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The Role of Affective/Emotional Temperament in Predicting Readiness to Treatment and Symptoms Severity in Depressed Patients

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ABSTRACT

This study aimed to investigate the role of affective/emotional temperament in predicting readiness to treatment and symptoms severity in DPs. This is a correlational study. The statistical population consisted all depressed patients referring to clinical centers of Rasht city in 2015, among whom 100 patients were selected via accessible sampling method. The data was gathered by Beck depression inventory, affective and emotional composite temperament, and minnesota multidimensional personality inventory, and analyzed by Pearson correlation coefficient and multivariate regression. The results showed that affective/emotional temperament was significantly correlated with readiness to treatment and symptoms severity ($p < 0/01$). In fact, it was revealed that 70.8 of readiness to treatment and .69 of symptoms severity were predicted by affective/emotional temperament; while .69 of readiness to treatment and .77 of symptoms severity could be predicted by components of affective/emotional temperament. Therefore, affective/emotional temperament can predict readiness to treatment and symptoms severity in DPs. Additionally, these findings have important implications in pathology and prevention from depression.

Introduction

Depression is a common disorder that causes disability (Lopez et al, 2006). Studies show that .20-.25 of people experience periods of depression in their lives. 12-month prevalence of Major Depression in United States is nearly .7 that differs among various groups of age, in a way that its prevalence in the group of men and women between 18-28 years of old is 5 times more than that in the above 60.

In addition, major depression is 1.5-3 times higher in women than men, and begins in adolescence (American Psychiatric Association, 2013; Translated by Seyyed Mohammadi, 2014). Depression can reduce the patients'

level of activities which in turn, may negatively affect their treatment process as well as their tendency toward treatment, since by worsening of depression, nearly all biological and psychological pleasures that make the life valuable disappear. DPs are mostly self-absorbed and focused on the moment less. They may be more vulnerable to physical disorders (American Psychiatric Association, 2000; translated by Nik-khoo and Avadis Yans, 2009). Therefore, this affects DPs' motivation to be treated. Morral et al (2014) found that DPs did not follow their treatment processes and were not adequately willing for it. Krandar et al (2016) also confirmed low

level of treatment tendency in DPs. Erkki et al (2013) reported that DPs in their sample were not ready to begin the treatment, and would exaggerate about their commitment to treatment. However, the results of long-term follow-up revealed that attitude toward treatment and commitment to it were mostly positive in them.

Affective/emotional temperament is a factor related to symptoms severity and readiness to treatment. Cloninger (1991), by emphasizing biological parameters, states that the personality is made of various temperaments. In his neuro-biological model, he asserts that temperament systems in the brain are functionally organized and made of different and separate systems, which work together for activation, persistence and behavioral inhibition in response to certain groups of stimulants (Abolghasemi, Bahari, Narimani, Zahed, 2012). In fact, temperament is the innate and basic tendency that regulates behaviors. Rymer et al (2005) classified affective/emotional temperament in five groups including depressive, cyclothymic, hyperthymic, irritable and anxious which may have role in temperament and emotional disorders. Lyn et al (2015) showed that rumination and problems of affective/emotional temperament could highly predict depressive temperament. Nabi Zade Chiyane et al (2014) also found that levels of cyclothymic and irritability were significantly higher in bipolar patients compared to normal individuals. Sermin et al (2015) concluded that affective/emotional temperament and flexibility were positively correlated in DPs, while a negative correlation was found between irritability and anxiety, with flexibility in the normal sample. In addition they found that in depressed patients, irritability and family coherence were negatively correlated, while in the health sample the correlation between family coherence and anxious temperament was highly positive, and family coherence and affective/emotional temperament were weakly correlated. Sherlyn et al (2010) confirmed the impacts of positive emotions and affective/emotional temperament on depression, in a way that high levels of positive emotions, affective/emotional temperament, and self-acceptance were reversely correlated with depression symptoms. Perugi et al (2012) related that affective/emotional temperament can influence clinical traits of bipolar patients. Given the high prevalence of depression, investigating the effects of various psychological factors on it seems necessary. In addition, attending the relation between affective/emotional temperament and depression, lack of studies investigating the role of affective/emotional

temperament in readiness to treatment and symptoms severity in DPs, the present study was performed to do it.

Procedures

This is a correlational study. The statistical population consisted all depressed patients referring to clinical, counseling and mental health centers of Rasht city in 2015, among whom 100 patients with depression symptoms were selected via accessible sampling method, and asked to fill the depression questionnaire. The study aims were explained and the patients signed a written testimony, and completed all the data-gathering tools. Finally, the data were analyzed by Spearman correlation coefficient and multivariate analysis in SPSS-20 software.

Tools

Beck Depression Inventory (BDI-II) : is the revised form of Beck Depression Inventory designed to assess depression severity (Beck, Steer & Brown, 2000). BDI-II has 21 items and its test-retest reliability with one week interval was computed .87 (quoted by Ja'afar Zade, 2012). Also, its coefficient with BDI (original version) was .93. Attari et al (2001) calculated Cronbach's alpha coefficient for the whole questionnaire, and its split-test, and test-retest reliability coefficient 0.87, 0.83 and 0.49, respectively. Affective and Emotional Composite Temperament (AFECT): this questionnaire was made by Lara et al (2012) with the aim of unifying affective/emotional temperament in a model. AFECT has 52 items, rated on a 5-point Likert scale, and assess affective and emotional temperament. Cronbach's alpha coefficient for emotional dimensions and emotional temperament have been reported 0.75 to .90. (Lara et al, 2012), and 0.70 to 0.82 (Lara et al 2008), respectively. In addition, correlation coefficients among emotional factors, as well as scores of affective temperament dimensions were low to average (Lara et al, 2012). Lara et al (2012) reported validity and reliability coefficient higher than .80 for the total affective and emotional temperament dimensions. Also, they calculated cronbach's alpha coefficient for the whole scale, and affective and emotional temperament 0.74, 0.76, and 0.65, respectively (Lara et al, 2012). Minnesota Multidimensional Personality Inventory (MMPI): readiness to treatment was assessed by MMPI. Designed by Hathaway and McKinley in Minnesota University in 1943, MMPI is made of three validity and ten clinical scales answered by "yes/no" choices. Validity scales provide information about the patient's attitudes toward the inventory (Ganji, 2011). Duckworth et al (1999) calculated MMPI rang of reliability and its

Cronbach's alpha coefficients .71 to .84, and .82 respectively. Also, Ben et al (2008) related its reliability coefficient between 0.73 to .83, and its validity coefficient for clinical scales .81. In the study of Seyyedian (2012) the range of reliability coefficients of MPPI, and its Cronbach's alpha were calculated .74 to .82, and .83, respectively.

Findings

The mean (standard deviation) of participants' ages was 33.38 (8.93). 40.5 were female and 59.9 were male, among whom, 63.3 were married, 25.7 were single, and 11.1 were divorced or widows.

Table 1. Mean and standard deviation of the study variables in depressed patients

| Emotional Temperament | | | Affective Temperament | | |
|------------------------|-------|--------|-----------------------|------|-------|
| Variable | SD | Mean | Variable | SD | Mean |
| Will | 10/82 | 30/83 | Depressive | 1/59 | 3/26 |
| Volition | 12/64 | 37/20 | Anxious | 1/24 | 3/50 |
| Inhibition | 6/18 | 35/85 | Apathetic | 1/14 | 2/77 |
| Sensitivity | 11/72 | 41/19 | Cyclothymic | 1/21 | 2/67 |
| Coping | 9/95 | 33/62 | Dysphoric | 1/23 | 2/91 |
| Control | 10/38 | 31/76 | Volatile | 1/45 | 2/97 |
| Sexual drive | 6/15 | 18/37 | Obsessive | 1/22 | 2/62 |
| total | 27/26 | 228/87 | Gladness | 1/50 | 2/63 |
| Readiness to treatment | 4/93 | 29/44 | Hyperthymic | 1/66 | 3/08 |
| Symptoms severity | 4/14 | 22/43 | Irritable | 1/17 | 2/43 |
| | | | Disinhibited | 1/21 | 3/06 |
| | | | Euphoric | 1/22 | 2/27 |
| | | | Total | 6/80 | 37/17 |

As it is observed in Table 1, the mean of affective and emotional temperament in the DPs were 37.17 and 228.87, respectively. The mean of readiness to treatment

and symptoms severity were also 29.44 and 22.43, respectively. Kolmogorov Smirnov Test showed that distribution of the variables was normal ($P>0.05$).

Table 2. Correlation coefficients among affective/emotional temperament, readiness to treatment and symptoms severity

| Emotional temperament | Symptoms severity | Readiness to treatment | Affective temperament | Symptoms severity | Readiness to treatment |
|-----------------------|-------------------|------------------------|-----------------------|-------------------|------------------------|
| Will | **0/69 | **-.0/70 | Depressive | **0/51 | **-.0/67 |
| Volition | **0/60 | **-.0/68 | Anxious | **0/39 | **-.0/33 |
| Inhibition | **0/65 | **-.0/40 | Apathetic | **0/69 | **-.0/51 |
| Sensitivity | **0/54 | **-.0/75 | Cyclothymic | **0/68 | **-.0/53 |
| Coping | **0/52 | **-.0/50 | Dysphoric | **0/47 | **-.0/44 |
| Control | **0/53 | **-.0/44 | Volatile | **0/55 | **-.0/45 |
| Sexual drive | **0/41 | **-.0/51 | Obsessive | *0/29 | *-.0/24 |
| total | **0/21 | **-.0/30 | Gladness | **-.0/47 | **0/59 |
| | | | Hyperthymic | *-.0/28 | *0/26 |
| | | | Irritable | *0/21 | -0/08 |

| | | | |
|--|--------------|--------|----------|
| | Disinhibited | **0/46 | ** -0/60 |
| | Euphoric | **0/33 | ** -0/35 |
| | Total | **0/69 | ** -0/60 |

According to findings of Table 2, affective temperament ($r = -0.60$) and emotional temperament ($r = -0.30$) were correlated with readiness to treatment ($P < 0.01$). In addition, a positive correlation was found between

affective temperament ($r = -0.69$) and emotional temperament ($r = -0.21$) with symptoms severity ($P < 0.01$).

Table 3. Results of multiple regression analysis for predicting readiness to treatment via affective temperament in depressed patients

| Predicting Variables | Non-Standard Coefficients | | Standard Coefficients | T | P |
|------------------------------|---------------------------|--------|-----------------------|-------|-------|
| | SE | B | BETA | | |
| Constant | 2/59 | 31/94 | | 12/34 | 0/001 |
| Will | 0/033 | 0/319 | - | 9/73 | 0/001 |
| Violation | 0/032 | -0/154 | 0/703 | -4/74 | 0/001 |
| Inhibition | 0/061 | 0/019 | 0/393 | 0/03 | 0/76 |
| Sensitivity | 0/047 | -0/209 | 0/024 | -4/43 | 0/001 |
| Coping | 0/048 | -0/123 | 0/498 | -2/55 | 0/01 |
| Control | 0/059 | -0/093 | 0/249 | 1/57 | 0/12 |
| Sexual drive | 0/057 | -0/132 | 0/164 | -2/31 | 0/001 |
| =31.36 F= 0.708 p<0.01 R^2 | | | | | |

Given the results of Table 3, affective temperament could predict .70 of readiness to treatment in depressed patients ($P < 0.001$).

Table 4. Results of multiple regression analysis for predicting symptoms severity via affective temperament in depressed patients

| Predicting Variables | Non-Standard Coefficients | | Standard Coefficients | T | P |
|------------------------------|---------------------------|--------|-----------------------|-------|-------|
| | SE | B | BETA | | |
| Constant | 4/47 | 41/59 | - | 7/61 | 0/001 |
| Will | 0/069 | -0/645 | -0/689 | -9/37 | 0/001 |
| Violation | 0/072 | 0/224 | -0/277 | 3/10 | 0/003 |
| Inhibition | 0/120 | -0/630 | -0/383 | -5/26 | 0/001 |
| Sensitivity | 0/100 | 0/193 | -0/223 | 1/96 | 0/05 |
| Coping | 0/101 | 0/322 | -0/316 | 3/22 | 0/002 |
| Control | 0/124 | 0/025 | 0/026 | 0/21 | 0/84 |
| Sexual drive | 0/121 | 0/230 | 0/139 | 1/91 | 0/06 |
| =0.693 F= 29.33 p<0.01 R^2 | | | | | |

Table 4 reveals the 0.69 of symptoms severity in the depressed patients was predicted by affective temperament ($p < 0.001$).

Table 5. Results of multiple regression analysis for predicting readiness to treatment via emotional temperament in depressed patients

| Predicting Variables | Non-Standard Coefficients | | Standard Coefficients | T | P |
|-----------------------------|---------------------------|--------|-----------------------|-------|-------|
| | SE | B | BETA | | |
| Constant | 2/32 | 36/89 | - | 15/88 | 0/001 |
| Depressive | 0/373 | -0/748 | -0/243 | 2/01 | 0/05 |
| Anxious | 0/379 | -0/186 | -0/047 | 0/049 | 0/62 |
| Apathetic | 0/384 | 0/071 | -0/016 | 0/18 | 0/85 |
| Cyclothymic | 0/472 | -1/45 | -0/361 | -3/06 | 0/003 |
| Dysphoric | 0/477 | -0/023 | -0/061 | 0/25 | 0/71 |
| Volatile | 0/435 | -0/006 | -0/021 | 0/21 | 0/78 |
| Obsessive | 0/308 | -0/460 | -0/114 | -1/49 | 0/14 |
| Gladness | 0/375 | 0/933 | -0/283 | 2/49 | 0/02 |
| Hyperthymic | 0/382 | 0/099 | -0/033 | 0/26 | 0/79 |
| Irritable | 0/376 | 0/374 | -0/089 | 0/99 | 0/32 |
| Disinhibited | 0/493 | 0/500 | -0/123 | -1/01 | 0/31 |
| Euphoric | 0/529 | -0/679 | -0/167 | -1/28 | 0/20 |
| =0.690 F= 2.34 p<0.01 R^2 | | | | | |

It can be seen in Table 5 that .69 of readiness to treatment was predicted by emotional temperament ($p < 0.001$).

According to the findings of Table 6, .77 of symptoms severity was predicted by emotional temperament ($P < 0.001$).

Table 6. Results of multiple regression analysis for predicting symptoms severity via emotional temperament in depressed patients

| Predicting Variables | Non-Standard Coefficients | | Standard Coefficients | T | P |
|-----------------------------|---------------------------|-------|-----------------------|-------|-------|
| | SE | B | BETA | | |
| Constant | 5/72 | 4/12 | - | -1/39 | 0/16 |
| Depressive | 1/19 | 0/661 | 0/187 | 1/79 | 0/08 |
| Anxious | 0/185 | 0/672 | 0/023 | 0/28 | 0/78 |
| Apathetic | 3/03 | 0/681 | 0/339 | 4/45 | 0/001 |
| Cyclothymic | 3/32 | 0/836 | 0/403 | 3/98 | 0/001 |
| Dysphoric | 0/778 | 0/845 | 0/093 | 0/92 | 0/36 |
| Volatile | 1/08 | 0/771 | 0/155 | 1/40 | 0/17 |
| Obsessive | 0/669 | 0/546 | 0/081 | 1/23 | 0/22 |
| Gladness | -0/936 | 0/665 | 0/138 | 1/41 | 0/16 |
| Hyperthymic | 0/731 | 0/677 | 0/119 | 1/08 | 0/28 |
| Irritable | 0/653 | 0/666 | 0/076 | 0/98 | 0/33 |
| Disinhibited | -0/816 | 0/874 | 0/098 | 0/93 | 0/35 |
| Euphoric | 0/126 | 0/937 | 0/015 | 0/13 | 0/89 |
| =0.770 F= 2.34 p<0.01 R^2 | | | | | |

Discussion and Conclusion

This study investigated the role of affective/emotional temperament in predicting readiness to treatment and symptoms severity in depressed patients. The results manifested that affective/emotional temperament and readiness to treatment were significantly related in DPs ($P < 0.01$). This finding was consistent with those of Carsten and Gregory (2008), Rihmer et al (2010), Amjadiyan (2011), Erkki et al (2013), Nabi Zade Chiyane et al (2014), Lyn et al (2015), and Sermin et al (2015). Carsten and Gregory (2009) found that affective temperament was correlated with symptoms of depression in adolescents. Lyn et al (2015) pointed out to the strong ability of rumination and affective temperament in predicting depressed temperament. In addition, Sermin et al (2015) revealed the significant correlation between affective temperament and flexibility in DPs. To explain this finding it can be mentioned that people's temperaments show their behavioral states, affecting the kind and tense of their interpersonal relationships (Hantouche et al, 2006). Affective temperaments can be activated by related events and if strongly enough, can excite related units and create automatic arousal patterns, facial expression, and so forth (Aliloo, 1998). Based on the information processing theory, each emotion has its own "knot" in the memory that causes linkages and prepositional representation of previous experiences. This theory assumes that there are high individual differences in the power and level of experiences related to former depressed temperament. Depression dissemination is done at least in two ways. First, more and stronger depression associations show that similar experiences in the future will be easily coordinated with critical and internal representation, and finally, activates depression knot. Second, after activation of depression knot, there is an increasing tendency to gather similar experiences to enter the consciousness. The more the number of these knotted accessible, the stronger the feelings of hopelessness and worthlessness, and it will not be limited to a special situation (Davidson et al, 2002; translated by Dehestani, 2006). Additionally, stimulation caused by temperaments in depressed patients involve them more strongly in this process and in turn, makes their symptoms severity tenser and reduces their readiness to treatment. The other finding of this study was that affective/emotional temperament were correlated with symptoms severity in DPs ($p < 0.01$).

Other researchers including Rihmer et al (2010), Sherlyn et al (2010), Amjadian (2011), Erkki et al (2013), Nabi Zade Chiayne et al (2014), and Sermin et al (2015) confirmed the same finding. Sherlyn et al (2010) reported that high levels of positive emotions, affective/emotional temperament, and self-acceptance were negatively correlated with depression symptoms. Also, Erkki et al (2013) observed that DPs had lower levels of readiness to treatment and exaggerated in their commitment to treatment. This finding can be explained by the fact that affective temperaments can be activated by related events and if strongly enough, can excite related units and create automatic arousal patterns, facial expression, and so forth (Aliloo, 1998). So, affective temperaments can strongly influence the symptoms severity. This study also showed that 7.8 of readiness to treatment and 69.3 of symptoms severity could be predicted by affective temperament, while emotional temperament could forecast .69 of readiness to treatment and .77 of symptoms severity. In this regard, Lyn et al (2015) manifested that rumination and problems of affective temperament can highly predict depression temperament. Sherlyn et al (2010) also observed that depression symptoms should be predicted by affective/emotional temperament and self-acceptance. To justify this finding one can argue that temperament is the fundamental and relatively inherent tendency that regulates individuals' behaviors. Based on the Cloninger's view (1991), and his emphasis on biological parameters, the personality is made of various temperaments. In addition, Clark et al (1983) stated that temperaments have two separate effects: they affect selection of materials and affective stimulants that enter awareness, and in turn, they influence the level of kind of their levels of amiability or distress. In this regard, Bower (1987) utters that emotions and certain affects including joy, fear, and depression have their special knot in the memory. Any kind of association with any of these knots can excite information about the automatic reaction to that specific affect. Affective knots can be activated by related events, and if strongly enough, they may terminate in arising related units and in turn, make automatic arousal pattern to work (1998). So, negative temperaments such as apathetic, cyclothymic, dysphoric, hyperthymic, irritable and so forth always stimulate knots of automatic and negative thoughts in DPs, and therefore, it may have role in symptoms severity and reduction of readiness to treatment in depressed patients.

In short, findings of the present study confirmed that affective/emotional temperament could predict symptoms severity and readiness to treatment in depressed patients, and it has important implications for pathology and prevention of depression. Lack of controlling the duration and severity of depression in the sample, using only self-report tools, and accessible sampling method were among the study limitations. Therefore, it is suggested that future research control depressed patients' duration and severity of symptoms, and use other tools of data gathering including interview beside self-report questionnaires in improve findings generalizability. In addition, regarding the significant relation between affective/emotional temperament and readiness to treatment and symptoms severity in depressed patients, it is recommended to design programs for reducing affective/emotional temperament in PDs in counseling and treatment centers.

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