RESEARCH ARTICLE

Article No: 57

The Role of Metacognitive Processes in Personality Traits: A Dimensional Perspective Based on the DSM-5 Alternative Model

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ABSTRACT

Introduction: This study examined the relationships between maladaptive personality traits, as conceptualized within the DSM-5 Alternative Model for Personality Disorders (AMPD), and metacognitive processes in a non-clinical adult sample.

Methods: The sample consisted of 275 adults aged 18–65 years recruited from non-psychiatric outpatient clinics. Participants completed the Personality Inventory for DSM-5, the Metacognitions Questionnaire-30, the Metacognitive Strategies subscale of the Cognitive Attentional Syndrome-1 questionnaire, the Patient Health Questionnaire-9, and the Generalized Anxiety Disorder-7. Pearson correlation analyses were conducted to examine associations between variables, and hierarchical multiple regression analyses were used to evaluate the relationships between metacognitive factors and personality traits while accounting for depression and anxiety symptoms.

Results: Correlation analyses revealed significant associations between maladaptive personality traits and metacognitive variables, with distinct

patterns observed across different personality dimensions. Regression analyses showed that several metacognitive factors remained significantly related to specific personality traits after controlling for depression and anxiety. In particular, the Need to Control Thoughts was associated with Antagonism, Disinhibition, and Psychoticism, whereas beliefs regarding the uncontrollability and danger of worry and metacognitive coping strategies were related to Negative Affectivity. Metacognitive factors showed limited associations with Detachment.

Conclusion: The findings suggest that metacognitive processes are meaningfully related to maladaptive personality traits and that these associations extend beyond general emotional distress. Metacognitive characteristics, particularly those involving attempts to regulate and control internal experiences, may represent relevant processes for understanding personality-related difficulties.

Keywords: DSM-5 alternative model, metacognition, metacognitive strategies, personality traits

INTRODUCTION

Metacognitive (MC) theory provides a well-established framework for understanding psychopathology by emphasizing individuals' beliefs about their own thinking and the ways in which these beliefs guide self-regulation (1). A substantial body of research has demonstrated the clinical utility of this approach, particularly in the treatment of mood and anxiety disorders, where metacognitive processes have been shown to play a central role in maintaining maladaptive patterns of cognition and behavior (2). Far less is known, however, about how these same processes may shape the development and persistence of personality characteristics. Personality traits are typically conceptualized as relatively stable and change-resistant patterns of belief and behavior, yet the metacognitive mechanisms that may underlie such stability remain poorly understood. Emerging evidence suggests that certain metacognitive tendencies especially those related to the perceived need to control one's thoughts may be associated with impulsivity, interpersonal difficulties, and psychotic-like experiences (3). Nonetheless, studies that examine these associations within a

Highlights

- Theoretical links between metacognition and traits were tested.
- Associations were examined within the DSM-5 dimensional model.
- Specific metacognitive profiles suggest targeted interventions.

dimensional model of personality, while accounting for the confounding effects of mood symptoms, are still notably scarce.

From a metacognitive perspective, beliefs about thinking itself such as the assumption that thoughts are uncontrollable or that worry serves

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a protective function are considered key drivers of emotional and behavioral responding (1). The constellation of coping strategies activated in response to perceived threat, commonly referred to as the Cognitive Attentional Syndrome (CAS), is thought to perpetuate rather than resolve psychological distress. By promoting sustained self-focused attention, repetitive negative thinking, and maladaptive control efforts, these strategies may contribute to both the emergence and the persistence of psychopathology (1).

Parallel efforts to conceptualize personality pathology have increasingly moved toward dimensional models that capture consistent cognitive and behavioral response tendencies across contexts. The DSM-5 Alternative Model for Personality Disorders (AMPD) represents a major step in this direction by framing maladaptive personality features in quantitative, trait-based terms rather than discrete categories (4). By focusing on impairments in personality functioning, the AMPD allows for a more nuanced assessment of severity and heterogeneity in personality pathology. The Personality Inventory for DSM-5, developed within this framework, operationalizes maladaptive personality traits across five broad domains (5).

Negative Affectivity (NA): Reflecting emotional instability and heightened threat sensitivity;

Detachment (DE): Characterized by social withdrawal and reduced capacity for pleasure;

Antagonism (AN): Encompassing manipulativeness, grandiosity, and diminished empathy;

Disinhibition (DI): Marked by impulsivity and poor self-control;

Psychoticism (PS): Involving unusual beliefs, eccentric behavior, and perceptual dysregulation.

Importantly, the AMPD shares with metacognitive theory a fundamentally transdiagnostic orientation, in that both approaches focus on core psychological processes that cut across traditional diagnostic boundaries. This conceptual convergence provides a compelling rationale for examining metacognitive processes within a dimensional model of personality. Preliminary findings support the plausibility of such an integration. For example, neuroticism has consistently been linked to negative metacognitive beliefs (6), and different domains of metacognition have been proposed to show differential associations with specific personality traits (7). Despite these indications, systematic investigations that situate these relationships within the full AMPD framework and statistically control for shared variance related to depression and anxiety remain exceedingly limited.

Against this background, the primary aim of the present study was to examine the associations between metacognitive processes and maladaptive personality traits as defined by the DSM-5 AMPD. Specifically, we hypothesized that metacognitive factors including beliefs about worry, cognitive confidence, perceived need for thought control, and components of the cognitive attentional syndrome would show significant, yet domain-specific, patterns of association with AMPD trait dimensions (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism).

In addition, we expected that metacognitive factors would continue to explain a significant proportion of variance in maladaptive personality traits even after statistically controlling for depressive and anxiety symptoms. Such findings would suggest that metacognitive processes exert a unique and independent influence on dysfunctional personality functioning, beyond the effects of current emotional distress.

METHODS

Study Design
This study employed a cross-sectional design to examine the associations between metacognitive processes and maladaptive personality traits as conceptualized within the DSM-5 Alternative Model for Personality Disorders (AMPD).

Participants and Procedure
The study sample consisted of individuals aged between 18 and 65 years who presented to various outpatient clinics of Tokat Gaziosmanpaşa University Faculty of Medicine Hospital, excluding the Psychiatry Clinic. Inclusion criteria were being between 18 and 65 years of age, having basic literacy skills, and providing voluntary consent to participate in the study. Exclusion criteria included a current or past history of any psychiatric diagnosis or treatment, as well as the use of psychotropic medication (including medications prescribed for non-psychiatric indications such as epilepsy).

Based on these criteria, 40 individuals with a psychiatric diagnosis or treatment history and 5 individuals using psychotropic medication were excluded, resulting in a final sample of 275 participants. The mean age of the sample was 30.09 years (SD=11.88). Of the participants, 175 (64%) were female and 100 (36%) were male. The majority of the sample was single (72%, n=200), and students constituted the largest occupational group (58%, n=160). All participants had completed at least 12 years of formal education (high school level or above).

An a priori power analysis conducted using G*Power 3.1 indicated that, for a multiple regression analysis with a medium effect size ($f^2=0.15$), an alpha level of 0.05, and 80% statistical power, a minimum sample size of 207 participants was required. With a final sample of 275 participants, the achieved statistical power exceeded 97%.

Measures
Personality Inventory for DSM-5 (PID-5): Maladaptive personality traits were assessed using the 220-item Personality Inventory for DSM-5, developed in accordance with the AMPD presented in Section III of the DSM-5 and adapted into Turkish (5,8). The scale assesses five higher-order personality domains: Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. Items are rated on a 4-point Likert scale ranging from 0 to 3, with higher scores indicating greater severity of maladaptive personality traits. Previous studies have reported internal consistency coefficients for the Turkish version ranging from 0.72 to 0.96. In the present study, Cronbach's alpha coefficients for the five domains ranged between 0.72 and 0.86.

Patient Health Questionnaire–9 (PHQ-9): Depressive symptom severity was measured using the Patient Health Questionnaire–9, originally developed by Kroenke and Spitzer (2002) and validated in Turkish by Sari et al. (2016) (9,10). The scale consists of nine self-report items rated on a 4-point Likert scale (0–3), with higher total scores reflecting greater depressive symptom severity. In the current sample, the Cronbach's alpha coefficient was 0.81.

Generalized Anxiety Disorder–7 Scale (GAD-7): Anxiety symptoms were assessed using the 7-item Generalized Anxiety Disorder scale developed by Spitzer et al. (2006) and adapted into Turkish by Konkan et al. (2013) (11,12). Participants rated each item on a 4-point Likert scale (0–3) based on their experiences over the previous two weeks. Higher total scores indicate greater anxiety severity. The Cronbach's alpha coefficient in this study was 0.89.

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Metacognitions Questionnaire–30 (MCQ-30): Metacognitive beliefs were assessed using the Metacognitions Questionnaire–30, developed by Cartwright-Hatton and Wells (2004) and adapted into Turkish by Tosun and Irak (2008) (13,14). The scale comprises five subscales: Positive Beliefs About Worry (PBW), Negative Beliefs About the Uncontrollability and Danger of Worry (NBW), Cognitive Confidence (CC), Need to Control Thoughts (NCT), and Cognitive Self-Consciousness (CSC). Items are rated on a 4-point Likert scale (1–4), with higher scores indicating more pronounced dysfunctional metacognitive beliefs.

In the present study, the term negative metacognitive beliefs specifically refers to the MCQ-30 subscale assessing beliefs about the uncontrollability and danger of worry. The positive and negative metacognitive belief subscales of the CAS-1 were not included in the analyses. Cronbach's alpha coefficients for the MCQ-30 total scale and subscales ranged from 0.76 to 0.88.

Cognitive Attentional Syndrome Scale–1 (CAS-1): Activation of the Cognitive Attentional Syndrome was measured using the CAS-1, developed by Wells (2011) and validated in Turkish by Gündüz et al. (2019) (1,15). The scale assesses three components: Metacognitive Coping Strategies (MCS), Positive Metacognitive Beliefs, and Negative Metacognitive Beliefs, with higher scores indicating greater CAS activation.

In this study, only the Metacognitive Coping Strategies subscale was included in the analyses. This decision was made to reduce conceptual and measurement overlap with the MCQ-30 subscales assessing positive and negative metacognitive beliefs, thereby minimizing the risk of multicollinearity and artificial inflation of shared variance. This approach allowed for a clearer evaluation of the unique contribution of metacognitive coping processes to personality dimensions. The Cronbach's alpha coefficient for the Metacognitive Coping Strategies subscale was 0.77.

Data Analysis
All statistical analyses were conducted using IBM Statistical Package for Social Sciences (SPSS) program version 25. Distributional properties of continuous variables were examined using Shapiro-Wilk tests in conjunction with skewness and kurtosis indices, indicating that

assumptions for parametric analyses were generally met. Associations between variables were examined using Pearson correlation coefficients.

To test the unique predictive role of metacognitive factors on maladaptive personality traits, a series of hierarchical multiple regression analyses was performed. In all models, depression (PHQ-9) and anxiety (GAD-7) scores were entered as control variables in the first step. In the second step, all MCQ-30 subscale scores and the CAS-1 Metacognitive Coping Strategies score were entered simultaneously. Total explained variance (R^2) values were reported for each model.

Multicollinearity was evaluated using variance inflation factor (VIF) values and tolerance coefficients, all of which were within acceptable limits. Independence of residuals was assessed using the Durbin-Watson statistic. All analyses were conducted using a 95% confidence interval, with statistical significance set at $p < 0.05$.

Ethical Considerations
The study was conducted in accordance with the principles of the Declaration of Helsinki and received approval from the Tokat Gaziosmanpaşa University Faculty of Medicine Clinical Research Ethics Committee. All participants were fully informed about the aims and procedures of the study, and written informed consent was obtained prior to participation. Collected data were anonymized, securely encrypted, and accessed exclusively by members of the research team.

RESULTS

Correlation Analyses
Associations among the study variables were examined using Pearson correlation analyses (Table 1). Negative Affectivity was positively and moderately to strongly associated with all personality domains (r=0.63–0.79, $p < 0.01$). Similarly, Detachment, Antagonism, Disinhibition, and Psychoticism were significantly and positively intercorrelated (r=0.47–0.73, $p < 0.01$).

Depressive (PHQ-9) and anxiety (GAD-7) symptoms were significantly associated with all personality domains (r=0.32–0.59, $p < 0.01$). Among metacognitive variables, NBW showed moderate to strong positive correlations with all personality domains (r=0.39–0.63, $p < 0.01$). Need to

Table 1. Pearson correlation coefficients among study measures

N=275	M ± SD	NA	DE	AN	DI	PS	PHQ-9	GAD-7	PBW	NBW	CC	NCT	CSC	MCS
NA	0.96±0.46	1.00	0.71**	0.63**	0.79**	0.69**	0.55**	0.59**	0.39**	0.63**	0.32**	0.56**	0.47**	0.45**
DE	0.85±0.43		1.00	0.47**	0.55**	0.65**	0.60**	0.55**	0.27**	0.45**	0.17**	0.34**	0.33**	0.36**
AN	0.69±0.38			1.00	0.65**	0.69**	0.35**	0.32**	0.33**	0.39**	0.24**	0.40**	0.28**	0.26**
DI	0.86±0.40				1.00	0.73**	0.49**	0.51**	0.32**	0.51**	0.24**	0.49**	0.43**	0.34**
PS	0.46±0.43					1.00	0.44**	0.46**	0.32**	0.48**	0.18**	0.48**	0.32**	0.35**
PHQ-9	0.95±0.63						1.00	0.68**	0.17**	0.42**	0.18**	0.33**	0.32**	0.36**
GAD-7	0.78±0.69							1.00	0.29**	0.55**	0.15*	0.43**	0.45**	0.47**
PBW	1.89±0.67								1.00	0.54**	0.23**	0.41**	0.47**	0.27**
NBW	1.99±0.62									1.00	0.32**	0.70**	0.65**	0.44**
CC	1.95±0.64										1.00	0.39**	0.32**	0.15*
NCT	2.03±0.67											1.00	0.57**	0.39**
CSC	2.18±0.63												1.00	0.31**
MCS	2.96±1.90													1.00

*: p <0.05; **: p <0.01; M: Mean; SD: standard deviation; NA: negative affectivity; DE: detachment; AN: antagonism; DI: disinhibition; PS: psychoticism. GAD-7: generalized anxiety disorder-7; PHQ-9: patient health questionnaire-9. PBW: positive beliefs about worry; NBW: negative beliefs about the uncontrollability and danger of worry; CC: cognitive confidence; CSC: cognitive self-consciousness; NCT: need to control thoughts; MCS: metacognitive coping strategies.

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control thoughts (NCT) and MCS were also significantly and positively correlated with personality domains. Associations involving CSC were comparatively weaker.

Hierarchical Regression Analyses

Negative Affectivity: A hierarchical multiple regression analysis was conducted to predict Negative Affectivity (Table 2). In the first step, depression (PHQ-9) and anxiety (GAD-7) were entered into the model, which was statistically significant (F=88.31, p <0.01) and accounted for 39% of the variance (R²=0.39).

In the second step, metacognitive variables were added, resulting in a significant increase in explained variance (F=40.93, p <0.01; R²=0.55). In the final model, depression, anxiety, NBW, CC, and NCT emerged as significant predictors of Negative Affectivity. Durbin–Watson and VIF values indicated that model assumptions were met.

Detachment: Results of the hierarchical regression analysis predicting Detachment are presented in Table 3. In the first step, depression and anxiety made significant contributions to the model, explaining 40% of the variance (F=92.76, p <0.01). The inclusion of metacognitive variables in the second step preserved overall model significance (F=25.85, p

<0.01) and increased the explained variance to 44%. In the final model, depression and anxiety remained significant predictors, whereas the contribution of metacognitive variables was limited.

Antagonism: Hierarchical regression results for Antagonism are shown in Table 4. In the first step, depression and anxiety were entered into the model, yielding a significant overall effect (F=22.49, p <0.01) and explaining 14% of the variance (R²=0.14). With the addition of metacognitive variables in the second step, the explained variance increased to 26% (F=11.88, p <0.01). In the final model, depression, PBW, and NCT were identified as significant predictors of Antagonism.

Disinhibition: Regression analyses predicting Disinhibition are presented in Table 5. In the first step, depression and anxiety were significant predictors and accounted for 30% of the variance (F=59.42, p <0.01). The inclusion of metacognitive variables in the second step increased the explained variance to 40% (F=22.78, p <0.01). In the final model, depression and NCT emerged as significant predictors of Disinhibition.

Psychoticism: Results of the hierarchical regression analysis for Psychoticism are shown in Table 6. In the first step, depression and anxiety contributed significantly to the model and explained 24% of the variance

Table 2. Results of hierarchical regression analysis predicting negative affectivity

Dependent variable: negative affectivity (N=275)	B	Beta	t	f	R²	ΔR²	Durbin-Watson	VIF
Step 1				88.31**	0.39**		1.76	
PHQ-9	0.189	0.26	4.00**					1.88
GAD-7	0.281	0.42	6.49**					1.88
Step 2				40.93**		0.16**		
PHQ-9	0.157	0.21	3.79**					1.92
GAD-7	0.122	0.18	2.85**					2.45
PBW	0.045	0.07	1.31					1.52
NBW	0.160	0.21	3.02**					2.99
CC	0.068	0.10	2.10*					1.23
NCT	0.110	0.16	2.62**					2.19
CSC	0.002	0.00	0.05					1.93
MCS	0.023	0.09	1.94					1.38

*: p <0.05; **: p <0.01; GAD-7: generalized anxiety disorder–7 scale; PHQ-9: patient health questionnaire-9; PBW: positive beliefs about worry; NBW: negative beliefs about the uncontrollability and danger of worry; CC: cognitive confidence; CSC: cognitive self-consciousness; NCT: need to control thoughts; CAS-1: cognitive attentional syndrome scale-1; MCS: metacognitive coping strategies.

Table 3. Results of hierarchical regression analysis predicting detachment

Dependent variable: detachment (N=275)	B	Beta	t	f	R²	ΔR²	Durbin-Watson	VIF
Step 1				92.76**	0.40**		1.69	
PHQ-9	0.282	0.42	6.57**					1.88
GAD-7	0.165	0.27	4.20**					1.88
Step 2				25.85**		0.04*		
PHQ-9	0.274	0.41	6.42**					1.92
GAD-7	0.096	0.16	2.18*					2.45
PBW	0.050	0.08	1.39					1.52
NBW	0.091	0.13	1.67					2.99
CC	0.008	0.01	0.25					1.23
NCT	-0.008	-0.01	-0.18					2.19
CSC	0.000	0.00	0.01					1.93
MCS	0.013	0.06	1.07					1.38

*: p <0.05; **: p <0.01; GAD-7: generalized anxiety disorder–7 scale; PHQ-9: patient health questionnaire-9; PBW: positive beliefs about worry; NBW: negative beliefs about the uncontrollability and danger of worry; CC: cognitive confidence; CSC: cognitive self-consciousness; NCT: need to control thoughts; CAS-1: cognitive attentional syndrome scale-1; MCS: metacognitive coping strategies.

Table 4. Results of hierarchical regression analysis predicting antagonism

Dependent variable: antagonism N=275	B	Beta	t	f	R²	ΔR²	Durbin–Watson	VIF
Step 1				**22.49****	**0.14****		**1.91**	
PHQ-9	0.156	0.26	3.39**					1.88
GAD-7	0.080	0.15	1.89					1.88
Step 2				**11.88****		**0.12****		
PHQ-9	0.142	0.24	3.26**					1.92
GAD-7	-0.017	-0.03	-0.38					2.45
PBW	0.096	0.17	2.65**					1.52
NBW	0.050	0.08	0.89					2.99
CC	0.039	0.07	1.15					1.23
NCT	0.108	0.19	2.45*					2.19
CSC	-0.025	-0.04	-0.58					1.93
MCS	0.010	0.05	0.85					1.38

*: p <0.05; **: p <0.01; GAD-7: generalized anxiety disorder–7 scale; PHQ-9: patient health questionnaire-9; PBW: positive beliefs about worry; NBW: negative beliefs about the uncontrollability and danger of worry; CC: cognitive confidence; CSC: cognitive self-consciousness; NCT: need to control thoughts; CAS-1: cognitive attentional syndrome scale-1; MCS: metacognitive coping strategies.

Table 5. Results of hierarchical regression analysis predicting disinhibition

Dependent variable: disinhibition N=275	B	Beta	t	f	R²	ΔR²	Durbin–Watson	VIF
Step 1				**59.42****	**0.30****		**1.92**	
PHQ-9	0.168	0.27	3.85**					1.88
GAD-7	0.192	0.33	4.79**					1.88
Step 2				**22.78****		**0.10****		
PHQ-9	0.153	0.24	3.70**					1.92
GAD-7	0.079	0.14	1.85					2.45
PBW	0.028	0.05	0.81					1.52
NBW	0.071	0.11	1.35					2.99
CC	0.015	0.02	0.46					1.23
NCT	0.109	0.18	2.61**					2.19
CSC	0.049	0.08	1.18					1.93
MCS	0.009	0.04	0.78					1.38

*: p <0.05; **: p <0.01; GAD-7: generalized anxiety disorder–7 scale; PHQ-9: patient health questionnaire-9; PBW: positive beliefs about worry; NBW: negative beliefs about the uncontrollability and danger of worry; CC: cognitive confidence; CSC: cognitive self-consciousness; NCT: need to control thoughts; CAS-1: cognitive attentional syndrome scale-1; MCS: metacognitive coping strategies.

Table 6. Results of hierarchical regression analysis predicting psychoticism

Dependent Variable: Psychoticism N=275	B	Beta	t	f	R²	ΔR²	Durbin–Watson	VIF
Step 1				**43.16****	**0.24****		**2.11**	
PHQ-9	0.154	0.23	3.18**					1.88
GAD-7	0.186	0.30	4.18**					1.88
Step 2				**18.85****		**0.12****		
PHQ-9	0.140	0.21	3.08**					1.92
GAD-7	0.072	0.12	1.54					2.45
PBW	0.065	0.10	1.73					1.52
NBW	0.078	0.11	1.34					2.99
CC	-0.015	-0.02	-0.43					1.23
NCT	0.183	0.29	3.97**					2.19
CSC	-0.070	-0.10	-1.52					1.93
MCS	0.015	0.07	1.18					1.38

*: p <0.05; **: p <0.01; GAD-7: generalized anxiety disorder–7 scale; PHQ-9: patient health questionnaire-9; PBW: positive beliefs about worry; NBW: negative beliefs about the uncontrollability and danger of worry; CC: cognitive confidence; CSC: cognitive self-consciousness; NCT: need to control thoughts; CAS-1: cognitive attentional syndrome scale-1; MCS: metacognitive coping strategies.

(F=43.16, p <0.01). The addition of metacognitive variables in the second step increased the explained variance to 36% (F=18.85, p <0.01). In the final model, depression and NCT were identified as significant predictors of Psychoticism.

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DISCUSSION

The findings of the present study indicate that maladaptive personality traits, as conceptualized within the DSM-5 Alternative Model for Personality Disorders (AMPD), are meaningfully and multidimensionally associated with metacognitive processes. Notably, several metacognitive variables continued to predict personality dimensions even after statistically controlling for depressive and anxiety symptoms. This pattern suggests that metacognitive processes are not merely epiphenomena of current emotional distress but may be more directly linked to the structural characteristics of maladaptive personality functioning.

Interrelations Among Personality Dimensions and Theoretical Context

The correlation findings presented in Table 1 provide empirical support for the dimensional nature of the AMPD. The moderate-to-strong positive associations among personality domains (r=0.47–0.79) are consistent with the notion that maladaptive personality features are organized around overlapping and shared psychological processes rather than discrete categorical boundaries (16). In particular, the strong interrelations among negative affectivity, disinhibition, and antagonism mirror the shared psychopathological substrate commonly observed in Cluster B-related personality patterns in clinical practice. The robust association between negative affectivity and disinhibition (r=0.79) may reflect the frequent co-occurrence of emotional dysregulation and impaired impulse control, processes often considered central to borderline personality organization (17). Similarly, the significant association between Negative Affectivity and Psychoticism (r=0.69) aligns with clinical observations suggesting that heightened emotional load may be accompanied by reduced cognitive flexibility and increased perceptual or ideational distortions (18).

These findings should be interpreted with caution, however, given that the study was conducted in a non-clinical sample. As such, the observed patterns should not be directly generalized to diagnosed personality disorder groups but rather viewed as reflecting theoretical and structural similarities at the trait level.

The Predictive Role of Metacognitive Processes

One of the key contributions of this study lies in demonstrating that different personality dimensions are associated with distinct metacognitive profiles. The results suggest that metacognitive processes do not exert uniform effects across personality domains; instead, specific processes appear to be differentially linked to particular maladaptive traits.

In the model predicting negative affectivity, NBW and NCT emerged as significant predictors, alongside depressive and anxiety symptoms. This finding suggests that perceiving internal experiences as uncontrollable and dangerous, coupled with persistent efforts to regulate or suppress such experiences, may constitute a core mechanism underlying heightened negative emotionality. Prior research has consistently linked these metacognitive processes to emotion regulation difficulties and chronic anxiety states (19). In addition, the continued predictive role of CC indicates that reduced confidence in one's own cognitive abilities may further amplify emotional vulnerability, a pattern that has also been noted in previous studies (7).

Findings related to Detachment suggest a more indirect relationship with metacognitive processes. After controlling for depression and anxiety, the predictive contribution of metacognitive variables to Detachment was limited, implying that this personality dimension may be more strongly shaped by relatively stable features such as emotional constriction, interpersonal sensitivity, and social withdrawal (20, 21). Nevertheless, it is plausible that perceiving internal experiences as threatening and adopting avoidance-oriented coping strategies may indirectly reinforce social disengagement, particularly when combined with diminished

interpersonal trust (22). From this perspective, Detachment may be more meaningfully understood through the interpersonal consequences of metacognitive processes rather than their direct effects.

A particularly salient finding of the study is the consistent predictive role of NCT across Antagonism, Disinhibition, and Psychoticism. This pattern suggests that rigid and persistent attempts to control one's thoughts may be closely associated with maladaptive traits characterized by impulsivity, oppositionality, and cognitive disorganization. Such findings are congruent with theoretical accounts proposing that attempts at thought control not only tend to fail but may themselves perpetuate maladaptive psychological cycles (23,24).

In the Psychoticism model, NCT emerged as the strongest predictor and appeared to attenuate the relative contribution of anxiety symptoms. This finding points to the potential role of metacognitive responses to unusual thoughts and experiences in the maintenance of psychotic-like features (25,26). It further suggests that psychotic experiences may be shaped not solely by emotional intensity but also by the ways in which individuals relate to, interpret, and attempt to regulate these experiences.

Clinical Implications and Relevance for Metacognitive Therapy

The metacognitive patterns identified in this study highlight the potential relevance of Metacognitive Therapy (MCT) for addressing personality-related difficulties. MCT's process-focused and transdiagnostic framework may be particularly well suited to understanding and targeting the co-occurring symptom clusters often observed in maladaptive personality functioning (19). Although the existing meta-analytic evidence suggests that MCT may yield promising outcomes in the context of personality pathology, empirical studies in this area remain limited (27).

The present findings suggest that interventions targeting specific metacognitive processes particularly NCT and NBW may yield clinically meaningful benefits. Core MCT techniques, including psychoeducation, enhancement of metacognitive awareness, worry postponement, and modification of one's relationship with thoughts, may help reduce maladaptive control efforts (1). The consistent association of NCT with multiple personality domains underscores the importance of focusing on how individuals relate to their thoughts rather than on the content of those thoughts. In this regard, techniques aimed at fostering cognitive distancing such as viewing thoughts as transient mental events or conducting behavioral experiments related to thought control may be especially relevant for individuals with prominent antagonistic, disinhibited, or psychotic features.

Strengths and Limitations

The strengths of this study include its integrative approach combining the AMPD dimensional framework with metacognitive theory, the use of a sample with adequate statistical power, and an analytic strategy that controlled for the effects of depressive and anxiety symptoms. Nevertheless, several limitations should be acknowledged. The cross-sectional design precludes causal inferences. Reliance on self-report measures introduces the possibility of response bias. Additionally, the use of a non-clinical sample drawn from a single cultural context limits the generalizability of the findings.

In conclusion, the present study provides empirical evidence suggesting that metacognitive processes may play a meaningful role in the understanding and treatment of maladaptive personality traits. The transdiagnostic predictive role of NCT, in particular, represents a promising focus for future research. To advance this line of inquiry, longitudinal studies involving clinical personality disorder groups (e.g., individuals diagnosed with borderline or narcissistic personality disorder) and randomized controlled trials examining the effects of MCT on personality-related outcomes are warranted.

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