution for examining predictive validity.

Another limitation was the low sample size of correctional officers who had been fired or forced to resign. Analyses showed trends in differences between this group compared to those on the job and who quit, especially with the risk estimates. Future studies should include a larger sample size in order to increase power to determine further differences among those who were still employed, fired or quit. Additionally, the time variability within job status could be problematic. For example, those who quit after only a year on the job could be argued to have different characteristics (undesirable vs. desirable) compared to those who quit on the job after five or more years. A better indicator would be to examine job status after a fixed number of years so that time on the job is not as variable. The small sample size in this study did not allow for such analysis. Lastly, in order to fully understand the differences in the quit group, it is necessary to

obtain and track reasons for departure. It was difficult explaining impact of the psychological variables on the quit group without fully knowing the reason for departure.

Furthermore, the analysis in the study utilized community norms for the T scores for the PAI and CPI. While this provides an important comparison between officers and the general public, it does not really demonstrate how correctional officers may differ from other public safety employees, namely law enforcement officers or other correctional officers (Roberts & Johnson, 2001). The analysis of lifestyle type showed the majority of the sample to be Alphas, which are typically found in law enforcement officers (Gough & Bradley, 1996). This would suggest that this sample of correctional officers may have similar characteristics to law enforcement officers, but this assumption cannot be made on the PAI & CPI scales or risk estimates without the comparison to public safety norms. Unfortunately these norms were not made available and future analyses should use the same population norms on which the sample is based.

Lastly, this study focused only correctional officers who were employed by sheriff's departments. Correctional officers in the jail setting may have duties that are more similar to law enforcement officers particularly in agencies that require the newly hired to start out as jail officers before they are allowed to become deputies. This was the case for Agency A and it was apparent from the number of officers who quit due to promotional reasons. Correctional officers hired to state or federal penitentiaries may exhibit remarkably different characteristics and scores on the psychological battery. Therefore, the similarities found between correctional officers in this study and past research on law enforcement officers may be reflective of the type of correctional

officers. It is expected that research on prison correctional officers would yield different results and therefore, the results of this study may not be reflective of that type of correctional officer.

Conclusion

While there were some limitations, there was good evidence that the JR&A psychological screen has predictive validity in correctional officers most notably with the psychologist's rating, To, So, Gi, Wo, Sc, PAR-H, PAI substance abuse risk estimate and General problem points from the PsyQ. However, only the psychologist's rating was consistent across both job performance types and accounted for most of the variation after controlling for agency. The importance of the psychologist cannot be understated. Any standards pertaining to the use of psychological screening require the administration to be conducted by a trained psychologist (Blau, 1994; Serafino, 2010; Davis & Rostow, 2010; Ben-Porath et al., 2011). In this study, one psychologist was responsible for conducting 97% of the screenings and oversaw the final recommendation for the other 3%. He has almost 20 years experience conducting public safety screenings with the JR&A psychological battery. The final rating is based on his knowledge of the battery and what he considers to be the most important flags, as well as the follow-up interview (which was not examined). Any questionable items or elevated scores are addressed in the interview and weigh into this final rating. Therefore, while we can assess if there are particular variables within the psychological battery that are more predictive than others, the most important feature appears to be the interpretation of all the components and ultimately the conclusion (i.e., final rating) of the psychologist.

While increased reliability across supervisors or larger sample sizes may have shown more scales or risk estimates to have predictive validity in this population, it is unclear if the proportion of variance explained would have significantly increased. Previous studies examining the utilization of psychological variables in law enforcement officers have found some associations but in general the relationship tends to vary depending on the study or has not attempted to predict future behavior (Hiatt & Hargrave, 1988; Hogan, 1971; Aamodt, 2004). This study examined group differences but also examined prediction, however, the analyses revealed much the same—only a few measurement factors could predict future performance. This could be indicative of examining elements of the measurements on their own. One of the primary suggestions of psychological screening is the use of multiple assessments and basing decisions for hire on the battery as a whole (Ben-Porath et al., 2011; Blau, 1994). The JR&A psychological screen was developed in the same way and the psychologist's rating is the sum of all the parts. Therefore, it is not surprising that the most predictive factor was the overall rating.

Another possible reason for the limited explanation is predicting future performance based solely on pre-employment psychological testing in general (Grant & Grant, 1996; Weiss & Weiss, 2011). For most departments, much screening occurs before psychological testing is administered. As such, many undesirable candidates have already been weeded out. Additionally, true tests of predictive validity are not possible. A department cannot risk liability hiring potentially bad officers for the sake of testing (Weiss & Weiss, 2011). Therefore, one is trying to differentiate among the best crop of candidates. Because of this studies often lose power since the predictors are restricted and

there are so few officers who fall in the negative range of the dependent variable (e.g., fired, unsatisfactory, etc). So while the evidence may be weak, it is difficult to say conclusively that psychological testing is not valid in predicting future behavior. Without predictive validity, psychological testing would be considered an ethical violation (Weiss & Weiss, 2011).

One of the primary issues then lies in what the test is attempting to predict. In conversations with the psychologist overseeing the evaluations, he stated the goal of their battery was to predict the first year of performance. Personality can evolve over time and invariably one would assume that the duties faced by law enforcement or correctional officers would impact them over time (Grant & Grant, 1996; Blau, 1994). Additionally, the introduction of stress, can have a significant impact on one's behavior (Malloy & Mays, 1984). One possibility is to examine academy or probation performance, which may be a better outcome measure for validating pre-employment screening (Forero, Gallargo-Pujol, Maydeu-Olivares, & Andres-Pueyo, 2009). Conversely, fitness for duty assessments should be validated by on-the-job performance (Grant & Grant, 1996). However, there is evidence that suggests misconduct occurs early on the job. Harris (2006) found that misconduct in police officers quickly peaks with in the first five years of service. Misconduct in correctional officers may occur even sooner. A study of federal correctional officers showed that 58% of officers who engaged in misconduct did so within the first two years of service (Office of the Inspector General, 2011). With the majority of correctional officers receiving some type of disciplinary action shortly after

probation and there being few, if any, measures that can be used to assess performance, the importance of pre-employment screening cannot be understated.

In conclusion, while criterion-related evidence may be limited, we cannot discount the utility of pre-employment psychological screening with correctional officers. Cost analysis of this type of screening in public safety has demonstrated that errors in employment selection can cost a major city close to half a million dollars for each erroneous hiring decision. The costs of recruitment, testing and training for each replacement contribute to these costs (Blau, 1994). To prevent these errors, screening is a necessary tool in hiring. Screening is not solely based on psychological testing but it contributes to the overall picture on the suitability of a candidate (Aamodt, 2004; Forero et al, 2009). Therefore, psychological testing should continue to be used in pre-employment screening for all public safety officers with continued evaluation in terms of its effectiveness in predicting behavior.

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APPENDIX A:

Descriptions of the CPI primary scales, special purpose scales and risk estimates.

Measure	High Score Description (Gough & Bradley, 1996)
Primary Scales	
Dominance (Do)	Being strong in face-to-face situations and able to influence others
Capacity for Status (Cs)	Upward and downward mobility, ambition & motivation
Sociability (Sy)	Outgoing, seeks out others
Social Presence (Sp)	Spontaneity and engaging social manner
Self-Acceptance (Sa)	Personal worth, self-esteem and accomplishment
Independence (In)	Self-sufficiency & perseverance
Empathy (Em)	Adapting one's behavior to the needs of others
Responsibility (Re)	Attentiveness to others & dependability
Socialization (So)	Self-discipline and rule-following
Self-Control (Sc)	Self-controlled, patient and reserved
Good Impression (Gi)	Denies self-serving motives, cooperative, helpful
Communality (Cm)	Positive views of others, conventional, sincere
Well-Being (Wb)	Integrity, trust in others, taking initiative, ambitious
Tolerance (To)	Acceptance of others, concern for others
Achievement via Conformance (Ac)	Organized & industrious
Achievement via Independence (Ai)	Ability to set new goals, independent beliefs
Intellectual Efficiency (Ie)	Cognitive ability & functioning, intelligent
Psychological Mindedness (Py)	Interest in new ideas, open minded to criticism
Flexibility (Fx)	Liveliness and adaptable
Special Purpose Scales	
Law Enforcement Orientation (Leo)	Confidence, organized, practical
Managerial Potential (Mp)	Propensity for persons to seek managerial positions
Work Orientation (Wo)	Strong and disciplined, will to work, dependable
Creative Temperament (CT)	Creativity, unconventional
Leadership (Lp)	Ambitious and resourceful
Amicability (Ami)	Cheerful, cooperative, friendly, modest
Tough-mindedness (Tm)	Practical, logical and unemotional
Anxiety (Anx)	Complaining, nervous and tense
Narcissism (Nar)	Exaggerated self-esteem, devaluation of others
Integrity (Itg)	Honesty about illegal drug use
Risk Estimates	
Substance Abuse Problems (Sub Abuse)	
Illegal Drug Use Problems (Drug Use)	
Alcohol Use Problems (Alcohol)	
Anger Management Problems (Anger)	
Integrity Problems (Integrity)	
Job Performance Problems (Job Perform)	
Rated Poorly Suited by Psychologist (Poorly Suited)	

APPENDIX B:

Descriptions of the PAI validity, clinical, treatment and interpersonal scales, and risk estimates.

Measure	High Score Description (Morey, 2003)
Validity Scales	
Inconsistency (INC)	Inconsistent responding among similar items
Infrequency (INF)	Confusion or random responding throughout test
Negative Impression (NIM)	Faking bad—exaggerated unfavorable impression
Positive Impression (PIM)	Faking good—exaggerative favorable impression
Clinical Scales	
Somatic Complaints (SOM)	Preoccupation with physical functioning and health issues, reflective of conversion and somatic disorders
Conversion (SOM-C)	Sensory or motor dysfunction
Somatization (SOM-S)	High frequency of physical ailments
Health Concerns (SOM-H)	High preoccupation of health problems
Anxiety (ANX)	Significant anxiety and tension
Cognitive (ANX-C)	Worry and concern which impair concentration
Affective (ANX-A)	High tension, difficulty relaxing and increased fatigue
Physiological (ANX-P)	Displays physical symptoms of anxiety
Anxiety-Related Disorders (ARD)	Distress and fear specific to a situation
Obsessive-Compulsive (ARD-O)	Obsessive thoughts and/or behavioral compulsions
Phobias (ARD-P)	Demonstration of common phobic fears which interfere with everyday life
Traumatic Stress (ARD-T)	Experience of traumatic event(s) which cause continuous stress
Depression (DEP)	Prominent unhappiness, moody and dissatisfied
Cognitive (DEP-C)	Feelings of worthlessness, helplessness and failure
Affective (DEP-A)	Sadness and loss of interest in normal activities
Physiological (DEP-P)	Sleep and appetite issues, lack of energy
Mania (MAN)	Restlessness, impulsivity and high energy
Activity Level (MAN-A)	Overinvolved in activities in a disorganized manner
Grandiosity (MAN-G)	Self-centered and narcissistic
Irritability (MAN-I)	Strained relationships with others, can be volatile
Paranoia (PAR)	Distrustful, overly suspicious and hostile
Hypervigilance (PAR-H)	Suspiciousness and careful of surroundings
Persecution (PAR-P)	Feel treated inequitably and others against them
Resentment (PAR-R)	Bitterness and cynicism in relationships, blaming
Schizophrenia (SCZ)	Feelings of alienations, difficulties in concentration
Psychotic Experiences (SCZ-P)	Unusual perceptions, delusional beliefs
Social Detachment (SCZ-S)	Socially isolated and awkward
Thought Disorder (SCZ-T)	Confusion, concentration problems, disorganization
Borderline Features (BOR)	Impulsive and emotionally unstable, suspicious but needy
Affective Instability (BOR-A)	Poor emotional control

Identity Problems (BOR-I)	Emptiness and lack of fulfillment
Negative Relationships (BOR-N)	History of ambivalent relationships
Self-Harm (BOR-S)	Engaging in impulsive activities that can cause harm
Antisocial Features (ANT)	Impulsive, hostile, antisocial activity, callous
Antisocial Behaviors (ANT-A)	History of criminal and antisocial acts
Egocentricity (ANT-E)	Lack of empathy, exploitive of others
Stimulus-Seeking (ANT-S)	Craving excitement and stimulation, reckless
Alcohol Problems (ALC)	Alcohol abuse or dependence
Drug Problems (DRG)	Drug abuse or dependence
Treatment Scales	
Aggression (AGG)	Angry, easily-provoked, hostile
Aggressive Attitude (AGG-A)	Aggressive, unable to control anger expression
Verbal Aggression (AGG-V)	Abusive in verbal expressions of anger
Physical Aggression (AGG-P)	History of physical displays of anger
Suicidal Ideation (SUI)	Recurrent thoughts of suicide
Stress (STR)	High levels of stress or worry about current life events
Nonsupport (NON)	Little to no support with social relationships
Treatment Rejection (RXR)	Unreceptive to treatment, denial
Interpersonal Scales	
Dominance (DOM)	Low: Passive in relationships, lack confidence High: Confident, self-assured, ambitious, possibly domineering
Warmth (WRM)	Low: Cold, unfeeling, aloof High: Warm, need to be accepted, avoid conflict
Risk Estimates (reported in likelihood)	
Substance Abuse Problems (Sub Abuse)	
Illegal Drug Use Problems (Drug Use)	
Alcohol Use Problems (Alcohol)	
Anger Management Problems (Anger)	
Integrity Problems (Integrity)	
Job Performance Problems (Job Perform)	
Rated Poorly Suited by Psychologist (Poorly Suited)	

APPENDIX C:

Description of the measured background categories of the PHQ with item counts and possible number of critical and serious admissions.

PHQ Category	Topics Covered	# Items[a]	# Critical (DQ1-2)	# Serious (S1-3)
Education	Highest degree achieved; LE academy training	2	0	2
Employment	Current employment; Attendance; Sick use abuse; Complaints and warnings; Theft	14	4	14
Military experience	Enlistment; Branch type; Service length; Rank; Combat experience; Discharge type; Discipline; AWOL	12	2	9
Law enforcement experience	# applications; Type of LE experience; # years; Citizen complaints; Reprimands/ suspensions; Substance use on job; Perjury; Termination; Gun use	28	12	8
Driving	Current license; DL suspensions; Citations; Accidents & injury; Leaving scene; Insurance	12	2	8
Financial	Bankruptcy & collections; Evictions; Failure to pay taxes & educational loans	8	1	8
Legal	Suspect/witness/arrest/conviction for any crime & 13 specific crimes; Probation; Civil action; Concealed weapon; Obtaining stolen goods	26	17	18
Substance Use	Alcohol use & frequency; Drinking & driving; Use questions pertaining to 8 different drug classes; Drug distribution & marijuana growth; Cigarettes	55	33	33
General[b]	Demographics; Tattoos; Current living arrangements; Marital status; Child support; Physical fights; Hand guns; Carrying out duties of LE officer; Job application rejection; Suicide	29	6	14

[a] The total number of item reflected for the PHQ are only the number that were also on the PsyQ. I was only able to obtain critical and serious scores in regards to items on the PsyQ. It is unknown how the dropped items from the PHQ were scored.

[b] There were 8 items from the General category that were moved from this category on the PsyQ and placed into either the Adult Relationships, Parenting or Psychological categories.

Description of the measured background categories of the PsyQ with item counts and possible number of critical and serious admissions.

PsyQ Category	**Topics Covered** (new topics to PsyQ italicized)	# **Items**	# **Critical (DQ1-2)**	# **Serious (S1-3)**
Education	Highest degree achieved; LE academy training; *GPA; specialized training*	8	0	7
Employment	Current employment; Attendance; Sick use abuse; Complaints and warnings; Theft; *Sexual harassment; threats*	28	12	26
Military experience	Enlistment; Branch type; Service length; Rank; Combat experience; Discharge type; Discipline; AWOL	13	3	9
Law enforcement experience	# applications; Type of LE experience; # years; Citizen complaints; Reprimands/ suspensions; Substance use on job; Perjury; Termination; Gun use; *traffic incidents*	33	10	18
Driving	Current license; DL suspensions; Citations; Accidents & injury; Leaving scene; Insurance	13	2	9
Financial	Bankruptcy & collections; Evictions; Failure to pay taxes & educational loans; *Gambling*	13	2	12
Legal	Suspect/witness/arrest/conviction for any crime & 13 specific crimes; Probation; Civil action; Concealed weapon; Obtaining stolen goods	27	18	19
Substance Use	Alcohol use & frequency; Drinking & driving; Use questions pertaining to 8 different drug classes; Drug distribution & marijuana growth; Cigarettes; *presence of others*	60	36	38
General	Demographics; Tattoos; Physical fights; Hand guns; Carrying out duties of LE officer; Job application rejection	23	4	11
Development	*Parent(s) & sibling(s) in childhood home; Domestic violence as child; Childhood disorders; Juvenile delinquency*	23	0	17
Adult relationships	Current living arrangements; Marital status; *Domestic violence as adult; Stalking & restraining orders*	15	5	12
Parenting	Child support; *# children; Physical discipline; CPS*	7	1	5
Psychological	Suicide; *Contact with mental health professional; Hospitalization & outpatient treatment; Diagnosis*	14	3	13
Sexual	Prostitution; Sexual behaviors; Age of sexual partner	10	4	8