

Study of Cloninger's Dimension of Personality in Patients with Mood Disorders

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ABSTRACT

Background: The relationship between mood disorders and personality has been of longstanding interest to clinicians. Moreover, personality traits have a strong influence on the course and outcome of depressive and bipolar disorders. **Objective:** to study the impact of personality traits on different parameters of mood disorders including age of onset of illness, clinical picture, and severity of illness, frequency of relapse, frequency of hospitalization and duration of admission in hospital. **Subjects and methods:** The sample included the first 50 patients fulfilling the criteria of bipolar or unipolar mood disorders according to DSM-IV. Higher mean scores of novelty seek; harm avoidance, reward dependence, and cooperativeness were found in patients with major depressive disorder. **Results:** Higher mean scores of persistence, self directedness and self transcendence were found in patients with bipolar mood disorders. Frequency and duration of hospitalization were indirectly related to harm avoidance while frequency of relapse was directly related to cooperativeness. **Conclusion:** Cloninger's personality dimensions in subjects with mood disorders impact the clinical picture and severity of illness. Personality profile affects the frequency of hospitalization and duration of admission to the hospital and number of episodes. Also it was found that specific traits are associated with earlier age of onset. The findings of the current study suggest that clinicians should be more vigilant for the effect of certain personality dimensions in patients with mood disorders.

Key words: Cloninger's Dimension, Mood disorders, Egypt.

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INTRODUCTION

Personality traits and disorders have a strong influence on the course and outcome of major depressive and bipolar disorders¹. Personality may affect overall treatment response or response to certain treatment modalities or influence what treatments patients receive². In Cloninger's model of personality, the relationship between personality and mood disorders is complex because the underlying variation is

multidimensional and quantitative³. Cloninger's model presumes that various dimensions of character and temperament (which are biologically based and independent) distinguish individuals without mental disorders from those with mental disorders and also distinguish between various disorders⁴.

Severity of major depressive disorder (MDD), as assessed by the Hamilton Rating

Scale for Depression, was correlated positively to the harm avoidance score and negatively to the self-directedness and cooperativeness scores⁵. Cloninger et al. viewed temperament profile of patients with bipolar mood disorder (BMD) to be approximately average of the general population⁶. There was also a significant association between bipolar disorder and Novelty Seeking⁷. On the other hand, bipolar patients were significantly higher in Harm Avoidance and lower in reward dependence, self directedness and cooperativeness⁸.

Regarding personality profile in relation to the age of onset of the illness, patients with early onset were significantly higher in the temperament factor harm avoidance than patients with late onset⁸. Patients with early onset had more fear of uncertainty (HA2) and were more shy (HA3).

The presence of personality traits in subjects with mood disorders may impact the clinical picture and severity of illness. That's why this work was done to study the impact of personality traits on age of onset of illness, clinical picture, severity of illness, frequency of relapse, frequency of hospitalization and duration of admission in hospital.

SUBJECTS AND METHODS

This study was done at the Institute of Psychiatry, Ain Shams University. All cases were selected from inpatients. The sample included all cases admitted to inpatient departments during a period of 6 months. All Cases were diagnosed bipolar or unipolar mood disorders according to DSM-IVTR. The sample included both males and females. Patients below 18 years or above 50 years old were excluded. Also,

euthymic patients were excluded. To keep the sample homogenous all cases of comorbid axis I or III diagnoses were excluded. Structured Clinical Interview for DSM-IV Axis I Disorder (SCID-I)⁹ was used for all cases to confirm the diagnosis. Hamilton Depression Rating Scale (24 items) (HAM-D) (10) and Young Mania rating Scale (YMRS)¹¹ were used to assess the severity of the disorders. Temperament and Character Inventory-Revised (TCI-R) was used for personality assessment⁶. It is a battery of tests designed to assess the seven basic dimensions of personality; 4 temperaments and 3 characters namely novelty seeking, harm avoidance, reward dependence, persistence, self directedness, cooperativeness and self transcendence. Each of the 4 temperaments and the 3 characters have further 4 subscales. The questionnaire is formed of 240 items. The mean administration time is 90-120 minutes. It has a 5 points scoring (definitely false, mostly or probably false, neither true nor false, mostly or probably true, definitely true). All temperament scales and subscales are shown in table (1). Before start of any procedure an informed consent was taken from all patients and their legal guardians. Data was subjected to statistical analysis using SPSS version 12. Level of significance was detected at $p=0.05$. Tests used included means, standard deviation, percent, Independent sample t-test, one way ANOVA test and Spearman correlation (r) test.

RESULTS

The study recruited 50 patients. The sample included 35 patients with bipolar disorder; 14 males and 21 females. Cases of major depressive disorders were 15 patients; 10 males and 5 females. The mean age of

patients was 31.58 ± 8.64 . Males constitute 48 % of cases (n=24) and females constitute 52% (n=26). Single patients were 40% (n=20) of the cases while married patients were 46% of the cases (n=23). Seven cases

were either widow or divorced. The index episode was mania in 65.7 % of bipolar cases (N=23) and was depression in 34.3% of bipolar cases (n=12).

Table (1) showed Temperaments and characters Scales and Subscales description:

Item	Subscale 1	Subscale 2	Subscale 3	Subscale 4
Novelty seeking (NS)	Exploratory anxiety/ Stoic Rigidity	Impulsiveness Reflection	Extravagance/ Reserve.	Disorderliness/ Regimentation
Harm Avoidance (HA)	Anticipatory worry & pessimism/ Uninhibited optimism	Fear of uncertainty.	Shyness with strangers.	Fatigability & Asthenia
Reward Dependence (RD)	Sentimentality.	Openness to warm communication/ aloofness.	Attachment	Dependence
Persistence (P)	Eagerness of effort/ laziness	Work hardened/ spoiled	Ambitious/ underachieving	Perfectionist/ pragmatic
Self-Directedness (SD)	Responsibility/ Blaming.	Purposefulness/ Lack of goal direction.	Resourcefulness	Enlightened second nature.
Cooperativeness (CO)	Social Acceptance/ Social Intolerance	Empathy/ disinterest. social	Helpfulness/ Unhelpfulness.	Compassion/ revengefulness.
Self-transcendence (ST)	Self-Forgetful/ self conscious experience.	Transpersonal identification/ Self- Differentiation.	Spiritual acceptance/ Rational materialism	NB. Self transcendence has only 3 subscales

NB: there is a fifth subscale for cooperativeness which is pure hearted conscience versus self-serving advantage

As shown in table (2), Cloninger's temperaments were correlated to Axis I diagnosis which revealed higher mean scores of Novelty Seeking (NSt), Harm Avoidance (HAt), Reward Dependence (RDt), and Cooperativeness (Ct) with patients with major depressive disorder but not reaching the point of statistical significance except for HAt. On the other hand, higher mean scores of Persistence (PSt), Self Directedness (SDt) and Self Transcendence (STt) were found with patients with bipolar mood disorder but also not reaching the point of statistical significance except for (STt).

Correlation of Cloninger's personality temperaments and characters subscales between patients in relation to axis one diagnosis revealed statistically significant results as shown in table (3).

As shown in table (4), direct relation was found between harm avoidance scales and severity of depression, while a reciprocal relation was found between severity of depression and persistence, self directedness, cooperativeness and self transcendence.

Table (2) Mean Scores of Temperament & character

	BMD (Mean $\pm$ SD)	MDD (Mean $\pm$ SD)	P- value
NSt	88.9 $\pm$ 19.9	97 $\pm$ 15.7	0.17
HAt	90.6 $\pm$ 23.8	109.8 $\pm$ 22.6	0.01
RDt	105.3 $\pm$ 22.8	107.5 $\pm$ 22.5	0.760
PSt	139.2 $\pm$ 30.3	130.3 $\pm$ 25.8	0.326
SDt	135.9 $\pm$ 32.2	130 $\pm$ 22.8	0.520
Ct	130.4 $\pm$ 27.9	133.1 $\pm$ 17.5	0.728
STt	85.1 $\pm$ 19.9	73.7 $\pm$ 13.9	0.048

P value is significant at ≤ 0.05

Table (3): Comparison of Cloninger's Personality temperaments and characters subscales between patients in relation to axis I diagnosis:

	BMD (Mean ± SD)	MDD (Mean ± SD)	P-value
HA1	30.3± 7.3	38± 8.5	0.002
HA2	23.1±5.39	28±4.6	0.004
SD2	24.9± 3.9	21.1±5.7	0.028
ST2	25.9±5.5	18.5±5.5	0.000

P value is highly significant at ≤ 0.005 ; *P* value is very highly significant at = 0.000

Table (4) Spearman Correlation of Severity of depression and Cloninger's dimensions

Item	r-value	P-value
HA1	0.477	0.000
HA2	0.460	0.001
HA4	0.291	0.041
HA_t	0.435	0.002
PS2	-0.357	0.011
SD3	-0.296	0.037
C2	-0.334	0.018
ST1	-0.313	0.027
ST_t	-0.306	0.031

P value is significant at ≤ 0.05 ; *P* value is highly significant at ≤ 0.005 ; *P* value is very highly significant at = 0.000

Also reciprocal relationship was found between severity of mania and NS, HA, RD, SD, PS4 and ST but not reaching the point of statistical significance except for PS4 as shown in table (5).

As shown in table (6) the age of onset of illness was indirectly correlated to novelty seeking (NS_t), self Transcendence (ST_t), i.e. earlier age of onset was associated with higher mean scores of NS and ST. While directly correlated to harm avoidance, reward dependence, persistence, self transcendence and cooperativeness, i.e., earlier age of onset was associated with lower mean scores of these temperaments and characters. But not reaching the point

of statistical significance except with RD1 and ST2.

Table (5) Spearman Correlation of Severity of mania and Cloninger's dimensions

Item	r-value	P-value
NS_t	-0.006	0.974
HA_t	-0.014	0.94
RD_t	-0.014	0.942
PS4	-0.419	0.021
SD_t	-0.138	0.467
ST_t	-0.120	0.527

P value is significant at ≤ 0.05

Table (6): Correlation between age of onset and different temperament and characters

	r-value	P-value
NS_t	-0.32	0.823
ST_t	-0.189	0.189
ST2	-0.34	0.015
HA_t	0.141	0.330
RD_t	0.183	0.203
PS_t	0.016	0.912
SD_t	0.07	0.630
C_t	0.207	0.149
RD1	0.291	0.04

P value is significant at ≤ 0.05 ; *P* value is highly significant at ≤ 0.005

Correlation of **Frequency of hospitalization** to temperaments and character revealed a reciprocal relationship between the frequency of hospitalization and HA1 (anticipatory worry and pessimism versus uninhibited optimism) with a significant statistical difference as shown in table (7). Also, highly significant statistical direct relationship between the frequency of hospitalization and C1 (Social acceptance versus social intolerance) was found. Moreover, the study showed a reciprocal relationship between the

duration of hospitalization and HA2 (Fear of uncertainty) with a significant statistical difference. Also, the duration of hospitalization was directly related to STt with a significant statistical difference. **Frequency of relapse** was significantly related directly to C1 (Social acceptance versus social intolerance).

Table (7): Correlation frequency of hospitalization and different temperament and characters

Item	Scales	r-value	P-value
F of Hosp.	HA1	-0.29	0.041
	C1	0.375	0.007
D. of Hosp.	HA2	-0.313	0.027
	STt	0.281	0.048
N. Episodes	C1	0.414	0.003

P value is significant at ≤ 0.05 ; P value is highly significant at ≤ 0.005

DISCUSSION

Despite the presence of numerous studies discussing temperaments and characters in patients with major depressive disorder, scanty data is available for patients with bipolar disorder. Furthermore, there is no available data indicating use of TCI-R scale in Egyptian patients with mood disorders.

The results of the current study revealed statistically significant higher mean scores of harm avoidance (HA) among patients with major depressive disorder. The significance was found only in subscale HA1 (anticipatory worry and pessimism versus uninhibited optimism) and HA2 (fear of uncertainty). Harm avoidance has consistently been reported to be elevated in subjects with major depression^{2, 6-7, 12}. Also, it has been proven that low scorers on harm avoidance tend to be emotionally stable and extraverts and have low probability to

develop depression¹³. Harm avoidance might be a trait characteristic that differentiates between patients with major depression and bipolar disorder. This finding has extremely important clinical implication as it can be used to differentiate between patients with unipolar and bipolar major depression.

Lack of significant differences between patients with MDD and BMD in self directedness and cooperativeness was unexpected as previous studies found lower scores of self directedness (SD) and high cooperativeness (CO) in depression⁵.

On the other hand and in regard to bipolar patients, the current study found higher mean scores of self transcendence (ST) and ST2 (transpersonal identification versus self differentiation), and SD2 (purposefulness versus lack of goal direction). These findings were supported by other Western studies^{8, 14-15}.

Although in the current study there were no statistical significant differences between unipolar and bipolar disorders as regard novelty seeking, persistence and reward dependence, other studies found many differences. Young et al. reported elevated novelty seeking in bipolar patients⁷. Osher et al. reported reduced scores in persistence, and increased scores of reward dependence in bipolar patients¹⁵. Moreover, bipolar patients were significantly higher in harm avoidance and lower in reward dependence, self-directedness, and cooperativeness than controls⁸.

These controversial results are owing to many factors including methodological differences in different studies especially in selection of the comparison groups.

The current study also found that the high scores of ST2 (transpersonal identification/

self-differentiation) the lower the age of onset of illness. Also, the lower the scores of RD1 (sentimentality) the earlier the age of onset of illness. These results are different from Engstrom et al. who found that early onset of illness was significantly higher in the temperament factor harm avoidance (HA)⁸. Direct relation was found between harm avoidance scales and severity of depression. This finding was replicated and supported by other studies^{14, 16}.

A reciprocal relation was found between severity of depression and persistence, self directedness, cooperativeness and self transcendence, as low scorers in these temperament and characters were characterized by tendency to give up easily in frustration, criticism, obstacles, weakness, fragility and fatigue. These findings were similar to what were found by other studies^{15, 17}. However the authors were suspecting some cultural differences as most of other studies were western studies. Similarities and lack of cultural differences support the biological nature of these temperament and characters.

On the other hand it was found that severity of mania was associated with lower scores of PS4 (perfectionist versus pragmatic). No available data from previous studies are present because the majority of researchers have assessed personality in euthymic bipolar patients.

According to the current study, psychiatrists should predict more frequent hospitalization in patients with low scores of HA1 (anticipatory worry and pessimism versus uninhibited optimism) and high scores of C1 (social acceptance versus social intolerance). Also the duration of hospitalization might increase in patients with low scores of HA2 (fear of uncertainty) and high scores of ST. The

only scale found related to number of episodes was C1 (social acceptance versus social intolerance). That's why all these scales might have a prognostic value.

CONCLUSION

There has been evidence that support the hypothesis of the study. The presences of personality traits in subjects with mood disorders impact the clinical picture, severity of the illness and prognosis. Personality profile affects the frequency of hospitalization and duration of admission to the hospital and number of episodes. Also it was found that specific traits are associated with earlier age of onset. The findings of the current study suggest that clinicians should be more vigilant for the effect of certain personality dimensions in patients with mood disorders.

REFERENCES

1. Akiskal HS. Toward a temperament based approach to depression: implications for neurobiological research. In "Depression & Mania: From Neurobiology to treatment". Gressa C, Fratta W., Pani L. & Sera G. (Eds). 1995. New York: Raven Press.
2. Mulder TR. Personality Pathology and Treatment Outcome in Major Depression: A Review. *Am J Psychiatry* 2002;159:359-71.
3. Barrantes N, Colom F, Claridge G. Temperament and Personality in Bipolar Affective Disorders. In "Bipolar Disorders: Clinical and Therapeutic Progress" Vieta E. (coordinator). 2001. Editorial Medica Panamericana, S.A.
4. Dolan-Sewell RT, Krueger RF, Shea MT. Co-occurrence with syndrome disorders. In "Handbook of Personality Disorders: Theory, Research and Treatment". W. John Livesley (Ed). 2001;84-104. New York: Guilford Press
5. Hirano S, Sato T, Narita T et al. Evaluating the state dependency of the Temperament and Character Inventory dimensions in patients with

- major depression: a methodological contribution. *J Affect Disord* 2002;(1-3):31-8.
6. Cloninger CR, Przybeck T, Svrakic DM et al. The temperament and character inventory: A guide to its development and use. 1994. St Louise. Center for Psychobiology of Personality.
 7. Young LT, Bagby M, Cooke RG et al. A comparison of Tridimensional Personality Questionnaire dimensions in bipolar disorder and unipolar depression. *Psychiatry Res* 1995;58:139-43.
 8. Engstrom C, Brandstrom S, Sigvardsson S et al. Bipolar disorder II: personality and age of onset. *Bipolar Disord* 2003;5(5):340-48
 9. First M B., Spitzer R L, Gibbon M et al Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition. (SCID-I/P) 2002. New York: Biometrics Research, New York State Psychiatric Institute.
 10. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry* 1960;23:56-62.
 11. Young RC, Biggs JT, Ziegler VE et al. A rating scale for mania: reliability, validity and sensitivity. *B J Psychiatry* 1978;133:429-35.
 12. Abrams KY, Yune SK, Kim SJ, et al. Trait and state aspect of harm avoidance and its implication for treatment in major depressive disorder, dysthymic disorder and depressive personality disorder. *Psychiatr Clin Neurosci* 2004;58:240-48.
 13. Stewart ME, Ebmeier KB, and Deary IJ. Personality correlates of happiness & sadness: EPQ-R & TPQ compared. *Pers Individ Differ* 2005;38(5):1085-96.
 14. Ampollini P, Marchesi C, Signifredi R et al. Temperament and personality features in patients with major depression, panic disorder and mixed conditions. *J Affect Disord* 1999;52(1-3):203-7.
 15. Osher Y, Cloninger CR, Belmaker RH. TPQ in euthymic manic-depressive patients. *J Psychiatr Res* 1996;30(5):353-7.
 16. Mulder RT, Joyce PR, Cloninger CR. Temperament and early environment influence comorbidity and personality disorders in major depression. *Compr. Psychiatry* 1994;35,225-33.
 17. Grucza RA, Przybeck TR, Spitznagel EL et al. Personality & depressive symptoms: a multi-dimensional analysis. *J Aff Dis* 2003;74(2):123-30.

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