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THE PERSONALITY ASSESSMENT INVENTORY SHORT FORM: A CLOSER LOOK IN A FORENSIC SAMPLE

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THE PERSONALITY ASSESSMENT INVENTORY SHORT FORM: A CLOSER LOOK IN A FORENSIC SAMPLE

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Abstract

The Personality Assessment Inventory (PAI) is a well-known self-report measure that aids in treatment planning and evaluation outcomes. The PAI short-form (PAI-SF) consists of the first 160 items from the full-form's 344 items. The current study examined extra-test relationships/ correlates of the PAI-SF interpersonal scales dominance (DOM) and warmth (WRM), as well as internal correlations between the treatment rejection scale (RXR) and the warmth scale in a forensic sample. Data were collected from archival evaluations, from a private practice, of adults ages 18-69 years old. Two independent T-test analyses were conducted to determine the mean difference between violent-offense-charged and nonviolent-offense-charged defendants on the warmth and dominance scales. Results indicated that there were not significantly different scores on the PAI-SF's warmth or dominance scales. A Pearson's correlation coefficient analysis was conducted to determine the relationship between the treatment rejection scale and the interpersonal scale, warmth. Results indicated a significant positive correlation between the treatment rejection scale and warmth scale, counter to expectations.

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Introduction and Review of Literature

The Personality Assessment Inventory (PAI), first developed by Leslie Morey, was described as “a substantial improvement from a psychometric perspective over the existing standard in the area" (Helmes & Rodden 1993, p. 417). Treatment planning and outcome evaluations are further enhanced by the personality assessment, which helps to identify an individual's strengths, weaknesses, underlying needs, and attitudes towards themselves and others. When applied to forensic settings, personality tests such as the PAI can be used to detect indicators of mental impairment that may be relevant to competency and sanity evaluations in criminal cases.

The utility of the PAI in a forensic context is advantageous over other forms of assessments such as the Millon Clinical Multiaxial Inventory (MCMI) or Minnesota Multiphasic Personality Inventory (MMPI) for various reasons described below. Furthermore, the PAI also appears to predict significant outcomes in these settings, like recidivism in inmate releases from custody and disciplinary problems while incarcerated (Sinclair et al., 2009).

In contrast to the MMPI and MCMI that implement dichotomous choices for statements (e.g., true/false or agree/disagree), the PAI uses a 4-point scale ranging from “false, not true at all” to “very true” (Watson & Liljequist, 2015). Providing more than two alternative responses for each statement facilitates a greater degree of difference in the frequency and severity of behavior or symptom within a single item than dichotomous choices would allow (Weiner & Greene, 2017). Further, the PAI is desirable

to implement in a forensic setting due to the straightforward structure of questions, as well as the content of the questions being assessed at a fourth grade reading level (Weiner & Greene, 2017).

The PAI includes 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales, within its 344 questions, that do not overlap, to provide a clear assessment of relevant areas of psychopathology (Morey, 1991). In forensics evaluations, such as competency or sanity assessments, respondents may become fatigued, time constraints may be an issue, and when multiple measures are administered, the PAI-Short Form (PAI-SF) is available (Weiner & Greene, 2017).

For 20 of the 22 full-scales, the PAI-SF produces scaled scores. It incorporates the first 160 items of the PAI that have been shown to have the strongest item-scale correlations for each clinical scale (Sinclair et al., 2009). The two scales that are not included in the PAI-SF are the inconsistency (INC) and stress (STR) scales due to low item-scale correlations. The PAI-SF can be utilized instead of the full-form to accommodate certain circumstances. As the PAI-SF includes less than half of the full-form items, it may be helpful to use in competency or insanity evaluations (Sinclair et al., 2009). For example, the PAI-SF is typically used as part of a larger assessment battery in forensic settings. Thus, using the short-form in such settings is advantageous because valid completion of the PAI involves a complex combination of motivational, cognitive, and emotional factors (Morey, 1991).

A review of case law conducted by Mullen & Edens (2008) demonstrated the utility of the PAI in forensic settings, such as profiles being admitted into courts as evidence in criminal and civil proceedings (e.g., child custody, sentencing evaluations, risk

assessments). A survey of case law published in a computerized legal database, Lexis-Nexis Academic, was carried out to provide an overview of how PAI is applied in the legal system by these researchers. Among the 125 trial cases reported in this search engine, 43 were criminal (34%) and 82 (66%) were civil trials. These accounts can provide some insight into whether PAI usage is increasing. The number of legal cases in Lexis-Nexis involving the PAI increased substantially from 1995 (2 cases) to 2006 (21 cases), which is in line with professional surveys that have shown PAI use to have increased significantly over the last decade (Mullen & Edens, 2008). Out of the 125 cases included in the review, 60% (75 cases) provided clinical interpretations for the validity scales of the PAI. To note for the purpose of the current study and addressed further below, the treatment rejection scale was addressed in 10.7% of cases that included interpretations, and the four primary validity scales of the PAI were highlighted in 31 profiles (41.3%); with positive impression (17%) and negative impression scale (10.1%) as the most frequently noted scales (Mullen & Edens, 2008). The reported high frequency of clinical attention on these scales signifies their importance for interpretation and admissibility in forensic evaluations. The two interpersonal scales, dominance (2.7%) and warmth (1.3%) were least often interpreted among the PAI's 22 scales. Consequently, further research is warranted regarding the utility of these two scales when assessing offenders in forensic evaluations and treatment considerations.

The PAI, like the MMPI and MCMI, is a self-report measure. With self-report measures comes the risk of dissimulation. Dissimulation is the manipulation of response styles in an effort to conceal one's genuine thoughts and feelings and to present oneself more favorably (Morey et al., 2007). There have been previous concerns regarding

response distortion, such as dissimulation, to reflect desirable responses on self-report measures among criminal offenders. As described by Milton et al. (2005), response distortion will have implications on clinicians that are attempting to accurately diagnose or assess those in a forensic setting.

The PAI's validity scales address the concerns of how respondents present themselves and the degree of openness and honesty in their responses. The Positive Impression Management scale (PIM) is used to detect if one is presenting oneself in a positive light. For example, within an offender population one may be motivated to 'look better' for a reduced sentence or lesser security classification. Offenders with high psychopathic traits are more likely to engage in positive impression management because several of the core features of psychopathy, such as manipulativeness, glibness, and superficial charm, are reflected in goal-directed deception (Gillard & Rogers, 2015).

In contrast, negative distortion (Negative Impression Management; NIM) on the PAI, may occur for at least two reasons. First, in many cases of genuine psychopathology, such as borderline personality disorder or major depression, individuals exhibit cognitive distortions that lead them to exaggerate the negative characteristics of themselves, their world, and their future (Hopwood et al., 2007). Second, individuals may deliberately overreport problematic features of themselves or their environments. Individuals may feign a disorder in order to gain attention, treatment, or other considerations (Hopwood et al., 2007). For example, during competency evaluations, offenders may over-present symptoms to avoid traditional incarceration (Hopwood et al., 2007).

The PAI includes two scales that examine the interpersonal characteristics of warmth (WRM) and dominance (DOM) in addition to clinical and personality pathology

scales. (Parker et al., 2020). If a respondent displays warmth, they can be viewed as nurturing, open, and are interpersonally oriented. In contrast, a respondent that exhibits dominance can be seen as assertive and is likely to be in control of social situations. Morey and colleagues (2007) described that respondents with a high dominance score display low tolerance for others who disagree with their ideas. However, further research within the interpersonal scales is warranted as dominance and warmth are typically ignored when interpreting PAI profiles. Given this, a PsycInfo search was conducted by the primary investigator using the keywords "dominance," "warmth," and "personality assessment inventory." Only one article was found containing the keywords above, which exemplifies not only the lack of interpretation of these scales but the amount of existing literature. Although there were subsequent searches conducted that yielded relevant articles, the PAI's interpersonal scales were not the primary focus in many of the reported statistics. Further, another limitation of the available research on the PAI's interpersonal characteristics is that studies have been limited to specific populations. Yet, fruitful data has been published in these specific populations, in that more is known about the relationship between dominance and warmth.

For example, although dominance and warmth have previously been viewed as being on opposite sides of a continuum, meaning the scales are bipolar and high scores on one scale should correspond to low scores on the other (Morey, 1991), recent data has refuted this notion. As evidenced by data collected from male sexual offenders, Parker and colleagues (2020) found a significant positive relationship between warmth and dominance, suggesting sexual offenders may display both interpersonal characteristics. Further, their interpersonal profile may differ compared to other offenders (Parker et al.,

2020). For example, sexual offenders may be both self-assured, confident, and forceful yet warm, friendly, and exhibit an exceptionally intense desire to be accepted by others (Morey, 1991).

Dominance scores have shown low correlations with both forms of impression management (Edens, 2009), Positive Impression Management (PIM) and Negative Impression Management (NIM), in an offender population, suggesting the extent to which one is autonomous in relationships does not have a bearing on their perspective of other psychopathology factors measured by the PAI. However, warmth has shown moderate positive correlations with positive impression management and moderate negative correlations with negative impression management. The relationship between the interpersonal scale warmth and the PAI validity scales illustrates the possible influence of impression management on self-reported interpersonal features such as nurturance and sympathy. However, previous research has not differentiated offender types such as violent versus non-violent offenders when determining the influence of interpersonal characteristics on the impression management scales. Information pertaining to how an offender views interpersonal and intrapersonal relationships may be beneficial when assessing willingness to accept treatment and participate in rehabilitation programs that are court mandated.

The PAI contains two additional scales to predict treatment responsiveness (Parker et al., 2020). The treatment rejection scale (RXR) is designed to assess openness to change, which could relate to warmth, motivation level towards treatment, or rehabilitation in an offender population (Morey, 1991). High scores on the RXR scale are indicative of low motivation and being less receptive to treatment, whereas low scores are predictive of

higher motivation. However, as motivation for treatment does not always translate into a successful outcome, the treatment process index (TPI) measures the difficulty of the treatment process (Morey, 2007) such as indicators of personality characteristics or behaviors that may create challenges to treatment and is composed of 12 indicators of barriers that may arise throughout treatment such as hostility, decreased motivation, defensiveness, and perceived social support (Morey, 2007). Higher scores on the TPI suggest treatment noncompliance and lower scores are correlated with treatment adherence. These scales may be of interest in conjunction with the interpersonal and validity scales in assessing offenders.

In a study conducted by Parker and colleagues (2020), researchers sought to expand the understanding of the PAI relationship between treatment predictors and interpersonal characteristics among sexual offenders. Results demonstrated that the treatment rejection scale (RXR) was positively associated with dominance and warmth, although the treatment process index scale (TPI) was negatively associated with warmth (Parker et al., 2020). It was further reported RXR and TPI had an inverse relationship in this sample indicating motivation for treatment may have a negative relationship with the treatment process (Parker et al., 2020). In other words, an individual may be highly motivated to complete treatment yet face obstacles attributed to psychopathology that may limit their ability to participate in the treatment process. Therefore, it has been suggested that the PAI-identified interpersonal characteristics may be beneficial to consider in relation to treatment considerations within an offender population.

Further, when evaluating recidivism rates the occurrence of reoffending after being released from imprisonment in the same sample of sexual offenders, results demonstrated

higher scores on positive impression management (PIM) were predictive of lower scores on the treatment process index (TPI) and higher scores on the treatment rejection scale (RXR) (Parker et al., 2020). An explanation for this finding could be attributed to offenders facing serious consequences scoring higher on positive impression management and underreporting challenges or being apprehensive to treatment.

When considering successful and individualized treatment, the antisocial features scale (ANT), aggression scale (AGG), and the violence potential index (VPI) on the PAI have also demonstrated relevance. Gardner and colleagues (2015) conducted a meta-analysis that included thirty studies of institutional misconduct and recidivism. Results indicated antisocial and aggression scores to be the strongest predictors of all types of misbehavior among individuals while incarcerated. However, it was noted further research is warranted concerning sample characteristics such as population type and offense type that may influence the predictive validity of PAI scales" (p. 524).

However, even if a single PAI scale (e.g., ANT) explained most of variance in determining the risk of reoffending, other PAI scales may still provide useful insights concerning the psychological characteristics of offenders that could be helpful for risk management purposes (Gardner et al., 2015). For example Gardner and colleagues (2014) explain, "although two individuals might be at roughly equivalent risk for engaging in some type of aggressive act in the future, efforts to mitigate this risk would presumably be very different for one offender who presents as interpersonally dominant (high dominance scale score), verbally aggressive (high aggression score), and resistant to treatment (high treatment rejection score) compared to another offender who presents as socially isolated (high nonsupport score), potentially traumatized (high anxiety-related

disorders score), and prone to substance abuse (high drug and alcohol scores) and suicidal thoughts (high suicidal ideation score) (p.542)."

PAI profiles collected from routine health screenings and prior research from male prison inmates in multiple state prisons have shown a relationship between externalizing behavior, such as impulsivity and substance abuse, and low warmth and high dominance. The data also suggested impulsive, aggressive, and self-harm behavior was associated with a generally cold (low warmth) interpersonal style (Edens, 2009). Specifically, low warmth and high dominance were associated with antisocial and paranoid symptoms. Results were consistent with previous research on nonoffender populations indicating individuals with a low need for affiliation, such as those with antisocial or paranoid features do not require warm interpersonal relationships and lack a drive to belong (Edens, 2009). This suggests a more dominant and cold interpersonal style is associated with aggressive behavior and misconduct as measured by the PAI.

The PAI's utility in relation to treatment adherence has produced inconsistent findings in previous studies. Specifically, the treatment rejection scale has not produced generalizable results within an offender population due to factors such as violent versus nonviolent offenses and type of evaluation (competency versus sanity) that were not considered; offenders in previous studies were not classified based on offense type, rather they were grouped based on treatment type (e.g., addiction treatment); (Ruiz et al., 2013). However, the risk-need-responsiveness (RNR) model proposed by Andrew and Bonta (2015) has gained wide recognition for directing offender assessment and treatment across many of the aforementioned variables. Embedded in this model are three core principles: 1) the risk-based principle suggests that criminal behavior can be reliably

predicted and that treatment should target those at greater risk; 2) The need principle emphasizes the importance of characteristics, traits, or issues that directly relate to an individual's risk of reoffending, such as family instability or substance abuse, in the design and administration; and 3) the responsivity principle specifies how the treatment should be delivered (Andrew & Bonta, 2015). For instance, the responsivity principle focuses on the offender's cognitive capabilities to learn from an intervention; treatment is tailored to the offender's motivation to change and learning style through a cognitive-behavioral approach.

Consisting of eight central risk/need factors, the model has shown empirical and conceptual correlates to recidivism. The PAI can assess several of the eight identified factors within the RNR model. For example, the antisocial features scale (ANT) includes three subscales that correspond with the antisocial personality pattern outlined in the RNR model. The responsiveness element of the RNR model assesses features related to interest in treatment and compliance with providers (Andrew & Bonta, 2015). As previously described, the PAI could also prove useful for predicting treatment responsiveness. Individual characteristics such as treatment motivation and interpersonal style are also considered to be crucial while predicting criminal recidivism. (Andrew & Bonta, 2015).

Yet in a study evaluating predictive validity of the PAI using the RNR model, for identifying treatment motivation and certain interpersonal styles in an offender population, results were unremarkable. The PAI was administered as part of an in-jail substance abuse treatment program, typically within the first two to three weeks of the program (Ruiz et al., 2013). All participants (N = 141) completed an 8–10-week

evidence-based treatment, conducted in small groups (Ruiz et al., 2013). Each offender was enrolled in an addiction treatment program, with most being court-mandated treatment as a condition of their sentence (Ruiz et al., 2013). To address recidivism rates, multiple types of criminal arrest information websites were used; data were collected and used to record the nature of the offense, date, and type of each arrest (e.g., violent, drug); (Ruiz et al., 2013). To note for the purpose of the current study, only 8% of offenders were incarcerated for a violent crime, most offenders had committed drug and property offenses. The central eight risk/need factors and responsivity factors identified by Andrews and Bonta (2015) and operationalized by various PAI scales demonstrated mixed results in predicting criminal reoffending (violent versus general recidivism) among those who successfully completed the program. Namely, antisocial behavior indicators, antisocial personality patterns, and the hostility component of antisocial cognitions were all found to be reliable predictors of violent and general reoffending by the PAI. (Ruiz et al., 2013). Further, hostile dominance, which can be described as a personality trait characterized by hostility and domination in interpersonal, affective, and behavioral difficulties, as well as a proclivity for more severe psychological symptomatology (Podubinski et al., 2014) was reported as predictive of violent reoffending. However, PAI scales that show similarities with components of the RNR model's responsiveness factors, such as the PAI's treatment rejection and dominance scale produced unremarkable results when considering the general re-offense rate (Ruiz et al., 2013).

Nevertheless, a significant limitation of the previously described study is over half of the participants (53%) had been previously involved in an addiction treatment program,

such that the familiarity of treatment procedures could have positively affected treatment adherence as high rates of treatment adherence. It is important to note one explanation for such high treatment compliance could be due to the sample consisting of incarcerated offenders. Offenders that are mandated to complete treatment or are motivated by a reduction in prison sentencing may display lower scores on the RXR scale, indicating higher levels of openness and willingness to change (Ruiz et al., 2013). Future research is warranted to address the generalizability of the PAI's score validity across different contexts (Ruiz et al., 2013).

Finally, when considering the PAI's interpersonal scales, previous research in a sample of 1,412 sexual offenders has demonstrated that dominance as measured by the PAI dominance scale, was a small although statistically significant predictor both violent and sexually violent recidivism (Boccaccini et al., 2010). Further, dominance was the only PAI measure positively associated with sexually violent recidivism. These findings suggest the utility of interpersonal scales when considering long-term treatment programs and recidivism in the forensic setting.

Rationale for the Current Study

The increasing usage of the PAI in legal settings warrants further research on the utility of this measure within an offender population. One value of psychometric measures is their ability to predict extratest variables, which is a form of criterion-related validity. The relative lack of clinical use and published research on the PAI's interpersonal scales dominance and warmth limits their utility in this capacity. Moreover, the mixed results concerning the existing literature on the PAI's interpersonal scales, calls for more rigorous and generalizable data. Parker and colleagues (2020) found a

significant positive relationship between warmth and dominance in a sample of sexual offenders, suggesting a potential difference in interpersonal characteristics among this population. However, the sample was limited to sex offenders and did not examine other factors that may have influenced the findings. For example, seriousness of the crime and violent compared to nonviolent offenses were not evaluated. In the current study, the decision to examine differences between violent and non-violent offense charged defendants was based on the PAI scale descriptions of dominance and warmth. For example, existing literature indicates there are significant differences in violent and nonviolent offenders which may relate to interpersonal characteristics such as dominance and warmth on the PAI-SF. To date, there does not appear to be published literature evaluating the correspondence of the PAI-SF's interpersonal characteristics to the treatment rejection scale in an offender population.

Given the description of scores on dominance that are moderately elevated (i.e., 60*T* or 69*T*) suggesting an individual who is self-assured, confident, and aggressive (Morey, 1991), it was predicted individuals charged with violent offenses would score higher on the dominance scale and lower on the warmth scale as compared to non-violent defendants.

Further, considering the PAI-SF is commonly administered in forensic settings as a part of individual forensic evaluations, the treatment rejection scale may yield useful information. Specifically, lower scores on the treatment rejection scale and higher scores on the interpersonal scale warmth may suggest an offender displays a high motivation for treatment and is engaging and empathic. Previously, the treatment rejection scale has not produced consistent results within an offender population; however, individuals who

scored lower on the PAI-SF treatment rejection scale were predicted to score higher on the interpersonal scale, warmth.

Method

Participants

Participant data were gathered using archival forensic evaluation data for a private practice. PAI data were collected from the files of individuals who were required to complete pretrial evaluations, specifically competency/insanity evaluations. Inclusion criteria consisted of individuals who were aged 18 years or older at the time of the evaluation and who completed a PAI or PAI-SF. The final sample consisted of the profiles of 49 individuals (29 males) whose ages ranged from 18 to 69 years old, with a mean age of 36.34 years (SD = 13.62). Participants were predominantly Caucasian (83.67%), with many having obtained a high school education (48.98%), and further having a history of receiving both inpatient and outpatient mental health services (51.02%). Alleged offense characteristics in the sample consisted of violent offenses (51.02%), with many individuals charged with multiple crimes of varying degrees, such as felony (51.02%) and misdemeanor offenses (67.35%). Additionally, there was a large overlap between individuals who were evaluated for their competency to stand trial (93.88%) and further evaluated to assess their mental health status at the time the offense occurred (85.71%). Refer to table one for full sample demographics.

Materials

The Personality Assessment is a multiscale inventory designed for clinical assessment of adults ages 18 years and older (Morey, 1991). The Personality Assessment Inventory Short-Form (PAI-SF) produces scaled scores for the 20 of the 22 clinical full-scales. It

contains the first 160 PAI items that have demonstrated to have the strongest item-scale correlations for each clinical scale (Sinclair et al., 2009). The PAI and accordingly the PAI-SF implements T-scores, which is a standardized score. For example, T-scores have a mean of 50 and a standard deviation of 10. Therefore, an individual who obtains a T-score of 50 would be considered in the average range and as T-scores deviate above the mean of 50, the more clinical significance they may carry. Further, during the PAI's scale development, items that covaried with major demographic variables such as gender were omitted. Therefore, a defendant's score on the PAI-SF is not influenced by their gender. The PAI-SF was also desirable for the purpose of the current study due to the participants having been evaluated in a forensic setting and many having difficulties completing the full PAI. The PAI and PAI-SF scale agreement correlations have been reported as ranging from 0.85 to 0.95 for the 20 clinical and nonclinical scales, with a median correlation of 0.91, which exceeds most recommendations in evaluating the congruency between forms (Ward et al., 2018). Further, the coefficient alpha for the 20 short-form scales has a reported median of 0.79 (Ward et al., 2018).

The following scale descriptions and short-form characteristics are provided for the currents study's focus on interpersonal characteristics and treatment adherence:

Dominance *(DOM)*

"The Dominance scale provides a measure of one's submissiveness, control, or autonomy in interpersonal relationships" (Morey 2007, p. 47). There are four items that assess dominance on the short-form. The following statement is an example of one of the items: *"I'm a very take "charge type" type of person."* The short-form scale correlation with the full-form scale has been reported as .87 (Morey, 2007).

Warmth *(WRM)*

The Warmth scale provides a measure of one's empathy and engagement versus withdrawal, rejection, and mistrust in interpersonal relationships (Morey 2007, p. 47 2007). The following statement is an example of one of the four items that assess warmth: *"I'm a very sociable person."* The short-form scale correlation with the full-form has been reported as .85 (Morey, 2007).

Treatment Rejection *(RXR)*

"The Treatment Rejection Scale provides a measure of qualities and attitudes associated with the willingness to seek personal changes that are psychological or emotional in nature" (Morey 2007, p. 46). There are four items that assess one's willingness to participate in treatment interventions on the short-form. An example of one of the items is as follows: *"I have some inner struggles that cause problems for me."* The short-form scale correlation with the full-form has been reported as .91 (Morey, 2007). It is important to note that scoring on the Treatment Rejection scale is different from other scales on the PAI. For example, a higher score on RXR indicates an individual is less likely to participate in treatment, suggesting an individual is more likely to reject treatment services.

Procedure

Information was transferred from the archived forensic evaluation files to an excel spreadsheet by the author to prevent the association of data with individual names. Information that was transferred included age, sex, race, educational level, mental health

history, type of forensic evaluation, forensic evaluation outcome, offense classification (i.e., felony versus misdemeanor), and nature of the offense (i.e., violent versus non-violent). Categorical variables were coded and entered onto the spreadsheet. For example, mental health history was coded with 0 being indicative of no history of mental health services (10.20%), 1 being indicative of previously or currently receiving outpatient services (30.61%), 2 being indicative of previously receiving inpatient services (8.16%), and 3 being indicative of receiving both inpatient and outpatient mental health services (51.02%). Crimes that were coded as violent offenses were as follows: murder, nonnegligent manslaughter, forcible rape, robbery, and aggravated assault, based on the Federal Bureau of Investigation's Uniform Crime Reporting Program, that indicates the above offenses involve force or threat of force (*Uniform Crime Reporting Program*, 2011). Out of the 49 profiles included, 24 profiles included violent offenses. Only PAI-SF's were included; any full PAI profiles were re-scored as a short-form using computer-based scoring. Given the nature of the sample, it was anticipated that some profiles may yield elevations on the PAI-SF three validity scales (NIM, PIM, INC). However, only nine profiles exhibited elevations on one or more of the three validity scales. Analyses were conducted including and omitting these profiles, yet as the two sets of analyses yielded similar results, the total sample was used for the reported results that follow.

Table 1

Sample Demographics and Characteristics

Variable	N = 49	%
Sex		
Male	29	59.18
Female	20	40.82
Race		
Caucasian	41	83.67
African A.	7	14.29
Two or More	1	2.04
Mental Health History		
None	5	10.20
Outpatient	15	30.61
Inpatient	4	8.16
Both	25	51.02
Evaluation[a]		
Competency	46	93.88
Sanity	42	85.71
Offense Type[b]		
Violent	24	48.98
Nonviolent	32	65.31

Note. Evaluation[a] and Offense Type[b] are not mutually exclusive variables. Competency and Sanity evaluations may overlap due to the psychological assessment referral. Offense type may overlap as some individuals were charged with violent and nonviolent crimes.

Results

It was hypothesized that defendants charged with violent offenses would score higher on the dominance scale and lower on the warmth scale as compared to defendants charged with non-violent offenses. Two independent T-test analyses were conducted to determine the mean difference between violent-offense-charged and nonviolent-offense-charged defendants on the warmth and dominance scales. Results indicated that defendants who allegedly committed violent offenses (N = 24, M = 45.20, SD = 11.01) versus nonviolent offenses (M = 43.96, SD = 11.54) did not significantly differ on the PAI-SF dominance scale scores (t (47) = -0.39, p > .05). Results further indicated that defendants charged with violent offenses (M = 38.13; SD = 12.73) versus nonviolent offenses (M = 41.48, SD = 13.85) did not produce significantly different scores on the PAI-SF warmth scale (t (47) = 0.88, p = .38; refer to table two).

It was further hypothesized that individuals who scored lower on the PAI-SF's treatment rejection (RXR) scale would score higher on the interpersonal scale warmth (WRM). A Pearson's correlation coefficient analysis was conducted to determine the relationship between the treatment rejection scale (M = 40.84, SD = 10.94) and the interpersonal scale, warmth (M = 39.84, SD = 13.28). In contrast to the hypothesized relationship, results of the analysis determined there was a significant positive correlation between the treatment rejection and warmth scales (r = 0.29, p = .04).

Table 2

Means and Standard Deviations among violent-offense-charged and nonviolent-offense-charged groups on the Dominance (DOM) and Warmth (WRM) scales

	Violent-offense-charged *n* = 24				Nonviolent-offense-charged *n* = 25			
Variables	*M*	*SD*	Min	Max	*M*	*SD*	Min	Max
Dominance (DOM)	45.20	11.01	25	66	43.20	11.54	22	70
Warmth (WRM)	38.13	12.73	19	62	41.48	13.85	14	66

Means and Standard Deviations based on T-scores for scales (*M* = 50, *SD* = 10).

Discussion

The PAI is often used as part of a forensic evaluation, specifically to detect indicators of mental impairment that may be relevant to competency and sanity evaluations in criminal cases. In such settings, a short-form may be beneficial to implement to due to client fatigue and/or cognitive impairment, as well as the reduced time it takes to administer the short form as compared to the full-form. The PAI and PAI-SF scale agreement correlations have been reported as ranging from 0.85 to 0.95 for the 20 clinical and nonclinical scales, with a median correlation of 0.91 (Ward et al., 2018). Therefore, the PAI-SF has been considered a valid substitute when the full-form may be strenuous for a client to complete due to cognitive impairment or other factors. Given this, it is important to consider the validity, in this case the relationship with extra-test variables, of the interpersonal scales dominance and warmth, which are typically ignored during the interpretation of the PAI. The present study contributed to the small body of existing research concerning the utility of the interpersonal scales (DOM and WRM) by examining the difference in scores between violent-offense-charged versus nonviolent-offense-charged defendants. The scope of the present study also considered the correlation between the treatment rejection scale (RXR) and the warmth scale (WRM).

It was hypothesized that defendants charged with violent offenses would score higher on the dominance scale and lower on the warmth scale as compared to defendants charged with non-violent offenses. However, the results of the two independent t-tests were unremarkable. For example, the lack of significant differences between violent-offense-charged and nonviolent-offense-charged defendants on the PAI-SF interpersonal

scale dominance (DOM) suggests items may not predict conduct involving use or threat of force in a forensic sample. Previous research conducted by Eden and Colleagues (2009) suggests that aggressive behavior is associated with a more dominant and cold interpersonal style as measured by the PAI, which is not supported by the current study's findings. One reason may be due to the utilization of pre-trial evaluations in the current sample, meaning defendants were merely charged with a crime, not convicted. It is possible that defendants charged with violent crimes were found not guilty.

While considering the non-significant differences between violent-offense-charged and nonviolent-offense-charged defendants on the interpersonal scale warmth (WRM), it is possible the items on this scale display poor criterion validity. For example, as previously described the warmth scale measures one's empathy and social engagement (Morey, 2007). It was hypothesized nonviolent-offense-charged defendants would score higher on the warmth scale as high scores suggest one displays characteristics associated with empathy and social engagement. However, as previously discussed, Parker and colleagues (2020) found a significant positive relationship between warmth and dominance in a sample of sexual offenders, suggesting sexual offenders may display both interpersonal characteristics. Therefore, it is possible that violent-offense-charged and nonviolent-offense-charged defendants display both characteristics as well. Once again, the non-significant differences between violent-offense-charged and nonviolent-offense charged defendants on the PAI-SF's warmth scale may be due to the use of pre-trial evaluations and the unknown outcome of defendants' cases.

Results from the second hypothesis suggests the interpersonal characteristic warmth (WRM) is positively correlated with the treatment rejection scale (RXR), which

is the opposite relationship to what was predicted. For example, the interpersonal scale warmth and the treatment rejection scale were positively correlated which suggests the more open and empathetic one presented themself (WRM) the less likely they were to endorse willingness to seek treatment (RXR).

In the current study, defendants charged with violent and nonviolent offenses obtained a mean warmth score in the range that is considered moderately low. Morey (2007) described *T* scores in the range of 35*T* to 44*T* (moderately low) as indicative of an individual who is rather distant in personal relationships. Individuals who score in this range may also be viewed by others as unsympathetic or stern (Morey, 2007). However, these individuals view themselves as independent and place a lower value on the opinion of others. The mean treatment rejection (RXR) score for defendants charged with violent and nonviolent offenses was in what is considered the average range. "Individuals with average scores on RXR reflect a person who acknowledges the need to make some changes, has a positive attitude towards change, the possibility of personal change, and accepts the importance of personal responsibility" (Morey, 2007 p. 46). Given these interpretations it is possible the analysis yielded a significant positive correlation as opposed to a negative correlation due to individuals who place a lower value on the opinions of others, may have a positive attitude toward change (Morey, 2007). Also, while considering these interpretations, another possibility may be that individuals who score in these ranges feel they can utilize "self-help" compared to seeking professional services as they acknowledge their need for change yet, consider themselves to be independent.

As mentioned previously, Parker and Colleagues (2020) found a similar significant positive correlation between warmth and the treatment rejection scale in a sample of men charged with sexual offenses. Further, the *Personality Assessment Inventory Professional Manual* (Morey, 2007) describes that the interpersonal scale warmth and the treatment rejection scale show a positive correlation, which is reported as $r = .27$ in the clinical sample and $r = .09$ in the census-match normative sample, which suggests that the forensic sample performed in a way that is similar to these other groups.

Limitations of the present study include the small sample size as smaller effect sizes may be harder to detect. Further, another limitation of the current study is the predictive validity of some scales of the PAI-SF as scale descriptions for warmth and dominance may overlap as T score interpretations include both attributes of warmth and dominance depending on the evaluation. Lastly, the current study used archival data, therefore criminal justice proceeding outcomes for the violent-charged-offense defendants and nonviolent-charged-offense defendants are unknown. It is possible individuals who were charged with violent offenses were found not guilty and vice versa.

In clinical practice, the interpretation of scores relies on previous research to form conclusions concerning one's performance on a measure such as the PAI-SF and further make predictions about the respondent's clinical and personality characteristics. Therefore, future research should consider using a larger sample size in effort to produce generalizable results. Specifically, further research conducted in special populations, such as forensic populations may aid clinical professionals in interpreting scores on the interpersonal scales. Unfortunately, based on the insignificant findings from the first hypothesis and the significant positive correlation from the second hypothesis, the results

of the current study do not offer evidence to aid in the interpretation of the interpersonal characteristics scales in forensic practice.

Therefore, the question remains as to whether there is utility within the PAI's interpersonal scales. As evidenced by the results from the first hypothesis, which suggests that there are not interpersonal differences between those who were charged with violent versus nonviolent offenses, despite the interpersonal scale descriptions and previous research indicating differences between violent and nonviolent offenders, these scales may not offer useful information in this context. Furthermore, as discussed by Morey (2007) lower scores on the interpersonal scale warmth suggest one may display characteristics that interfere with willingness to participate in treatment. Nevertheless, the interpretation of the warmth and treatment rejection scales together, may not be relevant when determining how an individual's interpersonal characteristics influences their willingness to participate in treatment. Finally, future research in forensic populations should explore other PAI-SF scales that may accurately predict conduct involving use or threat of force and also the influence of one's personality characteristics when considering treatment recommendations.

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