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Original Article

Role of Self-Regulation Behaviors in Predicting Treatment Readiness and Symptoms Severity in Depressed Patients

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ABSTRACT

The aim of the present study was to determine the role of self-regulation behaviors in predicting treatment readiness and symptoms severity in depressed patients. It was a correlational study and its statistical population consisted all depressed patients referring to health centers of Rasht city in 2015. The sample included 100 depressed patients selected via accessible sampling method. Data was gathered by Beck Depression Inventory-II (Beck, 1996), Self-Regulation Scale (Ibanez et al, 2005) and Minnesota Multidimensional Personality Inventory (MMPI; Hathaway, & McKinley, 1943), and analyzed by Pearson correlation coefficient and multivariate regression analysis. The results showed that self-regulation behaviors could predict 0.27 of treatment readiness and 0.30 of symptoms severity in depressed patients. These findings may have important clinical implications for pathology and prevention from depression.

Keywords: Self-regulation behaviors, Treatment readiness, Depression

Introduction

Depression disorder is a recurring situation with significant social, economic, physical and mental consequences. Due to negative effects on academic achievements, as well as interpersonal and family relations, it can diminish patients' lives quality. It may also cause significant economic loss due to its disabling effects on job functions and repetitive absences (Spitzer, 2009). Studies show that 0.20 to 0.25 of individuals experience depression at least one time in their lives. 12-month prevalence of ccc in United States is nearly 0.07, although it significantly differs given the age, in that its prevalence in individuals between 18 to 29 years of old is almost 3 times more than those in 60 or above. Women are 1.5 to 3 time more prone than men to develop depression, and it usually begins in adolescence period (American Psychiatric Association, 2013; Translated by Seyyed Mohammadi, 2014).
Depression reduces patients' activity levels which in turn may influence their treatment readiness and its progress, since its chronic states abolish a great deal of

biological and psychological enjoyments that makes patients' lives valuable. Depressed patients are usually withdrawn and cannot concentrate on hear and now. These patients are even more vulnerable to physical harms (American Psychiatric Association, 2000; Translated by Nik khoo et al, 2009). Morral et al (2014) stated that depressed patients did not effectively trace their treatment process. Krandar et al (2016) also observed that treatment readiness is low in depressed patients. In the study of Erick et al (2013), depressed patients had low treatment readiness while their stated commitment to treatment was exaggerated. However, the results of long-term follow up revealed positive stability of their attitudes toward treatment and their commitments to it.

Depression may weaken the ability to manage self-regulation behaviors. In fact, emotion regulation (ER) is an external and internal process that helps individuals to control, evaluate, and change their emotional reactions. Therefore, any deficits in ER may make individuals vulnerable to psychological disorders including depression and anxiety disorders (Garnefski, Baan and Kraaij, 2003). Garnefski, Baan and Kraaij (2003) believe that peoples' cognitive evolution while confronting a problematic situations is very important since maintenance of mental health is the result of mutual interaction between using cognitive strategies of ER and proper evolution of the problematic situation. In other words, self-regulation points to peoples' attempts to change the situation that may include thoughts, emotions, tensions, desires, behaviors, and emotional processes. SR is a multidimensional constructs and contents cognitive, social-affective-motivational, and physiologic processes that influence active control of behaviors. SR is verified in psychological functioning, normal development, and adjustment problems (Calkins & Howse, 2004). Mauas (2014) found a significant relation between SR, irritability, and personality vulnerability against depression. Fakhar et al (2014) investigated Mind Theory, reassessment and emotion suppression in three groups of patients with depression and bipolar disorder (BPD), and healthy individuals. They reported that both groups of patients with and BPD gained lower scores in mind theory and higher scores in emotion suppression compared to that of the healthy ones. In addition, they found that scores of depressed patients in reassessment were lowest in the three groups. Aryana Kiya and Ja'afari (2014) observed that BPD and depressed patients' scores in components of cognitive emotion regulation were low, yet with no significant difference. Salehi et al (2015) explored a positive relation between cognitive strategies of ER and depression prediction. Buschkuehl et al (2013) detected a relation between attending to emotions and recovery of ccc. They concluded that the presence of positive emotions could reduce ccc symptoms. The relationship between ER and ccc symptoms was also confirmed in the study of Jutta and Ian (2010).

Given what said above, as well as high prevalence of depression and its negative impacts on various aspects of patients' lives, investigating the role of different psychological variables in its development seems necessary. In addition, attending the relation between self-regulation behaviors and depression, the gap of little studies on correlation of self-regulation behaviors with symptoms severity and treatment readiness in depressed patients seems obvious. Therefore, the present study was conducted to fill this gap.

Methodology

The present study was correlational. The statistical population consisted all depressed patients referring to health centers of Rasht city in 2015. The sample included 100 patients selected via accessible sampling method. To form the sample group, the first author referred to these health (psychiatric, counseling, mental health) centers and selected the participants among those with depression symptoms. Then, they were asked to fill Beck Depression Inventory-II for more confidence. The aims of the study were explained and the participants filled a written testimony. Finally, the questionnaires were performed and the data was analyzed by $SPSS_{20}$.

Tools

Beck Depression Inventory-II (BDI-II): This 21-item inventory to assess depression is the revised form of Beck Depression Inventory (BDI; Beck, 1961) in 1996 (Beck, Steer and Brown, 2000). Retest reliability of BDI-II with one week interval was reported 0.87 (Ja'far Zade Dashbolaq, 2012). Also, its correlation coefficient with BDI and Stress-Anxiety-Depression Questionnaire were computed 0.93, and 0.88, respectively (Ja'far Zade Dashbolaq, 2012). Attari et al (1991) related Cronbach alpha (internal consistency) for the whole BDI-II, its split-half reliability, and re-test reliability coefficient with 3 weeks interval, 0.87, 0.82, and 0.49, respectively.

Self-Regulation Scale (SRS): designed by Ibanez et al (2005), SRS has 25 items and assesses 5 aspects of self-regulation including positive actions (solving problems and facilitating happiness), controllability (internal control attributions), expression of feelings and needs (identification and expression of needs, wishes and feelings), assertiveness (autonomy and self-confidence), and well-being seeking (satisfaction with oneself and others) on a 5-point Likert scale (Ibanez et al, 2005). SRS retest reliability with a one-month interval was calculated 0.87 (Marques et al, 2005). In Iran, SRS Cronbach alpha on a sample of 357 male students was computed 0.90 to 0.97 and its satisfactory internal consistency was confirmed (Besharat, 2011). Additionally, content validity of SRS was verified by 6 qualified psychologist based on Kenadll's agreement coefficient.

MinnesotaMultidimensional Personality Inventory (MMPI): treatment readiness of depressed patients in this study was assessed by MMPI, made in 1943 by Hathaway & McKinley in Minnesota University. MMPI is a self-report questionnaires that consists 3 validity and 10 clinical scales. Validity scales provide information about the participants' attitudes toward the test (Gnaji, 2011). Scope of MMPI reliability and its Cronbach alpha have been reported 0.71 to 0.84, and 0.82. Ben et al (2008) also reported reliability coefficient of MMPI by retest method for clinical scales between 0.73 to 0.84. Seyyedian (2012) calculated its clinical scales reliability coefficient 0.74 to 0.82 and its Cronbach alpha 0.83.

Findings

The mean (and standard deviation) of the participants' ages was 33.38 (8.93). 45.5. 59.5 of them were male, 63.2 were married, 25.7 were single, and 11.1 were divorced or widows.

Table 1. Mean and standard deviation of self-regulation, treatment readiness and symptoms severity in depressed patients

Variables		M	SD
Self-regulation	Positive actions	14/01	**3/18**
	Controllability	12/17	**2/81**
	Expression of feelings and needs	13/47	**3/46**
	Assertiveness	12/27	**3/08**
	Well-being seeking	13/28	**2/90**
	Total	65/20	**13/56**
Treatment readiness		29/44	**4/93**
Symptoms severity		22/43	**4/14**

Given Table (1), the mean (standard deviation) is 656.30 (13.56) for self-regulation, 29.44 (4.93) for treatment readiness, and 22.43 (4.14) for symptoms severity. Normal distribution of the variables scores was verified by Kolmogorov Smirnov Test (P>0.05).

Table 2. Coefficient correlation of self-regulation components with treatment readiness and symptoms severity depressed patients

Self-regulation	treatment readiness	symptoms severity
Positive actions	**0/04**	**-0/14**
Controllability	**0/19**	****-0/34**
Expression of feelings and needs	****0/36**	****-0/41**
Assertiveness	**0/07**	**-0/15**
Well-being seeking	**0/06**	****-0/27**
Total	**0/12**	****-0/30**

As it is obvious in Table (2), self-regulation (r=-0.30) was correlated with symptoms severity in depressed patients (P<0.01). However, no correlation was found between self-regulation and treatment readiness in these patients.

Table 3. Results of multivariate regression analysis for predicting treatment readiness via self-regulation in depressed patients

Predicting variables	Non-standard coefficients		standard coefficients	T	P
	B	SE	Beta		
Constant	6/09	4/54	-	1/34	0/18
Positive actions	-2/02	0/689	0/632	-2/93	0/004
Controllability	2/79	0/892	0/772	3/13	0/002
Expression of feelings and needs	0/302	0/480	0/103	0/63	0/53
Assertiveness	-0/861	0/600	0/261	-1/44	0/15
Well-being seeking	1/29	0/540	0/368	3/39	0/02
F= 2/34		R^2 = 0/275	P<0/01		

Findings of Table (4) show that observed F was significant (P<0.001) and 0.27 of treatment readiness was predicted by self-regulation. Given beta values, positive actions (β=0.632), controllability (β=0.772) and well-being seeking

(β=0.368) could predict treatment readiness in depressed patients.

Table 4. Results of multivariate regression analysis for predicting symptoms severity via self-regulation in depressed patients

Predicting variables	**Non-standard coefficients**		**standard coefficients**	**T**	**P**
	B	SE	Beta		
Constant	32/77	2/16	-	15/19	0/001
Positive actions	0/815	0/327	-0/525	2/49	0/01
Controllability	-0/997	0/424	-0/567	2/35	0/01
Expression of feelings and needs	-0/545	0/228	-0/383	2/39	0/02
Assertiveness	0/679	0/285	-0/424	2/38	0/02
Well-being seeking	-0/271	0/256	-0/159	-1/06	0/29
F= 2/34	**R^2 = 0/308**	**P<0/01**			

Results of Table (5) uphold the significant values of observed F (P<0.001) and manifest that 0.30 of symptoms severity could be predicted by self-regulation components. Given beta values, positive actions (β=-0.525), controllability (β=-0.567), expression of feelings and needs (β=-0.383) and assertiveness (β=-0.424) could forecast symptoms severity significantly.

Discussion and Conclusion

The current study aimed to investigate the role of self-regulation behaviors in predicting treatment readiness and symptoms severity in depressed patients. The results confirmed a positive correlation with self-regulation behaviors and symptoms severity in depression patients (P<0.01), however, self-regulation behaviors and treatment readiness were not significantly correlated. These findings were in line with previous research. For example, Tymoti et al (2001) reported that reduction of depression symptoms had a positive effect on self-regulation behaviors. Scott and O'Hara (2003) observed deficit in emotion regulation in patients with depression and anxiety. Jutta and Ian (2010) detected a significant correlation between emotion regulation and depression symptoms. Buschkuehl et al (2013) also perceived that attending to emotions could improve depression.

In explaining this finding it could be said that self-regulation is a series of cognitive processes activated automatically or intently. These processes let individuals enjoy positive experiments and avoid negative ones, change their severity, and adjust their facial expression with social norms (Gross and John, 2003). So, self-regulation may reduce rumination and negative thoughts which in turn may significantly help to improve depression symptoms, in that as Beck cognitive spiral assumes, negative former experiences are coded as schemas in memory and will be activated in similar situations to affect new information interpretations. Depressive thoughts include informative statements (basic assumptions) about that the ''self'' is unable, the external world is problematic, and the future is frustrating. These automatic thoughts and regular errors cause negative evaluation about the self, world, and future, and in turn, may increase self-criticism and blur the individuals' consciousness contents

(Beck, 1979). In contrast, self-regulation aids individuals to avoid negative events and to control their severity (Gross and John, 2003).

A finding of the current study was that self-regulation behaviors could predict 0.27 of treatment readiness, and 0.30 of symptoms severity. In this line, Sebena et al (2013) framed that depression symptoms could be foreseen by self-regulation. In addition, the study of Scotte and O'Hara (2003) verified that sever deficits in self-regulation could previsedepression and anxiety. This finding can be explained by the fact that self-regulation is the ability to control experiences and emotional expression. Its function can be either redirecting a negative mood/emotion or suppressing or changing behavior manifestation of an emotion; therefore, it may diminish negative emotions caused by depression and propel depressed patients to seek treatment. Aldao et al (2012) found that in depressed patients the higher the ability to regulate emotions with life events, the better the treatment outcomes would be. Given association network theory (ANT; Bower, 1981), depressed patients interpret events more negatively, and depressed mood selectively increases the likelihood of accessing negative interpretive constructs. According to ANT, each emotion is re-presented in association network as a node and is related to other re-presents of the network. Node-to-node activation of emotions boosts access to mood coordinated materials and therefore, leads to mood coordinated orientation (Mohammad Aliloo, 1998). So, by influencing on mood changes, self-regulation behaviors may have effective role in quelling symptoms severity of depressed patients and motivate them to get help.

In sum, the findings of this study revealed that self-regulation behaviors could predict treatment readiness and symptoms severity in depressed patients, which may have important clinical implications for pathology and prevention programs of this disorder. Selecting the participants by accessible sampling method, lack of controlling their symptoms duration and severity, and using only self-reported tools are among the study limitations that future research should consider to improve findings generalization. Finally, due to the observed correlation between self-regulation behaviors and symptoms severity of depression, it is recommended that health centers design programs to teach self-regulation skills to depressed patients with the aim of diminishing their symptoms severity and facilitating their recovery process.

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