THE UTILITY OF THE PERSONALITY ASSESSMENT SCREENER IN

PREDICTING INSTITUTIONAL MISCONDUCT

A Thesis

by

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ABSTRACT

Inmates currently in the criminal justice system suffer from mental illness at a higher rate than the general public. Higher rates of mental illness are associated with a greater likelihood of violent and non-violent institutional misconduct. As such, it is important to screen and identify individuals who are at-risk for violence and intervene at an earlier stage. The present study examines the utility of the Personality Assessment Screener (PAS), a brief self-report measure that screens for behavioral and affective issues, in predicting institutional misconduct (operationalized as general, aggressive, and physically aggressive infractions). A meta-analytic approach was utilized on four archival datasets that consisted of all-male participants ($N = 703$) to determine if PAS total, Psychotic Features (PF), Hostile Control (HC), Anger Control (AC), and single item (item 22, "People think I'm aggressive") scores predicted general, aggressive, and physically aggressive infractions. PAS total scores were predictive of all infraction levels with small to medium effect sizes (ds = .29-.50), suggesting that a global screening measure of psychopathology was effective in predicting institutional misconduct. PF (ds = .49-.65) and AC (ds = .25-.48) were both predictive all infraction levels, suggesting that one's level of persecutory thinking and features of paranoid psychosis as well as anger management and expression is indicative of institutional misconduct. HC, which measures an interpersonal style characterized by a need for control and an inflated self-image, was effective in predicting aggressive ($d = .30$) and physically aggressive ($d = .26$) infractions, but not general infractions. Lastly, item 22, which measures self-perceived aggressiveness, predicted general ($d = .13$) and

aggressive ($d = .36$) infractions but not physically aggressive infractions ($d = .14$).

Moderator analyses further suggested that follow-up period (measure in months) and

institutional setting (general population vs. treatment) were consistent moderators in the

ability of PAS scores to predict institutional misconduct. Overall, the present findings

suggest that the PAS is an effective tool in predicting institutional misconduct and may

be a useful addition in correctional settings to screen for violent and non-violent

misbehaviors.

DEDICATION

Lovingly dedicated to Kim, my mom, and all my friends, for reminding me that I am

stronger than I believe.

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NOMENCLATURE

AC   Anger Control

AGG   Aggression Scale

AN   Alienation

ANT   Antisocial Features Scale

AO   Acting Out

AP   Alcohol Problems

AUC   Area Under the Curve

CSU   Crisis Stabilization Unit

FDOC   Florida Department of Corrections

GP   General Population

HC   Hostile Control

HP   Health Problems

NA   Negative Affect

NIMH   National Institute of Mental Health

PAI   Personality Assessment Inventory

PAS   Personality Assessment Screener

PF   Psychotic Features

ROC   Receiver Operating Characteristic

SAT   Substance Abuse Treatment

SW   Social Withdrawal

ST   Suicidal Thinking

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CHAPTER I

INTRODUCTION

The number of inmates currently in the criminal justice system with mental illness is considerably higher than in the general public. Higher rates of mental illnesses are associated with a greater likelihood of self-harm and criminality, specifically violent and non-violent institutional misconduct. Because of the higher prevalence of mental illness and the negative effects it can have in a correctional setting, it is important to have psychometrically sound measures to assess for psychological dysfunction.

Comprehensive psychological evaluations provide detailed profiles of inmates' emotional and cognitive issues. However, these evaluations require extensive time, are costly, and must be conducted by mental health professionals. In correctional and forensic settings, there are often not sufficient resources (e.g., staff time and cost of purchasing assessments) to support comprehensive evaluations. Screening measures are an ideal method of addressing this issue because their brevity and coverage ensures that less time and effort is required to assess each individual. Rather, inmates can be screened to identify those who require more comprehensive evaluations. The Personality Assessment Screener (PAS; Morey, 1997) is a brief self-report measure that screens for clinical problems related to behavioral and affective issues. The PAS is ideal for criminal justice settings because of its brevity (approximately five minute administration time) and the breadth of psychological functioning covered. Although growing in interest, there is currently a modest amount of research published on this measure among justice-involved samples.

The primary purpose of this study was to examine the predictive validity of the PAS in correctional settings, specifically its ability to assess risk for institutional misconduct. PAS scores were investigated in relation to their ability to predict various types of misconduct (e.g., violent or non-violent infractions). The following sections discuss (1) the prevalence of mental illness in the criminal justice system, (2) screenings and comprehensive evaluations currently utilized, (3) existing violence risk assessment tools, (4) self-perceived risk of violence, and (5) the potential utility of the PAS in the criminal justice system.

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Prevalence of Mental Illness in the Criminal Justice System

The United States currently houses an estimated 2,246,100 inmates in state and federal prisons and local jails (Carson, 2018; Zeng, 2018). Within this population, the number of inmates with diagnosed or undiagnosed mental disorder greatly exceeds the general population. In fact, one in seven prisoners have a serious mental disorder, such

as psychosis or major depression (Fazel, Hayes, Bartellas, Clerici, & Trestman, 2016). Additionally, a national survey estimated that about 16% of incarcerated offenders self-reported being mentally ill (Ditton, 1999). Despite this high level of need, mentally ill inmates are frequently underdiagnosed and poorly treated.

With the considerable size of this population, it is essential that clinicians and correctional staff know the consequences of undetected mental illness in an institutional setting. In the general population, individuals with severe mental illnesses are more prone to criminal behavior. The presence of schizophrenia, major depression, bipolar, or other severe mental disorders substantially predict increased rates of violent crime, suicide, and premature mortality (Fazel, Wolf, Palm, & Lichtenstein, 2014; Teplin, 1990). Similarly, inmates with mental health issues are at greater risk for suicide, self-harm, violence, disciplinary infractions, and victimization (Fazel et al., 2016). Furthermore, clinical variables such as aggressiveness, impulsiveness, antisocial traits and psychopathy are robust predictors of institutional misconduct (Schenk & Fremouw, 2012).

A survey conducted by Ditton (1999) analyzed mental health and treatment among inmates and probationers. An estimated 16% of incarcerated offenders in prisons and jails were categorized as being mentally ill. In the state prison population, inmates with a mental health conditions were 53% more likely than other inmates (46%) to be incarcerated for a violent crime. Furthermore, about three in ten mentally ill inmates were recidivists with a current or past sentence for violent crime. When evaluating disciplinary problems, Ditton (1999) stated that mentally ill inmates were more likely to

be involved in a physical altercation than other inmates since admission (36% compared to 25%). Additionally, more than six in ten mentally ill state prison inmates were formally charged with rule breaking. Similar results were obtained in a more recent national survey such that mentally ill inmates were more likely to be charged with a rule violation (58% compared to 43%) and to be injured in a fight (20% compared to 10%; James & Glaze, 2006). These surveys illustrate the high prevalence of inmates with a mental illness. Moreover, the high rate of violent crime incarcerations and recidivism, charges on rule breaking, and physical aggression during incarceration highlight the need for greater attention to this population.

Screenings and Comprehensive Evaluations in Criminal Justice System

Legal mandates require that mentally disordered inmates receive necessary assessment and treatment (Mental Health America, 2015). Specifically, all prisoners are required to be screened for mental health and substance abuse problems and, if necessary, for further evaluation, assessment, and treatment. The absence of such assessments increases the likelihood that mentally ill inmates will commit new criminal offenses and continuously be admitted into and released from correctional facilities (Human Rights Watch, 2003).

Unfortunately, criminal justice professionals who are forced to identify, refer, and manage inmates with mental illness typically are not trained or experienced in this type of assessment (Lurigio & Swartz, 2006). Additionally, it would be an impractical use of resources to provide every inmate with an exhaustive mental health assessment (Grisso, 2005). Accordingly, there needs to be a method for filtering, or screening, those

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who need further and more extensive evaluation. Screenings differ from comprehensive evaluations in their depth, length, and use of resources. A screener is concise and provides an overall impression of an individual's psychological functioning. In contrast, an evaluation is a comprehensive assessment that provides an in-depth and detailed profile of one's functioning in several areas. Although comprehensive evaluations are more informative, they can be costly and time consuming. This is a consequence that is prominent in criminal justice settings. Thus, screeners are an ideal tool for prisons and jails as they are time and cost efficient. Additionally, screeners could be used as a risk assessment tool to identify inmates who may engage in violence and institutional misconduct.

Brief screening measures show some promise in identifying individuals with mental illness. Martin, Potter, Crocker, Wells, and Colman (2016) found that screening instruments did indeed significantly increase the detection of mental illness among inmates. A systematic review examining mental health screening tools among forensic populations identified 22 screening tools (Martin, Colman, Simpson, & McKenzie, 2013). Of this set, the Brief Jail Mental Health Screen (BJMHS; Steadman, Scott, Osher, Agnese, & Robbins, 2005) and the Jail Screening Assessment Tool (JSAT; Nicholls, Roesch, Olley, Ogloff, & Hemphill, 2005) were notable instruments that have replication studies with independent samples and could be systematically reviewed.

The BJMHS is a brief screening measure that consists of eight items, requiring about five minutes for correctional officers to complete (Steadman et al., 2005). The JSAT, on the other hand, takes approximately 20 minutes to complete and requires a

trained clinical professional (Nicholls et al., 2005). In a study investigating the clinical

utility of the BJMHS and the JSAT in identifying individuals with mental illness in

police custody, both measures increased the accuracy of detecting detainees with a

current mental illness ($AUC_{BJMHS} = 0.72$, $AUC_{JSAT} = 0.78$; Baksheev, Ogloff, &

Thomas, 2012). Although there was no significant difference in the performance of the

BJMHS and JSAT in identifying serious mental illness, the JSAT was able to identify

other Axis I disorders more effectively ($AUC = 0.82$). Overall, it appears that notable

measures, such as the BJMHS and JSAT, effectively increase accuracy of mental illness

identification, further supporting the argument that instruments screening for mental

illness show promise in increasing identification of inmates requiring further assessment.

Risk Assessment Tools

Risk assessment tools are intended to assist in the identification and management

of individuals who are prone to committing violent acts and other forms of misconduct.

A meta-review conducted by Singh and Fazel (2010) revealed that over 120 different

risk assessment tools were currently being used in forensic and correctional settings.

Some of the most common instruments used are the Historical, Clinical, Risk

Management – 20 (HCR-20; Douglas, Hart, Webster, & Belfrage, 2013); the Level of

Service Inventory – Revised (LSI-R; Andrews & Bonta, 1995); and the Violence Risk

Appraisal Guide (Harris, Rice, & Quinsey, 1993).

The HCR-20 is a comprehensive assessment that evaluates the presence of

historical and clinical violence risk factors (Douglas et al., 2013). In a forensic in-patient

facility, the HCR-20 significantly predicted violence with AUC's ranging from 0.65 to

0.72; physical violence was significantly predicted using the clinical scale (Macpherson & Kevan, 2004). Likewise, it was able to predict verbal comments (AUC = 0.65), touching others (AUC = 0.64), non-violent inappropriate sexual behavior (AUC = 0.64), and violent inappropriate sexual behavior (AUC = 0.64; O'Shea et al., 2016). The LSI-R, similar to the HCR-20, is an assessment tool that identifies offenders' risk and needs in regard to recidivism (Andrews & Bonta, 1995). In a study assessing violence during imprisonment, the LSI-R produced comparable predictions to the HCR-20 (AUC = 0.70; Persson, Belfrage, Fredriksson, & Kristiansson, 2017). Lastly, the VRAG is an actuarial instrument that assesses for risk of violence among individuals who have previously committed violent criminal acts (Harris et al., 1993). In a study examining the predictive validity of the VRAG in a sample of jail inmates, its scores significantly predicted institutional misconduct during incarceration (AUCs ranging 0.65 to 0.70; Hastings, Krishnan, Tangney, & Stuewig, 2011). However, none of these measures were designed to be brief or efficient. Additionally, they all require a trained clinician or staff member to administer and score the instrument.

Self-Perceived Risk of Violence

Although there currently is an abundance of risk assessment instruments that require a trained rater (e.g., clinician or psychologist), another avenue for conceptualizing level of risk and predicting misconduct is through self-report methods. Previous research focused on self-report measures in criminal justice settings expressed hesitation regarding their usefulness due to the adversarial nature of forensic and correctional settings (Edens, Hart, Johnson, Johnson, & Olver, 2000). However, in a

meta-analysis investigating risk-appraisal and self-report measures, criminal justice

outcomes could be effectively predicted through self-report measures (Walters, 2006). In

fact, self-reports were as effective as clinician-rated risk assessment measures when they

focus on content-relevant behaviors (e.g., criminal and antisocial behaviors). Notable

measures included the Criminal Sentiments Scale (CSS; Andrews & Wormith, 1984),

Self-Appraisal Questionnaire (SAQ; Loza, Dhaliwal, Kroner, & Loza-Fanous, 2000),

Psychological Inventory of Criminal Thinking Style (PICTS; Walters, 1995), and the

Personality Assessment Inventory (PAI; Morey, 1991, 2007).

Self-report questionnaires can span from measures of psychopathology (e.g.,

PAI) and personality (e.g., Psychopathic Personality Inventory [PPI]; Lilienfeld &

Andrews, 1996) to more direct measurements of "criminal thinking" (e.g., SAQ, PICTS,

and CSS). Measures of psychopathology and personality have demonstrated utility in

predicting general and violent institutional misconduct. The PAI is a 344-item

comprehensive self-report assessment tool that measures emotional and behavioral

dysfunctions and, more relevantly, can be used to predict different types of misbehavior,

including violence, institutional misconduct, and recidivism (Morey, 1991, 2007). In a

meta-analysis examining the PAI's ability to predict misconduct and recidivism

(Gardner, Boccaccini, Bitting, & Edens, 2015), content-related scales (e.g., Antisocial

Scale [ANT] and Aggression Scale [AGG]) emerged as the most robust predictors of all

types of misconduct ($d_{ANT} = 0.23$; $d_{AGG} = 0.40$). When examining institutional

misconduct specifically, ANT and AGG produced the greatest predictive effects ($d_{ANT} =$

0.44; $d_{AGG} = 0.46$). Another self-report measure that has been shown to be beneficial in

predicting misconduct is the Psychopathic Personality Inventory (PPI; Lilienfeld &

Andrews, 1996), which measures psychopathic personality traits from the perspective of

the target individual. In assessing its ability to predict misconduct, PPI total score and

factor scores measuring self-centered impulsivity (PPI-II) have been significantly

predictive of any ($AUC_{total} = 0.70$; $AUC_{PPI-II} = 0.72$), nonaggressive ($AUC_{total} = 0.68$;

$AUC_{PPI-II} = 0.71$), and aggressive infractions ($AUC_{total} = 0.69$; $AUC_{PPI-II} = 0.72$; Edens,

Poythress, Lilienfeld, Patrick, & Test, 2008).

In addition to measures of psychopathology and personality, there are self-report

measures constructed with the purpose of evaluating criminal thinking. For instance, the

PICTS is an 80-item self-report survey that appraises eight thinking styles (e.g.,

entitlement, power orientation, or cognitive indolence) believed to support a criminal

lifestyle (Walters, 1995). Studies investigating the PICTS' ability to predict misconduct

demonstrated that the measure was effective in predicting general and violent

institutional misconduct (Walters, 2005, 2007). Another measure with utility in the

criminal justice system is the SAQ, a 67-item inventory designed to predict violent and

non-violent offender recidivism among correctional population (Loza et al., 2000).

Because it was created with the intention of measuring recidivism, studies have

demonstrated the SAQ's effectiveness in predicting violent and non-violent recidivism

(Loza, Neo, Shahinfar, & Loza-Fanous, 2005). Additionally, the SAQ was effective in

predicting institutional incidents, specifically incidences of physical or verbal aggression

or rule-breaking (Rodrigues, Seto, Ahmed, & Loza, 2016). Another measure of note is

the Criminogenic Cognition Scale (Tangney, Stuewig, & Mashek, 2007), a 25-item self-

report measure that explores dimensions of (a) Notions of Entitlement, (b) Failure to Accept Responsibility, (c) Short-Term Orientation, (d) Insensitivity to the Impact of Crime, and (e) Negative Attitudes toward Authority. This relatively new measure is shorter than the previously described measures and, thus, may be especially useful in criminal justice settings. Studies examining the utility of the CCS reported that criminogenic thinking upon incarceration predicted subsequent report of misconduct (Tangney et al., 2012).

An area of research that has received some recent attention is the predictive validity of single-response self-reports of perceived dangerousness. In a study conducted by Skeem, Manchak, Lidz, and Mulvey (2013), high-risk psychiatric patients were asked "How concerned should your therapist be that you might be violent in the next two months?" and instructed to rate their level of concern on a zero (no concern) to five (greatly concerned) scale. Self-perceptions of risk effectively predicted serious violence (AUC = 0.74), even more so than other assessment tools (AUC = 0.59 – 0.66). Likewise, another study asked psychiatric patients of the likelihood that they will threaten other people or act violently (Roaldset & Bjørkly, 2010). Similar to Skeem et al. (2013), patients' self-perception of future misconduct significantly predicted a violent incident (AUC = 0.73). Although informant-rated risk assessment tools are capable of predicting risk for future violence, it seems that self-assessments and perhaps even a single question may be equally, if not more, effective. However, participants in Skeem et al. (2013) and Roaldset (2010) study resided in a psychiatric facility rather than in a criminal justice setting.

In forensic and correctional populations, there exist a multitude of self-report measures that have the capacity to predict recidivism and institutional misconduct. In reviewing the most commonly used measures in criminal justice settings, the issue of time-constraint arises. With the exception of the CCS, which has 25 items, all of the previously described self-report measures range in length from 67 items to 344 items. The length of these measures limits their applicability to correctional and forensic populations because, similar to clinician or staff-rated risk-assessment measures, an excess of time would be expended. As such, brief self-report measures that are capable of predicting misconduct would be ideal. Additionally, asking participants of their perceived future dangerousness seems to have some utility, at least in clinical populations.

The Personality Assessment Screener

The Personality Assessment Screener (PAS; Morey, 1997) is a brief 22-item self-report measure that screens for relevant clinical problems related to behavioral and emotional issues. The PAS items were derived from its parent assessment, the Personality Assessment Inventory (PAI; Morey, 1991, 2007), which is a more comprehensive self-report measure assessing adult psychopathology, interpersonal style, and response validity. Generally completed in five minutes, the PAS identifies problematic areas that require further assessment and investigation. Specifically, the PAS assesses clinical psychopathology on a global level by examining total score as well as by considering 10 domains or "elements" of dysfunction: Negative Affect, Acting Out, Health Problems, Psychotic Features, Social Withdrawal, Hostile Control, Suicidal

Thinking, Alienation, Alcohol Problem, and Anger Control. Clinical problems are categorized as having *moderate*, *marked*, or *extreme* risk based on the PAS' *P*-scores. Raw scores (0-66) correspond to a *P*-score, or a probability estimate, which indicates the percentage of individuals who express some psychological dysfunction on the parent instrument (PAI). Individuals are predicted to report clinically significant psychological impairment on the parent instrument when classified as having *moderate* to *extreme* risk (a raw cutoff score $\geq$19) or a *P*-score $\geq$ 48. Because correctional and forensic settings have insufficient resources to provide comprehensive mental health evaluations, screening measures are ideal for identifying inmates who would require more extensive assessments (Lurigio & Swartz, 2006).

The clinical utility of the PAS has not been extensively researched using offender samples, although this research base is growing. For example, in a study that examined the ability of the PAS in identifying inmates at risk for major depression and suicide (Harrison & Rogers, 2007), the PAS Suicidal Thinking subscale was effective at detecting suicide at a lower score range (i.e., cut score $\geq$1) and had a sensitivity of 0.85 and a negative predictive power (NPP) of 0.96. Additionally, the PAS Negative Affect subscale seems to be an excellent screener for major depression. It had a very high NPP (0.99) and has the potential of being used to screen out inmates who are unlikely to have major depression.

More recently, Kelley, Edens, and Douglas (2018) examined the ability of the PAS to predict clinically significant elevations on the PAI in a large offender sample (N = 1,658). The researchers of the study examined the ability of PAS total scores in

predicting scale elevations on the PAI using the standard clinical/community norms and comparing it to the corrections norm (Morey, 2007). As previously stated, a raw cutoff score ≥19, as determined using clinical/community norms, usually warrants further assessment. When utilizing this cutoff, Kelley et al. (2018) found that approximately 90% of the sample would require further assessment, limiting the utility of the PAS in a correctional setting. However, increasing the cutoff score to ≥29 improved the sensitivity of the PAS without appreciably worsening its specificity. Additionally, PAS total scores outperformed any of its individual elements, with the notable exception of Anger Control, which was a stronger predictor of Aggression as measured by the PAI than the total score, and Hostile Control, which was uniquely associated with interpersonal features of psychopathy above and beyond PAS total score. This suggests that these element scores may provide meaningful incremental information, beyond PAS total score, that could guide risk assessment and management. Overall, Kelley et al. (2018) stated that the PAS shows promise as a mental health screening instrument for inmates, particularly when utilizing revised cutoff scores more specific to correctional settings.

Similar results were obtained in a recent study conducted by Edens, Penson, Smith, and Ruchensky (2019) in which they examined PAS scores in three criminal justice sample (incarcerated sex offenders, prison inmates in general population and psychiatric units, jail detainees). Comparable to Kelley et al. (2018), there was substantial support for the ability of the PAS to screen for psychological dysfunction, with elevated PAS scores predicting significant PAI profile elevations (AUCs ranging 0.81 to 0.96; combined sample AUC of 0.85). Furthermore, PAS total scores were more

predictive of PAI outcomes than element scores (AUCs ranging 0.82 to 0.91; combined

sample AUC of 0.89), with the exception of the PAS Suicidal Thinking element.

In a more recent study, McCredie, Truong, Edens, and Morey (2020) investigated

the convergent and discriminant validity of the PAS in a sample of male inmates in a

year-long study with five data collection intervals. Specifically, the study examined

temporal changes on the PAS and external criterion measures to determine if the

measure offers meaningful data about changes in psychological functioning over time.

Results suggested that PAS total score demonstrated appreciable stability over time in a

correctional sample with test-retest scores ranging from 0.76 to 0.84 between

administration periods and an *r* of 0.65 over the span of the entire study. These findings

suggest that the PAS total score is able to capture meaningful changes in psychological

functioning over time.

Harrison and Rogers (2007) and, more recently, Kelley et al. (2018), Edens et al.

(2019), and McCredie et al. (2020) are currently the only studies examining the clinical

utility and predictive validity of the PAS in a criminal justice setting. Thus far, the PAS

has been shown to be effective in predicting major depression, suicide, and significant

elevations in PAI scores. However, no studies to date have examined the potential

ability of the PAS to predict inmate violence and other forms of misconduct.

The Present Study

The purpose of this research was to examine the predictive validity of the PAS as

a risk assessment screen in correctional settings. Using various archival datasets from

jail and prison samples, this study explored whether PAS total, element, and item scores

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could meaningfully predict institutional misconduct (i.e., violent and non-violent infractions). Consistent with previous findings on the association between mental illness and criminality (Ditton, 1999; Fazel et al., 2014; James & Glaze, 2006) as well as findings indicating that PAS total scores are generally the most predictive of PAI clinical elevations (Edens et al., 2019; Kelley et al., 2018), it was expected that PAS total scores would predict institutional misconduct. In addition to the total score, scores on Psychotic Features, Hostile Control, and Anger Control elements were examined in relation to institutional misconduct. Based on previous research on the associations between severe mental illness and violence (Fazel et al., 2016; Fazel et al., 2014; Teplin, 1990), it was expected that Psychotic Features would demonstrate significant elevations and be predictive of institutional misconduct. Previous studies examining PAI scores as predictors of misconduct and violence found the Antisocial Features (ANT) and Aggression (AGG) scales to be useful predictors of heightened risk of harm to others (Gardner et al., 2015; Reidy, Sorensen, & Davidson, 2016). Based on findings that antisocial and psychopathic traits are predictors of institutional infractions (Schenk & Fremouw, 2012) and that Hostile Control was uniquely associated with features of psychopathy (Kelley et al., 2018), it was expected that Hostile Control would predict misconduct. Similarly, Anger Control was found to be the strongest predictor of the AGG scale and was, therefore, expected to predict misconduct.

Finally, similar to Skeem et al. (2013), this study also investigated inmates' self-perception of violence risk. More specifically, the predictive utility of PAS item 22, "People think I'm aggressive," was examined. This item was expected to predict

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misconduct based on the finding of Skeem et al. that patients' self-perception of risk effectively predicted serious violence. Lastly, due to the saliency of PAS total scores compared to element scores in correlations with PAI scales and external criterion measures, it was predicted that possible elevations of element scores not included in this study would be captured by the total score.

CHAPTER II

METHOD

This project utilized four archival datasets to examine the predictive validity of

the PAS on varying levels of institutional misconduct and disciplinary infractions.

Because these datasets contain participants from diverse criminal justice settings (e.g.,

inmates in detention centers and substance abuse treatment offenders), effect sizes were

calculated for each sample and then subjected to meta-analytical procedures.

Focal Measure

The PAS, which was derived from the PAI item pool, is a 22-item self-report

questionnaire that screens for multiple domains of emotional and behavioral issues. A

total of 22 items are rated on a four-point Likert scale as "false, not at all true", "slightly

true," "mainly true," and "very true." Items are organized into 10 different "elements"

that represent distinct clinical issues: Negative Affect (NA), Acting Out (AO), Health

Problems (HP), Psychotic Features (PF), Social Withdrawal (SW), Hostile Control (HC),

Suicidal Thinking (ST), Alienation (AN), Alcohol Problem (AP), and Anger Control

(AC). The element scores portray the major domains covered in the PAS' parent

instrument, the PAI (Morey, 2007). Scores from the PAS are used to create a PAS total

score and separate element scores.

Each possible total raw score (0-66) corresponds with a probability estimate, *P*

scores, reflecting the likelihood that the respondent who completed the PAS would

obtain at least one clinically significant elevation on the PAI. Using *P* scores or raw

scores, clinicians can compare ranges of severity and determine the risk individuals have

for experiencing emotional and behavioral problems. Levels of risk are characterized as Low (<15.00P), Normal (15.00P to 29.99P), Mild (30.00P to 47.99P), Moderate (48.00P to 74.99P), Marked (75.00P to 99.81P), and Extreme (>99.81P). Moderate to extreme categories are determined to have a greater probability of receiving clinically significant psychological dysfunction on the PAI and it is recommended that participants receiving scores in this range are provided more comprehensive assessments.

The PAS element Psychotic Features (PF) contains two items (total raw score = 0-6) that measures persecutory thinking and other psychotic phenomena. High scores in PF indicates a possibility of present paranoid psychosis, but follow-up evaluations would be necessary to examine specific thought processes and content. The PAS element Hostile Control (HC) contains two items (total raw score = 0-6) that measures one's need for control and self-image. Individuals scoring high in HC have increased need for control, inflated self-image, and is manipulative or exploitative while low scores represent an extremely submissive individual who can be easily exploited. Item 22 ("People think I'm aggressive") is one of the two items included in HC. In addition to analyzing HC, item 22 was investigated individually because it was hypothesized that individuals are relatively perceptive in their self-assessments and, specifically, level of aggression. Lastly, Anger Control (AC) also contains two items (total raw score = 0-6) that measure difficulties in anger management. High scores in AC illustrates an individual who is chronically angry and may express it through verbal and physical means.

Participants, Criterion Measures, & Procedures

Florida Prison Inmates

This sample consisted of 60 male inmates originally recruited at the Florida Department of Corrections (FDOC) in a larger study examining the relationship between personality testing and malingering (Edens, Poythress, & Watkins-Clay, 2007; Edens, Poythress, & Watkins, 2001). The original sample size was 115 male inmates, but two subsamples (n=55) were eliminated because they had been given simulation instructions to fake a mental disorder or were judged by clinical staff to be malingering. Half of the current sample consisted of participants from the general population of the FDOC system ($n = 30$) and the other half included admissions recruited from the prison's Crisis Stabilization Unit (CSU; $n = 30$). The mean age for the entire sample was 32.80 ($SD = 9.0$) and the majority of inmates were African American (60.9%) or Caucasian (32.2%). Participants were provided $5 in their institutional accounts as compensation for their participation.

The 22 PAS items were extracted from responses of the full-length PAI and PAS total and element scores were computed via SPSS syntax. Inmate institutional misconduct data were collected during the study's follow-up period ($M = 27.12$ months, $SD = 19.68$). Infractions were coded into three outcome variables: (a) *general*, (b) *aggressive,* and (c) *physically aggressive. General infractions* refer to any rule-breaking activity, ranging from the possession of contraband to attacking an officer or other inmates. From general infractions, *aggressive infractions* were subcategorized to include both physical and verbal aggression. Lastly, *physically aggressive infractions* were

extracted from aggressive infractions, which includes acts such as assault or battery with a deadly weapon. These outcome measures were coded dichotomously (0 = *no infractions*; 1 = *one or more infractions*). For all categories, the modal number of infractions committed was zero. The base rate for *general infractions* was 40.4%, and base rates for any *aggression* and *physical aggression* were progressively lower (29.8% and 21.2%, respectively).

NIMH Project Substance Abuse Treatment Offenders

This sample was comprised of male offenders who were court-ordered to residential drug treatment programs. Participants were originally recruited in a larger study assessing psychopathy and antisocial personality disorder in an offender population (Poythress et al., 2010). In the current study, 331 male offenders in mandated residential drug treatment sites were included for analyses. Specifically, data from sites in Florida ($n = 152$), Nevada ($n = 24$), Oregon ($n = 73$), Texas ($n = 53$), and Utah ($n = 29$) were collected. The mean age for the entire sample was 30.16 ($SD = 6.39$) with a diverse ethnic composition (58.6% Caucasian; 26.7% African American; 14.5% of participants additionally self-identified as ethnically Hispanic).

Participants were administered the full-length PAI, from which the 22 PAS items were extracted and total and element scores computed. Institutional misconduct data were recorded based on general, aggressive, and physically aggressive incidents and collected one year after the study began. Most broad was *general acts of noncompliance* (i.e., general incidents), or any aggressive or nonaggressive acts (e.g., gambling, lying to staff, stealing), that was listed in the agency's incident report log or progress notes.

Within this category, *aggressive incidents* were recorded, including any verbal or physical aggression against a staff member or another offender. Lastly, *physical incidents* were extracted from aggressive incidents to measure more severe forms of misbehavior. General infractions, aggressive incidents, and physical incidents were operationalized by the absence or presence of one or more incident (0 = *no incidents*; 1 = *one or more incidents*). For all categories, the modal number of incidents recorded was zero. The base rate for *general incidents* was 48.9% with base rates for *aggressive incidents* and *physical incidents* even lower (17.2% and 2.4%, respectively).

NIMH Project General Population Inmates

This sample derived from the same study as the substance abuse treatment offenders sample, both of which originated from a larger study examining antisocial and psychopathic personality traits among prisoners and substance abusers (Poythress et al., 2010). In the current study, 285 general-population male inmates were recruited from Florida (*n* = 50), Nevada (*n* = 208), Oregon (*n* = 57), and Utah (*n* = 70) prison sites. The mean age for the entire sample was 29.47 (*SD* = 6.90) with a majority of inmates identifying as Caucasian (61.5%; 38.5% African American; 8% of participants additionally self-identified as ethnically Hispanic).

Similar to the substance abuse sample, participants were administered the full-length PAI with PAS total and element scores subsequently extracted. Institutional misconduct data were hierarchically recoded into *general infractions*, *aggressive infractions*, and *physically violent infractions* and coded dichotomously (0 = *no infractions*; 1 = *one or more infractions*). For all categories, the modal infractions

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recorded was zero. The base rate for *general infractions* was 43.2% with *aggressive* and *physically violent infractions* progressively lower (28.1% and 4.6%, respectively).

Texas Jail Inmates

This sample consisted of 78 male pretrial criminal defendants originally recruited in a larger project examining personality dysfunction in the criminal justice system (Kelley, Rulseh, Sörman, & Edens, 2014). Inmates were instructed to complete the PAI, among other measures, under standard instructions with the exception that items were read aloud to participants. On average, participants were 32.02 years of age ($SD = 11.07$) and predominantly Caucasian (34.5%), Hispanic (34.5%), and African American (27.4%; 3.6% other).

Participants were administered the full-length PAI as part of a larger project with PAS total and element scores later extracted. Inmate institutional misconduct data were collected during the study's follow-up period ($M = 16.44$ months, $SD = 2.16$) and were coded as *general*, *aggressive*, and *physically aggressive infractions* dichotomously (0 = *no infractions*; 1 = *one or more infractions*). For all categories, the modal infractions recorded was zero. The base rate for *general infractions* was 37.2% with *aggressive* and *physically aggressive* infractions progressively lower (16.7% and 9%, respectively).

Planned Analyses

The current study utilized meta-analytic methods to investigate overall effect sizes for PAS scores predicting infraction types using a random effects model. Independent AUC (area under the curve) values were calculated from receiver operating characteristic (ROC) curves to examine global classification accuracy. ROC curves were

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created for each predictor variable of interest (PAS total, PF, HC, AC, and item 22 scores) for *general infractions*, *aggressive infractions*, and *physically aggressive infractions* for a total of 15 AUC values per study and 60 in total (across four samples).

Potential outliers were identified by first examining base rates of infraction type and AUC values. If base rates were exceptionally low (e.g., one individual engaged in a physically aggressive infraction out of a sample of 30), then it was determined to not be representative of the population and, thus, removed from further analyses. From AUC values, *d* values (effect sizes) were calculated using formulas from Ruscio (2008). All effects were adjusted and weighted by their inverse variance weights to control for varying sample sizes (unweighted effect sizes are also reported for descriptive purposes).

To examine potential heterogeneity across effect sizes, Cochran's *Q* statistic was calculated for each effect. Significant *Q* statistics indicates the need to examine moderator variables because the varying effects is not due to chance alone. For each effect, I^2 was also calculated to quantify the proportion of variance attributable to heterogeneity rather than chance (Higgins, Thompson, Deeks, & Altman, 2003). Levels of heterogeneity are categorized as low, moderate, or high (I^2 values $\geq$ 25%, 50%, and 75%, respectively). Assuming heterogeneity is present in at least some meta-analytic results, potential moderating variables were investigated. These moderators include age (in years), and race (percent Caucasian), whether sample was from correctional or treatment setting, follow-up period (in months), and base rate of misconduct in the sample (by percent).

CHAPTER III

RESULTS

Preliminary Analyses

Table 1 presents base rates by each infraction type and the raw numbers of inmates who had at least one infraction on record ("yes") versus those who did not ("no"). Preliminary examination suggested that the Florida general population (GP) sample would be an overly and negatively influential outlier to the overall model. Specifically, Florida GP had a total of 30 participants with only 6 committing a general infraction, 3 committing an aggressive infraction, and 1 committing a physically aggressive infraction. Although aggressive infraction base rates are expected to be low, the exceptionally small number of positive cases in these categories may cause effect sizes to be unstable and/or spurious. Because of the low base rate across infraction types, Florida GP was not included in further analyses.

Table 1
Base Rate of Infraction Type

	Base Rate	Yes	No
General Infractions			
Florida GP	20%	6	24
Florida CSU	63%	17	10
NIMH GP	43.2%	123	162
NIMH SAT	48.9%	162	169
Texas Jail	37.2%	29	49
Aggressive Infractions			
Florida GP	10%	3	27
Florida CSU	51.9%	14	13
NIMH GP	28.1%	80	205
NIMH SAT	17.2%	57	274
Texas Jail	16.7%	13	65
Physically Aggressive Infractions			
Florida GP	3.3%	1	29
Florida CSU	40.7%	11	16
NIMH GP	4.6%	13	272
NIMH SAT	2.4%	8	323
Texas Jail	9%	7	71

Note. PAS = Personality Assessment Screener; GP = general population; CSU = crisis stabilization unit; NIMH GP = National Institute of Mental Health general population; NIMH SAT = National Institute of Mental Health substance abuse treatment.

Table 2 provides descriptive statistics for the PAS total score and element scores included in the current study in terms of raw scores. Participants' average PAS total scores fell in the range classified as *marked* risk for all except Florida GP inmates, which fell in the *moderate* to *marked* range. Compared to the clinical sample reported in the PAS manual ($N = 1,246$; Morey, 1997) which had an average total score of 25.83 ($SD = 9.99$), the current samples' total score was higher except for Florida GP which was about 2 points lower than the clinical average. Average PF scores for Florida GP, NIMH GP, and NIMH SAT participants fell in the *moderate* range whereas Florida CSU and Texas Jail participants' scores fell within the *moderate* to *marked* range. The manual's clinical sample reported a PF raw score of 1.19 ($SD = 1.53$), which was comparatively lower

than the current samples' average scores. Average HC scores were lower than PF such that Florida GP, NIMH GP, and NIMH SAT participants demonstrated *mild* to *moderate* levels of risk, and Florida CSU and Texas Jail participants' scores fell within the *moderate* range. Compared to the clinical sample ($M = 2.44$, $SD = 1.62$), all samples of the current study reported higher raw HC scores. Average AC scores were lower than that of HC and PF such that scores from Florida GP and NIMH GP participants fell within the *normal* to *mild* range of risk, and Florida CSU, NIMH SAT, and Texas Jail participants' scores fell within the *mild* to *moderate* range. Compared to the clinical sample ($M = 2.36$, $SD = 1.74$), only Florida CSU and NIMH SAT participants reported higher average PF scores. Lastly, average item 22 scores ranged from 0.95-1.74 on a scale from 0 to 3; however, there are no *P* scores for a single item nor clinical sample for comparison.

Table 2
PAS Raw Scores for Total Sample

Sample	Total		Psychotic Features		Hostile Control		Anger Control		Item 22	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Florida GP[a]	23.97	6.37	1.87	1.83	2.47	1.93	1.73	1.55	1.00	1.08
Florida CSU[b]	32.63	8.27	2.59	2.26	3.81	1.92	2.70	1.96	1.74	1.26
NIMH GP[c]	26.45	8.53	1.62	1.54	2.89	1.51	1.99	1.63	1.06	0.99
NIMH SAT	31.39[d]	8.04	1.72[e]	1.47	2.97[e]	1.63	2.64[f]	1.76	1.21[e]	1.08
Texas Jail[g]	27.31	9.32	2.46	2.14	3.00	1.66	2.01	1.76	0.95	1.09

Note. PAS = Personality Assessment Screener; GP = general population; CSU = crisis stabilization unit; NIMH GP = National Institute of Mental Health general population; NIMH SAT = National Institute of Mental Health substance abuse treatment.
[a]$n = 30$, [b]$n = 27$, [c]$n = 285$, [d]$n = 303$, [e]$n = 313$, [f]$n = 315$, [g]$n = 78$

Table 3 presents AUC values from receiver operating characteristics (ROC) curves examining the ability of the PAS at the total and element level to predict general infractions. AUC values for PAS total scores ranged from .44 to .71, with scores significantly identifying general infractions among Florida CSU and NIMH GP participants. AUC values for PAS PF scores were somewhat less variable and larger, ranging from .55 to .79, with significant identification of general infractions among Florida CSU inmates and NIMH GP. AUC values for PAS AC scores ranged from .55 to .64, with significant identification of general infractions among NIMH GP. AUC values for PAS HC scores ranged from .48 to .63 and item 22 scores AUC values ranged from .52 to .65.

Table 3

AUC Values for General Infractions

Sample	PAS	AUC	SE	95% CI
Florida CSU[a]	Total	**0.71***	0.10	[0.52, 0.91]
	PF	**0.79***	0.10	[0.61, 0.98]
	Item 22	0.65	0.12	[0.42, 0.87]
	HC	0.63	0.12	[0.40, 0.86]
	AC	0.64	0.11	[0.42, 0.86]
NIMH GP[b]	Total	**0.59***	0.03	[0.52, 0.66]
	PF	**0.61***	0.03	[0.54, 0.67]
	Item 22	0.54	0.04	[0.47, 0.61]
	HC	0.51	0.04	[0.44, 0.58]
	AC	**0.58***	0.03	[0.52, 0.65]
NIMH SAT	Total[c]	0.53	0.03	[0.47, 0.60]
	PF[d]	0.55	0.03	[0.48, 0.61]
	Item 22[d]	0.53	0.03	[0.47, 0.61]
	HC[d]	0.48	0.03	[0.41, 0.54]
	AC[e]	0.55	0.03	[0.49, 0.62]
Texas Jail[f]	Total	0.62	0.07	[0.49, 0.75]
	PF	0.60	0.08	[0.46, 0.73]
	Item 22	0.52	0.07	[0.38, 0.66]
	HC	0.51	0.07	[0.34, 0.65]
	AC	0.56	0.07	[0.43, 0.69]

Note. PAS = Personality Assessment Screener; PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control. GP = general population; CSU = crisis stabilization unit; NIMH GP = National Institute of Mental Health general population; NIMH SAT = National Institute of Mental Health substance abuse treatment. AUC = area under the curve; SE = standard error; CI = confidence interval.
[a]n = 27. [b]n = 285. [c]n = 303. [d]n = 313. [e]n = 315. [f]n = 78.
*p < .05. **p < .01. ***p < .001

Table 4 presents AUC values from ROC curves examining the ability of various PAS scores to predict aggressive infractions. AUC values of PAS total scores predicting aggressive infractions ranged from .52 to .65, with total scores significantly identifying aggressive infractions among NIMH SAT participants. AUC values for PAS PF scores ranged from .59 to .79, with significant identifications of aggressive infractions among Florida CSU, NIMH GP, and NIMH SAT participants. AUC values for PAS AC scores

ranged from .59 to .65, with significant identifications of aggressive infractions among

NIMH GP and NIMH SAT participants. HC scores did not appear to be significant

predictors of aggressive infractions, although AUC values, similar to other PAS scores,

ranged from .50 to .67. Lastly, AUC values of item 22 ranged from .51 to .66, with

significant identification of aggressive infractions among NIMH SAT participants.

Overall, AUC values among PAS scores were in the .50 to .79 range with PAS PF scores

being the most predictive of aggressive infractions.

Table 4
AUC Values for Aggressive Infractions

Sample	PAS	AUC	SE	95% CI
Florida CSU[a]	Total	0.52	0.11	[0.30, 0.75]
	PF	**0.79****	0.09	[0.61, 0.96]
	Item 22	0.65	0.11	[0.44, 0.86]
	HC	0.64	0.11	[0.43, 0.86]
	AC	0.61	0.11	[0.39, 0.83]
NIMH GP[b]	Total	0.57	0.04	[0.49, 0.64]
	PF	**0.59***	0.04	[0.51, 0.66]
	Item 22	0.51	0.04	[0.44, 0.59]
	HC	0.50	0.04	[0.42, 0.57]
	AC	**0.59***	0.04	[0.52, 0.67]
NIMH SAT	Total[c]	**0.58***	0.04	[0.50, 0.66]
	PF[d]	**0.61****	0.04	[0.53, 0.69]
	Item 22[d]	**0.61****	0.04	[0.53, 0.69]
	HC[d]	0.56	0.04	[0.47, 0.64]
	AC[e]	**0.64*****	0.04	[0.57, 0.72]
Texas Jail[f]	Total	0.65	0.09	[0.48, 0.83]
	PF	0.60	0.09	[0.42, 0.78]
	Item 22	0.66	0.09	[0.48, 0.83]
	HC	0.67	0.09	[0.49, 0.85]
	AC	0.65	0.08	[0.49, 0.81]

Note. PAS = Personality Assessment Screener; PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control. GP = general population; CSU = crisis stabilization unit; NIMH GP = National Institute of Mental Health general population; NIMH SAT = National Institute of Mental Health substance abuse treatment. AUC = area under the curve; SE = standard error; CI = confidence interval. PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control. [a]$n = 27$. [b]$n = 285$. [c]$n = 303$. [d]$n = 313$. [e]$n = 315$. [f]$n = 78$.
*$p < .05$. **$p < .01$. ***$p < .001$

Table 5 presents AUC values from ROC curves examining the ability of various

PAS scores to predict physically aggressive infractions. AUC values for PAS total scores

predicting physically aggressive infractions ranged from .58 to .68, with significant

identification of physically aggressive infraction among NIMH GP. For PAS PF scores,

AUC values ranged from .61 to .76, with significant identification among Florida CSU

and NIMH SAT participants. AUC values for PAS AC scores ranged from .52 to .71, with significant identification of physically aggressive infractions among NIMH GP. AUC values ranged from .52 to .63 for PAS HC scores and .45 to .59 for item 22, with no significant predictions. Overall, PAS scores ranged from .45 to .76, with PF scores seeming to have the greatest likelihood of identifying physically aggressive infractions.

Table 5
AUC Values for Physically Aggressive Infractions

Sample	PAS	AUC	SE	LB
Florida CSU[a]	Total	0.58	0.12	[0.35, 0.80]
	PF	**0.76****	0.10	[0.58, 0.95]
	Item 22	0.59	0.11	[0.37, 0.81]
	HC	0.63	0.11	[0.41, 0.84]
	AC	0.52	0.12	[0.28, 0.76]
NIMH GP[b]	Total	**0.68***	0.08	[0.52, 0.84]
	PF	0.61	0.08	[0.45, 0.77]
	Item 22	0.45	0.09	[0.28, 0.62]
	HC	0.52	0.09	[0.35, 0.69]
	AC	**0.71***	0.08	[0.55, 0.88]
NIMH SAT	Total[c]	0.63	0.07	[0.50, 0.77]
	PF[d]	**0.71****	0.07	[0.57, 0.84]
	Item 22[d]	0.58	0.09	[0.40, 0.76]
	HC[d]	0.60	0.08	[0.44, 0.76]
	AC[e]	0.62	0.08	[0.46, 0.77]
Texas Jail[f]	Total	0.66	0.12	[0.43, 0.88]
	PF	0.62	0.11	[0.40, 0.84]
	Item 22	0.55	0.12	[0.31, 0.78]
	HC	0.55	0.12	[0.31, 0.79]
	AC	0.67	0.10	[0.47, 0.86]

Note. PAS = Personality Assessment Screener; PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control. GP = general population; CSU = crisis stabilization unit; NIMH GP = National Institute of Mental Health general population; NIMH SAT = National Institute of Mental Health substance abuse treatment. AUC = area under the curve; SE = standard error; CI = confidence interval. PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control. [a]$n = 27$. [b]$n = 285$. [c]$n = 303$. [d]$n = 313$. [e]$n = 315$. [f]$n = 78$.
*$p < .05$. **$p < .01$. ***$p < .001$

Meta-analytic Results

Table 6 reports mean effect sizes of PAS scores predicting general infractions along with measures of heterogeneity across studies. The overall weighted mean effect size for PAS total scores was significant and small to medium ($d = .38$) with high levels of heterogeneity ($I^2 = 93.27\%$). PF scores had a significant and medium overall effect size ($d = .49$,) with high levels of heterogeneity ($I^2 = 97.32\%$). AC scores demonstrated a significant, small effect size ($d = .25$) with moderate levels of heterogeneity ($I^2 = 39.18$). Item 22 scores demonstrated a significant, small effect size ($d = .13$,) with low levels of heterogeneity ($I^2 = .03\%$). Lastly, HC scores did not significantly predict general infractions ($d = .07$) but did have high levels of heterogeneity in effect sizes ($I^2 = 85.63\%$).

Table 6

Meta-Analysis Results for PAS Scores Predicting Institutional Misconduct

Outcome/scale	N	d	SE	95% CI	Q	I²
General infractions						
Total	693	**0.38****	0.13	[0.13, 0.64]	**29.56*****	93.27%
PF	703	**0.49***	0.21	[0.09, 0.89]	**50.48*****	97.32%
HC	703	0.07	0.10	[-0.12, 0.25]	**12.21****	85.63%
AC	705	**0.25*****	0.04	[0.16, 0.34]	5.56	39.18%
Item 22	703	**0.13*****	0.03	[0.07, 0.19]	6.80	0.03%
Aggressive Infractions						
Total	693	**0.29*****	0.07	[0.16, 0.42]	6.93	60.70%
PF	703	**0.53****	0.18	[0.17, 0.88]	**34.59*****	95.32%
HC	703	**0.30***	0.14	[0.02, 0.58]	**27.77*****	91.52%
AC	705	**0.44*****	0.06	[0.32, 0.55]	6.54	53.33%
Item 22	703	**0.36****	0.12	[0.12, 0.60]	**29.14*****	88.58%
Physically Aggressive Infractions						
Total	693	**0.50*****	0.07	[0.37, 0.64]	3.88	14.89%
PF	703	**0.65*****	0.14	[0.37, 0.92]	**14.80****	80.55%
HC	703	**0.26****	0.09	[0.09, 0.43]	4.63	36.87%
AC	705	**0.48*****	0.14	[0.20, 0.77]	**13.34****	79.46%
Item 22	703	0.14	0.12	[-0.10, 0.37]	**9.57***	66.41%

Note. PAS = Personality Assessment Screener; PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control.

N = aggregated sample size; d = mean weighted Cohen's *d* effect size; SE = standard error; CI = confidence interval.

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

Moderator analyses found that study follow-up period was a significant moderating variable between PAS total scores and general infractions such that a one-unit increase in follow-up period corresponds with an increase of .04 units in effect size (see Table 7 for a summary of moderator analyses for general infractions across PAS scores). Similarly, follow-up period was found to be a significant moderating variable for PAS PF scores and PAS HC scores such that a one-unit increase in follow-up period corresponds with an increase of .06 and .03 units in effect size, respectively.

Table 7

Summary of Moderator Analyses for General Infractions

Moderator	Total				PF				HC			
	d	SE	Q	I2	d	SE	Q	I2	d	SE	Q	I2
Base Rate	0.01	0.01	0.92	94.61%	0.03	0.02	3.05	95.95%	0.02	0.01	2.00	85.00%
Age	0.05	0.18	0.09	95.66%	-0.04	0.28	0.02	98.32%	-0.01	0.14	0.00	92.83%
Follow-Up	**0.04****	0.01	8.96	76.25%	**0.06*****	0.01	14.08	85.55%	**0.03****	0.01	7.30	45.55%
Race	-0.01	0.01	0.52	95.11%	-0.004	0.02	0.04	98.46%	-0.003	0.01	0.09	93.08%
Sample	0.04	0.33	0.90	93.29%	0.26	0.48	0.30	96.84%	0.11	0.26	0.19	87.01%
Correctional	---	---	---	---	---	---	---	---	---	---	---	---
Treatment	---	---	---	---	---	---	---	---	---	---	---	---

Table 7 continued

Moderator	AC				Item 22			
	d	SE	Q	I2	d	SE	Q	I2
Base Rate	0.01	0.012	0.87	61.83%	0.01	0.01	3.56	48.29%
Age	-0.03	0.06	0.30	54.76%	-0.04	0.11	0.15	86.42%
Follow-Up	0.01	0.01	1.56	48.59%	0.02	0.01	4.03	0.11%
Race	0.0006	0.01	0.01	64.94%	0.0009	0.01	0.01	88.64%
Sample	0.001	0.12	0.0002	54.60%	0.15	0.19	0.62	75.99%
Correctional	---	----	---	---	---	---	---	---
Treatment	---	---	---	---	---	---	---	---

Note. *d* = mean weighted Cohen's *d* effect size; SE = standard error. PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control.
*p < .05. **p < .01. ***p < .001

For aggressive infractions, the overall weighted mean effect size for PAS total scores was small but significant ($d = .29$) with moderate levels of heterogeneity ($I^2 = 60.7\%$). PF scores demonstrated an overall medium and significant effect size ($d = .53$) with high levels of heterogeneity ($I^2 = 95.32\%$). HC scores demonstrated a significant and small effect size ($d = .30$,) with high levels of heterogeneity ($I^2 = 91.52\%$). AC scores demonstrated a significant, medium effect size ($d = .44$) with a moderate amount of heterogeneity ($I^2 = 53.33\%$). Item 22 scores demonstrated a significant and small to medium effect size ($d = .36$) with high levels of heterogeneity ($I^2 = 88.58\%$).

Moderator analyses found that age was a significant moderating variable for PAS total scores such that a one-unit increase in age corresponds with an increase of .11 units in effect size (see Table 8 for a summary of moderator analyses for aggressive infractions across all PAS scores). Similarly, age moderated the relationship for HC and for item 22 in predicting aggressive infractions such that a one-unit increase in age corresponds with a .27 and .20 increase in effect size, respectively. Base rate was a significant moderating variable in PF scores predicting aggressive infractions such that one-unit increase in base rate corresponds with an increase of .02 units in effect size. Follow-up period was also shown to be a significant moderator for PF scores such that a one-unit increase in follow-up period corresponded with a .05 unit increase in effect size. Lastly, race was a significant moderating variable for HC scores such that a one-unit increase (in this case, percent Caucasian) corresponds with a .02 unit decrease in effect size.

Table 8

Summary of Moderator Analyses for Aggressive Infractions

Moderator	Total				PF				HC			
	d	SE	Q	I2	d	SE	Q	I2	d	SE	Q	I2
Base Rate	-0.01	0.01	2.84	37.61%	**0.02****	0.01	7.71	84.82%	0.003	0.01	0.06	94.51%
Age	**0.11***	0.05	4.27	0.11%	-0.02	0.25	0.01	97.05%	**0.27****	0.05	23.96	0.01%
Follow-Up	-0.01	0.02	0.39	82.62%	**0.05*****	0.01	25.72	32.24%	0.03	0.02	1.78	90.82%
Race	-0.01	0.004	3.49	0.05%	-0.002	0.02	0.02	97.42%	**-0.02****	0.01	8.32	70.96%
Sample	-0.16	0.19	0.73	69.53%	0.39	0.35	1.26	92.31%	0.06	0.34	0.03	90.67%
Correctional	---	---	---	---	---	---	---	---	---	---	---	---
Treatment	---	---	---	---	---	---	---	---	---	---	---	---

Table 8 continued

Moderator	AC				Item 22			
	d	SE	Q	I2	d	SE	Q	I2
Base Rate	-0.01	0.01	1.56	38.14%	0.001	0.01	0.01	92.56%
Age	0.08	0.06	1.65	41.22%	**0.20***	0.10	4.13	75.38%
Follow-Up	-0.002	0.01	0.02	67.89%	0.02	0.02	1.04	90.21%
Race	-0.004	0.01	0.46	62.96%	-0.01	0.01	2.25	85.89%
Sample	0.08	0.12	0.43	40.51%	0.16	0.27	0.35	85.38%
Correctional	---	---	---	---	---	---	---	---
Treatment	---	---	---	---	---	---	---	---

Note. d = mean weighted Cohen's d effect size; SE = standard error. PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control.

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

For physically aggressive infractions, the overall weighted mean effect size for PAS total scores was medium and significant ($d = .50$) with low levels of heterogeneity ($I^2 = 14.98\%$). PF scores demonstrated a significant and medium effect size ($d = .65,$) with high levels of heterogeneity ($I^2 = 80.55\%$). HC scores demonstrated a significant and small effect size ($d = .26$) with low to moderate levels of heterogeneity ($I^2 = 36.87\%$). AC scores demonstrated a significant, medium effect size ($d = .48$) with moderate to high levels of heterogeneity ($I^2 = 79.46\%$). Item 22 scores did not demonstrate a significant effect size ($d = .14$) but demonstrated moderate levels of heterogeneity ($Q = 9.57$, $p = .023$, $I^2 = 66.41\%$).

Moderator analyses indicated that sample type significantly moderated the relationship for PF, HC, AC, and item 22 scores (see Table 9 for a summary for moderator analyses for physically aggressive infractions across PAS scores). For PF scores both correctional and treatment centers were significant moderators with treatment centers ($d = .85$) demonstrating bigger effect sizes than correctional institutions ($d = .40$), suggesting that PF scores were more predictive among inmates and offenders in treatment centers than in correctional institutions. Among AC scores, correctional institutions ($d = .70$) demonstrated larger effect sizes than treatment centers ($d = .28$), suggesting that AC scores were more predictive of physically aggressive infractions in correctional settings. For HC scores and item 22, only treatment centers demonstrated a significant effect size ($d = .38$ for HC; $d = .30$ for item 22).

Table 9

Summary of Moderator Analyses for Physically Aggressive Infractions

Moderator	Total				PF				HC			
	d	SE	Q	I2	d	SE	Q	I2	d	SE	Q	I2
Base Rate	-0.01	0.005	2.41	0.00%	0.01	0.01	2.10	74.05%	0.01	0.01	0.98	40.07%
Age	-0.01	0.10	0.02	45.37%	-0.05	0.19	0.06	87.90%	0.02	0.12	0.02	55.62%
Follow-Up	-0.02	0.01	2.41	0.00%	0.03	0.02	1.78	75.77%	0.01	0.01	1.01	38.96%
Race	0.001	0.01	0.03	45.70%	0.003	0.01	0.05	87.73%	-0.0004	0.01	0.002	56.68%
Sample	-0.20	0.13	2.45	0.00%	**0.44*****	0.13	11.78	8.58%	**0.28***	0.14	4.20	0.00%
Correctional	---	---	---	---	**0.40*****	0.10	118.18	8.58%	0.11	0.10	18.91	0.00%
Treatment	---	---	---	---	**0.85*****	0.08	118.18	8.58%	**0.38*****	0.09	18.92	0.00%

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Table 9 continued

Moderator	AC				Item 22			
	d	SE	Q	I2	d	SE	Q	I2
Base Rate	-0.01	0.01	3.33	67.13%	0.01	0.01	0.47	72.23%
Age	-0.02	0.20	0.01	86.70%	0.10	0.15	0.45	71.52%
Follow-Up	-0.03	0.02	3.35	66.59%	0.02	0.02	0.64	70.16%
Race	0.002	0.02	0.02	86.64%	-0.01	0.01	0.21	74.86%
Sample	**-0.42***	0.19	4.86	50.13%	**0.34***	0.17	4.12	30.04%
Correctional	**0.70*****	0.13	32.88	50.13%	-0.04	0.12	6.36	30.04%
Treatment	**0.28***	0.14	32.88	50.13%	**0.30***	0.12	6.36	30.04%

Note. d = mean weighted Cohen's d effect size; SE = standard error. PAS elements: PF = Psychotic Features; HC = Hostile Control; AC = Anger Control.

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

CHAPTER IV

DISCUSSION

The goal of the present study was to examine a brief screening measure's ability to identify inmates at elevated risk for institutional misconduct. The current study examined the ability of the PAS to predict institutional misconduct among four archival datasets from jail and prison samples (after removal of one outlier sample [Florida GP] in which almost no participants engaged in misconduct). Consistent with our hypothesis, PAS total scores significantly predicted general, aggressive, and physically aggressive infractions with effect sizes ranging from small to medium (ds = .29-.50). Similar results were obtained for PF scores, which demonstrated medium effect sizes across infraction type (ds = .49-.65) and for AC scores, which demonstrated small to medium effect sizes (ds = .25-.48). To a lesser degree, HC scores were predictive of misconduct for aggressive and physically aggressive infractions, albeit with small effect sizes (ds = .26-.30), although it did not appear to significantly predict general infractions. Item 22, similarly, demonstrated significant effect sizes for general and aggressive infractions (ds = .13-.36), but, interestingly, did not statistical significance for physically aggressive infractions.

It is possible that PAS total scores were consistently predictive of misconduct across infraction types because it is a global measure of psychopathology and captures a clinical profile of participants that encompasses all element scores, even those not specifically analyzed in the current study (e.g., Negative Affect, Alienation, Social Withdrawal). Because inmates who struggle from mental illnesses are at an increased

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risk for aggressive and defiant behaviors (Fazel et al., 2014; Fazel et al., 2016), it is reasonable to expect that those who experienced higher levels of global psychopathology are more likely to have an infraction on their record. Similarly, AC scores consistently demonstrated significant effect sizes across infraction types. AC contains two items that measure anger management, specifically asking the respondent about his or her temper and whether it takes a lot to make him or her angry; higher scores on AC suggest that an individual may be chronically angry and may express it through verbal or physical means. In the current study, AC effect sizes increases as infraction type becomes more aggressive ($d_{general}$ = .25; $d_{aggressive}$ = .44; $d_{physically\ aggressive}$ = .48), further suggesting that one's perception of his or her level of anger and ability to manage it is predictive of future acts of general misconduct and, even more so, aggressive (verbal and physical) misconduct. This is further corroborated by Schenk & Fremouw's (2012) study finding that aggressiveness is a robust indicator of institutional misconduct.

Interestingly, PF scores demonstrated the largest effect sizes across infraction types. The PF element contains two items that measure persecutory thinking and features of paranoid psychosis. As previously stated, serious mental disorders, particularly psychosis or clinical depression, is especially prevalent in correctional settings with these disorders substantially increasing the rates of violence, disciplinary infractions, and victimization (Fazel et al., 2014; Fazel et al., 2016). Furthermore, systematic reviews demonstrate some support for the association between paranoia and aggression in psychosis (Darrell-Berry et al., 2016). As such, the current study suggests that perhaps

increased feelings of paranoia may cause one to become more defiant and aggressive (verbally and physically) in an institutional setting.

The smallest effect sizes were observed for HC scores and Item 22 scores. HC did not significantly predict general infractions, but it did significantly predict aggressive and physically aggressive infractions, with small effect sizes. The HC element measures an interpersonal style in which an individual has an inflated self-image and has a need for control. As such, the current data suggests that higher perception of one's self-image and need for control is predictive of aggressive (verbal and physical) behaviors. Item 22 directly measures self-perceived aggression by asking the participant to rate the statement, "People think I'm aggressive". It was hypothesized that this direct measure would be predictive of infractions, particularly aggressive and physically aggressive infractions. However, the current results indicate that this item is not predictive of physically aggressive infractions and only somewhat predictive of general and aggressive infractions. Future research will need to further examine whether self-perceived aggression is predictive of future acts of misconduct, at least as measured by PAS item content.

When looking specifically at general infractions, it is interesting to note that PAS total, PF, and HC scores were moderated only by follow-up period such that they were more predictive as more time passed in the duration of the study. General infractions include any aggressive and nonaggressive behaviors that were included in staff incident logs or inmates' records. It may be that the more time an individual spends incarcerated,

the more opportunities they may have to engage in misconduct. Furthermore, inmates who are elevated on measures of general psychopathology and, even more so, indicators of psychosis and paranoia, are more likely to engage in misconduct over time. However, past research on sentence length and serious and violent prison infractions by female inmates found that short-term inmates (two years or less) were more likely than longer-term inmates (eight or more years) to commit serious and violent crimes (Reidy & Sorensen, 2018). No studies thus far examined sentence length as a contributor of general infractions nor in a mixed or male sample. Thus, future research should consider how sentence length, in congruence with mental health, affects general institutional misconduct.

Within aggressive infractions, age moderated PAS total, HC, and item 22 scores such that increased age resulted in higher predictive validity. Aggressive infractions included any verbal or physical aggression that an inmate engaged in within the study timeframe. It is surprising that age would be a moderating variable such that higher age would result in more aggressive infractions, especially since younger inmates are more likely to engage in various types of misconduct (Cunningham & Sorensen, 2007; Valentine et al., 2015). This may be due to a variety of factors, including the lack of power in our small samples or perhaps it truly represents how age affects aggression in the current sample. However, the current results are not suggesting that younger aged inmates are more likely to engage in institutional misconduct, but rather that PAS scores are better predictors of such behaviors among older offenders. Future research will need

to further explore the discrepancy in our results. For PF scores, base rate and follow-up period moderated the relationship. Similar to the relationship between PF scores and general infractions being moderated by follow-up period, it is possible that paranoia and psychosis increases the likelihood of engaging in aggressive behaviors (Darrell-Berry et al., 2016). Race was only a significant moderator for the relationship between HC scores and aggressive infractions such that non-Caucasian inmates had HC scores that were more predictive of aggressive infractions, but only to a small degree. Research thus far provides some evidence suggesting that non-White inmates are more likely to engage in violent misconduct (e.g., Berg & DeLisi, 2006), however, there seems to be some evidence that there is no racial difference in misconduct (Camp et al., 2006). Because of the lack of consistency in race being a moderator, future research will need to further examine this variable as a potential contributor to predicting institutional misconduct.

Lastly, within physically aggressive infractions, PAS PF, HC, AC, and item 22 were all moderated by sample type, which was dichotomized as treatment centers (NIMH SAT and Florida CSU) and correctional institutions (Texas jail, NIMH GP), essentially categorizing inmates who may be suffering from psychological difficulties and placed in an institution specifically to treat their psychological needs as opposed to those who are categorized as 'general population' in their original studies. Results indicated that treatment centers obtained higher effect sizes than correctional centers (for PF, HC, and Item 22 scores), suggesting that physical aggression is more prevalent among inmate and offender population with notable mental illnesses and that PAS scores

were more predictive of physically aggressive infractions in this setting. Past research indicates that psychosis and clinical depression (Felson et al., 2012) and major mental illness with a history of violence (Walters & Crawford, 2014) have strong effects on aggressive infractions. Because of the differences in psychological functioning that likely exists between treatment and general population correctional institutions, it is reasonable to expect that there would be differences in physical aggression among these two settings. Interestingly, AC scores predicting physically aggressive infractions was also moderated by setting but with correctional settings having a larger effect sizes, suggesting that perhaps it is more predictive among general population inmates than treatment center inmates.

There are some limitations to these meta-analytic findings that are important to note, which future individual studies hopefully can improve upon. Specifically, the current study only examined effect sizes for male samples. This limits the generalizability of results and future studies should examine PAS scores as it relates to institutional misconduct among female inmates and mixed samples. Another limitation is the sample sizes included in the current study. Specifically, Florida GP and CSU inmates each had 30 participants and Texas jail inmate sample had 78 participants. In the Florida GP sample, base rates of general, aggressive, and physically aggressive infractions were exceptionally low such that further analyses could not be conducted as the results would not be representative of the population. Furthermore, the overall small samples sizes, particularly in two of the four samples included in the current study, may have resulted

in attenuated power. In congruence with the increasingly low base rate of general, aggressive, and physically aggressive infractions, it is necessary to have larger sample sizes to ensure we can obtain appropriate power and have results that could be generalized to correctional settings. This is especially necessary for physically aggressive infractions as the base rates ranged from 1 to 13.

Limitations notwithstanding, the current study provides meaningful information about the utility of the PAS in correctional settings. Consistent with past research (Edens et al., 2019; Harrison & Rogers, 2007; Kelley et al., 2018; McCredie et al., 2020), PAS total scores were predictive of institutional misconduct, more so than element (and item) scores – excluding PF. As such, use of the PAS in correctional settings as a measure of risk should primarily focus on its total score. However, PF scores appear to independently be even more predictive of institutional misconduct than the total score in correctional settings. It may be that simply asking individuals in correctional settings the two items of the PF element may assist evaluators in assessing risk. Regardless, the current data adds to the growing literature supporting the utility of the PAS in correctional settings, particularly as a measure of institutional misconduct.

Summary and Conclusions

The current study is the first to use a brief, screening measure of psychopathology and short indicators of specific areas of dysfunction (e.g., PF to measure psychosis and paranoia) to predict three levels of misconduct with increasing severity. Furthermore, we used multiple samples that varied in infraction base rate,

follow-up period, age, setting, and race to determine if these variables moderated the ability of PAS scores to predict institutional misconduct. Our results indicate that global measures of psychopathology (i.e., PAS total) and indicators of psychosis and paranoia and anger (i.e., PF and AC, respectively) were predictive of misconduct across infraction types. One's ratings of their self-image and need for control (i.e., HC) was predictive of aggressive and physically aggressive infractions, but not general infractions. Lastly, participants' self-perception of whether they believe others see them as aggressive (i.e., item 22) was predictive of general and aggressive infractions but not physically aggressive infractions. Furthermore, follow-up period appeared to be a frequent moderator of PAS scores and general infractions, age appeared to be a frequent moderator of aggressive infractions, and sample type appeared to be a frequent moderator of physically aggressive infractions. These results provide meaningful information about the utility of the PAS in correctional settings such that it may be useful as a predictor of misconduct. Future research should further examine the utility of brief self-report measures, specifically ones that measure self-reported global dysfunction, psychosis and paranoia, and anger as possible indicators of institutional misconduct. Furthermore, examination of how PAS scores may vary due to time in an institution (e.g., follow-up period), age of the population, and the type of institution (e.g., general population versus clinical/in-patient) may assist evaluators in determining when and how to interpret PAS scores as a predictor of misconduct. Our research contributes to the growing literature regarding the utility of the PAS in correctional settings, which

is especially important due to its ability to target issues in resource-limited institutions,

particularly the needs of correctional and forensic populations.

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