Original Article

The role of HEXACO personality dimensions and emotion regulation in predicting depression

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Abstract

Background: one of the main issues in the social health is investigating the factors affecting the quality of life of people with depression. The main objective of the present study was providing the trainings to help in improving the mental health and quality of life in people with depression for the counselors and psychologists. This study examined the role of HEXACO personality dimensions in predicting the quality of life with depression.

Methods: The statistical population comprised all people with depression referred to counseling centers in Tehran mental hospitals, 200 subjects were chosen using simple random sampling. The BDI, HEXACO personality inventory, emotion regulation questionnaire, and SF-36 questionnaire for quality of life were used. The collected data were analyzed based on Pearson correlation coefficient and stepwise regression.

Results: There was a positive and significant relationship between HEXACO personality dimensions and the quality of life in people suffering from depression. The results of stepwise regression analysis showed that all personality dimensions and emotion regulation could significantly predict the quality of life. Therefore, there was a positive and significant correlation between personality dimensions and emotion regulation with the quality of life.

Conclusion: quality of life of people with depression can be predicted by emotion regulation and HEXACO personality factors.

Keywords: Emotion Regulation; Personality Inventory; Psychiatric; Quality of Life; Regression Analysis.

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Introduction

Depression is an emotional disorder, which is specified with mood and emotional evolutions (1). The prevalence of depression in women is twice greater than men with the highest lifespan spread (17%) among other psychiatric disorders (2, 3).

Quality of life associates with the mental perception of each person about the feeling of being good and life satisfaction (4-6). Previous researches (7-9) have indicated that quality of life is a powerful force that directs, maintains, and promotes health and wellbeing in different cultures and communities (10, 11). Psychologists more focus on individual differences that distinguish people's personality traits (12). Overview of personality definitions shows that there is not a specific theory about all meanings of personality since psychologists have no consensus on an exact definition of personality (13). Studies (14-16) showed

that personal and background characteristics, including personality, mood, marital status, social communications, and long-run complications of the disease can influence the quality of life. HEXACO personality theory is one of the most comprehensive theories and supplement approach to the five-factor model of personality. HEXACO personality theory consists of six significant personality factors, including Honesty-Humility (H), Emotionality (E), Extroversion (X), Agreeableness (A), conscientiousness (C), and Openness to experience (O). Seemingly, personality traits have a significant effect on the emotion regulation strategies of people (17-19).

Researchers have introduced nine strategies for cognitive emotion regulation: rumination, acceptance, self-blame, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and other-blame (20-22). Emotion regulation is inseparably related to human life through cognitions. Cognitions or cognitive procedures might help us to manage and regulate emotions or feelings to have control over emotions. A study showed that those who suffer from depression mostly use negative cognitive strategies, such as rumination and catastrophizing when facing unpleasant situations (23). In this context, some researchers (Filipovic, Randjelovic, Ille, Markovic, Milovanovic, and Kovacevic) studied anxiety, personality traits, and quality of life and found that anxiety and personality traits could predict the quality of life of patients with depression (15). Another study examined emotion regulation and its role in negative thinking, anxiety, and depression (24). They found a significant correlation between emotion, anxiety, and depression. Arabi and Bagheri indicated that emotion regulation strategies mediate the relationship between pain intensity and quality of life (26). Irrational beliefs and emotion regulation skills could significantly predict the quality of marital life (27).

According to the literature review, particularly in Iran, we didn't find any study on the role of HEXACO personality dimensions and emotion regulation in predicting the quality of life of patients with depression. Hence, this study was conducted to examine the role of HEXACO personality dimensions and emotion regulation in predicting the quality of life of people who suffer from depression in order to improve the mental health and quality of life of such patients.

Method

Research Plan: This was a descriptive study with correlational type since it was conducted to examine HEXACO personality dimensions and emotion regulation in predicting the quality of life of people with depression.

Statistical population of the study comprised all people with depression referred to counseling centers in Tehran of which some centers were chosen randomly. 200 respondents were selected using random sampling method. According to statistics, 117 respondents (58.5%) were men and 83 respondents (41.5%) were women who were in the age range of 20-57.

Instruments

Following instruments were used:

Beck Depression Inventory: this questionnaire includes 21 item groups and was developed by Beck and colleagues for the first time. Each group of items (including four sentences) measures one aspect of depression symptoms, which have been graded based on symptoms' severity. Scores varied between zero (for lack of symptom) and 3 (for most severe symptom). The overall score of the questionnaire equals 0-63 indicating the mildest and severest symptoms, respectively. Beck reported internal

consistency coefficient of this instrument equal to 0.7-0.92 with Cronbach's alpha coefficient of 0.81. Validity and reliability of this questionnaire was reported 0.72 and 0.87, respectively (28).

HEXACO Personality Inventory: This questionnaire is a model of personality factors, which includes 60 items and six dimensions of Honesty-Humility (H), Emotionality (E), Extroversion (X), Agreeableness (A), conscientiousness (C), and Openness to experience (O). Each dimension consists of 10 items. This inventory is scored based on a 5-point Likert scale. Lee and Ashton measured Cronbach's alpha for these dimensions and reported 0.92, 0.90, 0.89, 0.89, and 0.90 for honesty-humility, emotionality, agreeableness, conscientiousness, and openness to experience, respectively (11). In the Persian version, reliability of the 100-item scale of this test was obtained to 0.80, 0.74, 0.81, 0.73, 0.71, and 0.76 for each of the components, including honesty-humility, emotionality, agreeableness, conscientiousness, and openness to experience, respectively (9).

Cognitive Emotion Regulation Questionnaire (CERQ): questionnaire of Cognitive emotion regulation strategies comprises 36 items. Each item is answered based on a five-point Likert scale (from 1= almost never to 5=almost always). This questionnaire includes none subscales, including self-blame, blaming others, catastrophizing, rumination, putting into perspective, refocus on planning, acceptance, positive refocusing, and positive reappraisal. Five of them are adaptive cognitive strategies, and four of them are maladaptive CERs. Therefore, every person obtains 11 scores separately (3). The structural validity and reliability of this scale were approved using Confirmatory Factor analysis in Iran. Reliability of this scale also obtained in the range of 0.64-0.82 for each subscale using Cronbach's alpha coefficient (11). Cronbach's alpha coefficient of this questionnaire equaled 0.89 in this study.

Quality of Life Questionnaire: This questionnaire includes 36 items within eight subscales: physical functioning, limitation in physical activities because of physical problems, bodily pain, general health, vitality, psychological health, limitation in physical activities because of emotional problems, and social functioning. The overall score of eight subscales varies between 0 and 100; the higher the score, the better the health status. Consistency analysis showed that except for vitality, other subscales in the Persian version had the minimum standard reliability coefficient of 0.77-0.90. The validity, and reliability of this questionnaire were confirmed in the Iranian population. Reliability of this scale was approved, except for vitality, regarding minimum standard reliability coefficient of 0.77-0.90. Moreover, they reported convergent validity of this scale in the range of 0.58-0.95 (12).

Implementation Procedure

After ethical and research licenses were obtained from Islamic Azad University and the implementation procedure was matched with required authorities, the researcher initiated the research procedure. In this regard, research objectives were explained to respondents, and they found how to complete the questionnaires. Then, they were asked to answer the questions honestly considering their situations. The researcher was there to answer the question if there was any. The collected data were statistically analyzed using Pearson Correlation Coefficient and stepwise regression.

Descriptive and inferential statistics have been used to analyze the data. In the descriptive part, the mean and standard deviation were used and in the inferential part, correlation coefficient and stepwise regression analysis were employed. SPSS software was used to analyze the data.

Results

To analyze data, Pearson Correlation Analysis and stepwise regression were employed. Table 1 reports descriptive indicators of personality, quality of life, and emotion regulation.

According to Table 1, the mean values of studied variables are at average level regardless of standard deviation value. Furthermore, Kolmogorov-Smirnov coefficients and significance levels of all variables in the table above show their significance. Furthermore, Cronbach's alpha coefficient of all variables was close to or above 0.7. Accordingly, the questionnaires that were used in this study had acceptable internal consistency. Moreover, the validity of variables equaled between 0.5077 and 0.8749. Table 2 reports the results of the correlation test of HEXACO personality factors,

Table 1. Descriptive statistics of personality traits, quality of life, emotion regulation

Variable	Mean	SD	Variance	Kolmogorov-Smirnov	Cronbach's alpha	CR index	AVE
Personality	3.19	0.816	0.665	0.121	0.785	0.801	0.8391
Honesty	3.4583	0.66945	0.448	0.110	0.773	0.783	0.5909
Emotionality	3.2390	0.71234	0.507	0.131	0.811	0.813	0.8291
Extroversion	3.6700	0.69676	0.485	0.324	0.790	0.801	0.8022
Agreeableness	3.5356	0.70292	0.494	0.225	0.843	0.879	0.7866
Conscientiousness	3.5967	0.84313	0.711	0.142	0.819	0.823	0.8021
Openness to experience	3.5128	0.77500	0.601	0.129	0.778	0.775	0.8111
Quality of life	3.6000	0.80825	0.653	0.111	0.823	0.821	0.7218
Physical dimension	3.5400	0.99162	0.983	0.170	0.934	0.932	0.6712
Psychological dimension	3.7500	0.93373	0.872	0.149	0.885	0.886	0.8787
Social relationships	3.7250	1.02206	1.045	0.265	0.787	0.785	0.6334
Social environment	3.3750	0.98449	0.969	0.200	0.827	0.823	0.5077
Emotion regulation	3.4900	0.90776	0.824	0.265	0.988	0.984	0.8743
Positive refocusing	3.2700	0.99096	0.982	0.139	0.790	0.792	0.7809
Positive reappraisal	3.5700	1.05388	1.111	0.133	0.877	0.875	0.6369
Self-blame	3.6900	0.83510	0.697	0.154	0.789	0.786	0.7888
Blaming others	3.4500	1.00126	1.003	0.210	0.820	0.821	0.7243
Rumination	3.5600	0.97527	0.951	0.218	0.932	0.933	0.6719
Catastrophizing	3.2800	0.91421	0.836	0.109	0.875	0.874	0.8749
Acceptance	3.3450	0.78681	0.619	0.155	0.784	0.782	0.5816

emotion dimensions, and quality of life, as seen in this table, there is a significant relationship between HEXACO personality dimensions and quality of life of people with depression; the correlation coefficient of these factors equaled 0.581. Furthermore, there is a significant relationship between emotion regulation and the quality of life of people with depression at the significance level of 95%, with a correlation coefficient of 0.527.

Table 2. Result of correlation between HEXACO personality dimensions and emotion with quality of life

Component	**Quality of life**	
HEXACO personality dimensions	Pearson correlation	0.581
	Sig	0.001
	N	200
Emotion regulation	Pearson correlation	0.527
	Sig	<0.001
	N	200

To examine the effect through model fit, regression was analyzed. Nevertheless, the table below assesses model adequacy indicators of the quality of life of people with depression (Y) and HEXACO personality dimensions (X).

Correlation between independent and dependent variables equaled 0.581. R^2 was equal to 33% indicating that 33% of changes in the quality of life of people with depression are explained by HEXACO personality dimensions. Since R^2 does not take df (degree of freedom), adjusted R^2 was used. Adjusted R^2 also equaled 31%. According to the obtained D-W statistic that is at a standard interval of 1.5-2.5, residuals are not dependent on each other. According to these indicators, the model showed required adequacy.

Table 3. F test (ANOVA) of regression significance

Model	Sum of squares	df	Mean sum of squares	F value	Sig
Regression	43.852	7	6.265	13.962	<0.001
Residual	86.148	192	0.449		
Total	130.000	199			

According to Table 3, the significance level of this value was <0.001 indicating that regression is significant at the level of 95%. Dependent variable: quality of life of people with depression

According to Table 4, one unit increase in each independent variable will lead to an increase (coefficient equivalent) in the

Table 4. Significance of regression coefficients of HEXACO personality dimensions and quality of life of people with depression

Variable	Non-normalized coefficients		Normalized coefficients	T	Sig
	B	Std. Error	Beta		
Constant value	1.100	0.314		3.500	0.001
Personality	0.152	0.088	0.153	1.732	<0.001
Honesty	0.431	0.124	0.357	3.469	0.001
Emotionality	0.066	0.087	0.058	0.755	<0.001
Extroversion	-0.019	0.187	0.016	0.214	0.003
Agreeableness	0.40	0.102	0.035	0.396	0.001
Conscientiousness	0.018	0.101	0.018	0.174	<0.001
Openness to experience	0.322	0.105	0.309	3.077	0.002

dependent variable. To examine and propose the model of the relationship between the quality of life of people with depression (Y) and emotion regulation dimensions (X), model adequacy indicators were assessed.

Table 5. F test (ANOVA) of regression significance

Model	Sum of squares	df	Mean sum of squares	F value	Sig
Regression	36.155	8	4.519	9.198	<0.001
Residual	93.845	191	0.491		
Total	130.000	199			

Correlation between independent and dependent variables equaled 0.527R^2 equaled 27% indicating that 27% of changes in the quality of life of people with depression are explained by emotion regulation strategies. Since R^2 does not take df (degree of freedom), adjusted R^2 was used. Adjusted R^2 also equaled 24%. According to the obtained D-W statistic that is at a standard interval of 1.5-2.5, residuals are not dependent on each other. According to these indicators, the model showed required adequacy.

According to Table 5, the significance level of this value was <0.001 indicating that regression is significant at the level of 95%. Dependent variable: quality of life of people with depression

According to Table 6, one unit increase in each independent variable will lead to an increase (or decrease) (coefficient equivalent) in the dependent variable.

Discussion

This study was conducted to examine the role of HEXACO personality dimensions and emotion regulation in predicting the quality of life of people with depression. Results indicated a significant relationship between HEXACO personality dimensions and the quality of life of people who suffer from depression. This finding was in line with results obtained by other studies (13, 24, 25). The mentioned authors predicted depression based on cognitive emotion regulation strategies and marital satisfaction among women. Results of

Table 6. Significance of regression coefficients of emotion regulation dimensions and quality of life of people with depression

Variable	Non-normalized coefficients		Normalized coefficients	T	Sig
	B	Std. Error	Beta		
Constant value	2.185	0.324		6.745	<0.001
Emotion regulation	0.140	0.075	0.157	1.856	0.002
Positive refocusing	0.44	0.068	0.054	0.648	<0.001
Positive reappraisal	0.049	0.058	0.064	0.841	0.001
Self-blame	-0.216	0.072	0.223	0.9892	0.003
Blaming others	-0.197	0.080	0.244	2.469	<0.001
Rumination	-0.079	0.065	0.095	1.214	0.002
Catastrophizing	-0.140	0.070	0.158	2.012	<0.001
Acceptance	0.050	0.80	0.005	0.650	<0.001

regression analysis showed that marital relationship (17.7%), catastrophizing (11.6%), blaming others (4.4%), positive refocusing (3.5%), education (1.6%), self-blame (1.2%), and relatives and friends (0.9%) together could predict 40.9% of depression.

Results of the extant study showed a significant relationship between emotion regulation and the quality of life of people with depression. This result was matched with findings obtained by researchers (15, 26) who examined the mediating role of emotion regulation strategies in the relationship between pain intensity and quality of life in patients with chronic pain disorder. Results showed that the emotion reappraisal strategy had a negative relationship with pain and a significant relationship with quality of life. Furthermore, emotion suppression strategy had a significant positive and negative relationship with pain intensity and quality of life, respectively. There was also a significant and negative relationship between pain intensity and quality of life. Moreover, results indicated that emotion regulation strategies could mediate the relationship between pain intensity and quality of life.

Also, results showed that quality of life can be predicted based on HEXACO personality dimensions in people who suffer from depression. This finding was in line with results obtained by other researchers (24, 17), who studied mediating role of cognitive emotion regulation skills in the relationship between coping strategies and quality of life. Findings showed that problem-focused and emotion-focused coping strategies mediated by cognitive emotion regulation styles were considered powerful predictors and meaningful of quality of life for students. Standardized effects of positive and negative cognitive emotion regulation styles on students' quality of life were significant. There was no significant relationship between emotion-based coping strategies and quality of life and problem-focused coping strategies and quality of life had a statistically significant relationship. Positive and negative styles of cognitive emotion regulation showed a significant relationship with quality of life.

Results of this study indicated that the quality of life of people with depression can be predicted based on emotion regulation. This finding was matched with results obtained by (24, 15). They studied emotion regulation and its role in negative thinking, anxiety, and depression. Results showed that anxiety and personality traits could predict the quality of life of the patient with depression. Depression more likely occurs when individuals attribute negative traits as the experience of loneliness to themselves. Any exposure of people with depression to another person leads to the negative self-appraisal. Accordingly, excessive decision-making experiences might be the best description for cognitions of people with depression who minimize the positive experiences and maximized the negative ones. It seems that people with depression experience different cognitions within progress steps. Expectations of depressed individuals before any response might be as important as rewards or strengths the experience after the response. The people with depression not only evaluate their progress strictly neglecting promotion of their response but also their expectation level is low before doing any action.

As the research sample was just confined to Tehran and patients at the cross-sectional interval, the generalization of findings should be done cautiously. Moreover, this study only focused on the patients with depression; hence, the results cannot be used for all patients. Furthermore, results might have been biased due to the use of medicines by patients. Such a point requires consideration. Besides, the high number of

questions and self-report methods used for data collection can be mentioned as another research constraint. Ultimately, it is suggested to conduct this study in other areas and provinces with more control over demographic features, such as age, sex, education, and so forth in order to provide more comparative results.

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