

*PERSONALITY TRAITS, PSYCHOSOCIAL
FUNCTIONING AND TREATMENT INFLUENCE IN
MAJOR DEPRESSIVE DISORDER*

Master Thesis

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Abstract

Major Depressive Disorder (MDD) is a heterogeneous condition that not only affects mood and cognition, but also disrupts functioning. Personality traits are increasingly recognized as influential in both the course of MDD and treatment outcomes. This study explored how personality traits shape the clinical profile and functional outcomes of adults with MDD, alongside the influence of treatment history. Participants completed validated self-report measures—the Temperament and Character Inventory-Revised, Outcome Questionnaire-45 and Quick Inventory of Depressive Symptomatology—alongside clinician-rated data from the Dutch Measure for Treatment-Resistant Depression. Findings confirmed that high Harm Avoidance and low Self-Directedness were strong predictors of greater depressive symptom severity, longer illness duration and increased functional impairment. Reward Dependence and Cooperativeness showed more complex, domain-specific associations, reflecting both protective and maladaptive roles depending on context. Treatment history analyses revealed that untreated individuals were at the highest risk for the negative consequences of untreated depression. Psychotherapy, particularly when delivered alone, was modestly associated with improved long-term social role functioning. In contrast, individuals with the most severe symptoms were more likely to receive pharmacotherapy, which on its own did not significantly improve functional outcomes.

These results highlight the importance of incorporating personality assessment into MDD treatment planning. A trait-informed, multimodal approach may enhance personalization, support functional recovery and optimize long-term outcomes for individuals living with depression.

Introduction

Depression is a growing public health challenge globally and its complexity is particularly evident in the Netherlands, with 18.7% of adults experiencing at least one depressive episode in their lifetime and an annual prevalence of 9.8% (Volksgezondheid en Zorg, n.d.). Recent data from the NEMESIS studies indicate a rising trend, with the proportion of adults diagnosed with a depressive disorder in the past year increasing from 6% to nearly 11% between 2007 and 2022 (Trimbos-Instituut, n.d.). Among depressive disorders, MDD represents a particularly severe and persistent condition, marked not only by emotional and cognitive symptoms, but also by long-term disability, diminished quality of life and frequent treatment resistance (Peeters et al., 2016; Smith, 2023)

One key factor contributing to the heterogeneity in the course and outcomes of MDD—such as symptom severity, chronicity, relapse risk, functional impairment and response to treatment—is personality. Personality traits have been identified as influential in increasing predisposition, shaping symptom presentation and even altering personality itself as a result of depressive episodes (modification effect). Additionally, some personality traits may function as subclinical markers of depression (overlap effect) (Bajraktarov et al., 2017; Hansenne et al., 1998). These effects—referred to as the modification effect and the overlap effect—underscore the complex, bidirectional relationship between personality and depression, highlighting the need to investigate how specific personality dimensions relate to different clinical characteristics of MDD. Understanding these relationships is crucial for identifying individual vulnerabilities and informing more personalized treatment approaches.

Beyond its core symptoms, MDD severely disrupts psychosocial functioning, impacting interpersonal relationships, occupational roles and daily life management. The interaction between personality traits and psychosocial functioning is complex, with certain traits either facilitating or impeding adaptation in the face of depressive symptoms (Spinhoven

et al., 2011a). Gaining insight into how personality profiles relate to specific areas of functioning can help clinicians better predict individual challenges and guide tailored interventions.

Crucially, psychosocial functioning also serves as a key outcome through which both personality and treatment effects may manifest. While clinical treatments for MDD often prioritize symptom reduction, long-term recovery also depends equally on restoring functioning and emotional well-being. A holistic approach must therefore go beyond symptom reduction and consider how different treatment modalities—pharmacotherapy, psychotherapy or a combination of both—impact psychosocial functioning (Karrouri et al., 2021). These treatments may differentially influence recovery across domains such as emotional well-being, interpersonal relationships and role performance, which are essential to achieving full functional recovery in individuals with MDD.

In light of the increasing prevalence of depression and its complex interplay with personality and functioning, a comprehensive understanding of these relationships is essential. This study aims to examine how specific personality traits relate to depressive symptom severity, illness duration and psychosocial functioning—both overall and within specific domains—in adults with MDD and how these associations are influenced by the type of treatment received. In doing so, it seeks to contribute to a more nuanced understanding of MDD and inform more effective, person-centered clinical interventions.

Personality Traits in MDD

Numerous studies have demonstrated that specific personality traits are strongly associated with severe depressive disorder (Hirano et al., 2002). For instance, individuals with MDD frequently exhibit heightened anxiety, risk aversion and increased sensitivity to stress (Celikel et al., 2009). These individuals often lack goal orientation and self-direction, which are associated with feelings of helplessness and hopelessness—key features of the disorder

(Hirano et al., 2002). In addition, a strong dependence on social validation and heightened sensitivity to social rejection are commonly observed in individuals with depression (Ahola et al., 2023). Difficulties with empathy and maintaining social relationships are also prevalent among those with MDD (Bajraktarov et al., 2017).

Conversely, certain personality traits may act as protective factors against depression. Traits such as curiosity and an adventurous disposition have been linked to greater resilience and less severe depressive symptoms (Ahola et al., 2023). Similarly, spiritual or existential outlooks can promote adaptive coping mechanisms, enabling individuals to better manage psychological stress (Celikel et al., 2009). Perseverance and determination may also bolster an individual's capacity to cope with adversity, potentially mitigating the severity of depressive symptoms (Hirano et al., 2002).

A central challenge in this literature is the directionality of the association between personality traits and MDD, as most studies are cross-sectional. Longitudinal evidence suggests that certain temperament traits may precede depression; for example, Ahola et al. (2023) found that specific temperament traits predicted later onset. In contrast, cross-sectional studies indicate that character traits are sensitive to affective state: Bajraktarov et al. (2017) reported distinct profiles in recurrent depression compared to healthy controls, while Hirano et al. (2002) and Celikel et al. (2009) found temperament traits relatively stable but character traits varying with depressive severity. Takahashi et al. (2013b) showed that personality profiles can also differentiate treatment-resistant patients from remitted and healthy groups, suggesting a potential role of personality in treatment outcomes. Together, these findings suggest a bidirectional relationship between personality and depression, though limited longitudinal data—especially on functional outcomes and treatment response—restrict causal inference.

While a substantial body of research has examined the relationship between personality traits and the severity of depressive symptoms, considerably less is known about how these traits relate to other critical dimensions of MDD—such as how long the condition persists and how it affects day-to-day functioning. These factors are essential for understanding the broader impact of depression on individuals' life and long-term outcomes. Recent findings suggest that traits like elevated anxiety, avoidance, stress sensitivity and diminished self-direction and goal orientation may not only affect symptom intensity but also predict the chronicity of depression, functional impairment and treatment response (Ovchinnikov et al., 2023; Takahashi et al., 2013b).

To address these gaps in the literature, the present study expands upon traditional research by examining the associations between personality traits and multiple clinical dimensions of MDD, including symptom severity, illness duration and overall psychosocial functioning. Specifically, it investigates whether traits such as emotional reactivity, avoidance, social dependency, rejection sensitivity, lack of direction and interpersonal difficulties are associated with greater depressive symptom severity, reduced functioning and/or prolonged illness duration. Conversely, it is hypothesized that higher levels of curiosity, adventurousness, spiritual and existential orientation and perseverance correlate with lower symptom severity, improved functioning and/or shorter illness duration. This integrative approach seeks to determine whether a consistent personality profile influences multiple facets of the depressive experience, thereby providing a more comprehensive understanding of how personality traits shape the course and impact of the disorder.

Overall, this research aims to enhance our understanding of individual differences among adults diagnosed with MDD, with particular emphasis on the temperament and character traits that distinguish this population. By identifying which traits may exacerbate depressive symptoms and which may support resilience and recovery, the study aims to clarify

the broader role of personality in the clinical presentation and progression of MDD. Ultimately, the findings may inform the development of more personalized, trait-informed strategies for assessment, prevention and treatment—contributing to more precise and effective psychological care for individuals living with depression.

Personality Traits and Psychosocial Functioning in MDD

The relationship between personality traits and psychological distress is a central topic in clinical psychology, particularly in understanding disorders such as MDD. Research indicates that certain enduring traits are closely linked to how individuals function psychologically and socially. For example, individuals who tend to be anxious, cautious, pessimistic and sensitive to potential harm often experience heightened anxiety and depressive symptoms, along with difficulties in interpersonal relationships (Cloninger et al., 1993; Mitchell et al., 2021; Spinhoven et al., 2011b). Conversely, those who lack a sense of spiritual connection typically report higher distress and poorer social relationships, whereas individuals with stronger idealism and deeper reflection tend to exhibit better psychological well-being (Chiappelli et al., 2021; Weber et al., 2013). Autonomy and self-regulation has been linked to effective coping, reduced distress and better role functioning (Cloninger et al., 1993; Mitchell et al., 2021). Similarly, traits such as perseverance, determination and goal focus promote resilience and enhance social role functioning, while the absence of these qualities correlates with increased symptom severity and functional impairment (Paterniti et al., 2002; Weber et al., 2013). Social engagement and warmth are associated with positive interpersonal interactions, whereas social detachment can worsen depressive symptoms (Perris, 1984; Spinhoven et al., 2011b). Traits characterized by impulsivity, curiosity and sensation-seeking, although linked to risk-taking behaviors, may impair social functioning and increase distress when those needs remain unmet (Chiappelli et al., 2021; Weber et al., 2013). Finally, empathy, tolerance and cooperation are linked to lower psychological distress and healthier relationships,

while deficits in these areas correlate with interpersonal conflict and worsening depressive symptoms (Spinhoven et al., 2011a).

This body of knowledge leads to the hypothesis that specific personality traits correlate with particular aspects of psychological functioning. A strong positive correlation is expected between anxiety-related distress and traits characterized by high worry and risk aversion and a negative correlation with traits involving spirituality and purpose. Depressive distress is anticipated to positively correlate with high anxiety and low self-discipline, while negatively associated with strong spirituality and perseverance. Regarding interpersonal relationships, positive correlations are expected with traits reflecting social engagement and warmth; and negative correlations with traits related to social detachment and low empathy. Finally, social role functioning is expected to be negatively associated with impulsivity and positively linked to perseverance.

The goal is to gain insight into how specific personality dimensions affect the emotional well-being and functioning of individuals with MDD. This will contribute to understanding which temperament and character traits influence the severity of depressive symptoms and how they modulate other aspects such as anxiety, interpersonal relationships and social functioning.

Treatment Efficacy in MDD

Effective treatment of MDD is critical, as untreated depression often results in long-term disability and significantly reduced quality of life (Kamenov et al., 2016; Karroui et al., 2021). A key component of successful treatment is restoring functioning, which encompasses interpersonal relationships, social role performance and emotional well-being (Kamenov et al., 2016). While both pharmacotherapy and psychotherapy are established, evidence-based treatments for MDD, their distinct impacts on psychosocial functioning remain underexamined. Most research has focused on symptom reduction, with less attention paid to

how different treatments influence specific domains of functional recovery (Kamenov et al., 2016; Zilcha-Mano et al., 2014).

Pharmacotherapy —especially with selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs) and other antidepressant medications — targets the biological symptoms of depression, such as mood disturbance, emotional dysregulation and lack of interest. Although effective in reducing anxiety and symptomatic distress (such as sleep disturbances, fatigue and concentration issues), its effects on interpersonal relationships and social functioning tend to be modest (Cuijpers et al., 2021; Kamenov et al., 2016). In contrast, psychotherapy, particularly Cognitive Behavioral Therapy (CBT) and Interpersonal Therapy (IPT), addresses the cognitive, emotional and social components of MDD. These interventions focus on building skills in communication, emotional regulation, problem-solving and stress management, resulting in more direct improvements in relational and social functioning (Cuijpers et al., 2021).

Studies comparing combined treatment to monotherapy consistently report superior outcomes. Lam et al. (2013) found that combined pharmacotherapy and psychotherapy significantly improved both symptom relief and psychosocial functioning. Similarly, Cuijpers et al. (2021) reported enhanced long-term outcomes, including fewer relapses and better role functioning. This suggests a synergistic benefit, as pharmacotherapy addresses neurochemical imbalances while psychotherapy enhances coping and relational skills. Conversely, individuals with untreated MDD tend to show worsening psychosocial impairment. Research has linked the absence of treatment to persistent emotional distress and significant deficits in interpersonal and occupational functioning (Malkki et al., 2023; Zilcha-Mano et al., 2014).

Against this background, the current study investigates whether the type of treatment received—none, pharmacotherapy, psychotherapy or a combination, significantly impacts psychosocial functioning in individuals with MDD. It is hypothesized that individuals

receiving combined treatment will show the most substantial improvements across all domains. Those receiving no treatment are expected to exhibit the highest levels of psychological distress and the lowest levels of interpersonal and social functioning. Additionally, psychotherapy, whether alone or combined, is anticipated to be particularly effective in enhancing interpersonal relationships and role functioning, while pharmacotherapy alone is expected to yield moderate reductions in internal distress with more limited effects on functional outcomes.

By adopting a comprehensive, function-oriented approach to treatment evaluation, this study aims to deepen understanding of the differential impacts of treatment modalities on recovery in MDD. The findings may inform personalized care strategies, support the use of integrated interventions and reinforce the need to include functional outcomes as a core component of both clinical practice and long-term treatment planning.

Methods

Materials

To operationalize the key constructs in the study's theoretical framework, a set of validated instruments was used to assess personality dimensions, symptom severity, illness duration and psychosocial functioning and previous treatment history in individuals with MDD.

Personality traits were assessed using Cloninger's Temperament and Character Inventory-Revised (TCI-R), a comprehensive 240-item self-report questionnaire rated on a five-point Likert scale ranging from "not at all true" to "completely true" (Cloninger et al., 1993). The instrument distinguishes between temperament traits—biologically based tendencies such as harm avoidance (HA), novelty seeking (NS), reward dependence (RD) and persistence (PS)—and character traits, which include self-directedness (SD), cooperativeness (CO) and self-transcendence (ST). HA reflected a tendency toward anxiety and risk avoidance, NS captured impulsivity and the pursuit of novelty, RD measured the extent to which individuals sought approval and attachment and PS assessed the capacity to persist despite fatigue or frustration. In the character domain, SD indicated an individual's ability to regulate and adapt behavior to achieve personal goals, CO reflected prosocial behavior and empathy, and ST represented a sense of spirituality or connection to a greater whole. The TCI-R has demonstrated strong psychometric properties, with Cronbach's alpha values generally exceeding 0.80, indicating high internal consistency (Wessels et al., 2013).

Depressive symptom severity was measured using the Quick Inventory of Depressive Symptomatology (QIDS), a 16-item self-report scale based on DSM criteria. It evaluates nine core symptom domains, including mood, energy, cognitive function, sleep, appetite and psychomotor activity. Items are rated on a four-point Likert scale from 0 (no symptom) to 3 (severe symptom), yielding a total score ranging from 0 to 27. The QIDS is widely validated

and exhibits high internal reliability, typically reporting Cronbach's alpha values between 0.80 and 0.90 (Rush et al., 2003).

Psychosocial functioning was assessed using an adapted version of the Outcome Questionnaire-45 (OQ-45), originally developed by Lambert et al. (1996). This widely used self-report instrument evaluates psychological functioning across multiple domains. In this study, the OQ-45 was modified to provide greater specificity by dividing the Symptomatic Distress scale into two subdomains: Anxiety Symptom Distress (ASD) and Depressive Symptom Distress (DSD). The full 45-item questionnaire covers ASD, DSD, Interpersonal Relations (IR) and Social Role Functioning (SR). Each item is rated on a five-point Likert scale from 0 ("never") to 4 ("almost always"). The OQ-45 has shown excellent internal consistency, with Cronbach's alpha ranging from 0.85 to 0.95 (Boswell et al., 2013; De Jong et al., 2007; Jabrayilov et al., 2017).

Illness duration, global psychosocial impairment and treatment history were assessed using the Dutch Measure for quantification of Treatment Resistance in Depression (DM-TRD), a clinician-administered instrument that evaluates a broad set of clinical variables relevant to chronic depression (Peeters et al., 2016). These include episode duration, DSM-based severity ratings, psychosocial impairment (assessed via the Global Assessment of Functioning [GAF] scale), comorbid psychiatric disorders, psychosocial stressors, history of trauma and previous pharmacological and psychotherapeutic interventions. For this study, only the most relevant variables—episode duration, GAF scores and treatment history—were included in the analysis (Peeters et al., 2016).

Together, these instruments enable a multidimensional exploration of the clinical and personal experiences of individuals with MDD, allowing for a nuanced exploration of the clinical profiles of individuals diagnosed with MDD.

Participants

Participants were recruited from PsyQ, a specialized outpatient mental health clinic in The Hague, the Netherlands, which focuses on mood disorders such as MDD. The final sample consisted of four partially overlapping subsamples, based on the availability of completed assessments: TCI-R and QIDS (n = 90; assessing personality and depression severity), TCI-R and DM-TRD (n = 46; assessing personality and clinical characteristics including illness duration and GAF), TCI-R and OQ-45 (n = 86; assessing personality and psychosocial functioning), and OQ-45 and DM-TRD (n = 173; assessing psychosocial functioning and treatment history) (see Table 1).

Table 1.
Demographic Characteristics of the Sample

Variable	Category	TCI-R & QIDS (N=90)		TCI-R & DM- TRD (N=46)		TCI-R & OQ-45 (N=86)		OQ-45 & DM- TRD (N=173)	
		n	%	n	%	n	%	n	%
Diagnosis	Mild	4	4,44	4	8,70	4	4,65	25	14,45
	Moderate	42	46,67	20	43,48	41	47,67	106	61,27
	Severe	44	48,89	22	47,83	41	47,67	42	24,28
Age		41,29 ±13,058		41,98 ±12,68		41,65 ±13,10		42,55 ±12,53	
Gender	Male	38	42,22	13	28,26	36	41,86	60	34,68
	Female	52	57,78	33	71,74	50	58,14	113	65,32
Education Level	Low	13	14,44	10	21,74	13	15,12	N/A	
	Medium	32	35,56	17	36,96	29	33,72		
	High	45	50,00	19	41,30	44	51,16		
Employment Status	Employed	62	68,89	36	78,26	53	61,63	N/A	
	Unemployed	16	17,78	7	15,22	19	22,09		
	Other	12	13,33	3	6,52	14	16,28		
Marital Status	Married	17	18,89	9	19,57	19	22,09	N/A	
	Partnered	1	1,11	-	-	1	1,16		
	Never Married	57	63,33	28	60,87	52	60,47		
	Divorced	7	7,78	3	6,52	6	6,98		
	Widowed	1	1,11	1	2,17	1	1,16		
	Unknown	7	7,78	5	10,87	7	8,14		

Variable	Category	TCI-R & QIDS (N=90)		TCI-R & DM- TRD (N=46)		TCI-R & OQ-45 (N=86)		OQ-45 & DM- TRD (N=173)
Nationality	Dutch Nationality	78	86,67	38	82,61	73	84,88	
	Dual Nationality	3	3,33	3	6,52	3	3,49	N/A
	Non-Dutch (Other)	9	10,00	5	10,87	10	11,63	
Illness Duration	None			6	13,04			12 6,94
	Acute (≤ 12 months)			6	13,04			40 23,12
	Subacute (13-24 months)	N/A		7	15,22	N/A		28 16,18
	Chronisch (≥ 24 months)			27	58,70			93 53,76
Treatment Type	No Treatment			12	26,09			53 30,64
	Pharmacotherapy			9	19,57			47 27,17
	Psychotherapy	N/A		6	13,04	N/A		17 9,83
	Both			19	41,30			56 32,37

Note. TCI-R= Temperament and Character Inventory–Revised; QIDS= Quick Inventory of Depressive Symptomatology; OQ-45= Outcome Questionnaire–45; DM-TRD= Dutch Measure for Treatment-Resistant Depression; N/A= Not applicable. "N" represents the number of participants and "%" represents the percentage of participants in each category. Percentages may not total 100 due to rounding. Age is presented as $M \pm SD$ (mean $\pm$ standard deviation). Diagnosis categories refer to the severity of Major Depressive Disorder (MDD). Education level refers to the highest achieved by participants and employment status categorizes current employment. Illness duration refers to the length of depressive symptoms. Treatment type refers to the kind of therapy received.

Eligibility criteria required participants to: (1) be at least 18 years; (2) have a formal diagnosis of MDD, confirmed by a licensed mental health professional using DSM-5 criteria; and (3) have completed at least one of the core instruments: the TCI-R, OQ-45, QIDS or DM-TRD. Exclusion criteria included comorbid diagnoses of severe psychiatric conditions (e.g., schizophrenia, bipolar disorder) or neurological/somatic illnesses that could impair cognitive functioning or hinder participation in the study.

Demographically, participants were predominantly middle-aged adults, with mean ages ranging from 41.29 years ($SD= 13.06$) to 42.55 years ($SD= 12.53$) across the subsamples. Females represented the majority in each group, ranging from 57.8% in the TCI-R & QIDS group to 71.7% in the TCI-R & DM-TRD group. The majority of participants were diagnosed with either moderate or severe MDD. Specifically, in the TCI-R & QIDS group, 46.7% had

moderate symptoms and 48.9% had severe symptoms; similar distributions were found in the other groups, with moderate severity being most common in the OQ-45 & DM-TRD group (61.3%) (see Table 1).

Education levels were predominantly high or medium. In the TCI-R & QIDS group, 50.0% had a higher education level, 35.6% medium and 14.4% low. This pattern was similar in the other subsamples. Most participants were employed at the time of assessment, with employment rates ranging from 61.6% to 78.3% across groups. Unemployment rates varied from 15.2% to 22.1% and a minority fell into the “other” category, which likely included students, retirees and those on long-term disability (see Table 1).

In terms of marital status, the majority of participants were never married, with proportions ranging from 60.5% to 63.3% across groups. Between 18.9% and 22.1% were married, 6.5% to 7.8% were divorced and 1.1% to 2.1% were widowed. For 7.8% to 10.9% of participants, marital status was unknown. The majority of participants were Dutch nationals, with Dutch citizenship reported in over 82% of cases across all subsamples. Dual or non-Dutch nationalities accounted for a relatively small percentage (3.3%–11.6%) (see Table 1).

Further clinical insights were available for participants in the DM-TRD subsamples. The majority of these individuals experienced chronic depression (≥ 24 months), reported by 58.7% in the TCI-R & DM-TRD group and 53.8% in the OQ-45 & DM-TRD group. Smaller proportions reported subacute (13–24 months), acute (≤ 12 months) or no current depressive symptoms. Regarding treatment status, participants varied in their current engagement: in the TCI-R & DM-TRD group, 41.3% received combined psychotherapy and pharmacotherapy, 26.1% received no treatment, 19.6% were undergoing pharmacotherapy only and 13.0% psychotherapy only. The OQ-45 & DM-TRD group followed a similar distribution (see Table 1).

All participants provided written informed consent and ethical approval for the study was obtained from an accredited ethics committee of the Parnassia Groep, ensuring compliance with relevant ethical guidelines for human research.

Procedure

Participants completed the QIDS and OQ-45 questionnaires online prior to their initial appointment with a mental health professional. These self-report measures were administered in Dutch via a secure online platform, allowing participants to respond at their convenience. The DM-TRD was administered by trained clinicians during the intake session, based on structured clinical interviews and a review of each participant's medical records. The TCI-R was also completed in Dutch via the same secure online platform during the early stages of treatment, giving participants the flexibility to complete it at their own pace. All data were collected and processed electronically.

Scoring followed the standardized procedures outlined for each instrument. For the TCI-R, raw scores were calculated by summing responses within each of the seven personality dimensions. For the OQ-45, subscale scores were derived by summing item responses within each functional domain. The QIDS total score was computed by summing the highest ratings across the nine DSM-based symptom categories. For all three self-report measures, higher scores indicated greater symptom severity or psychosocial impairment.

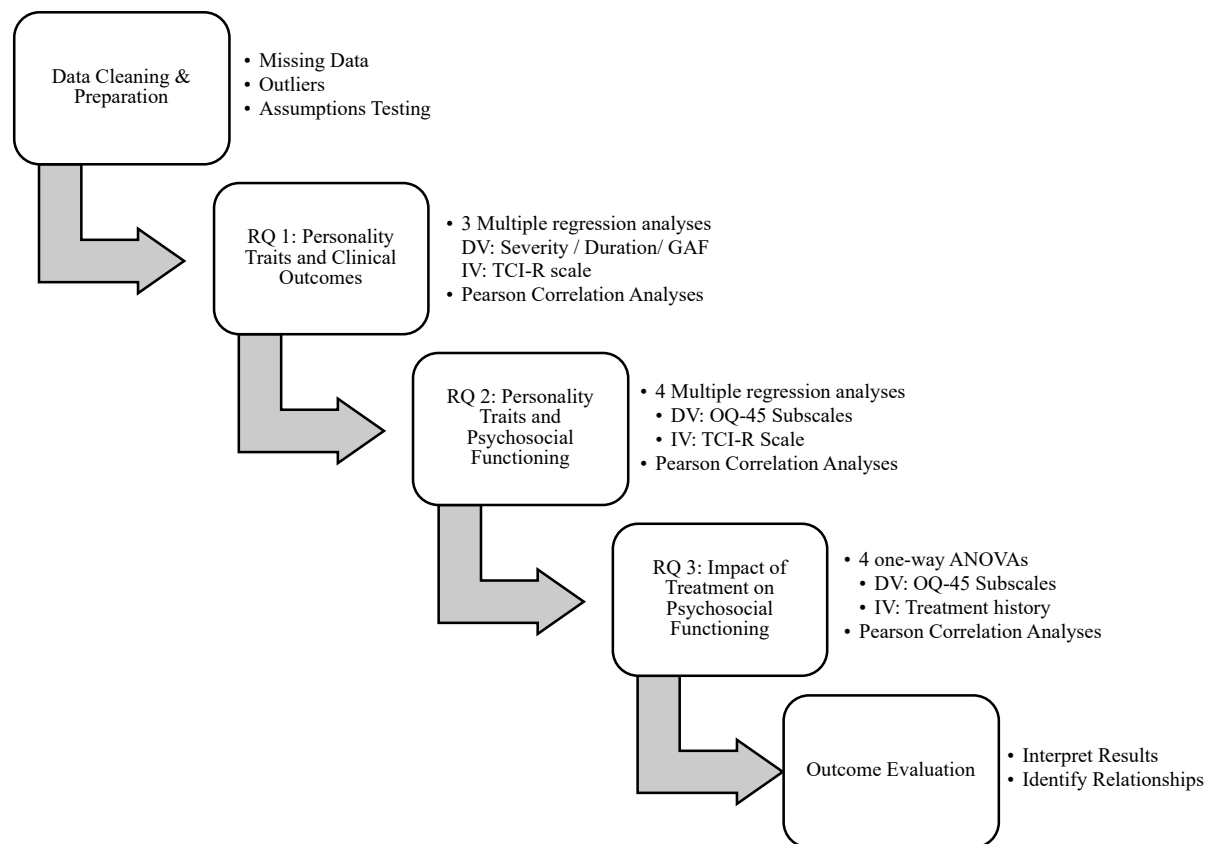
Within the DM-TRD, the relevant variables were operationalized as follows: Episode duration was categorized into acute (≤ 12 months), subacute (13–24 months) and chronic (≥ 24 months). GAF scores were grouped into four impairment levels: no impairment (GAF 90–100=0), mild (GAF 60–90=1), moderate (GAF 30–60=2) and severe (GAF <30 =3). Pharmacotherapy resistance was scored on a scale from 0 to 5, depending on the number of antidepressant trials undertaken during the current episode. Psychotherapy resistance was rated on a scale from 0 to 2, indicating no therapy, a single protocol-based therapy or multiple types of therapy,

respectively. These values were then used to construct a categorical treatment variable with four levels: 0= no treatment, 1= pharmacotherapy only, 2= psychotherapy only and 3= combined treatment.

Planned Data Processing and Statistical Analyses

The analysis began with data cleaning to ensure the dataset's accuracy and completeness, addressing missing data and evaluating key statistical assumptions, including normality, linearity, homoscedasticity, multicollinearity and outliers (see Figure 1). Once the data met these assumptions, statistical models were applied with a significance level of $p < .05$ and effect sizes were calculated to assess the strength of observed relationships. All analyses were conducted using IBM SPSS Statistics to ensure rigorous and reliable results.

Figure 1.
Overview of Data Analysis Procedures.



Note. This figure summarizes the data cleaning procedures and the statistical analyses used to address three research questions.
Abbreviations: RQ= research question; DV= dependent variable; IV= independent variable; TCI-R= Temperament and Character Inventory–Revised; GAF= Global Assessment of Functioning; OQ-45= Outcome Questionnaire-45.

Research Question 1: Personality Traits and Clinical Outcomes

To explore the relationship between personality traits (as measured by the TCI-R) and key clinical outcomes, three multiple regression analyses were conducted. The first model examined the predictive value of personality traits on symptom severity (QIDS), the second assessed predictions for illness duration (DM-TRD) and the third focused on overall psychosocial functioning (DM-TRD). Pearson correlation analyses were also conducted to further investigate the strength and direction of these associations (see Figure 1).

Prior to analysis, multiple regression assumptions were evaluated to ensure model validity. Normality, linearity and homoscedasticity were confirmed through visual inspections of residual scatterplots, histograms and P–P plots. The Durbin-Watson statistic (range: 1.469–1.872) indicated no autocorrelation. Multicollinearity was not present, with VIF values ranging from 1.161 to 3.770 and all tolerance values exceeding 0.1. Standardized residuals remained within ± 3 and all Cook’s Distance values were below 1.0, suggesting no influential outliers. Cases with Mahalanobis distances above 15 were excluded to control for multivariate outliers. These diagnostics supported the robustness and reliability of the regression models.

Research Question 2: Personality Traits and Psychosocial Functioning

This question examined the associations between personality traits (TCI-R) and domains of psychosocial functioning, measured by the OQ-45. Four multiple regression analyses were conducted using the TCI-R dimensions as predictors and the OQ-45 subscales—ASD, DSD, IR and SR—as outcomes. Pearson correlation analyses were also conducted for additional insight (see Figure 1).

Assumption checks confirmed normality, linearity and homoscedasticity via residual plots, histograms and P–P plots. Durbin-Watson values (DSD=1.790, ASD=2.219, SR=2.126, IR=1.621) indicated no autocorrelation. Multicollinearity was ruled out, with VIF values between 1.138 and 2.847 and all tolerance values above 0.1. No influential or multivariate

outliers were detected based on standardized residuals, Cook's Distance and Mahalanobis distance.

Research Question 3: Impact of Treatment on Psychosocial Functioning

The third research question assessed the effect of treatment type (DM-TRD) on psychosocial functioning (OQ-45). The four OQ-45 domains (DSD, ASD, IR, SR) served as dependent variables, while treatment type (no treatment, pharmacotherapy only, psychotherapy only or combined therapy) was the independent variable. Four one-way ANOVAs were conducted to compare domain scores across treatment groups. Post-hoc comparisons were planned to identify specific group differences where significant effects were found, using Tukey's HSD or Games-Howell tests as appropriate based on homogeneity of variance. Pearson correlations were also used to examine associations between treatment and functioning (see Figure 1).

Assumptions of normality, linearity and homoscedasticity were met for DSD, ASD, and IR. For the SR domain, Levene's test indicated a violation of the assumption of equal variances ($p = .023$). No influential outliers were identified based on standardized residuals, Cook's Distance or Mahalanobis distance.

Results

Personality Traits and Clinical Characteristics

The study included 87 participants, with a mean depressive symptom severity score of 17.56 ($SD= 5.15$), indicating moderate to severe depression. A subset of participants ($N=46$) provided additional data on episode duration and psychosocial functioning. In this group, the mean illness duration was 2.20 years ($SD= 1.11$) and the average GAF score was 1.67 ($SD=.70$), indicating mild to moderate functional impairment.

Descriptive analyses of the associations between TCI-R personality traits and clinical measures (QIDS, DM-TRD) revealed that specific traits were strongly linked to key features of depression. Specifically, Harm Avoidance, Cooperativeness, Self-Directedness and Persistence had the highest mean scores, suggesting their association with more severe depressive symptoms, longer episodes and greater functional impairment (see Table 2). For depressive symptom severity, mean scores were 120.80 ($SD= 24.17$) for Harm Avoidance, 130.37 ($SD= 17.64$) for Cooperativeness, 121.91 ($SD= 20.35$) for Self-Directedness and 100.23 ($SD= 20.19$) for Persistence. For illness duration and psychosocial functioning, mean scores were 127.83 ($SD= 18.35$) for Harm Avoidance, 126.57 ($SD= 18.47$) for Cooperativeness, 119.00 ($SD= 18.86$) for Self-Directedness and 97.80 ($SD= 21.48$) for Persistence.

Although these descriptive values do not establish statistical significance on their own, they highlight personality traits that may be particularly elevated in individuals with more severe or chronic depressive profiles.

Table 2.*Descriptive Statistics for TCI-R Personality Dimensions Across Clinical Outcomes.*

Personality Trait	Depressive Symptom Severity (N = 87)	Illness Duration (N = 46)	GAF (N = 46)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Harm Avoidance	120.80 (24.17)	127.83 (18.35)	127.83 (18.35)
Novelty Seeking	91.83 (14.60)	90.48 (12.25)	90.48 (12.25)
Reward Dependence	95.24 (18.08)	93.13 (18.67)	93.13 (18.67)
Persistence	100.23 (20.19)	97.80 (21.48)	97.80 (21.48)
Self-Directedness	121.91 (20.35)	119.00 (18.86)	119.00 (18.86)
Cooperativeness	130.37 (17.64)	126.57 (18.47)	126.57 (18.47)
Self-Transcendence	58.03 (13.63)	58.80 (12.03)	58.80 (12.03)

Note. N= total number of participants in the sample, M= mean, SD= standard deviation.

Depression Severity and Personality Traits

Correlation analyses indicated that Harm Avoidance was positively associated with depression severity ($r=.41$, $p<.001$), while Reward Dependence ($r=-.25$, $p=.018$) and Self-Directedness ($r=-.32$, $p=.003$) were negatively correlated with depressive symptoms (see Table 3). These findings suggest that individuals who are more anxious and risk-averse, less socially engaged and lower in self-regulation or goal orientation tend to experience more severe depressive symptoms.

Table 3.*Pearson Correlations Between Personality Traits and Clinical Measures*

Predictor	Depressive Symptom Severity (QIDS)		Illness Duration (DM-TRD)		GAF (DM-TRD)	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Harm Avoidance	.41***	<.001	.07	.626	.03	.825
Novelty Seeking	-.16	.141	.03	.832	.06	.705
Reward Dependence	-.25*	.018	-.09	.569	-.04	.788
Persistence	-.13	.228	-.37*	.011	-.26 †	.085
Self-Directedness	-.32**	.003	-.38**	.009	-.33*	.025
Cooperativeness	-.10	.337	-.27 †	.066	-.19	.198
Self-Transcendence	.09	.416	.05	.735	-.03	.849

Note. QIDS= Quick Inventory of Depressive Symptomatology; DM-TRD= Dutch Measure for Treatment-Resistant Depression; *r*= Pearson correlation coefficient; *p*= probability value; $p<.05$ (*), $p<.01$ (**), $p<.001$ (***), (†) indicates marginally significance ($p<.10$).

Further analysis demonstrated that the combination of these personality traits accounted for a significant portion of the variance in depression severity — approximately 24%

—with the model yielding $F(7, 79)=3.65$, $p=.002$ and a medium-to-large effect size (Cohen's $f^2=.32$) (see Table 4).

Table 4.

Multiple Regression Predicting Clinical Measures from TCI-R Traits

Outcome Variable	<i>N</i>	<i>F</i> (<i>df</i> ₁ , <i>df</i> ₂)	<i>p</i>	<i>R</i> ²	<i>f</i> ²
Depressive Symptom Severity (QIDS)	87	3.65 (7, 79)**	.002	.24	.32
Illness Duration (in years) (DM-TRD)	46	2.87 (7, 38)*	.017	.35	.53
GAF (DM-TRD)	46	1.50 (7, 38)	.198	.22	.28

Note. QIDS= Quick Inventory of Depressive Symptomatology; DM-TRD= Dutch Measure for Treatment-Resistant Depression; *F*= F-statistic; *df*₁= model degrees of freedom; *df*₂= residual degrees of freedom; *R*²= coefficient of determination; *f*²= effect size (Cohen's *f*²); *p*= probability value, $p<.05$ (*), $p<.01$ (**).

Within this predictive model, Harm Avoidance ($\beta=.46$, $p=.012$) and Cooperativeness ($\beta=.34$, $p=.029$) emerged as significant positive predictors, suggesting that sensitivity to negative outcomes and approval-seeking relate to greater depression severity. Conversely, Reward Dependence remained a significant negative predictor ($\beta= -.34$, $p=.031$), indicating that lower responsiveness to social rewards scores are associated with greater symptom severity (see Table 5).

Table 5.

Associations Between TCI-R Personality Dimensions and Clinical Variables
(*N* = 87 for QIDS; *N* = 46 for Duration and GAF)

Predictor	Depressive Symptom Severity (QIDS)		Illness Duration (DM-TRD)		GAF (DM-TRD)	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Harm Avoidance	.46**	.012	-.29	.147	-.24	.272
Novelty Seeking	.15	.299	-.17	.326	-.07	.725
Reward Dependence	-.34*	.031	.51†	.053	.39	.167
Persistence	.14	.302	-.42*	.028	-.29	.160
Self-Directedness	-.13	.381	-.30†	.098	-.29	.142
Cooperativeness	.34*	.029	-.53*	.032	-.39	.146
Self-Transcendence	.09	.428	.06	.709	-.05	.780

Note. QIDS= Quick Inventory of Depressive Symptomatology; DM-TRD= Dutch Measure for Treatment-Resistant Depression; β = standardized regression coefficient; *p*= probability value; $p<.05$ (*), $p<.01$ (**), (†) indicates marginally significance ($p<.10$).

Interestingly, although Self-Directedness was strongly associated with depression, it did not significantly predict it when other factors were considered. Conversely, Cooperativeness became a significant predictor despite not showing a clear initial correlation.

Illness Duration and Personality Traits

Correlational analyses revealed that illness duration was significantly negatively associated with Self-Directedness ($r=-.38$, $p=.009$) and Persistence ($r=-.37$, $p=.011$), indicating that lower levels of these traits were linked to longer depressive episodes. Cooperativeness also showed a marginally significant negative correlation ($r=-.27$, $p=.066$), suggesting a possible relationship between higher Cooperativeness and shorter illness duration. These results imply that individuals with higher levels of self-determination, purposefulness and cooperativeness may experience less chronic depression, potentially due to greater psychological resilience or adaptive functioning (see Table 3).

Expanding on these results, the combination of personality traits significantly predicted illness duration, $F(7, 38)=2.87$, $p=.017$, explaining approximately 35% of the observed variance ($R^2=.35$), which reflects a large effect size (Cohen's $f^2=.53$) (see Table 4). Among the traits, lower levels of Persistence ($\beta=-.42$, $p=.028$) and Cooperativeness ($\beta=-.53$, $p=.032$) were most strongly linked to longer illness duration, suggesting that individuals who struggle with perseverance or interpersonal harmony may be more prone to experiencing prolonged depressive episodes. Additionally, higher Reward Dependence ($\beta=.51$, $p=.053$) was marginally linked to longer duration, indicating that heightened sensitivity to social rewards might contribute to a more chronic course. Lower Self-Directedness ($\beta=-.30$, $p=.098$) also appeared to be related to longer illness duration, pointing to the potential importance of self-regulation in mitigating the persistence of depressive symptoms (see Table 5).

Psychosocial Functioning and Personality Traits

Regarding psychosocial functioning, lower Self-Directedness ($r=-.33$, $p=.025$) was significantly associated with greater functional impairment, while lower Persistence ($r=-.26$, $p=.085$) showed a marginally significant association, suggesting self-control and perseverance

may play a role in overall functioning. No other personality traits showed significant associations with functioning.

However, the full model of personality traits did not significantly predict psychosocial functioning overall, accounting for approximately 22% of the variance ($R^2=.22$) without reaching statistical significance ($F(7, 38)=1.50, p=.198$) (see Table 4).

In summary, the results provide partial support for Hypothesis 1.1. As predicted, higher Harm Avoidance and lower Self-Directedness were consistently associated with greater depression severity and longer illness duration. Lower Cooperativeness was also linked to both symptom severity and illness duration in regression models, although this was less consistent in bivariate analyses. Contrary to expectations, higher Reward Dependence showed a marginally significant association with longer illness duration, suggesting it may not have the anticipated protective effect. Hypothesis 1.2. received limited support: while Persistence showed a significant inverse relationship with illness duration, Novelty Seeking and Self-Transcendence did not demonstrate significant associations with any of the clinical outcomes examined. These findings underscore the complex and multifaceted role of personality in the clinical presentation and course of MDD and suggest that certain character traits (e.g., Self-Directedness and Persistence) may warrant further investigation as potential therapeutic targets or risk markers.

Associations Between Personality Traits and Psychosocial Functioning

Participants reported the highest levels of DSD ($M=63.43, SD=14.46$), followed by ASD ($M=29.51, SD=8.26$). Among personality traits, Cooperativeness ($M=130.65, SD=17.90$) and Harm Avoidance ($M=122.42, SD=24.16$) had the highest mean scores, indicating behavioral inhibition and strong interpersonal tendencies (see Table 6).

Table 6.*Descriptive Statistics for Psychosocial Functioning and Personality Variables (N= 86)*

Variable	<i>M</i>	<i>SD</i>
Anxiety Symptom Distress	29.51	8.26
Depressive Symptom Distress	63.43	14.46
Interpersonal Relations	21.79	6.62
Social Role Functioning	15.97	5.00
Harm Avoidance	122.42	24.16
Novelty Seeking	92.73	14.94
Reward Dependence	95.20	18.92
Persistence	101.29	21.22
Self-Directedness	121.20	20.08
Cooperativeness	130.65	17.90
Self-Transcendence	58.73	12.38

Note. *M*=mean, *SD*=standard deviation.***Associations Between Personality Dimensions and ASD***

Higher Harm Avoidance was strongly associated with greater ASD ($r=.47, p<.001$), reflecting the role of behavioral inhibition and heightened sensitivity to aversive stimuli. Conversely, lower Self-Directedness, indicating reduced self-regulation and goal-directed behavior, was linked to higher anxiety distress ($r=-.34, p=.001$). Additionally, Novelty Seeking characterized by impulsivity and a desire for new experiences, was moderately associated with lower levels of anxiety distress ($r=-.27, p=.014$) (see Table 7).

Table 7.*Pearson Correlations Between Personality Traits and Psychosocial Functioning.*

Predictor	Anxiety Symptom Distress		Depressive Symptomatic Distress		Interpersonal Relations		Social Role Functioning	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
HA	.47**	<.001	.45**	<.001	.37**	<.001	.18 †	.093
NS	-.27*	.014	-.23*	.035	-.17	.125	-.12	.277
RD	-.19 †	.080	-.32**	.003	-.42**	<.001	-.19 †	.074
PS	-.14	.187	-.17	.112	-.22*	.046	-.01	.914
SD	-.34**	.001	-.41**	<.001	-.47**	<.001	-.20 †	.067
CO	-.20 †	.062	-.25*	.023	-.40**	<.001	-.16	.135
ST	.01	.901	-.09	.402	-.10	.342	-.15	.174

Note. HA=Harm Avoidance; NS=Novelty Seeking; RD=Reward Dependence; PS=Persistence; SD=Self-Directedness; CO=Cooperativeness; ST=Self-Transcendence; *r*= Pearson correlation coefficient; *p*= probability value. $p<.05$ (*), $p<.01$ (**), (†) indicates marginally significance ($p<.10$).

When considering all personality traits together, they accounted for approximately 26% of the variance in ASD ($R^2=.26$; $F(7,78)=3.85, p=.001$), a result that indicates a large

effect size (Cohen's $f^2=.35$) (see Table 8). This means that personality dimensions, as a group, have a substantial impact on how individuals experience anxiety distress in the context of major depression.

Table 8.

Multiple Regression Predicting OQ-45 Subscales from TCI-R Personality Traits

Outcome Variable	$F(7,78)$	p	R^2	f^2
Anxiety Symptom Distress	3.85**	.001	.26	.35
Depressive Symptomatic Distress	4.26***	<.001	.28	.38
Interpersonal Relations	4.75***	<.001	.30	.43
Social Role Functioning	1.25	.288	.10	.01

Note. F = F-statistic; R^2 = coefficient of determination; f^2 = effect size (Cohen's f^2); p = probability value, $p<.01$ (**), $p<.001$ (***)

Among all traits, Harm Avoidance demonstrated the most consistent and strongest relationship with higher ASD scores ($\beta=.48, p=.004$) (see Table 9). This means that individuals with higher Harm Avoidance tend to experience greater anxiety symptom distress, reinforcing its central role in anxiety symptomatology among individuals with MDD.

Table 9.

Associations Between TCI-R Personality Dimensions and Psychosocial Functioning

Predictor	Anxiety Symptom Distress		Depressive Symptomatic Distress		Interpersonal Relations		Social Role Functioning	
	β	p	β	p	β	p	β	p
HA	.48**	.004	.40*	.016	.14	.389	.17	.350
NS	-.04	.748	.05	.687	.04	.739	.04	.787
RD	.06	.688	-.18	.250	-.18	.235	-.09	.598
PS	.21	.103	.20	.103	.11	.373	.21	.139
SD	-.16	.250	-.25 †	.073	-.32*	.022	-.16	.300
CO	-.02	.900	.10	.491	-.10	.508	-.01	.931
ST	.01	.941	-.10	.341	-.11	.277	-.17	.149

Note. HA=Harm Avoidance; NS=Novelty Seeking; RD=Reward Dependence; PS=Persistence; SD=Self-Directedness; CO=Cooperativeness; ST=Self-Transcendence; β = standardized regression coefficient; p = probability value, $p<.05$ (*), $p<.01$ (**), (†) indicates marginally significance ($p<.10$).

Although Self-Directedness and Novelty Seeking were also significantly related to ASD when examined individually, their influence appeared to be less pronounced when considered alongside other traits. This pattern highlights Harm Avoidance as the most prominent personality factor linked to anxiety symptoms in this sample.

Associations Between Personality Dimensions and DSD

Greater depressive distress was correlated with higher levels of Harm Avoidance ($r=.45, p<.001$), while lower levels of Self-Directedness ($r=-.41, p<.001$), Reward Dependence ($r=-.32, p=.003$), Cooperativeness ($r=-.25, p=.023$) and Novelty Seeking ($r=-.23, p=.035$). These findings suggest that individuals with greater behavioral inhibition and lower self-regulation, social responsiveness, empathy and exploratory tendencies, tend to report higher levels of depressive distress (see Table 7).

When examined collectively, personality traits explained 28% of the variance in DSD ($R^2=.28$; $F(7,78)=4.26, p<.001$), reflecting a large effect (Cohen's $f^2=.38$) (see Table 8). These findings point to a substantial link between personality dimensions and the severity of depressive distress in individuals with MDD. Among these traits, Harm Avoidance remained a significant positive predictor of DSD ($\beta=.40, p=.016$), meaning that individuals with higher levels of cautiousness and behavioral inhibition tend to experience greater distress. While Self-Directedness showed a marginally significant negative effect ($\beta=-.25, p=.073$), suggesting a trend where higher levels of self-discipline may be linked to lower distress, although this effect was not statistically conclusive (see Table 9).

Although several personality traits (Self-Directedness, Reward Dependence, Cooperativeness, Novelty Seeking) show individual associations with depressive distress, only Harm Avoidance stands out as a unique predictor when all traits are examined together. This means that Harm Avoidance likely captures the most distinct and central features of depressive symptomatology in this sample.

Associations Between Personality Dimensions and IR

Poorer interpersonal relations was most strongly associated with lower Reward Dependence ($r=-.42, p<.001$), Self-Directedness ($r=-.47, p<.001$), Cooperativeness ($r=-.40, p<.001$) and Persistence ($r=-.22, p=.046$). This indicates that individuals who exhibit greater

sensitivity to social cues, along with lower self-regulation, empathy and perseverance, tend to experience more significant interpersonal difficulties. Conversely, higher Harm Avoidance was significantly associated with increased IR ($r=.37$, $p<.001$), indicating that greater emotional avoidance relates to more interpersonal problems (see Table 7).

Together, the set of personality dimensions explained 30% of the variance in IR ($R^2=.30$; $F(7,78)=4.75$, $p<.001$), which corresponds to a large effect size (Cohen's $f^2=.43$) (see Table 8). This indicates a strong link between personality traits and interpersonal difficulties in individuals with MDD. Notably, Self-Directedness stood out as a key factor; individuals with lower Self-Directedness tended to report greater interpersonal difficulties ($\beta=-.32$, $p=.022$) (see Table 9).

Although Reward Dependence, Harm Avoidance, Self-Directedness, Persistence, and Cooperativeness were each linked to interpersonal difficulties, only Self-Directedness showed a unique and significant association when other traits were taken into account.

Associations Between Personality Dimensions and SR

No significant relationships were found between social role functioning and any of the assessed temperament or character traits. However, weak, non-significant trends emerged: a marginal positive link with Harm Avoidance ($r=.18$, $p=.093$) and marginal negative links with Self-Directedness ($r=-.20$, $p=.067$) and Reward Dependence ($r=-.19$, $p=.074$). These patterns hint at a possible tendency for higher emotional inhibition and lower self-direction or social engagement to be linked to poorer performance in work, school or household roles, though these associations were not strong enough to draw firm conclusions (see Table 7).

Overall, the personality dimensions examined accounted for about 10% of the variation in SR scores ($R^2=.10$, $F(7, 78)=1.25$, $p=.288$), with a small effect size (Cohen's $f^2=.014$) (see Table 8). This suggests that personality traits, at least in this sample, were not

strongly related to how individuals manage daily responsibilities or function in broader social roles (see Table 9).

Findings partially supported the proposed hypotheses. In line with Hypothesis 2.1., ASD was significantly associated with higher Harm Avoidance, but not with Self-Transcendence. For Hypothesis 2.2., Harm Avoidance and Self-Directedness were significantly related to DSD, though Persistence and Self-Transcendence did not show significant effects, either in correlation or regression. Hypothesis 2.3. was only partially supported: although Reward Dependence, Cooperativeness and Self-Directedness were correlated with IR, only Self-Directedness uniquely predicted interpersonal functioning in the multivariate model, highlighting its central role. Hypothesis 2.4. was not supported, as no significant associations were found between SR and any of the assessed personality traits and the regression model for this domain was non-significant.

The Impact of Previous Treatment on Psychosocial Functioning

As the primary aim of this section was to examine differences between treatment groups, one-way analyses of variance were conducted first, followed by descriptive and correlational analyses.

The Impact of Prior Treatment on ASD

A one-way ANOVA showed no significant effect of treatment type on anxiety symptom distress, $F(3, 169)=1.46$, $p=.227$, partial $\eta^2=.03$, indicating that treatment history did not significantly explain variance in ASD scores (see Table 10).

Table 10.*One-Way ANOVA Results for Effects of Treatment Type on OQ-45 Domains*

Dependent Variable	<i>F</i> (3,169)	<i>p</i>	Partial η^2	Levene's <i>F</i>	Levene's <i>p</i>
Anxiety Symptom Distress	1.46	.227	.03	0.84	.473
Depressive Symptomatic Distress	1.98	.119	.03	1.27	.286
Interpersonal Relations	0.14	.934	.00	2.13	.098
Social Role Functioning	1.56	.200	.03	3.05	.030

Note. *F*= F-statistic; *p*= significance level; Partial η^2 = partial eta squared (effect size). Levene's *F* and Levene's *p* report results of Levene's test for homogeneity of variance.

Descriptive statistics revealed that ASD scores were highest among participants who had received pharmacotherapy or combined treatment and lowest among those with no prior treatment (see Table 11).

Table 11.*Descriptive Statistics for OQ-45 Subscales by Treatment Type*

Outcome Measure	No Treatment (<i>n</i> = 53) <i>M</i> (<i>SD</i>)	Pharmacotherapy (<i>n</i> = 47) <i>M</i> (<i>SD</i>)	Psychotherapy (<i>n</i> = 17) <i>M</i> (<i>SD</i>)	Combined Treatment (<i>n</i> = 56) <i>M</i> (<i>SD</i>)
Anxiety Symptom Distress	28.06 (8.05)	31.02 (8.55)	30.71 (6.97)	30.77 (8.22)
Depressive Symptom Distress	58.23 (14.81)	64.02 (14.31)	63.24 (11.05)	64.00 (14.21)
Interpersonal Relations	20.64 (7.59)	21.19 (7.97)	21.82 (4.31)	21.30 (6.99)
Social Role Functioning	15.21 (6.28)	15.38 (4.83)	17.53 (3.94)	16.86 (5.02)

Note. *n*= number of participants in a subgroup; *M* = Mean; *SD* = Standard Deviation.

Correlation analysis further explored these patterns. A significant negative correlation was found between ASD and the no-treatment group ($r = -.16$, $p = .037$), suggesting that individuals with higher anxiety distress were less likely to have received prior treatment. A marginally significant positive correlation was observed with pharmacotherapy ($r = .13$, $p = .085$), suggesting a trend toward higher anxiety distress among individuals with a history of medication use. No significant correlations were found for psychotherapy or combined treatment (see Table 12).

Table 12.*Pearson Correlations Between Treatment Type and OQ-45 Subscale Scores*

	None		Pharmacotherapy		Psychotherapy		Combined	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
ASD	-.16*	.037	.13†	.085	.08	.302	.07	.395
DSD	-.18*	.016	.16*	.039	.10	.192	.09	.243
IR	-.04	.562	.02	.773	.04	.638	.02	.819
SR	-.10	.185	.04	.618	.16*	.035	.11	.152

Note. ASD= Anxiety Symptom Distress; DSD= Depressive Symptom Distress; IR= Interpersonal Relations; SR= Social Role Functioning; *r*= Pearson correlation coefficient; *p*= probability value, $p < .05$ (*), (†) indicates marginally significance ($p < .10$).

The Impact of Prior Treatment on DSD

Similarly, a one-way ANOVA showed no significant effect of treatment type on depressive symptom distress, $F(3, 169)=1.98$, $p=.119$, partial $\eta^2=.03$, indicating that treatment history did not substantially affect current depressive symptoms (see Table 10). Descriptive statistics showed that DSD scores were highest among participants who had received pharmacotherapy or combined treatment and lowest among those with no prior treatment (see Table 11). A significant negative correlation was found between DSD and the no-treatment group ($r=-.18$, $p=.016$), indicating higher depressive symptom distress in untreated individuals. A weak positive correlation was observed for the pharmacotherapy group ($r=.16$, $p=.039$), suggesting a mild link between medication use and increased distress—potentially reflecting that individuals with more severe symptoms are more likely to receive pharmacological treatment. (see Table 12).

The Impact of Prior Treatment on IR

No significant effect was found for treatment type on interpersonal relations, $F(3, 169)=.14$, $p=.934$, partial $\eta^2=.00$, suggesting that treatment history had little to no impact on interpersonal relations (see Table 10). Descriptive statistics showed that IR scores were highest among participants who had previously received psychotherapy and lowest among those with no prior treatment (see Table 11). No significant correlations were found between any past treatment type and current interpersonal functioning. Specifically, correlations between IR and

treatment types were negligible: no treatment ($r=-.04$, $p=.562$), pharmacotherapy ($r=.02$, $p=.773$), psychotherapy ($r=.04$, $p=.638$) and combined treatment ($r=.02$, $p=.819$) (see Table 12).

The Impact of Prior Treatment on SR

Also, treatment type did not significantly influence social role functioning, as shown by $F(3, 169)=1.56$, $p=.200$, partial $\eta^2=.03$. Levene's test revealed unequal variances across treatment groups ($F(3, 169)=3.05$, $p=.030$), which limits the reliability of group comparisons. (see Table 10). Descriptive statistics indicated that SR scores were highest among participants who had received psychotherapy or combined treatment and lowest among those with no prior treatment (see Table 11). A statistically significant positive correlation was found between psychotherapy treatment and SR ($r=.16$, $p=.035$), indicating that individuals who had received psychotherapy reported better social role functioning (see Table 12).

In conclusion, the results provided limited support for the hypothesized effects of treatment type on psychosocial functioning in individuals with MDD. While descriptive statistics showed some variation across treatment groups, no significant differences were found in any OQ-45 domains (ASD, DSD, IR, SR) based on past treatment. Specifically, combined treatment did not lead to better psychosocial functioning compared to other treatment types, contrary to Hypothesis 3.1. Hypothesis 3.2. was partially supported by negative correlations between no treatment and higher distress in ASD and DSD, though no significant effects were found for IR and SR. Hypothesis 3.3. received limited support, with a small but significant correlation between psychotherapy and SR. Hypothesis 3.4. was partially supported by a positive correlation between pharmacotherapy and DSD, though no significant effects were seen in IR or SR. Overall, these results suggest that past treatment history may not be a strong predictor of psychosocial functioning at treatment intake.

Discussion

A comprehensive analysis of the study's of the three research questions revealed several notable findings regarding the associations between personality traits, clinical characteristics, psychosocial functioning and treatment type in individuals with MDD (see Appendix).

Regarding the first research question, which examined the relationship between personality traits and clinical outcomes such as symptom severity, illness duration and global functioning, the results strongly supported the proposed hypotheses. Harm Avoidance emerged as a significant factor, both correlating with and predicting symptom severity. In contrast, Self-Directedness was negatively associated with all three outcomes, suggesting a protective, resilience-enhancing role in depression, and was a marginal predictor of illness duration. Reward Dependence exhibited a more complex pattern: it was a negative predictor for symptom severity and a marginal positive predictor for illness duration, though it only showed a significant association with severity, indicating more nuanced effects than initially expected. Similarly, Cooperativeness demonstrated mixed effects, positively predicting symptom severity but negatively predicting illness duration, with a marginally significant negative association with illness duration. Finally, Persistence was negatively associated with illness duration and also served as a negative predictor, partially supporting its theorized protective role.

The second research question examined the associations between specific personality traits and distinct domains of psychosocial functioning, offering partial support for the hypothesis. As expected, Harm Avoidance was positively associated with and predicted ASD, while Self-Directedness and Novelty Seeking showed significant negative correlations with this domain. Reward Dependence and Cooperativeness were also marginally negatively correlated with ASD. For DSD, a positive association was found with Harm Avoidance and

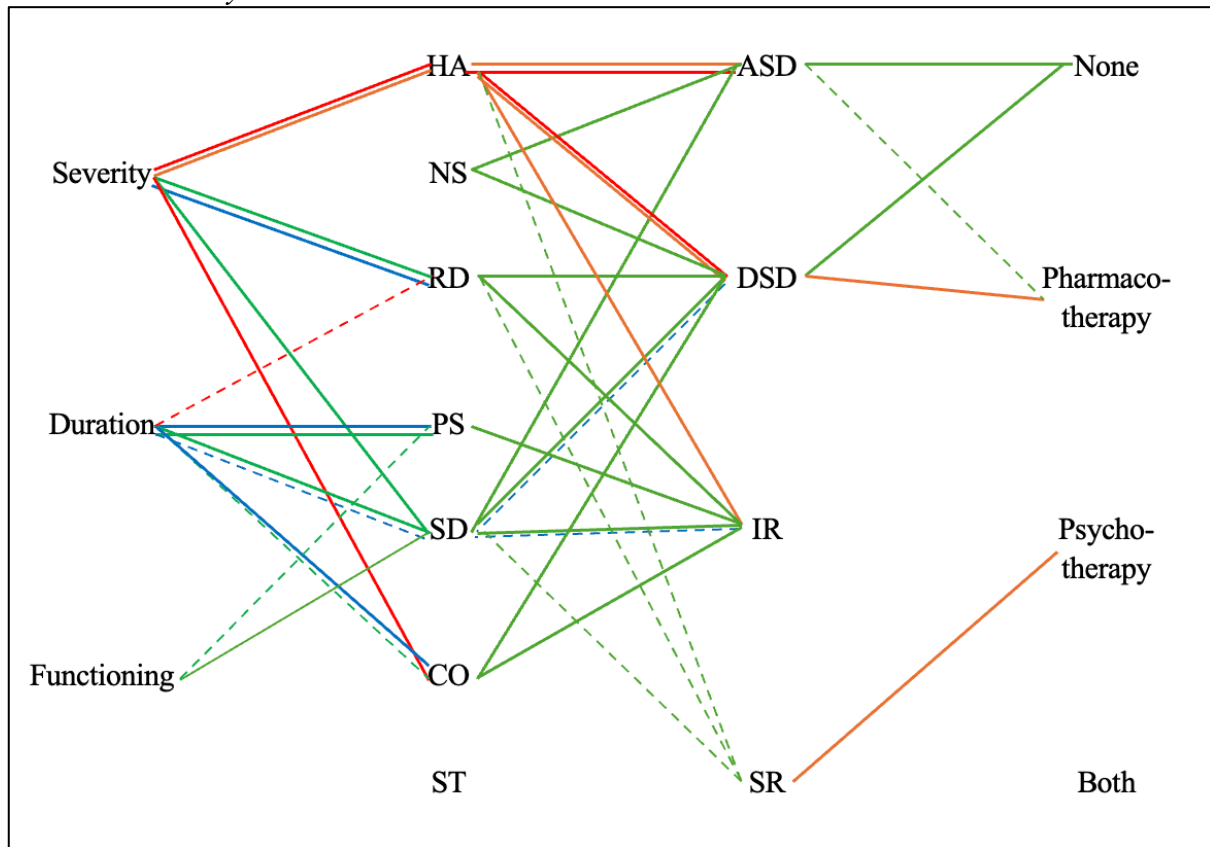
negative associations with Self-Directedness, Cooperativeness, Reward Dependence and Novelty Seeking. However, only Harm Avoidance was a significant predictor in regression and Self-Directedness was a marginal predictor, suggesting that multiple personality traits contribute to emotional distress in depression. In IR, Harm Avoidance showed a significant positive relationship, while negative associations were observed with Reward Dependence, Cooperativeness, Persistence and Self-Directedness. Notably, Self-Directedness was a significant predictor in the regression model. Finally, regarding SR, neither correlation nor regression analyses yielded statistically significant results and no individual personality trait emerged as a significant predictor.

The third research question examined the impact of treatment type on psychosocial functioning. Although the overall comparisons between groups did not yield statistically significant results, several correlations offered partial support for the hypotheses. Participants who reported receiving no treatment experienced higher levels of anxiety and depressive distress. Pharmacotherapy showed a modest positive association with depressive distress, while psychotherapy was positively associated with better social role functioning. However, contrary to the hypotheses, combined treatment did not significantly outperform other modalities across any functioning domain and no significant effects were observed for interpersonal functioning based on treatment type.

Overall, these findings demonstrate that personality traits are not merely background factors, but active determinants in the expression, persistence and treatment response of MDD. This pattern of results is summarized in Figure 2, which provides a concise, integrative and post hoc visualization of the significant and marginal associations observed across correlation and regression analyses, offering a descriptive synthesis of how personality traits relate to clinical outcomes, psychosocial functioning and treatment history in this sample.

Figure 2.

Path Model of Personality Traits, Clinical Outcome, Psychosocial Functioning and Treatment History in MDD.



Note. Solid red and blue lines represent significant regression predictors; red indicates positive and blue indicates negative predictions. Solid orange and green lines represent significant correlations; orange indicates positive and green indicates negative associations. Dashed lines indicate marginally significance.

Abbreviations: HA= Harm Avoidance; NS= Novelty Seeking; RD= Reward Dependence; PS= Persistence; SD= Self-Directedness; CO= Cooperativeness; ST= Self-Transcendence; ASD= Anxiety Symptom Distress; DSD= Depressive Symptom Distress; IR= Interpersonal Relations; SR= Social Role Functioning.

Personality Traits and Clinical Outcomes

The findings largely confirmed the hypothesis that certain personality traits play a significant role in the severity and course of depressive symptoms. Specifically, individuals characterized by heightened emotional sensitivity, worry and avoidance tendencies reported more severe depressive symptoms, in line with earlier research linking these traits to stress reactivity and pessimistic thinking (Celikel et al., 2009; Hirano et al., 2002). In contrast, traits reflecting self-discipline, purposefulness and a sense of personal agency were associated with lower symptom severity and better overall functioning, supporting evidence that self-directed

and autonomous individuals are less vulnerable to chronic depression (Hirano et al., 2002; Teraishi et al., 2015).

Social and interpersonal traits showed more complex effects. A lower tendency toward warmth and connectedness was associated with greater symptom severity (Takahashi et al., 2013b). Conversely, excessive dependency appeared related to longer illness duration (Ahola et al., 2023). Together, these findings indicate that both social detachment and excessive dependency can contribute to the persistence of depressive symptoms, emphasizing the importance of balanced interpersonal functioning in emotional recovery. Unexpectedly, individuals displaying greater cooperativeness and social conformity reported higher symptom severity, a finding that appears counterintuitive given previous research linking interpersonal difficulties to poorer recovery (Bajraktarov et al., 2017; Hirano et al., 2002). Finally, perseverance and persistence in goal pursuit predicted shorter illness duration, consistent with their proposed role in adaptive coping and resilience (Hirano et al., 2002; Joyce et al., 2007). No significant effects were observed for traits related to curiosity or spiritual and existential orientation.

Overall, the results confirmed most of the hypothesized associations, emphasizing that personality characteristics related to emotional reactivity, autonomy and persistence are particularly influential in depressive symptom severity. These findings highlight how enduring personality traits shape individual differences in vulnerability and recovery within depressive disorders.

Personality and Psychosocial Functioning

A domain-specific analysis of psychosocial functioning revealed distinct personality trait correlates for each dimension, underscoring the role of personality and offering new insights into how temperament and character contribute to emotional distress, interpersonal difficulties and social functioning in depression.

Anxiety symptoms were most strongly associated with the personality dimensions of heightened emotional reactivity and a tendency to avoid challenging situations, confirming the hypothesis and aligning with research linking these traits to vulnerability for both anxiety and depressive symptoms (Celikel et al., 2009; Hirano et al., 2002; Spinhoven et al., 2011b). Traits reflecting broader existential perspective or self-transcendence showed no significant effect, suggesting their protective role may be context-specific (Bajraktarov et al., 2017). In contrast, greater levels of curiosity and stronger self-regulation were associated with lower anxiety, reflecting the adaptive role of behavioral activation and goal-directed functioning (Mitchell et al., 2021; Teraishi et al., 2015). Social engagement and sensitivity to social rewards had only marginal effects, indicating that interpersonal traits may play a weaker or more context-dependent role in mitigating anxiety (Celikel et al., 2009).

Depressive symptoms were strongly linked to personality dimensions reflecting heightened emotional reactivity and lower self-regulation, confirming part of the hypothesis and consistent with research identifying these traits as risk factors for persistent depressive symptoms and poor treatment outcomes (Takahashi et al., 2013b; Zaninotto et al., 2016). Unexpectedly, traits associated with existential perspective and perseverance showed no significant associations, contrary to the findings of Weber et al. (2013), possibly due to sample-specific factors or stronger proximal influences from traits like self-regulation. Interestingly, lower behavioral activation, social engagement and interpersonal functioning may contribute to depressive symptomatology, consistent with patterns of anhedonia and social withdrawal commonly seen in MDD (Ovchinnikov et al., 2023; Takahashi et al., 2013b).

Interpersonal functioning showed a complex pattern. Contrary to expectations, higher levels of traits reflecting social engagement and cooperativeness were negatively associated with relationship quality, diverging from literature that assumes these traits are universally beneficial for relationships (Perris, 1984; Spinhoven et al., 2011a; 2011b). In the context of

MDD, they may reflect maladaptive patterns— such as dependency, rejection sensitivity or overaccommodation stemming from poor boundaries, especially in a sample in which nearly two-thirds were never married. Traits reflecting self-regulation and autonomy were consistently linked to better interpersonal outcomes, likely supporting assertiveness and healthy boundary-setting (Celikel et al., 2009). Conversely, higher emotional reactivity and lower perseverance contributed to relational difficulties, indicating that interpersonal challenges may arise not only from affective instability but also from reduced resilience and motivation (Joyce et al., 2007; Teraishi et al., 2015). These findings underscore that the impact of personality traits is context-dependent: traits typically considered “positive” can become maladaptive under emotional dysregulation or unmet relational needs.

Finally, no temperament or character traits emerged as strong predictors of social role functioning. Traits related to emotional reactivity showed a trend toward poorer role outcomes, while traits supporting social engagement and self-regulation showed trends toward better functioning, consistent with prior research (Farmer & Seeley, 2009; Spinhoven et al., 2011a, 2011b). This suggests that role impairments in MDD may be more influenced by external factors—such as social or environmental stressors—than by intrinsic personality traits. It may also reflect measurement limitations of the SR subscale in the OQ-45, which has been critiqued for lower internal consistency compared to the Symptom Distress and Interpersonal subscales (Boswell et al., 2013). Alternatively, the impact of personality on role functioning may be indirect, mediated by depressive symptom severity or interpersonal confidence.

In summary, the hypotheses were partially supported: predicted associations between personality traits and anxiety, depressive and interpersonal functioning were confirmed in several cases, whereas expected links with social role functioning were not observed. These findings underscore that personality shapes psychological functioning in depression in a nuanced, context-dependent way rather than following uniform patterns.

Treatment Effects on Functioning

The study's analysis of treatment effects on functioning revealed more modest outcomes than expected, likely influenced by the fact that assessment was conducted at the start of a new treatment phase.

Combined treatment did not show superior outcomes, diverging from meta-analytic evidence (Cuijpers et al., 2021; Kamenov et al., 2016; Lam et al., 2013). This discrepancy may reflect the inclusion of individuals with more severe, chronic or treatment-resistant depression, with longer illness duration acting as a confounder due to reduced treatment response and delayed functional recovery relative to symptom improvement (Karrouri et al., 2021).

Untreated participants reported higher distress, aligning with evidence on the risks of untreated depression, which is a well-established risk factor for chronic impairment, psychiatric comorbidities and suicidality (Malkki et al., 2023; Zilcha-Mano et al., 2014). However, the modest effect sizes indicate that treatment status alone does not fully account for the observed distress.

Psychotherapy was modestly linked to improvements in social role functioning, but not interpersonal relationships. These findings resonate with existing literature, particularly interpersonal and cognitive-behavioral therapies, improves interpersonal skills and role reintegration, leading to better work functioning, family roles and social engagement (Cuijpers et al., 2021; Kamenov et al., 2016; Zilcha-Mano et al., 2014). However, individuals with greater interpersonal difficulties may have been more likely to receive psychotherapy, potentially masking its benefits. Moreover, interpersonal functioning tends to improve more slowly than symptoms and varies considerably across individuals (Malkki et al., 2023).

Pharmacotherapy was marginally associated with anxiety reduction and significantly with depressive symptom reduction, suggesting that those with more severe depression were more likely to receive medication. However, it showed limited impact on social and vocational

functioning, highlighting its limitations in restoring social and vocational roles (Zilcha-Mano et al., 2014). While pharmacotherapy addresses biological factors such as anhedonia, sleep, and appetite, psychological interventions target cognitive, interpersonal, and motivational aspects crucial for functional recovery. Biological treatment can act as a foundation or booster for broader improvements, but is often insufficient alone, reinforcing the APA and NICE recommendation for multimodal approaches to moderate-to-severe depression (Cuijpers et al., 2021; Kamenov et al., 2016).

In conclusion, treatment effects were more modest than anticipated, partially supporting the hypotheses: untreated individuals showed higher distress, psychotherapy modestly improved social role functioning, pharmacotherapy reduced symptoms but had limited functional impact and combined treatment did not yield the expected superior outcomes.

Consideration and Limitation

Although this study revealed meaningful associations, several factors limit the strength and generalizability of the findings. The cross-sectional design precludes causal inference and the small sample—particularly in the TCI-R, DM-TRD, and psychotherapy-only subgroups—reduced power to detect subtle effects. Key variables such as trauma history, coping, social support, stressors and detailed treatment characteristics were not assessed.

In interpreting these findings, it is important to acknowledge the correlational nature of the analyses, which precludes conclusions about directionality or causality. Certain personality traits may both influence and be shaped by depressive states, especially in chronic depression, blurring the distinction between traits and symptoms (Hirano et al., 2002; Naito et al., 2000). Longitudinal research is therefore essential to disentangle trait vulnerability from state-dependent personality changes over time.

Moreover, demographic factors likely shaped some of the observed personality–depression associations. Women tend to score higher on Harm Avoidance and may experience distress more intensely, affecting psychosocial outcomes (Cloninger et al., 1993). Higher education levels may enhance SD and PS, which are essential for goal-setting and autonomy—both critical for maintaining functioning in depression (Farmer & Seeley, 2009). Marital status influences social dynamics; the predominance of never-married participants may relate to interpersonal difficulties and reduced social support. External stressors like job loss or chronic illness further impact treatment engagement and outcomes.

The chronic nature of depression in much of the sample—over half met criteria for chronic MDD—adds another layer of complexity. Longer illness duration and chronic depression are typically associated with slower recovery, reduced treatment responsiveness, social withdrawal and greater role impairment. The absence of clear treatment effects may indicate that therapies exert gradual, personality-level changes (Joyce et al., 2007; Ovchinnikov et al., 2023). Additionally, mismatches between treatment modalities and individual needs—along with cultural factors such as stigma, treatment preferences and access barriers—may have affected treatment engagement and outcomes.

Future Research

To address these limitations and build upon the present findings, further longitudinal research is needed. Although some studies have examined associations between personality traits and depressive outcomes, additional work is required to help clarify causal relationships and track how personality traits, symptom severity and psychosocial functioning evolve over time—especially in response to specific treatment modalities (Ahola et al., 2023; Farmer & Seeley, 2009). Given that many results in this study were at marginally significance, future research should use larger, more diverse samples to enhance statistical power and generalizability. Considering the complex associations between specific TCI-R dimensions and

psychosocial domains, future work could explore mediators and moderators such as coping styles, social support and neurobiological factors to deepen mechanistic understanding. It is also recommended that future research examine the associations between personality traits and the type of treatment received, as this could offer more nuanced insights into how different treatments affect specific traits, ultimately enabling more targeted interventions to improve patient outcomes. More detailed investigation into treatment effects is also needed, incorporating variables like psychotherapy type (e.g., CBT, psychodynamic), therapist experience, treatment duration and intensity, as well as pharmacotherapy class, dosage and duration. Such data could refine personalized treatment strategies by revealing how these factors interact with personality and clinical outcomes.

Contribution to Literature and Practice

Despite its limitations, this study contributes to the field by offering a multidimensional analysis that links temperament and character traits with clinical outcomes, psychosocial functioning and treatment history in MDD. It confirms the importance of established personality traits while questioning assumptions about others, highlighting the complex and context-dependent role of personality in depression. By analyzing domain-specific psychosocial outcomes, it provides nuanced insight into how traits uniquely influence emotional distress, interpersonal relationships and social role functioning. The study also identifies underexplored protective traits, supporting more refined, trait-informed models of depression. Importantly, findings underscore that personality traits do not uniformly affect all domains of functioning, emphasizing the need for personalized assessments and interventions. The inclusion of treatment history reveals that past therapeutic experiences significantly influence long-term functioning beyond current symptom severity, advocating for early, sustained and integrated treatment approaches.

Clinically, these results highlight the value of incorporating personality assessment into MDD diagnosis and treatment planning. Identifying personality profiles associated with symptom severity and functional impairment can guide tailored interventions to improve efficacy. The demonstrated benefits of combined pharmacotherapy and psychotherapy further support integrated multimodal treatment. Recognizing personality traits as both risk and protective factors encourages a strengths-based approach that fosters resilience alongside symptom relief. Ultimately, this research advocates for a personalized, holistic care model that addresses the dynamic interplay among personality, treatment history and psychosocial outcomes, optimizing recovery and clinical success in MDD.

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Appendix

Summary of Results

	Outcome	Key Predictors	Correlation (<i>r</i> , <i>p</i>)	Regression Coefficient (β , <i>p</i>)	Regression/ ANOVA (<i>F</i> , <i>p</i> , R^2/η^2)
RQ1: Personality and Clinical Outcomes	Depressive Symptom Severity (QIDS)	Harm Avoidance	.41, <i>p</i> < .001	.46, <i>p</i> = .012	<i>F</i> (7, 79) = 3.65, <i>p</i> = .002, R^2 = .24
		Reward Dependence	-.25, <i>p</i> = .018	-.34, <i>p</i> = .031	
		Self-Directedness	-.32, <i>p</i> = .003	—	
		Cooperativeness	—	.34, <i>p</i> = .029	
	Illness Duration	Reward Dependence	—	.51, <i>p</i> = .053†	<i>F</i> (7, 38) = 2.87, <i>p</i> = .017, R^2 = .35
		Persistence	-.37, <i>p</i> = .011	-.42, <i>p</i> = .028	
		Self-Directedness	-.38, <i>p</i> = .009	-.30, <i>p</i> = .098†	
		Cooperativeness	-.27, <i>p</i> = .066†	-.53, <i>p</i> = .032	
	Functioning (GAF)	Persistence	-.26, <i>p</i> = .085†	—	<i>F</i> (7, 38) = 1.50, <i>p</i> = .198, R^2 = .22
		Self-Directedness	-.33, <i>p</i> = .025	—	
RQ2: Personality and Psychosocial Functioning	Anxiety Symptom Distress	Harm Avoidance	.47, <i>p</i> < .001	.48, <i>p</i> = .004	<i>F</i> (7, 78) = 3.85, <i>p</i> = .001, R^2 = .26
		Novelty Seeking	-.27, <i>p</i> = .014	—	
		Reward Dependence	-.19, <i>p</i> = .080†	—	
		Self-Directedness	-.34, <i>p</i> = .001	—	
		Cooperativeness	-.20, <i>p</i> = .062†	—	
	Depressive Symptom Distress	Harm Avoidance	.45, <i>p</i> < .001	.40, <i>p</i> = .016	<i>F</i> (7, 78) = 4.26, <i>p</i> < .001, R^2 = .28
		Novelty Seeking	-.23, <i>p</i> = .035	—	
		Reward Dependence	-.32, <i>p</i> = .003	—	
		Self-Directedness	-.41, <i>p</i> < .001	-.25, <i>p</i> = .073†	
		Cooperativeness	-.25, <i>p</i> = .023	—	
	Interpersonal Relations	Harm Avoidance	.37, <i>p</i> < .001	—	<i>F</i> (7, 78) = 4.75, <i>p</i> < .001, R^2 = .30
		Reward Dependence	-.42, <i>p</i> < .001	—	
		Persistence	-.22, <i>p</i> = .046	—	
		Self-Directedness	-.47, <i>p</i> < .001	-.32, <i>p</i> = .022	
		Cooperativeness	-.40, <i>p</i> < .001	—	
	Social Role Functioning	Harm Avoidance	.18, <i>p</i> = .093†	—	<i>F</i> (7, 78) = 1.25, <i>p</i> = .288, R^2 = .10
		Reward Dependence	-.19, <i>p</i> = .074†	—	
		Self-Directedness	-.20, <i>p</i> = .067†	—	
RQ3: Treatment History and Functioning	Anxiety Symptom Distress	None	-.16, <i>p</i> = .037	—	<i>F</i> (3, 169) = 1.46, <i>p</i> = .227, η^2 = .03
		Pharmacotherapie	.13, <i>p</i> = .085†	—	
	Depressive Symptom Distress	None	-.18, <i>p</i> = .016	—	<i>F</i> (3, 169) = 1.98, <i>p</i> = .119, η^2 = .03
		Pharmacotherapie	.16, <i>p</i> = .039	—	
	Interpersonal Relations	Psychotherapie	—	—	<i>F</i> (3, 169) = .14, <i>p</i> = .934, η^2 = .00
	Social Role Functioning	Psychotherapie	.16, <i>p</i> = .035	—	<i>F</i> (3, 169) = 1.56, <i>p</i> = .200, η^2 = .03

Note. β = standardized regression coefficient; *F* = F-statistic; *GAF* = Global Assessment of Functioning; *p* = probability value; Partial η^2 = partial eta squared (effect size); *QIDS* = Quick Inventory of Depressive Symptomatology; *r* = Pearson correlation coefficient; RQ = Research Question; R^2 = coefficient of determination; (†) indicates marginally significance (*p* < .10). Dashes (—) indicate non-significant correlation/predictor in that analysis.