Psychometric validation of the Mood and Anxiety Symptom Questionnaire (MASQ)

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ABSTRACT

Background: We validated the Mood and Anxiety Symptom Questionnaire (MASQ-90), self-report questionnaire that assesses depressive, anxious and mixed symptomatology, on Slovenian psychiatric patient population. Three scales measure general distress (scale MASQ-GD), physiological arousal (scale MASQ-AA), and anhedonia or low positive affect (scale MASQ-AD).

Method: Patients of the University Psychiatric Clinic Ljubljana with variously expressed depressive or anxiety symptoms (N = 303) were included in the sample. In addition to MASQ, a subsample of 200 participants completed the Generalized Anxiety Disorder Questionnaire (GAD-7) and the Patient Health Questionnaire (PHQ-9).

Results: The average scores on the MASQ-GD and MASQ-AD scales and the sum-score of the MASQ questionnaire were medium high, while the average score on the MASQ-AA scale was low. The correlation between scores on the MASQ-GD and MASQ-AA scales was high (r = .73) and the correlation between MASQ-GD and MASQ-AD scales was high (r = .81). The correlation between scores on the MASQ-AA and MASQ-AD scales was moderate (r = .50). Internal consistency coefficients λ_2 showed excellent reliability of the scales MASQ-GD and MASQ-AA, good reliability of the scale MASQ-AD and excellent composite reliability of the $MASQ_{77}$ score. Factor analysis confirmed an adequate fit of the model to the data. Correlations between scores on the MASQ, GAD-7 and PHQ-9 questionnaires were high.

Conclusion: Based on the psychometric analysis performed, we can conclude that the MASQ-90 has adequate psychometric characteristics in the Slovenian clinical population and is therefore suitable for use in clinical research.

Key words: Anxiety, Depression, Mood and Anxiety Symptom Questionnaire MASQ, Test validity, Psychometrics

1. Introduction

Depressive and anxiety disorders are the most common mental disorders worldwide (1, 2, 3). They tend to co-occur and their symptoms are highly correlated (4). Results of a systematic review and meta-analysis of 66 studies involving 88.336 participants suggested that all types of anxiety symptoms predicted later depressive symptoms (r = .34), and all types of depressive symptoms predicted later anxiety symptoms (r = .31) (5). Comorbid major depressive disorder and generalized anxiety disorder is the most common form of comorbidity involving depressive and anxiety disorders (6). Epidemiological data suggested that 59.0% of individuals with generalized anxiety disorder met the criteria for major depressive disorder. Among 489 psychiatric patients from the four Western Balkan countries with a current primary diagnosis of major depression according to ICD-10, 72.5% of patients had at least one comorbid psychiatric disorder (7). The most frequent were anxiety disorders (53.6%), specifically generalized anxiety disorder (20.2%). Numerous studies have identified insufficient separation between the diagnoses of major depressive disorder and generalized anxiety disorder, which leads to less appropriate pharmacological and psychotherapeutic treatment (8). The frequency of co-occurrence of depressive and anxiety disorders far exceeds the levels of comorbidity that would result from a coincidental overlap of symptoms (9). There are several psychological hypotheses that explain the relationship between depressive and anxiety disorders and address the dilemma of the causes of their frequent co-occurrence. These include the general distress hypothesis, which states that so-called general distress occurs in all mood (affective) disorders, leading to their high comorbidity (10).

1.1. Tripartite Model of Anxiety and Depression

According to the general distress hypothesis, Tripartite Model of Anxiety and Depression was developed (11). The model is based on the assumption that there are two major factors of human temperament that are relatively independent of each other, namely positive affect (PA) and negative affect (NA) (12). Negative affect refers to experiencing negative emotions such as sadness, guilt, hostility, discomfort, fear, and dissatisfaction with oneself (13). It is related to the personality dimension of neuroticism and represents a stable, largely heritable factor of human temperament (11). High negative affect therefore includes both depressive and anxiety symptoms and is characteristic of all mood and anxiety disorders. Positive affect is related to the personality dimension of extraversion and is also a stable, largely inherited dimension of temperament. It includes traits such as enthusiasm, thrill-seeking, companionship, and energy (14). The Tripartite model predicts that people with depression exhibit low positive affect or anhedonia, which manifests itself in apathy, listlessness, indifference, and disinterest. These characteristics are thus specific to persons with depressive symptoms and are not present in persons with anxiety symptoms (10). In addition to negative and positive affect, the Tripartite Model of Anxiety and Depression predicts a third dimension, physiological arousal, which refers to the activation of the autonomic nervous system (10). It includes the following symptoms: dizziness, shortness of breath, rapid heartbeat, sweating, shaking hands, etc. It is assumed that this dimension is specific to people who experience anxiety symptoms and does not appear in depressed people. The Tripartite model assumes that certain characteristics of temperament influence the tendency of persons to develop depressive or anxiety disorders (11). Individuals with highly expressed negative affect and weakly expressed positive affect should therefore be predisposed to develop depressive disorders, while individuals with highly expressed negative affect and highly expressed physiological arousal are said to be more inclined to develop anxiety disorders.

1.2. Mood and Anxiety Symptom Questionnaire (MASQ)

The Mood and Anxiety Symptom Questionnaire (MASQ; 15) is a frequently used psychological questionnaire designed to assess depressive, anxiety and mixed symptomatology. It was designed based on the Tripartite Model of Anxiety and Depression (11). In the MASQ questionnaire symptoms of depressive and anxiety disorders are divided into three scales, 1) non-specific symptoms of general

distress (scale MASQ-GD), which are characteristic of both anxiety and depressive disorders, 2) physiological arousal (scale MASQ-AA), which is specific for anxiety disorders, and 3) anhedonia or low positive affect (scale MASQ-AD), characteristic only of depressive disorders (16). The MASQ-90 questionnaire has 90 items, of which 77 are included in the scales, and 13 are unclassified. The scales MASQ-GD, MASQ-AD and MASQ-AA include 38, 22 and 17 items, respectively. The initial instructions state that the items represent a list of feelings, sensations, problems, and experiences that people sometimes have. Participant's responds on a five-point scale (1 – not at all, 2 – a little bit, 3 – moderately, 4 – quite a bit and 5 – extremely) indicate the extent to which items apply to them in the last week. Based on the responses, we can calculate raw values for each of the three scales and thus determine which types of mood and anxiety symptoms predominate (17). In addition to the original version of the MASQ questionnaire, which contains a total of 90 items, there are also two shorter versions of the questionnaire with 62 (Short-MASQ) and 26 items (Mini-MASQ).

The primary advantage of the MASQ over other clinical mood disorder questionnaires is its ability to concurrently assess depressive and anxiety symptoms, assuming their interrelatedness and frequent overlap, rather than treating them as separate conditions. This study presents the psychometric validation of the Mood and Anxiety Symptom Questionnaire (MASQ), conducted on a sample of patients from the University Psychiatric Clinic Ljubljana, presenting varying levels of depressive and anxiety symptoms.

2. Method

2.1. Subjects and measures

The sample included 303 adult psychiatric patients who received inpatient or outpatient treatment from March to November 2023 in the following professional units of the University Psychiatric Clinic Ljubljana: Intensive Psychiatry Unit, Unit for Prolonged Psychiatric Treatment, Unit for Rehabilitation and Unit for Crisis Interventions. Participants had mild, moderate or severe symptoms of depression or anxiety, without psychotic (disturbed reality monitoring) or manic symptoms (experiencing euphoria, impulsivity, excessive energy, agitation, recklessness). For 15 persons included in the sample, age was not recorded. The average age of the other 288 persons was 36.4 years (SD = 14.1). There were 164 women and 115 men in the sample, 24 people had no gender information. The youngest participating woman was 18, and the youngest man was 19. The oldest woman included in the sample was 74 and the oldest man was 73.

Participants completed the MASQ-90 (Mood and Anxiety Symptom Questionnaire; 15), and a subsample of 200 patients also completed the validated Slovenian versions of the GAD-7 (Generalized Anxiety Disorder Questionnaire; 18) and the PHQ-9 (Patient Health Questionnaire; 19). The GAD-7 questionnaire contains 7 items. It is intended to assess the expression of symptoms of anxiety and is often used as a screening tool to determine the presence of generalized anxiety disorder (20). The PHQ-9 questionnaire has 9 items, and the additional, tenth item which is not taken into account in the total sum of item scores. The PHQ-9 score indicates the expression of depressive symptoms and can be helpful in determining the presence of major depressive disorder (21). Both the GAD-7 and the PHQ-9 are diagnostic tests and are often used within the health care system.

2.2. Data analysis

After data collection, we performed a psychometric analysis in the R software (22; packages used: psych, 23; lavaan, 24; missForest, 25; cocor, 26) and thus checked whether the MASQ questionnaire enables reliable and valid measurement of the main three constructs, i.e. general distress, physiological arousal and anhedonia, in our clinical population.

We calculated all relevant statistical parameters, performed a confirmatory factor analysis, assessed the reliability of the MASQ with appropriate coefficients of internal consistency, and evaluated the construct validity using the GAD-7 (18) and the PHQ-9 (19).

3. Results

3.1. Descriptive statistics

A total of 256 participants had complete data, meaning that their answers were properly recorded on all 90 items of the MASQ questionnaire. There were 47 participants with incomplete data in the sample; 36 people had one missing value, 9 people had two missing values, 1 person had three missing values, and 1 person had five missing answers to the items of the MASQ questionnaire. The total number of missing values was therefore 62, which represents approximately 0.2% of all 27,270 values. We imputed the missing values by means of the R package missForest (25), which is based on the random forest algorithm. Then we calculated descriptive statistics for the subscale and the total scale sum-scores of the MASQ questionnaire (Table 1).

Table 1. Descriptive statistics for the scales and the classical sum-score of the MASQ questionnaire

	M	*SD*	*Mdn*	M_{trim}	*Min*	*Max*	*Skew*	*Kurt*	*SE(M)*
MASQ	206.3	41.6	201	203.3	105	359	0.8	0.8	2.4
MASQ-AD	66.3	20.2	64	66.0	22	110	0.2	-1.0	1.2
MASQ-AA	29.2	10.8	26	27.4	17	79	1.6	3.0	0.6
MASQ-GD	90.2	33.7	86	88.5	38	190	0.4	-0.9	1.9

Note: M_{trim}: 10 % trimmed mean, Skew: skewness, Kurt: kurtosis, SE(M): standard error of mean.

In Table 1, we can see that the average scores on the MASQ-GD and MASQ-AD scales and the classic sum-score of the MASQ questionnaire were medium high regarding possible range of scores. The average score on the MASQ-AA scale was low. Coefficients of skewness with the exception of the coefficient for the MASQ-AD scale showed large positive skewness. Scores on the MASQ-AD scale were symmetrically distributed. The distribution of scores on the MASQ-GD and MASQ-AD scales was platykurtic, but on the MASQ-AA scale it was markedly leptokurtic. The classic total sum-score of the MASQ questionnaire also had a leptokurtic distribution. The standard errors of the mean were small (about 6% of SD), meaning that the mean estimates were relatively accurate.

For the purpose of evaluation of the construct validity of the MASQ, we used the Slovenian versions of the GAD-7 (18) and the PHQ-9 (19). The three psychological questionnaires were filled in by 200 participants of the MASQ study; namely outpatients and hospitalized patients of the University Psychiatric Clinic Ljubljana at the time of data collection. We calculated the descriptive statistics for the classical sum-scores of the GAD-7 and PHQ-9 questionnaires (Table 2).

Table 2. Descriptive statistics for the classical sum-scores of the GAD-7 and PHQ-9 questionnaires

	M	*SD*	*Mdn*	M_{trim}	*Min*	*Max*	*Skew*	*Kurt*	*SE(M)*
GAD-7	8.16	6.14	7	7.77	0	21	0.43	-1.05	0.43
PHQ-9	11.01	7.33	9	10.68	0	27	0.35	-1.06	0.52

Note: Mdn: median, M_{trim}: 10 % trimmed mean, Skew: skewness, Kurt: kurtosis, SE(M): standard error of mean.

The average scores of the sample of patients of the psychiatric clinic on the GAD-7 and PHQ-9 questionnaires were medium high. The coefficients of skewness showed large positive asymmetry for both GAD-7 and PHQ-9 questionnaires, and the coefficients of kurtosis showed platykurtic distributions of scores.

3.2. Correlations

The average correlation between individual two items of the MASQ questionnaire was .14, and the median of correlations was .29. The highest negative correlation occurred between items 86 and 16 (r = -.66), while the highest positive correlation was between items 80 and 76 (r = .84). Correlation between items within individual scales of the MASQ questionnaire were mostly moderately positive. Item 67 showed low negative correlations with other items within the MASQ-AA scale. Both the correlation between scores on the MASQ-GD and MASQ-AA and between scores on the MASQ-GD and MASQ-AD scales were high (r = .73 and .81, respectively), while correlation between scores on the MASQ-AA and MASQ-AD scales was moderate (r = .50).

3.3. Factor analysis

To verify the 3-factor structure of the MASQ questionnaire, we performed a confirmatory factor analysis using the R package lavaan (24). We used the WLSMV estimator. We rejected the hypothesis of a perfect fit of the data: x2(2846) = 4161.40, $p < 0.001$. Other robust fit indexes, however, showed good fit: CFI = 0.978, TLI = 0.978, RMSEA = 0.060, SRMR = 0.074. We calculated the factor weights, standard errors, and standardized factor weights for the 3-factor model of the MASQ questionnaire. Standardized factor weights were moderate to high, indicating that the items of the MASQ questionnaire are generally good measures of latent variables. Low factor weights appeared for items 5 and 12, while item 67 had a negative factor weight.

3.4. Reliability

Due to presence of negative correlations between the items of the MASQ questionnaire, we assessed reliability using the Guttman's λ_2 reliability coefficients. They showed excellent reliability of the MASQ-GD (λ_2 = .97) and MASQ-AA scales (λ_2 = .90), and slightly lower but adequate reliability of the MASQ-AD scale (λ_2 = .84). We also calculated the composite reliability for the sum of scores on all three scales of the MASQ questionnaire ($MASQ_{77}$), which was also excellent (λ_2 = .96). The $MASQ_{77}$ composite score refers to the sum of the 77 items of the MASQ questionnaire, which are classified into scales. In addition to them, there are 13 unclassified items in the MASQ questionnaire, which we did not include in the reliability assessment

3.5. Construct validity

We calculated the correlations between the MASQ, GAD-7 and PHQ-9 questionnaires´ test scores (Table 4).

Table 4. Correlations between the MASQ, GAD-7 and PHQ-9 questionnaires´ test scores

	GAD-7	PHQ-9
MASQ	.88	.87
MASQ-GD	.88	.87
MASQ-AD	.74	.77
MASQ-AA	.74	.67
GAD-7	1	.85
PHQ-9	.85	1

Table 4 shows that the correlations between the considered measures of depression and anxiety were highly positive. Test scores on the MASQ questionnaire were approximately equally highly correlated with scores on the GAD-7 questionnaire and scores on the PHQ-9 questionnaire. Correlation between scores on the MASQ-AA scale and the GAD-7 questionnaire was the same as correlation between scores on the MASQ-AD scale and the GAD-7 questionnaire. Scores on the PHQ-9 questionnaire correlated slightly higher with the scores on the MASQ-AD scale compared to their correlation with scores on the MASQ-AA scale.

The correlation between scores on the MASQ-AA scale and the GAD-7 questionnaire was statistically significantly higher ($p < 0.01$) than the correlation between the scores on the MASQ-AA scale and the PHQ-9 questionnaire. However, the correlation between scores on the MASQ-AD scale and the PHQ-9 questionnaire was not statistically significantly higher ($p = 0.22$) than the correlation between the scores on the MASQ-AA scale and the GAD-7 questionnaire. We used the procedure for comparing dependent correlations, as implemented in the cocor package to test the differences between the correlations (26).

4. Discussion

In this study, we validated the Mood and Anxiety Symptom Questionnaire (MASQ) on a sample of patients of the University Psychiatric Clinic Ljubljana. The MASQ questionnaire is designed to assess depressive, anxiety and mixed symptoms in both clinical and normative populations.

An examination of the descriptive statistics of the 90 items of the MASQ questionnaire showed low to medium high mean values, which is not consistent with expectations. Given that the sample included psychiatric patients with symptoms of mood disorders, we had assumed that the average item scores would have been slightly higher, which would indicate a high expression of depressive and anxiety symptoms. The reason for the low mean values of the items could be that a large proportion of the patients were interviewed after the stabilization of the acute phase of their mood disorder, when they had already experienced an improvement in mood, which indicated a successful treatment. In addition, we estimate

that many people with mild to moderate depressive and anxiety symptoms were included in the sample, while there were far fewer participants with severe symptoms of mood disorder. Due to their poor health and mental well-being, lack of motivation and ability to focus, these patients were often not willing or able to participate in such research. Therefore, despite the original plan that people with mild to severe symptoms would have been included, the sample mainly consisted of people with mild to moderately pronounced symptoms, who were able to function in their daily life and who had already shown the improvement in mood after medication and psychotherapeutic treatment. We assume that the average item scores of the MASQ questionnaire would have been significantly higher if the patients had filled out the MASQ questionnaire upon admission to the psychiatric clinic.

Items with the highest middle values were as follows: 23, 27, 35, 49, 58, 72 and 84. They refer to the absence of liveliness, energy, lightness, fun and a sense of self-pride, and the presence of excessive worry. The mentioned symptoms are quite general and very often appear in various mood disorders (27). Items with the lowest middle values were as follows: 12, 19, 25, 32, 34, 37, 45, 48, 52, 55, 57, 61, 63, 65, 69, 71, 73, 79, 81, 87, 88 and 89. These items are quite specific and mostly refer to physical symptoms, which are often shared with somatic illnesses. The item referring to thinking about death or suicide also had a very low average score, which is expected, since this type of thinking is characteristic especially of individuals with severe symptoms of mood disorders.

The average scores on the MASQ-GD and MASQ-AD scales were medium high, while the average score on the MASQ-AA scale was low. The explanation why the participants in general reported lower expressed anxiety symptoms and much higher expressed mixed and depressive symptoms may be that in the initial weeks of the psychiatric treatment, anxiety symptoms are more amenable to drug treatment than depressive symptoms, which generally persist for some time after starting taking medication (28). Mood disorders are often treated with antidepressants and anxiolytics. The effect of anxiolytics is immediate, but since they can cause addiction, long-term use is not recommended (29). They are very effective in reducing symptoms of anxiety (insomnia, restlessness), but their effect on reducing symptoms of depression (anhedonia, lack of energy) is much smaller. In contrast, antidepressants do not have an immediate effect; improvement usually occurs within a few weeks, and symptoms of mood disorders may even worsen in the early stages of treatment (28). It is therefore possible that the positive effects of treatment with anxiolytics (reduction of anxiety symptoms) had already been achieved in most of the participants, but due to the initial stages of taking antidepressants at the time, most patients had not yet noticed an improvement in depressive symptoms.

According to the assumptions of the authors of the MASQ questionnaire, the MASQ-GD scale includes items related to symptoms common to depressive and anxiety disorders, while the MASQ-AD and MASQ-AA scales include items with symptoms specific to depressive or anxiety disorders. Therefore, people with depressive disorders should achieve high scores on the MASQ-GD and MASQ-AD scales and a low score on the MASQ-AA scale. Conversely, people with anxiety disorders should achieve high scores on the MASQ-GD and MASQ-AA scales and a low score on the MASQ-AD scale. Due to the described assumptions, we expected that the scores on the MASQ-AA and MASQ-AD scales will correlate lower with each other than with the scores on the MASQ-GD scale. Our predictions were correct: in the sample of Slovenian psychiatric patients the correlations between the scores on the MASQ-GD and MASQ-AA scales and the MASQ-GD and MASQ-AD were high, while the correlation between the scores on the MASQ-AA and MASQ-AD scales was moderate.

The correlations between the individual items of the MASQ questionnaire were very diverse in the sample of Slovenian psychiatric patients: both weak and strong, both positive and negative correlations appeared. Correlations between items within each scale of the MASQ questionnaire were generally moderately positive. Surprisingly, item 67 correlated negatively with most items within the MASQ-AA scale.

For the purpose of checking reliability of the scales of the MASQ questionnaire, we calculated

the Guttman's λ_2 which, compared to other coefficients of internal consistency, are not so sensitive to negative correlations between items of a questionnaire (30). The results showed very good reliability of the MASQ-AA scale, MASQ-GD scale and the composite score $MASQ_{77}$. Reliability of the MASQ-AD scale turned out to be adequate for research purposes.

We performed a confirmatory factor analysis to check whether the collected data fit the 3-factor structure of the MASQ questionnaire. The parameters were estimated using the Weighted Least Squares Mean and Variance Adjusted (WLSMV), which treats the variables as categorical (24). Confirmatory factor analysis with the WLSMV estimator showed an adequate fit of the model to the data. The factor weights were generally moderate to high, and the fit indexes corresponded to the tentative criterion values proposed by Hu and Bentler: approximately 0.95 for the CFI, 0.06 for the RMSEA, and 0.08 for the SRMR (31). The 3-factor structure of the MASQ questionnaire therefore proved to be adequate, while the items proved to be good measures of latent variables.

Correlations between scores on the MASQ and Slovenian versions of PHQ-9 and GAD-7 questionnaires were expectedly high, which means that they measure related constructs in Slovenian clinical population. As expected scores on the MASQ-AA scale correlated statistically significantly higher with scores on the GAD-7 questionnaire compared to the scores on the PHQ-9 questionnaire. The GAD-7 questionnaire is intended to identify generalized anxiety disorder and related anxiety disorders, while the PHQ-9 questionnaire is intended to identify major depressive disorder and related depressive disorders. Therefore, the MASQ-AA scale, a measure of expression of specific symptoms of anxiety disorders, is generally only to a lesser extent related to the PHQ-9 questionnaire than to the GAD-7 questionnaire. The difference between the correlation of scores on the MASQ-AD scale and the GAD-7 questionnaire and the correlation of scores on the MASQ-AD scale and the PHQ-9 questionnaire was not statistically significant, which is not consistent with expectations. Namely, we predicted that scores on the MASQ-AD scale of specific depressive symptoms would have correlated significantly higher with scores on the PHQ-9 questionnaire than with scores on the GAD-7 questionnaire.

In the Slovenian sample, the GAD-7 questionnaire did not differentiate between the MASQ-AA scale, which measures specific anxiety symptoms, and MASQ-AD scale, which measures specific depressive symptoms, although we expected that the scores in the GAD-7 questionnaire would have been more highly correlated with scores on the MASQ-AA scale than with the scores on the MASQ-AD scale. Higher scores of participants were therefore non-specifically associated with a higher expression of the symptoms of both anxiety and depressive disorders.

In the psychometric analysis we did not check whether participants with anxiety disorders generally achieved high scores on the MASQ-GD and MASQ-AA scales and low scores on the MASQ-AD scale, and whether participants with depressive disorders generally achieved high scores on the MASQ-GD and MASQ-AD scales and low scores on the MASQ-AA scale. Consequently, we cannot say with certainty that the MASQ-AA and MASQ-AD scales measure specific symptoms of anxiety or depressive disorders in Slovenian psychiatric patients. Based only on the correlations between the scales of the MASQ questionnaire, which otherwise agree with the model, we cannot say with certainty that the results of this research support the Clark-Watson's Tripartite Model of Anxiety and Depression.

5. Limitations

The validation was performed on a relatively small sample size, which consisted of 303 patients of University Psychiatric Clinic Ljubljana. Only 200 people were included in the sub-sample intended to check the construct validity of the MASQ questionnaire. There was only a small proportion of those with severe depressive and anxiety symptoms included in the sample. The majority of participants have been experiencing mild to moderately expressed symptoms and were already showing positive effects of the treatment when filling out the MASQ questionnaire. The results of the psychometric analysis therefore show that the MASQ questionnaire performs well in assessing the expression of depressive and anxiety symptoms in persons with moderately expressed

symptoms. In further research, we suggest checking the psychometric properties of the MASQ questionnaire on the sample of Slovenian normative population and compare them with the results of this study. It would also be interesting to compare the differences in average scores on the scales of the MASQ questionnaire between patients with depressive disorders, anxiety disorders and comorbidity of both types of disorders, and to check whether the differences support the assumptions of the Tripartite Model of Anxiety and Depression.

6. Conclusion

The results of this validation show that the MASQ questionnaire is a valid and reliable psychological instrument adequate for the assessment of depressive, anxiety and mixed symptoms in the Slovenian clinical population. MASQ questionnaire can be used in various psychological, neurobiological, genetic and cognitive studies of the development of mental disorders in which the severity of depressive and anxiety symptoms in the clinical population needs to be evaluated. Researchers will be able to use it for the purpose of creating a general examination of the expression of depressive and anxiety symptoms in an individual or for monitoring the individual's response to the treatment of mood disorders.

7. Ethics statement

The studies involving human participants were reviewed and approved by the Internal Review Board at the University Psychiatric Clinic Ljubljana. Participants provided their written informed consent to participate in this study.

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9. Declaration of Interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

10. Author contributions

(Using CRediT Taxonomy, http://www.cell.com/pb/assets/raw/shared/guidelines/CRediT-taxonomy.pdf http://www.cell.com/pb/assets/raw/shared/guidelines/CRediT-taxonomy.pdf). TF, GS, and SČD: Conceptualization; TF and GS: Methodology; AO: Software; TF: Formal analysis; TF and GS: Investigation; TF and SČD: Writing— original draft; AO, GS and JB: Writing—review & editing; JB: Project administration; GS and JB: Supervision.

11. Conflicts of Interest

The authors declare no conflict of interest.

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