Psychological Characteristics of Chronic Depression: A Longitudinal Cohort Study

Jenneke E. Wiersma, MSc; Patricia van Oppen, PhD; Digna J. F. van Schaik, MD, PhD; A. J. Willem van der Does, PhD; Aartjan T. F. Beekman, MD, PhD; and Brenda W. J. H. Penninx, PhD

Background: Few studies have investigated the importance of psychological characteristics for chronicity of depression. Knowledge about psychological differences between chronically depressed persons and nonchronically depressed persons may help to improve treatment of chronic depression. This is the first study to simultaneously compare in large samples various psychological characteristics between chronically depressed and nonchronically depressed adults.

Method: Baseline data were drawn from the Netherlands Study of Depression and Anxiety (NESDA), an ongoing longitudinal cohort study aimed at examining the long-term course of depressive and anxiety disorders in different health care settings and phases of illness. Participants were aged 18 to 65 years at the baseline assessment in 2004–2007 and had a current diagnosis of *DSM-IV* major depressive disorder (N = 1,002). Chronicity of depression was defined as being depressed for 24 months or more in the past 4 to 5 years. The chronicity criterion was fulfilled by 31% (n = 312). The NEO Five-Factor Inventory measured the 5 personality domains, the Leiden Index of Depression Sensitivity-Revised was used to measure cognitive reactivity (eg, hopelessness, rumination), and the Mastery Scale measured external locus of control.

Results: Compared to the nonchronically depressed persons, the chronically depressed persons reported significantly higher levels of neuroticism (OR = 1.81; 95% CI, 1.55–2.12; $P < .001$), external locus of control (OR = 1.94; 95% CI, 1.66–2.28; $P < .001$), and the following dimensions of cognitive reactivity: hopelessness (OR = 1.64; 95% CI, 1.43–1.88; $P < .001$), aggression (OR = 1.29; 95% CI, 1.13–1.48; $P < .001$), risk aversion (OR = 1.43; 95% CI, 1.24–1.63; $P < .001$), and rumination (OR = 1.55; 95% CI, 1.34–1.78; $P < .001$). They had significantly lower levels of extraversion (OR = 0.57; 95% CI, 0.49–0.67; $P < .001$), agreeableness (OR = 0.85; 95% CI, 0.74–0.97; $P = .02$), and conscientiousness (OR = 0.77; 95% CI, 0.67–0.88; $P < .001$). When testing these variables multivariably, the odds of chronic depression were significantly increased among those with low extraversion (OR = 0.73; 95% CI, 0.61–0.88; $P = .001$), high rumination (OR = 1.24; 95% CI, 1.01–1.53; $P = .04$), and high external locus of control (OR = 1.48; 95% CI, 1.21–1.80; $P < .001$). Controlling for severity of depressive symptoms, age at onset, comorbidity with anxiety disorders, medical illnesses, and treatment status did not change these results.

Conclusions: Our findings suggest that extraversion, rumination, and external locus of control, but not neuroticism, are differentiating psychological characteristics for chronicity of depression. These findings provide suggestions for more specific interventions, focused on extraversion, rumination, and external locus of control, in the treatment of chronic depression.

J Clin Psychiatry 2011;72(3):288–294

Submitted: *October 1, 2009; accepted January 28, 2010 (doi:10.4088/JCP.09m05735blu).*

Corresponding author: *Jenneke E. Wiersma, MSc, GGZ inGeest, AJ Ernststraat 1187, 1081 HL, Amsterdam, The Netherlands (j.wiersma@ggzingeest.nl).*

Chronic depression is among the most common psychiatric conditions seen in clinical settings, with up to 25%–35% of outpatients meeting criteria for chronic depression.[1,2] Chronic depression is difficult to treat, and misdiagnosis and undertreatment are still common.[3] Although research attention on chronic depression has been growing within the past 10 to 20 years, few studies have investigated the importance of psychological characteristics for chronicity of depression. Knowledge about psychological differences between chronically depressed persons and nonchronically depressed persons may help to improve classification and treatment of chronic depression.

Prior studies on psychological characteristics found higher levels of neuroticism,[4,5] introversion,[4–6] depressotypic cognitions,[5,7] and external locus of control[8] in chronic depression compared with nonchronic depression. However, none of these studies examined these psychological characteristics in the context of a large, comprehensive study; therefore, it remains unknown whether these characteristics are truly independent determinants of chronicity of depression.

The purpose of the current study was to simultaneously investigate the link between personality domains, cognitive reactivity dimensions, and external locus of control and chronicity of depression in a large sample of depressed adults. The following personality domains were considered: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The cognitive reactivity dimensions consisted of hopelessness, acceptance, aggression, perfectionism, risk aversion, and rumination.

Our goals were (1) to examine whether personality domains, dimensions of cognitive reactivity, and external locus of control are (independently) associated with chronicity of depression and (2) to examine whether differences in psychological characteristics between chronically and nonchronically depressed persons are independent of or whether they are mainly explained by other clinical depression characteristics known to be associated with chronicity, such as severity of depressive symptoms, early age at onset, comorbidity with anxiety disorders, medical illnesses, and treatment status.[9,10]

For Clinical Use

- Clinicians should be aware that low levels of extraversion (denoting introversion and poor sociability patterns) and high levels of rumination (denoting ineffective reasoning skills) and external locus of control (denoting helplessness and hopelessness) in depressed persons might imply a more chronic course of depression.
- Psychological treatment of chronic depression that puts greater emphasis on combating hopelessness and helplessness and that focuses on poor sociability patterns and ineffective reasoning skills could potentially lead to a better outcome.

METHOD

Sample

The data for the present study were drawn from the Netherlands Study of Depression and Anxiety (NESDA), an ongoing longitudinal cohort study aimed at examining the long-term course of depressive and anxiety disorders in different health care settings and phases of illness. Participants were between 18 and 65 years of age at the baseline assessment in 2004–2007 and were recruited from the community (19%), general practice (54%), and specialized mental health care facilities (27%). A total of 2,981 respondents were recruited, including healthy controls, respondents with subthreshold symptoms, and those with an anxiety and/or depressive disorder. The baseline assessment lasted, on average, 4 hours and included, eg, assessments of psychopathology, demographic and personal characteristics, and psychosocial functioning. Further details about NESDA are provided elsewhere.[11] The research protocol was approved by the ethics committees of participating universities, and, after complete description of the study, all respondents provided written informed consent.

Participants in NESDA who had a diagnosis of major depressive disorder (MDD) in the past year were selected for the present study. The MDD diagnosis was established using the World Health Organization Composite International Diagnostic Interview (CIDI), version 2.1, which classifies diagnoses according to *DSM-IV* criteria.[12] The CIDI is used worldwide, and World Health Organization field research has found high interrater reliability,[13] high test-retest reliability,[14] and high validity for depressive and anxiety disorders.[15,16] Specially trained clinical staff conducted the CIDI interviews. Of the 1,231 participants with a diagnosis of MDD in the past year, a total number of 229 participants were excluded from the study since data were missing on cognitive reactivity (n = 207) and/or chronicity of depression (n = 26), leaving 1,002 participants for the present study. Excluded participants did not differ in gender ($P = .86$) and severity of depressive symptoms ($P = .42$). However, they were younger (mean age, 37.8 vs 41.4 years; $P < .001$), had less education (mean, 10.7 vs 11.9 years; $P < .001$), and more often had comorbid anxiety (73.4% vs 65.7%; $P = .03$) and chronic depression (41.4% vs 31.1%; $P = .004$) compared to included participants.

Measures

Chronicity of depression. Chronicity of depression was measured by the Life Chart Interview method.[17] This instrument uses a calendar method to determine life events during the past 4 to 5 years to refresh memory and then assesses presence and severity of symptoms in this period. For each participant, the total number of months depressed in the past 4 to 5 years was computed. Participants who were depressed for 24 months or more over the past 4 to 5 years were defined as chronically depressed.[18]

Personality. Personality was operationalized using the NEO Five-Factor Inventory,[19] a 60-item self-report questionnaire measuring the "big 5" personality domains: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Each domain consists of 12 items. Examples of these items per domain are "I often feel less than others" (neuroticism), "I really like talking to people" (extraversion), "I have a wide range of intellectual interests" (openness to experience), "I'd rather cooperate than compete with others" (agreeableness), and "I have clear goals and work on them systematically" (conscientiousness). Scoring for each item ranged from 1 (totally disagree) to 5 (totally agree). In the current study, internal reliability (Cronbach α) ranged from $\alpha = 0.58$ for agreeableness to $\alpha = 0.88$ for neuroticism.

Cognitive reactivity. Recently, a self-report measure of reactivity of dysfunctional cognitions such as hopelessness, acceptance, aggression, perfectionism, risk aversion, and rumination has been developed: the Leiden Index of Depression Sensitivity-Revised (LEIDS-R).[20,21] The sensitivity of this measure in predicting depression has been demonstrated in 8 studies,[20–27] and so far there have been no replication failures. The LEIDS-R is a 34-item self-report questionnaire that indexes cognitive reactivity in response to low mood. Participants were instructed to think about the last time they felt sad and to indicate the degree to which a list of statements described their typical cognitions and behaviors in response to sad mood—for example, "When I feel sad, I feel more hopeless about everything" (hopelessness); "When I feel sad, I feel more like myself" (acceptance); "When I feel down, I lose my temper more easily" (aggression); "When I am in a sad mood, I become more bothered by perfectionism" (perfectionism); "When I feel down, I take fewer risks" (risk aversion); and "When I feel sad, I spend more time thinking about the possible causes of my moods"

(rumination). Scoring for each question ranged from 1 (not applicable) to 5 (very strongly applicable). Internal reliability (Cronbach α) in the present sample ranged from α = 0.57 for acceptance to α = 0.83 for hopelessness.

External locus of control. External locus of control reflects individuals' beliefs regarding the extent to which they feel they are not able to control or influence outcomes.[3] External locus of control is assessed by the 5-item Mastery Scale.[28] Examples of these items are "I have little control over the things that happen to me" and "I often feel helpless in dealing with the problems of life." Scoring for each item ranged from 1 (strongly disagree) to 5 (strongly agree), resulting in an overall score of 5 to 25, with higher scores indicating greater external locus of control. Internal reliability (Cronbach α) of the Mastery Scale in the current study was α = 0.84.

Sociodemographics and Clinical Depression Characteristics

Analyses were adjusted for the potentially confounding variables of age, gender, and educational level (years of education obtained). In addition, since a number of depression characteristics (severity of depression, early age at onset, comorbid anxiety, medical illnesses, and treatment status) have been associated with chronic depression[9,10] and could be associated with psychological indicators as well, we explored in separate analyses whether the observed effects of psychological factors on chronicity of depression are independent of or whether they are mediated through these clinical depression characteristics.

Information on age at onset of first depressive episode and comorbidity with anxiety disorders in the past year was established with the CIDI. Persons who experienced their first depressive episode before the age of 21 years were considered to have an early illness onset, whereas persons who experienced their first depressive episode at or after the age of 21 years were considered to have a late illness onset. Severity of depressive symptoms was measured using the 30-item Inventory of Depressive Symptomatology,[29] self-report version, which has shown high correlations with observer-rated scales. A count of the number of somatic conditions was derived from a self-report inventory (eg, cardiovascular disease, diabetes, osteoarthritis). For treatment status, use of antidepressants was measured on the basis of drug container inspection and was classified according to the World Health Organization Anatomical Therapeutic Chemical (ATC) classification system.[30] Antidepressants were considered present when taken at least 50% of the time and included selective serotonin reuptake inhibitors (ATC code: N06AB), tricyclic antidepressants (ATC code: N06AA), and other antidepressants (ATC codes: N06AF/N06AX). In addition, the Trimbos/iMTA Questionnaire for Costs Associated With Psychiatric Illness (TIC-P)[31] was used to gather information on receipt of psychological treatment (psychotherapy/counseling).

Statistical Analyses

Baseline characteristics were compared according to MDD chronicity status using χ^2 tests for categorical variables and ANOVA analyses for continuous variables. Logistic regression analyses were used to investigate how chronicity of depression relates to personality, cognitive reactivity, and external locus of control after adjustment for age, sex, and education. To examine the extent to which these psychological characteristics contribute independently to chronicity of depression, we entered them simultaneously into the model. To test for multicollinearity, we computed the variance inflation factor. To examine whether psychological characteristics potentially exert their effects on chronicity of depression through other clinical depression characteristics (severity, age at onset, comorbidity with anxiety disorders, medical illnesses, and treatment status), we first calculated correlation coefficients between these characteristics and psychological characteristics. Second, using logistic regression analyses, we examined whether the associations between psychological characteristics and chronicity of depression remained significant after controlling for clinical depression characteristics.

RESULTS

The study sample of 1,002 depressed adults consisted of 67.5% women. The mean age was 41.4 years (SD = 12.2 years), and mean educational level was 11.9 years (SD = 3.2 years). The chronicity criterion was fulfilled by 31.1% (n = 312). Table 1 summarizes the characteristics of nonchronically and chronically depressed persons. Chronically depressed persons were older ($P < .001$) than the nonchronically depressed participants. The mean number of months persons were depressed in the past 4 to 5 years was 40.6 (SD = 12.3) for the chronically depressed persons compared to 10.2 (SD = 6.1) for the nonchronically depressed persons. Besides having a longer illness duration, chronically depressed persons reported more severe depressive symptoms ($P < .001$), more comorbidity with anxiety disorders in the past year ($P < .001$), more medical illnesses ($P = .03$), and more use of antidepressants and/or psychotherapy ($P = .006$). They did not differ in age at onset of first depressive episode ($P = .37$).

To compare the risk of chronicity in depressed adults according to personality, cognitive reactivity, and external locus of control, we computed odds ratios through separate age-, sex-, and education-adjusted logistic regression analyses (Table 2). Chronicity of depression was significantly associated with all personality domains except openness to experience. In addition, chronicity of depression was significantly associated with an external locus of control and all the cognitive reactivity dimensions except acceptance and perfectionism.

To investigate the extent to which these psychological characteristics contribute independently to chronicity of depression, we tested the psychological characteristics multivariably (Table 2). Since certain psychological characteristics were highly intercorrelated ($r = 0.65$, $P < .001$ for risk aversion and rumination and $r = 0.55$, $P < .001$ for neuroticism and external locus of control), we checked whether multicollinearity problems would occur by computing the variance inflation factor. There were no multicollinearity problems since the variance inflation factors for all variables were below 2.2. In

Table 1. Demographic, Clinical, and Psychological Characteristics of the Total Sample and the Nonchronically and Chronically Depressed Persons

Characteristic	Total Sample (N = 1,002)	MDD Not Chronic (n = 690)	MDD Chronic (n = 312)	P[a]
Female sex, n (%)	676 (67.5)	469 (68.0)	207 (66.3)	.61
Age, mean ± SD, y	41.4 ± 12.2	40.5 ± 12.2	43.2 ± 11.8	.001
Education attained, mean ± SD, y	11.9 ± 3.2	12.0 ± 3.2	11.6 ± 3.2	.071
No. of months depressed in past 4 years, mean ± SD	19.7 ± 16.5	10.2 ± 6.1	40.6 ± 12.3	NA
Severity of depressive symptoms (IDS score), mean ± SD	31.3 ± 12.3	28.9 ± 11.9	36.5 ± 11.6	< .001
Onset before 21 years of age, n (%)	364 (36.3)	244 (35.5)	120 (38.5)	.37
Comorbid anxiety in past year, n (%)	658 (65.7)	418 (60.6)	240 (76.9)	< .001
No. of medical illnesses, mean ± SD	1.0 ± 1.1	0.95 ± 1.1	1.1 ± 1.1	.03
Treatment status, n (%)				
Antidepressants and/or psychotherapy/counseling	584 (58.3)	381 (55.2)	203 (65.1)	.006
Antidepressants	449 (44.8)	285 (41.3)	164 (52.6)	.004
Psychotherapy/counseling	340 (33.9)	213 (30.9)	127 (40.7)	.01
Personality, n (%)				
Neuroticism	41.9 (6.8)	40.9 (6.9)	44.3 (6.1)	< .001
Extraversion	33.4 (6.9)	34.5 (6.8)	30.9 (6.3)	< .001
Openness	31.2 (5.4)	31.4 (5.3)	30.7 (5.6)	.035
Agreeableness	43.0 (5.3)	43.2 (5.1)	42.3 (5.6)	.012
Conscientiousness	35.6 (6.2)	36.1 (6.0)	34.6 (6.5)	< .001
Cognitive reactivity, n (%)				
Hopelessness	7.4 (5.0)	6.6 (4.7)	9.1 (5.2)	< .001
Acceptance	1.9 (2.3)	1.8 (2.3)	2.0 (2.3)	.193
Aggression	6.2 (4.8)	5.9 (4.7)	7.0 (4.8)	.001
Perfectionism	6.7 (3.9)	6.6 (3.9)	6.8 (3.9)	.437
Risk aversion	10.9 (4.4)	10.4 (4.3)	12.0 (4.5)	< .001
Rumination	11.9 (4.5)	11.4 (4.5)	13.2 (4.4)	< .001
External locus of control, n (%)	15.4 (4.1)	14.6 (4.0)	17.1 (3.9)	< .001

[a]Comparison between nonchronic and chronic depressed persons, using χ^2 statistics for categorical variables and ANOVA analyses for continuous variables.
Abbreviations: IDS = Inventory of Depressive Symptomatology, MDD = major depressive disorder, NA = not applicable.

Table 2. Adjusted Odds Ratios for Chronic Depression According to Psychological Characteristics[a]

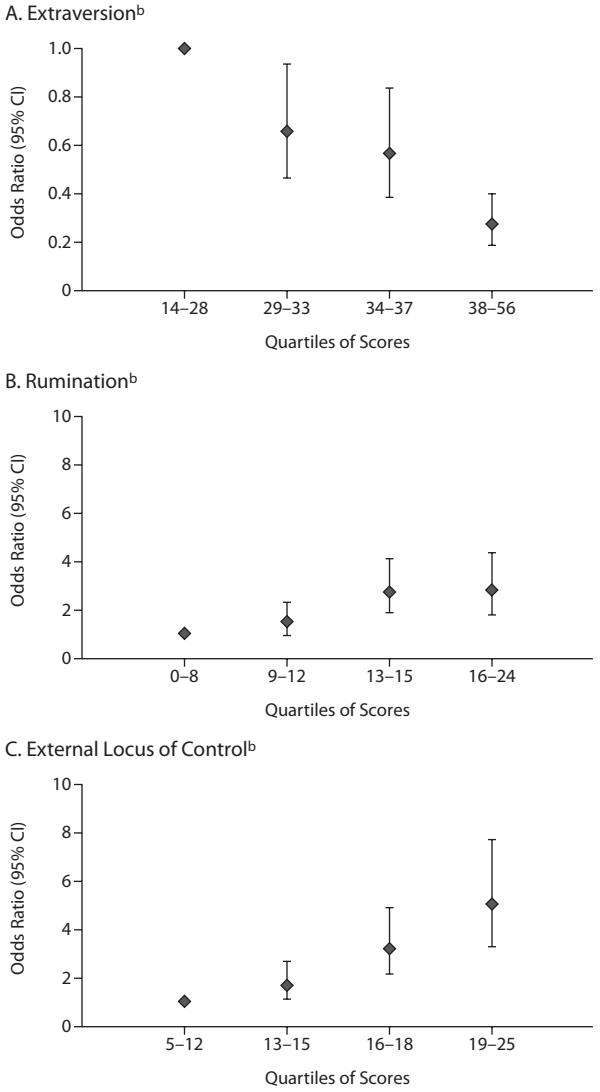
Variable	Psychological Characteristics Individually Considered, Odds Ratio (95% CI)	P[b]	Psychological Characteristics Simultaneously Entered, Odds Ratio (95% CI)	P[b]
Personality				
Neuroticism	1.81 (1.55–2.12)	< .001	1.17 (0.95–1.44)	.14
Extraversion	0.57 (0.49–0.67)	< .001	0.73 (0.61–0.88)	.001
Openness	0.91 (0.79–1.05)	.20	NA	NA
Agreeableness	0.85 (0.74–0.97)	.02	0.95 (0.80–1.13)	.56
Conscientiousness	0.77 (0.67–0.88)	< .001	1.00 (0.89–1.23)	.61
Cognitive reactivity				
Hopelessness	1.64 (1.43–1.88)	< .001	1.13 (0.93–1.37)	.23
Acceptance	1.07 (0.93–1.22)	.36	NA	NA
Aggression	1.29 (1.13–1.48)	< .001	0.89 (0.74–1.08)	.23
Perfectionism	1.07 (0.94–1.23)	.31	NA	NA
Risk aversion	1.43 (1.24–1.63)	< .001	0.96 (0.80–1.17)	.71
Rumination	1.55 (1.34–1.78)	< .001	1.24 (1.01–1.53)	.04
External locus of control	1.94 (1.66–2.28)	< .001	1.48 (1.21–1.80)	< .001

[a]Odds ratios are expressed per SD increase (for SD per variable, see Table 1).
[b]Adjusted for sex, age, and education.
Abbreviation: NA = not applicable.

this multivariable model, only extraversion, rumination, and external locus of control remained significantly associated with chronicity of depression. We additionally checked whether results were consistent when a stepwise entry method was applied to include psychological variables in the model. We found exactly the same final model (including extraversion, rumination, and external locus of control), which confirmed the robustness of our multivariable findings.

To further explore the associations between extraversion, rumination, and external locus of control and chronic depression, we graphically displayed the odds ratios of chronic depression across quartiles of these psychological characteristics (Figure 1). For all 3 variables, associations appeared linear ($P < .001$), and the lowest quartiles were significantly different from the second quartiles ($P = .02$, $P = .04$, and $P = .02$, respectively, for Figure 1A, 1B, and 1C).

Figure 1. Odds Ratios (increase per SD) for Chronicity of Depression Across Quartiles of (A) Extraversion, (B) Rumination, and (C) External Locus of Control[a]



[a]Adjusted for sex, age, and education.
[b]Overall $P < .001$.

To examine whether the psychological characteristics of extraversion, rumination, and external locus of control potentially exert their effects on chronicity of depression through other depression characteristics such as severity of depressive symptoms, age at onset, comorbidity with anxiety disorders, medical illnesses, and treatment status, we first calculated correlation coefficients between depression characteristics and extraversion, rumination, and external locus of control. The correlations were fairly modest in magnitude. The highest correlation was found between external locus of control and severity of depressive symptoms ($r = 0.52$, $P < .001$). Subsequently, we added the depression characteristics to the multivariable model and found that the associations between extraversion (per SD increase, OR = 0.77; 95% CI, 0.65–0.92; $P = .004$) and external locus of control (per SD increase, OR = 1.40; 95% CI, 1.16–1.69; $P < .001$) and chronicity of depression remained significant, whereas rumination reached borderline significance (per SD increase, OR = 1.16; 95% CI, 0.98–1.36; $P = .09$).

DISCUSSION

This study has demonstrated that, in depressed persons, chronicity is associated with higher levels of neuroticism, hopelessness, aggression, risk aversion, rumination, and external locus of control and with lower levels of extraversion, agreeableness, and conscientiousness. No differences were found for openness to experience, acceptance, and perfectionism. When testing these variables multivariably, the associations between extraversion, rumination, and external locus of control and chronicity of depression remained significant and were not due to underlying differences between chronically depressed persons and nonchronically depressed persons in severity of depressive symptoms, age at onset, comorbidity with anxiety disorders, medical illnesses, and treatment status (use of antidepressants and/or receiving therapy/counseling).

Our findings on the role of psychological characteristics in chronicity of depression are partly in line with prior studies on psychological characteristics and chronicity of depression. As in former studies,[4,5] our chronically depressed group reported higher levels of neuroticism compared to the nonchronically depressed group. However, in our study neuroticism did not remain associated with chronicity of depression when controlling for other psychological characteristics. Extraversion, rumination, and external locus of control did remain associated with chronicity of depression after controlling for other psychological characteristics. Our findings suggest that extraversion, rumination, and external locus of control, but not neuroticism, are differentiating psychological characteristics for chronicity of depression. This finding is new since prior studies[4,5] on chronicity of depression and neuroticism did not consider other psychological characteristics such as rumination and locus of control in their models, which might explain why they did find neuroticism to differentiate between chronic and nonchronic depression and we did not. Instead of neuroticism being a differentiating characteristic, we propose that it is rather a distal vulnerability factor for chronic depression,[32–35] with external locus of control and rumination serving as mediating mechanisms. Rumination has been conceptualized as a cognitive and behavioral expression of neuroticism,[36] and prior studies have found that rumination mediates the association between neuroticism and depression.[37,38] External locus of control might consolidate this mediation: it is suggested that the stronger the belief that fate controls the outcomes of personal events, the greater the stimulation of worry and guilt, and the deeper the depression that is manifested.[39,40]

Prior studies[4–6,8] have found associations for extraversion, rumination, and external locus of control in chronic depression; however, these studies have not tested these psychological characteristics simultaneously. Theories of chronic

depression emphasize feelings of hopelessness and helplessness, lowered positive emotionality, and poor sociability patterns in chronically depressed persons[3] and suggest that rumination in response to depressed mood prolongs depression.[41] Riso et al[7] did not find elevated levels of ruminative style in chronically depressed compared to nonchronically depressed individuals; however, this finding could have been due to the relatively small sample size (N = 69).

Limitations of the current study include the fact that our findings are based on a cross-sectional survey. Hence, we do not know if these psychological characteristics are causally related to chronicity of depression. Another limitation of this study is that it relied exclusively on self-report measures. These self-report measures can be affected by the depressed state.[42] State dependence can be an important source of data contamination; however, we think it is unlikely that a state-dependent bias can entirely account for our findings since comparisons were between 2 depressed groups and results were very consistent without and with adjustment for severity of depressive symptoms. Another limitation is the fact that our sample of chronically depressed persons was a mixture of poor responders, treatment-resistant depressed persons, and untreated (or inadequately treated) depressed persons, since they were derived from the community, primary care, and secondary care. However, in additional analyses, we tested for interaction effects between treatment status and psychological characteristics and did not find any significant interactions, indicating that the associations between extraversion, rumination, and external locus of control and chronicity of depression are similar for persons with and without treatment. Finally, in the current study, *chronicity of depression* was not defined according to *DSM-IV* criteria as being depressed for 24 consecutive months[12] but as being depressed for 24 months or more in the past 4 to 5 years. Therefore, it could be that some of the participants in the chronically depressed group did not strictly fulfill a diagnosis of chronic MDD but rather a diagnosis of recurrent MDD. For these participants, low levels of extraversion, high levels of rumination, and external locus of control could be seen as residual symptoms of depression rather than as characteristics of chronic depression.[43] Nonetheless, the mean number of months depressed in the past 4 to 5 years was 40.6 for the chronically depressed group (vs 10.2 months for the nonchronically depressed group), indicating that most chronically depressed participants would probably fulfill *DSM-IV* criteria for chronic depression. Furthermore, some persons in the nonchronic depression group may have had chronic depression in the past. However, these misclassifications would have led to a weakening of the associations between chronicity of depression and the psychological characteristics. Strengths of this study include the use of a large, representative sample and simultaneous consideration of personality, cognitive reactivity, and external locus of control.

Our findings suggest that there might be important psychological differences between chronically depressed persons and nonchronically depressed persons. This possibility has several implications for clinical practice. First, clinicians should be aware that low levels of extraversion (denoting introversion and poor sociability patterns), high levels of rumination (denoting ineffective reasoning skills), and external locus of control (denoting helplessness and hopelessness) in depressed persons might imply a more chronic course of depression. Second, psychological treatment of chronic depression that puts greater emphasis on combating hopelessness and helplessness and that focuses on poor sociability patterns and ineffective reasoning skills could potentially lead to a better outcome.[3,44–46]

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside US Food and Drug Administration–approved labeling has been presented in this article.
Author affiliations: Department of Psychiatry and EMGO Institute for Health and Care Research, VU University Medical Center and GGZ inGeest, Amsterdam (Ms Wiersma and Drs van Oppen, van Schaik, Beekman, and Penninx); Institute of Psychology, Leiden University, Leiden (Dr van der Does); Department of Psychiatry, Leiden University Medical Center, Leiden (Drs van der Does and Penninx); and Department of Psychiatry, University Medical Center Groningen, Groningen (Dr Penninx), The Netherlands.
Financial disclosure: **Ms Wiersma** and **Drs van Oppen**, **van Schaik**, **van der Does**, **Beekman**, and **Penninx** have no personal affiliations or financial relationships with any commercial interest to disclose relative to the article.
Funding/support: The infrastructure for the Netherlands Study of Depression and Anxiety (NESDA) (www.nesda.nl) is funded through the Geestkracht program of the Netherlands Organisation for Health Research and Development (Zon-Mw, grant number 10-000-1002) and is supported by participating universities and mental health care organizations (VU University Medical Center, GGZ inGeest, Arkin, Leiden University Medical Center, GGZ Rivierduinen, University Medical Center Groningen, Lentis, GGZ Friesland, GGZ Drenthe, Scientific Institute for Quality of Healthcare [IQ healthcare], Netherlands Institute for Health Services Research [NIVEL], and Netherlands Institute of Mental Health and Addiction [Trimbos]). Dr Wiersma was further supported by the Netherlands Organisation for Health Research and Development grant number 100-003-022. Dr van der Does is supported by the Netherlands Organisation for Science, NWO-VICI grant #453-06-005.

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