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## Personality pathology and structure among prisoners based on Kernberg's model

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### Abstract

This study examined the prevalence of personality styles and disorders (PSDs) and their association with dimensions of personality organization, based on Kernberg's model, among 97 male prisoners in Zahedan, Iran. The most prevalent PSD was antisocial personality disorder (25.8%), followed by schizoid, narcissistic, schizotypal, and negativistic (passive-aggressive) types, while depressive personality disorder was the least common (10.3%). Pearson correlation and regression analyses revealed that certain PSDs, specifically passive-aggressive, dependent, borderline, and depressive types, were significantly correlated with the subdomains of personality organization, including reality testing, primitive defenses, and identity diffusion. Notably, depressive personality disorder was a significant predictor for disturbances in reality testing and primitive defenses, while dependent and depressive types predicted greater identity diffusion. Antisocial, paranoid, schizoid, avoidant, obsessive-compulsive, schizotypal, rhapsodic, narcissistic, histrionic, and altruistic PSDs showed no significant associations with personality organization dimensions. These findings highlight both the high prevalence and the heterogeneity of PSDs among inmates and demonstrate that specific PSDs are related to structural aspects of personality organization, underscoring the importance of dimensional assessment for clinical intervention and rehabilitation planning in correctional settings.

**Key words:** personality disorders, prisoners, personality assessment.

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### Introduction

Personality disorders (PDs) are enduring patterns of inner experience and behavior that deviate markedly from cultural expectations, are pervasive and inflexible, and typically begin in adolescence or early adulthood, leading to distress or impairment.<sup>1</sup> In forensic and correctional settings, the prevalence and clinical significance of PDs have attracted significant attention due to their impact on criminal behavior, recidivism, and rehabilitation outcomes.<sup>2</sup> Prisons are environments marked by confinement and deprivation of personal freedoms, where psychological and social stressors can reveal or exacerbate underlying personality pathology, making the study of PDs among inmates particularly relevant.<sup>3</sup>

In Iran, several studies have investigated the prevalence and typology of PDs among prisoners, with findings indicating high rates of borderline, paranoid, schizoid, schizotypal, and narcissistic PDs.<sup>4-7</sup> The relationship between personality pathology and criminal behavior is complex and likely bidirectional; certain PDs may predispose individuals to criminal activity, while imprisonment can also potentiate or reveal latent personality dysfunction.<sup>5,8</sup> Individuals with PDs are at higher risk for criminal behavior and often present challenges for psychiatric intervention due to poor insight, resistance to treatment, and maladaptive interpersonal patterns.<sup>9-12</sup>

Personality refers to relatively stable patterns of thoughts, feelings, motivations, values, self-concept, and emotional expression, distinguishing individuals from one another.<sup>13,14</sup> The American Psychiatric Association defines personality as the unique adaptations each person develops for living, encompassing interests, motivations, values, self-perception, abilities, and affective patterns.<sup>15</sup> PDs are diagnosed when these traits are longstanding and maladaptive, not better explained by another mental disorder, and individuals with PDs often have limited awareness of their condition.<sup>16</sup> The Diagnostic and Statistical Manual of Mental Disorders categorizes PDs into three clusters: Cluster A (paranoid, schizoid, and schizotypal), Cluster B (antisocial, borderline, histrionic, and narcissistic), and Cluster C (avoidant, dependent, and obsessive-compulsive).<sup>17</sup> The prevalence of PDs is notably high in correctional settings; for example, studies in multiple countries have found that PDs account for approximately 21% of psychiatric disorders among inmates.<sup>5</sup> Iranian studies report high rates of antisocial, histrionic, borderline, narcissistic, schizoid, schizotypal, avoidant, and dependent PDs in prison populations.<sup>18</sup>

A widely used theoretical framework for understanding personality organization and pathology in these settings is Otto Kernberg's model. Kernberg's model conceptualizes personality as a dynamic structure of internalized object relations, with three levels: neurotic, borderline, and psychotic. These levels are distinguished by the

integrity of reality testing, degree of identity integration, and the nature of predominant defense mechanisms.<sup>19</sup> The borderline level is characterized by affective instability, impulsivity, disturbed relationships, and primitive defenses such as splitting. These personality organizations affect self-regulation, impulse control, moral reasoning, and adaptation to stress.<sup>20,21</sup> Recent research, including studies in Iran and similar contexts, continues to show high rates of personality pathology and comorbid disorders among prisoners.<sup>4,18,22</sup> For example, a study of 343 prisoners in Iran reported Cluster A, B, and C PD prevalence at 9.9%, 28.9%, and 7.9%, respectively.<sup>4</sup> Among male inmates, antisocial PD is most common, followed by schizoid, dependent, obsessive-compulsive, histrionic, and paranoid PDs.<sup>22</sup> International meta-analyses also highlight the predominance of antisocial and borderline PDs, especially among women.<sup>23</sup> Recent empirical findings from similar correctional environments further support these trends and underscore the need for updated, context-specific research.

The interaction between personality organization, particularly as conceptualized by Kernberg, and the manifestation of specific PDs in prison populations is a critical area for clinical and criminological research. Deficits in personality organization, such as impaired reality testing and fragmented identity, are associated with impulsivity, aggression, and risk-taking behavior.<sup>19</sup> Given the significant impact of PDs on mental health and rehabilitation in prisoners, it is necessary to clarify both the prevalence and structural organization of personality in this context. Therefore, the present study aims to examine the prevalence of PDs and their relationship with personality organization, as defined by Kernberg's model, among male prisoners in Zahedan Prison. By employing structured diagnostic tools and recent theoretical models, this study seeks to elucidate the interplay between personality pathology and criminality, providing guidance for clinical intervention and policy in correctional settings.

## Materials and Methods

### Study design and participants

This study employed a descriptive-correlational design to examine the prevalence of personality styles and disorders (PSDs) and their association with personality organization according to Kernberg's theory among male inmates at Zahedan Prison. The study population comprised all incarcerated males at the Zahedan correctional facility. The sample size was determined using G\*Power 3.1, with the following assumptions explicitly specified: a desired statistical power of 80%, an  $\alpha$ -level of 0.05, a large effect size ( $f^2$ ) of 0.22, and 14 predictor variables. These parameters were chosen based on recommendations for sufficient power in multiple regression analyses and to detect a large effect size, thereby ensuring the robustness of the findings.<sup>23,24</sup> Inclusion criteria for participation were: i) approval from the General Directorate of Prisons of Sistan and Baluchistan Province, and ii) obtaining informed consent from all participating inmates. Exclusion criteria included: i) lack of informed consent from inmates, and ii) non-approval from the General Directorate of Prisons. To minimize potential biases, several procedures were implemented. All participants were assessed for literacy levels prior to enrollment, and for those with lower literacy, the questionnaires were administered in an interview format by trained research staff to ensure comprehension. To address issues of participant motivation, the study objectives were clearly explained, and participants were assured of con-

fidentiality and the voluntary nature of their involvement. Questionnaire administration took place under the supervision of research team members, who were present to provide clarification and prevent discussion among participants, thereby minimizing response bias.

### Instruments

#### Demographic Information Form

A demographic questionnaire was administered to collect data on participants' age, marital status, educational attainment, psychiatric history (individual and familial), history of psychiatric consultations, status as a child of divorced parents, type of crime (categorized as homicide, disputes and assaults, theft, illicit relationships, drug-related offenses, and other felonies), and individual consent for participation.

#### Personality Style and Disorder Inventory

PSDs were assessed using the Personality Style and Disorder Inventory designed by Kuhl and Kazén,<sup>1</sup> which was adapted and validated for use in Iran by Sharifi *et al.*<sup>25</sup> The adapted version consists of 51 items covering 14 PSDs: antisocial, paranoid, schizoid, avoidant, obsessive-compulsive, schizotypal, rhapsodic, narcissistic, negativistic (passive-aggressive), dependent, borderline, histrionic, depressive, and altruistic. Responses are rated on a Likert scale ranging from "not at all" to "completely". Subscale scores are computed by summing the relevant item responses, with total scores ranging from 0 to 159; higher scores indicate greater severity of PD traits. The Cronbach's  $\alpha$  for the Persian version exceeded 0.60 for all subscales, with a composite reliability of 0.89. Content validity ratio and content validity index were reported as over 64% and 89%, respectively, indicating satisfactory psychometric properties.<sup>25</sup> In the present study, Cronbach's  $\alpha$  for the various subscales ranged from 0.73 to 0.85.

#### The Inventory of Personality Organization

Personality organization was measured using the Inventory of Personality Organization, which comprises 37 items rated on a five-point Likert scale. This instrument evaluates three core dimensions: reality testing, primitive defenses, and identity diffusion. Subscale scores were obtained by summing the relevant items, and the total score ranges from 37 to 185, where higher scores reflect greater disturbance in personality organization. The reliability and validity of the Persian version were confirmed by Mohammadi and Albehebahani, with Cronbach's  $\alpha$ s of 0.90 for the total scale, and 0.82, 0.68, and 0.91 for the subscales, respectively.<sup>26</sup> In this study, Cronbach's  $\alpha$  was 0.88 for the total scale, and 0.85, 0.77, and 0.90 for the subscales, respectively.

### Procedure

The study protocol was first approved by the academic supervisor and subsequently by the Ethics Committee of Islamic Azad University, Zahedan Branch (Ethics Code: IR.IAU.ZAH.REC.1402.002). Formal approval was then obtained from the General Directorate of Prisons of Sistan and Baluchistan Province. Potential participants were informed about the research objectives, benefits, procedures, and the voluntary nature of participation, and confidentiality of their responses was assured. After providing informed consent, participants completed the study questionnaires under the supervision of trained research assistants.

## Statistical analysis

Data analysis was performed using SPSS version 26 (IBM, Armonk, NY, USA). Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated to summarize demographic characteristics and primary study variables. Inferential analyses included Pearson's correlation coefficients to assess the relationships between PSDs and dimensions of personality organization. Multiple regression analyses were conducted to examine the predictive role of PSDs on the components of personality organization by controlling for psychiatric comorbidity, medication usage, and duration of incarceration. Statistical significance was set at  $p < 0.05$  for all analyses.

## Results

### Demographic and sociological characteristics

The study sample comprised 97 male prisoners with a mean age of 34.89 years (standard deviation=7.87). Regarding marital status, 32% were single, 57.7% married, and 10.3% divorced. Educational attainment varied, with 17.5% holding elementary degrees, 34% with secondary school certificates, 37.1% with high school diploma, 8.2% with bachelor's degrees, and 3.1% with a master's degree or higher. 27.8% of participants had a personal history of psychiatric illness, while 72.2% did not; 15.5% reported a family history of psychiatric illness. Prior psychiatric consultation

was reported by 22.7% of the participants, and 12.4% reported such a history in family members. Only 7.2% of participants were children of divorced parents. The most common criminal charges included murder (14.4%), disputes/assaults/theft (29.9%), affair (8.2%), drug-related offenses (25.8%), and other crimes (21.6%) (Table 1).

### Prevalence of personality styles and disorders

Assessment of PSDs revealed notable prevalence rates within the prison population. The most frequent PSDs were antisocial (25.8%), schizoid (22.7%), narcissistic (21.6%), schizotypal (20.6%), and negativistic (passive-aggressive) (20.6%). Other prevalent PSDs included rhapsodic (19.6%), obsessive-compulsive (18.6%), borderline (16.5%), dependent (14.4%), and avoidant PDs (12.4%). Less common disorders were paranoid (12.4%), histrionic (15.5%), altruistic (14.4%), and depressive PDs (10.3%) (Table 2).

### Correlation of personality styles and disorders with personality organization

Pearson correlation analysis was conducted to examine relationships between PSDs and the three subscales of personality organization according to Kernberg's model: reality testing, primitive defenses, and identity diffusion. Significant positive correlations were found between (i) passive-aggressive PD and all three subscales: reality testing ( $r=0.23$ ,  $p < 0.05$ ), primitive defenses

**Table 1.** Sociodemographic data.

Variables		
Age (years), mean (standard deviation)		34.89 (7.87)
Marital status, n (%)	Single	31 (32)
	Married	56 (57.7)
	Divorced	10 (10.3)
Education level, n (%)	Elementary degrees	17 (17.5)
	Secondary school certificates	33 (34)
	High school diploma	36 (37.1)
	Bachelor's degrees	8 (8.2)
	Master's degree or higher	3 (3.1)
A personal history of psychiatric illness, n (%)	Positive	27 (27.8)
	Negative	70 (72.2)
A family history of psychiatric illness, n (%)	Positive	15 (15.5)
	Negative	82 (84.5)
A personal history of prior psychiatric consultation, n (%)	Positive	22 (22.7)
	Negative	75 (77.3)
A family history of prior psychiatric consultation, n (%)	Positive	12 (12.4)
	Negative	85 (87.6)
Being a child of divorce, n (%)	Yes	7 (7.2)
	No	90 (92.8)
Psychiatric comorbidity, n (%)	Yes	39 (40.2)
	No	58 (59.8)
Medication usage, n (%)	Yes	21 (21.6)
	No	76 (78.4)
Criminal charges, n (%)	Murder	14 (14.4)
	Disputes/assaults/theft	29 (29.9)
	Affair	8 (8.2)
	Drug-related offenses	25 (25.8)
	Other crimes	21 (21.6)
Duration of incarceration (years), n (%)	<2	23 (23.7)
	2-6	61 (62.9)
	>6	13 (13.4)

( $r=0.25$ ,  $p<0.05$ ), and identity diffusion ( $r=0.23$ ,  $p<0.05$ ); (ii) dependent PD and all three subscales: reality testing ( $r=0.23$ ,  $p<0.05$ ), primitive defenses ( $r=0.28$ ,  $p<0.05$ ), and especially identity diffusion ( $r=0.36$ ,  $p<0.001$ ); (iii) borderline PD showed a sig-

nificant positive correlation with identity diffusion ( $r=0.23$ ,  $p<0.05$ ); and (iv) depressive PD demonstrated significant correlations with reality testing ( $r=0.33$ ,  $p<0.01$ ), primitive defenses ( $r=0.35$ ,  $p<0.001$ ), and identity diffusion ( $r=0.35$ ,  $p<0.001$ ). No significant correlations were found between PSDs (such as antisocial, paranoid, schizoid, avoidant, obsessive-compulsive, schizotypal, rhapsodic, narcissistic, histrionic, and altruistic) and the subscales of personality organization (Table 3).

**Table 2.** Prevalence of personality styles and disorders.

Personality styles and disorders	n (%)
Antisocial	25 (25.8)
Paranoid	12 (12.4)
Schizoid	22 (22.7)
Avoidant	12 (12.4)
Obsessive-compulsive	18 (18.6)
Schizotypal	20 (20.6)
Rhapsodic	19 (19.6)
Narcissistic	21 (21.6)
Negativistic (passive-aggressive)	20 (20.6)
Dependent	14 (14.4)
Borderline	16 (16.5)
Histrionic	15 (15.5)
Depressive	10 (10.3)
Altruistic	14 (14.4)

### Regression analysis

Multiple regression analyses were performed to further elucidate the predictive value of PSDs on the components of personality organization. For reality testing, depressive PD [ $B=1.68$ , standard error (SE)=0.60,  $\beta=0.33$ ,  $p<0.01$ ] was a significant predictor, with the model explaining 17% of the variance ( $R^2=0.17$ , adjusted  $R^2=0.14$ ;  $F(3,93)=6.44$ ,  $p<0.01$ ). For primitive defenses, depressive ( $B=0.69$ ,  $SE=0.30$ ,  $\beta=0.27$ ,  $p<0.05$ ) was also only predictor, accounting for 13% of the variance ( $R^2=0.13$ , adjusted  $R^2=0.11$ ;  $F(3,93)=5.02$ ,  $p<0.01$ ). For identity diffusion, dependent PD ( $B=0.54$ ,  $SE=0.26$ ,  $\beta=0.25$ ,  $p<0.05$ ) and depressive PD ( $B=0.55$ ,  $SE=0.26$ ,  $\beta=0.25$ ,  $p<0.05$ ) were significant predictors; borderline PD was also included but was not significant. The model explained 20% of the variance ( $R^2=0.20$ , adjusted  $R^2=0.17$ ;  $F(4,92)=5.95$ ,  $p<0.001$ ) (Table 4).

**Table 3.** Correlations between personality styles and disorders and personality organization subscales.

Personality styles and disorders	Reality testing	Primitive defenses	Identity diffusion
Antisocial	-0.14	-0.00	-0.00
Paranoid	-0.05	0.05	-0.02
Schizoid	-0.05	0.05	0.01
Avoidant	0.14	0.16	0.16
Obsessive-compulsive	0.11	0.11	0.10
Schizotypal	0.10	0.19	0.05
Rhapsodic	0.08	0.05	0.07
Narcissistic	0.03	0.08	0.02
Negativistic (passive-aggressive)	0.23*	0.25*	0.23*
Dependent	0.23*	0.28*	0.36***
Borderline	0.17	0.18	0.23*
Histrionic	-0.16	-0.01	0.04
Depressive	0.33**	0.35***	0.35***
Altruistic	0.17	0.15	0.18

\* $p<0.05$ ; \*\* $p<0.01$ ; \*\*\* $p<0.001$ .

**Table 4.** Summary of regression analysis of personality styles and disorders and personality organization subscales after controlling for psychiatric comorbidity, medication usage, and duration of incarceration.

PSDs	Reality testing		Primitive defenses		Identity diffusion	
	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$
Negativistic (passive-aggressive)	0.41 (0.57)	0.08	0.14 (0.29)	0.06	0.05 (0.26)	0.02
Dependent	0.23 (0.63)	0.04	0.22 (0.32)	0.09	0.54 (0.26)*	0.25
Borderline	-	-	-	-	-0.06 (0.29)	-0.02
Depressive	1.68 (0.60)**	0.33	0.69 (0.30)*	0.27	0.55 (0.26)*	0.25
$R^2$	0.17		0.13		0.20	
Adj. $R^2$	0.14		0.11		0.17	
F (df1, df2)	F (3, 96) = 6.44**		F (3, 93) = 5.02**		F (4, 92) = 5.95***	

B, unstandardized coefficients;  $\beta$ , standardized coefficients; df, degrees of freedom; SE, standard error; p, p-value; PSDs, personality styles and disorders;  $R^2$ , R square; Adj.  $R^2$ , adjusted R square. \* $p<0.05$ ; \*\* $p<0.01$ ; \*\*\* $p<0.001$ .

## Discussion

The present study investigated the prevalence of PSDs and their relationship with personality organization according to Kernberg's theory among male prisoners in Zahedan Prison. The findings reveal a statistically significant relationship between PSDs and levels of personality organization, supporting the conceptual framework proposed by Kernberg and aligning with previous empirical findings.<sup>1,2,19</sup> However, due to the cross-sectional and correlational design of the study, these associations should be interpreted with caution and do not imply causality or directionality.

### Interpretation of findings with respect to Kernberg's personality organization

Kernberg's model distinguishes between different levels of personality organization – neurotic, borderline (with high, middle, and low sublevels), and psychotic – characterized by six key domains: identity, defense mechanisms, object relations, moral functioning, aggression, and reality testing.<sup>2,19</sup> Our results indicate that higher scores on subscales of personality organization, such as reality testing, psychological defenses, and identity integration, are associated with lower prevalence of PSDs among the male prisoners. It is important to note, however, that not all PSDs demonstrated significant associations with personality organization in the present data; several types showed no significant relationship, which limits the generalizability of this pattern. PSDs such as passive-aggressive, dependent, borderline, and depressive types demonstrated a direct and positive association with higher levels of personality organization. Nevertheless, these associations should be interpreted as correlations rather than evidence of an underlying mechanism or directional relationship. These findings are congruent with earlier research by Kernberg,<sup>19</sup> and Lenzenweger and Clarkin,<sup>27</sup> who highlighted the role of personality organization in psychopathology.

### Differentiation of personality styles and disorders according to personality organization levels

By mapping specific PSDs onto Kernberg's levels, the study provides clinically relevant insights: i) passive-aggressive PD – located at the neurotic level, characterized by integrated identity, mature object relations, stable reality testing, and reliance on repression as the primary defense mechanism; ii) dependent PD – positioned at the higher borderline organization level, showing mild to moderate identity pathology, some instability in self and others, variable moral functioning, and defenses involving repression and splitting; iii) borderline PD – aligned with the middle level of borderline organization, marked by severe identity pathology, polarized and unstable object relations, primitive defenses (splitting), and vulnerability to transient lapses in reality testing under stress; iv) depressive PD – also placed at the neurotic level, with integrated identity and object relations, strong internalized moral functioning, and mature defenses, but with a tendency for self-directed aggression and difficulties in recognizing and fulfilling emotional needs.<sup>19</sup>

### Prevalence of personality styles and disorders

The observed prevalence rates indicate that antisocial PD is the most common among the male prisoner sample, while depressive PD is the least prevalent. This pattern is consistent with the criminological literature, which documents elevated rates of antisocial PD in incarcerated populations.<sup>28</sup> Moreover, the variability in the prevalence of other PSDs supports the heterogeneity of personality pathology in forensic settings.

logical literature, which documents elevated rates of antisocial PD in incarcerated populations.<sup>28</sup> Moreover, the variability in the prevalence of other PSDs supports the heterogeneity of personality pathology in forensic settings.

### Theoretical and clinical implications

These findings underscore the clinical utility of integrating Kernberg's personality organization framework in forensic mental health settings. Assessing personality organization provides a dimensional understanding of personality pathology that moves beyond categorical diagnoses. Such an approach can inform individualized treatment planning, risk assessment, and rehabilitation strategies. For instance, interventions targeting identity integration, enhancement of mature defenses, and reality testing may mitigate the severity of personality pathology, particularly in high-risk offender populations. Furthermore, the nuanced differentiation of PSDs according to levels of personality organization can guide the allocation of psychological resources and inform the development of targeted psychotherapeutic interventions, such as transference-focused psychotherapy and other evidence-based modalities adapted for forensic populations.<sup>19,29,30</sup> However, given the correlational nature of the data, further research is needed before drawing firm conclusions about how these interventions may impact PSDs in this population.

### Limitations and future research directions

Several limitations should be acknowledged. First, the study was limited to male prisoners in Zahedan Prison, and its findings may not generalize to female inmates or prisoners in other regions. The use of convenience sampling further limits external validity. Second, reliance on self-report questionnaires introduces the potential for response biases, such as social desirability and underreporting of pathological symptoms. This is particularly relevant in forensic populations, where denial and impression management may be common, potentially affecting the accuracy of the data. Third, the cross-sectional nature of the study precludes causal inferences regarding the relationship between PSDs and personality organization. In addition, the single-site and all-male sample restrict the generalizability of the findings, and the potential impact of cultural factors on both the expression of PSDs and the validity of assessment tools warrants further consideration. Future research should involve larger, more representative samples from multiple correctional facilities, including female inmates, to enhance the generalizability of findings. Longitudinal designs are also warranted to explore the temporal dynamics between personality organization and the development or remission of PSDs. It is also recommended that future studies utilize structured clinical interviews or mixed-methods approaches, and incorporate collateral informant reports, to mitigate biases inherent in self-report data and to provide a more comprehensive assessment of personality pathology.

## Conclusions

This study provides a comprehensive examination of the prevalence and typology of PSDs among male prisoners in Zahedan Prison, with a particular focus on their relationship to personality organization as conceptualized by Kernberg's theoretical framework. The findings indicate a high prevalence of specific PSDs – most notably antisocial, schizoid, narcissistic,

schizotypal, and negativistic (passive-aggressive) types – within the incarcerated population. Significant positive correlations were observed between certain PSDs (e.g., passive-aggressive, dependent, borderline, and depressive) and disturbances in key dimensions of personality organization, such as reality testing, primitive defenses, and identity diffusion. Regression analyses further identified depressive and dependent PDs as significant predictors of impaired personality organization. The results underscore the clinical and criminological importance of assessing both categorical and dimensional aspects of personality pathology in correctional settings. Integrating Kernberg's model offers enhanced conceptual clarity and practical utility for individualized diagnosis, treatment planning, and rehabilitation of offenders with complex personality pathology. Furthermore, the differentiation of PSDs according to levels of personality organization offers valuable insights for tailoring psychotherapeutic interventions and allocating forensic mental health resources more effectively. Notwithstanding its contributions, the present study is limited by its cross-sectional design, reliance on self-report measures, and focus on a single male prison population. Future research should strive for broader, more diverse samples, employ longitudinal methodologies, and incorporate multi-informant assessment approaches to further elucidate the interplay between personality pathology and organizational structure in forensic settings. Overall, these findings highlight the necessity of nuanced, theory-driven approaches to the assessment and management of PDs among incarcerated individuals, with potential benefits for both individual rehabilitation and public safety.

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