

Study of alexithymia trait based on Big-Five Personality Dimensions

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Abstract

The purpose of this research was to study the relationship between Big Five personality traits and alexithymia and to determine differences of alexithymic compare with non- alexithymic individuals in these personality traits in university students. In present study, 150 university students at Tabriz University were selected and asked to answer NEO-Five Factor Inventory (NEO - FFI), and Toronto Alexithymia Scale (TAS - 20). Results showed that there are negative and significant relationships between conscientiousness and openness to experiences with alexithymia and positive and significant relationships between neuroticism with alexithymia. As well as, there is significant difference between alexithymic and non-alexithymic individuals in neuroticism and openness to experiences. In one hand, these results suggest that neuroticism,

conscientiousness and openness to experiences are determinant of alexithymia; and in the other hand, high level of neuroticism and low level of openness to experiences are the characteristic of alexithymic people based on Big-five. Therefore, it can be conclude that high neuroticism and low openness to experiences are the alexithymic individual's traits.

Key words: Alexithymia, Big Five personality traits, Emotional dysfunction

Introduction

The term alexithymia was proposed and described by Sifneos in 1973, after seeing clients with difficulties relating to problems identifying and emotions (Taylor, 1994). Alexithymia is a personality trait known by the decreased capability of experiencing consciously, understanding and describing one's emotional state (Aaron, Benson, Park, 2015). Alexithymia is associated with poor interpersonal functioning. The dominant features of alexithymia are difficulties in describing feelings, difficulties in identifying feelings, and externally oriented thinking (Taylor, Bagby, Parker, 1997). Alexithymia is one of the emotional structures; it seems that events of early childhood, such as trauma have an important role in formation of alexithymia; on the other hand, early childhood traumas can affect shaping of personality and it determines the quality of life in next years. Some of the psychological problems originate from personality, so it can have a role in alexithymia, but presence or absence of association between them is unclear, before discussing about this association giving a brief definition of personality is necessary.

Personality is one of the fundamental dimensions of human and it affects all aspects of life, personality can be defined as the total of features that make difference among people. There isn't consensus about how many basic dimensions are needed to describe individual differences in personality among researchers, and different classification have been proposed throughout the history of personality research, but over the last two or three decades, the Big Five model was the most dominant model (Vazsonyi, Ksinan, Mikuška, Jiskrova, 2015). This

model was offered by Costa & McCrae in 1985. Revised NEO Personality Inventory is the most popular measures of the FFM (NEOPI-R; Costa & McCrae, 1992). This model describes five broad dimensions of human personality, namely openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (McCrae & Costa, 1997).

Numerous researches about the association of alexithymia with Big Five have been done, for example Gucht, Fontaine, Fischler (2003) showed that neuroticism was most strongly associated with Difficulty Identifying Feelings (DIF), whereas extraversion was mainly related to Externally Oriented Thinking (EOT). A combination of both neuroticism and extraversion were the best predictors of Difficulty Describing Feelings (DDF). Picardi, Toni, Caroppo, (2005), indicated TAS-20 total and subscale scores were correlated with low extraversion, openness, and agreeableness. Zlotnick, Mattia, Zimmerman, (2005) indicated that the most part of the alexithymia's scores is justified by low extraversion and openness and high neuroticism. In another study that has been done by Singh, Arteché, Holder (2011) about personality factors and alexithymia, results indicated that Openness was a significant predictor of alexithymia. Bibby and Ferguson, (2012) showed that alexithymia was negatively correlated with conscientiousness in university students. Based on the above findings, the results of various studies are inconsistent; some of studies showed that high neuroticism and low openness and extraversion are predictors and some others showed low agreeableness and conscientiousness is predictor, so clarification of this relationship needs more researches. In present study difference between alexithymic compare with non-alexithymic individuals, according to cut-off point of TAS-20, in FFM variables was studied. In a study Ueno, Maeda, Komaki, (2014) demonstrate that individuals with high TAS-20 scores are in two subgroups, one showed very high scores on difficulty in identifying feelings (DIF) and also neuroticism and other showed very high scores on externally oriented thinking (EOT) and very low scores on openness to experience. About the difference between alexithymic compare with non-alexithymic individuals in

personality dimensions literature is scarce and this study may be useful in clearing differences.

As indicated the association of alexithymia and personality dimensions and difference of personality dimensions in alexithymic compare with non-alexithymic individuals, in different studies aren't clear, the first goal of present investigation was to study the relationship of Big Five personality traits and alexithymia. Also according to uncertainty of these variables in Iran's culture, determination of these associations in Iran is second purpose. We hypothesized firstly; that the Big Five personality traits are predictors of alexithymia and our second hypothesis was studding differences of alexithymic compare with non-alexithymic individuals in Big Five personality. For testing this hypothesis we used NEO-Five Factor Inventory (NEO - FFI), and Toronto Alexithymia Scale (TAS - 20) and also cut-off point of TAS-20.

Method

Participants

In this cross-section and correlation study, participants were 150 undergraduate university students (boy and girl) at Tabriz University that selected by convenient sampling method. The mean age of participants was 22 (SD 2.96) years, and its range was between 18-26. Of all participants 74 (49.3%) were male and 76 (50.7%) were female and also the majority of subjects 121 (80.7%) had average social economic status and literacy level of 90 (60%) participant were at the bachelor level. In addition, of the participants 56 (37.3%) had governmental job status and 94 (62.7%) free status.

Procedure

After selecting the participants and explaining the study goals, and attracting their cooperation, demographic questionnaire, Toronto Alexithymia Scale (TAS-20) and NEO-FFI were distributed among the university students appealing them to study the questions carefully and select the answers according to their personality

traits and do not leave the questions unanswered as possible. All participants reported good health and no known neurological or psychiatric problems. Data were collected from January, 2017 to March, 2017 by researchers. All study subjects were given both verbal information and written summary of the study, where a voluntary participation, guarantee of anonymity, free will of withdrawal from the participation, and no disadvantage upon withdrawal were explained. Upon both verbal and written consents from the subjects, data was collected.

Measure

Alexithymia

Alexithymia, the deficiency in understanding, processing or describing emotions, was measured using the 20-Item Toronto Alexithymia Scale (TAS-20), a 20-item self-report measure of alexithymia (Taylor et al., 1985). Each item is rated on a five point Likert scale. The questionnaire provides a total alexithymia score (TAS Total) and three subscales, which reflect the three main facets of the alexithymia construct: factor scale TAS F1 assesses difficulties in identifying feelings, factor scale TAS F2 concerns difficulties in describing feelings, and factor scale TAS F3 reflects concrete externally oriented thinking or a preoccupation with the details of external events. The TAS Total score was used to classify the subjects in cases and controls. A cut-off of 61 was used to diagnose alexithymia and categorize the subjects into non-alexithymic (TAS Total score = < 60) and alexithymic (TAS Total score = > 61) (Taylor et al., 1997). Cronbach's α for the present study are 0.80.

Big Five personality traits

NEO-FFI consists of 60 items, 12 for each of the "FFM" variables. For each item, participants express agreement or disagreement on a five-point Likert type scale ranging from "completely disagree" (1) to "fully agree" (5). Half of the items in each sub-scale are worded positively, and the other half negatively, so as to avoid response set bias. The items of the different sub-scales are mixed, so that every fifth item represents one of the FFM. Cronbach's α for the present study are 0.73.

Statistical analysis

Questionnaire data were initially checked for missing item responses. Normality assumption was tested with Kolmogorov-Smirnov test. Data were presented by mean (M) and Std. Deviation (SD) for group and gender in big-five personality dimensions. The strength of associations of big-five personality dimensions with alexithymia were assessed by means of regression analysis, These associations were first tested in univariate analysis (Pearson`s correlations coefficients). The main effects of group and gender and their interactional effect were analyzed by MANOVA. The regression and MANOVA assumptions were assessed. All the assumptions were fulfilled.

Significance levels were set at $p < 0.05$ in all cases. SPSS 22.0 (SPSS Inc., Chicago, IL, USA) was used to perform the statistical analyses.

Results

Table 1 Shows mean and Std. Deviation of group and gender in big-five personality dimensions. Alexithymic people have higher level of Neuroticism ($M = 29.94$, $SD = 8.15$) and lower levels of Extraversion ($M = 28.07$, $SD = 30.01$), Agreeableness ($M = 25.91$, $SD = 5.28$), Conscientiousness ($M = 31.48$, $SD = 5.66$), and openness to experiences ($M = 23.88$, $SD = 4.39$). Also, male compared with female have low levels in all dimensions of big-five.

Table1. Mean and Std. Deviation of big-five personality dimensions

Variables	Alexithymic		non-alexithymic		Male		Female	
	M	SD	M	SD	M	SD	M	SD
Extraversion	28.07	7.34	30.01	6.55	29.43	6.73	29.76	6.81

Agreeableness	25.91	5.50	27.99	5.28	27.56	5.22	27.54	5.56
Conscientiousness	31.48	5.66	33.17	7.60	32.08	7.70	33.52	6.76
Neuroticism	29.94	8.15	20.62	7.93	20.49	8.08	24.68	9.08
openness	23.88	4.39	26.11	4.88	25.44	5.12	25.82	4.61

Table2. Correlations of the Big Five personality and alexithymia

Variables	1	2	3	4	5	6	7	8	9
1.alexithymia	1								
2. difficulties in describing feelings	.80**	1							
3. difficulties in identifying feelings	.90**	.68**	1						
4. externally oriented thinking	.58**	.18*	.29**	1					
5. extraversion	-.34**	-.28**	-.29**	-.21**	1				
6. agreeableness	-.43**	-.31**	-.42**	-.23**	.37**	1			

7.conscientiousness	-.36**	-.23**	-.27**	-.35**	.47**	.34**	1		
8. neuroticism	.61**	.50**	.59**	.28**	-.40**	-.52**	-.28**	1	
9.openness to experiences	-.29**	-.21**	-.15	-.38**	.23**	.16*	.22**	-.14	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

To investigate relationships between alexithymia with Big-five personality dimensions, a correlation matrix was produced (Table2). Significant correlation was found between alexithymia with all of the Big-five personality dimensions. Alexithymia was positively correlated to neuroticism ($r = .61$, $p < .01$). In the other hand, extraversion ($r = -.34$, $p < .01$), agreeableness ($r = -.43$, $p < .01$), conscientiousness ($r = -.36$, $p < .01$) and openness to experiences ($r = -.29$, $p < .01$) was negatively correlated alexithymia.

Table3. Multivariate regression modelling

Variable	B	SE B	β	Adjusted R²	Sig.
Extraversion	.004	.122	.003	.43	.972
Agreeableness	-.197	.154	-.096		.203
Conscientiousness	-.227	.109	-.149		.040
Neuroticism	.619	.094	.495		.000
Openness	-.405	.146	-.178		.006

A multiple linear regression was calculated to predict the participants' alexithymia based on Big- five personality dimensions. Significant regression equation was found ($F= 23.75$, $p=.000$) with a R^2_{adj} of .43. This result shows that Big Five personality dimensions accounts for 43% of the variance in the alexithymia. Based on this multivariate modeling, there are negative and significant relationships between conscientiousness and openness to experiences with alexithymia and positive and significant relationships between neuroticism with alexithymia. These results means that by increasing one unit in the score of conscientiousness ($p=.040$) and openness to experiences ($p=.006$) the score of alexithymia decreases by.15 and.18 units respectively. Inversely, by increasing one unit in the score of neuroticism ($p=.000$) the score of alexithymia increases by.50.

Table4. Between-subjects effects

Source	Dependent Variable	F	Sig.
Group= alexithymic, non- alexithymic	Extraversion	1.90	.169
	Agreeableness	3.31	.071
	Conscientiousness	1.94	.165
	Neuroticism	29.77	.000
	Openness	5.30	.023
Gender	Extraversion	.002	.963
	Agreeableness	.13	.716
	Conscientiousness	2.43	.121
	Neuroticism	9.96	.002

	Openness	.13	.716
group * gender	Extraversion	.26	.605
	Agreeableness	.71	.399
	Conscientiousness	.68	.408
	Neuroticism	2.41	.122
	Openness	.11	.737

A multivariate analysis of variance (MANOVA) was conducted to examine differences in group and gender in big-five personality dimensions as main effects, and group×gender as interactional effect. The multivariate test was significant by Pillai's Trace criterion, for group $F=7.103$, $p = .000$, and for gender $F=3.569$, $p = .005$. But, it was not significant by Pillai's Trace criterion, for interactional effect (group×gender) $F= .942$, $p = .456$. Also, tests of between-subjects effects showed that there is significant difference between alexithymic and non-alexithymic individuals in neuroticism ($F= 29.77$, $p = .000$) and openness to experiences ($F= 5.30$, $p = .023$).

According to the means, alexithymic individuals have high level of neuroticism and low level of openness to experiences. There is no significant difference between two groups in other dimensions of Big-five. As well as, about main effect of gender, there is significant difference between male and female in neuroticism ($F= 9.96$, $p = .002$). According to the means, female have high level of neuroticism. There is no significant difference between two genders in other dimensions of Big-five dimensions. Interactional effect of group×gender is not significant.

Discussion

The aim of present study was to examine relationship of Big Five personality traits and alexithymia and also compare differences of alexithymic and non-alexithymic people in terms of FFM.

Studying of first hypothesis showed that among the Big Five personality traits, conscientiousness, neuroticism, and openness to experience can predict alexithymia. According to current study low conscientiousness can predict alexithymia, individuals with conscientiousness trait have some features such as organization, persistence, and motivation in goal-directed behavior, also they are reliable, and ambitious (Costa et al., 1992). Because of low mood and excitement in alexithymia, they cannot do their tasks conscientiously. So this dimension of personality has a negative relationship with alexithymia. This result is consistent with (Taylora, Bagby, Kushnerc, Benoitd, Atkinsone, 2014; Elfhag, Lundh, 2007).

As indicated, in present study, another affective dimension of big five in predicting alexithymia is neuroticism, according to Costa and McCrae (1992) neuroticism is consist of six facets such as anxiety, depression, hostility, experience a sense of vulnerability, acting impulsively, and not accommodating with bad events. In current study the relationship of neuroticism and alexithymia is positive, because in individuals who have neuroticism trait, Behavioral Inhibition System (BIS) causes some troubles in feeling and describing of emotions because BIS is associated with feelings of anxiety and avoidance behaviors (Gray, 1990). Based on gray's theory and definition of neuroticism relationship between neuroticism and BIS is clear. By noticing to features of alexithymia, neuroticism, and BIS, there are some common characteristics between them, and these characteristics explain the positive relationship between neuroticism and alexithymia. This result supports some of previous findings such as Zimmermann, Rossier, Stadelhofen, Gaillard (2005); Elfhag, Lundh, (2007).

Another facet of personality that has association with alexithymia in present study is openness to experience. This dimension is one of the basic domains of human personality (McCrae & Sutin, 2009). In this study, link between alexithymia and openness to experience is negative. This result is consistent with some other studies (Kamlesh, Arteché, Holder, 2011; Yekta, Besharat, Roknoldini, 2011; Elfhag, Lundh, 2007; Wise and Mann, 1994; Bagby, Taylor, Parker, 1994). Individuals with dominant openness trait, are generally receptive to entertaining new and challenging facets of cultural life, as well as personal thoughts and emotions (McCrae & Costa, 2003), also there are positive relationship between Openness to experience and fantasy, sensitivity to art and beauty, tendency to be liberal (Costa & McCrae, 1992b) and intelligence (Gignac, Stough, & Loukomitis, 2004). Individuals with low openness aren't open to their emotional world, and don't have ability to relate to their own emotions so it is likely that a person with low openness suffer of alexithymia.

The next hypothesis of current research was to study the differences of two groups of alexithymic compare with non-alexithymic individuals in Big Five personality traits; grouping was according to cut-off point of TAS-20 inventory. Based on this study can be said that between two groups, there is a significant differences between alexithymic and non-alexithymic individual in neuroticism and openness to experience. This means that individuals with alexithymia have high neuroticism and low openness to experience. These findings are consistent with previous findings such as Besharat, (2007); Luminet, Bagby, Wagner, Taylor, Parker, (1999); Pandey and Mandal, (1996). In explanation of this result can be said that there are differences between alexithymic and non-alexithymic individuals, one of the basic features of alexithymia is objective thinking in other word imagination is too weak in this people, but individuals with high openness imagination and visualization are so strong. Neuroticism in alexithymia causes some ambiguity in emotions and feelings.

According to the findings of this study, it can be said that neuroticism, conscientiousness, and openness have major role in predicting alexithymia in nonclinical (normal) population, so maneuvering on these dimensions is recommended in educational and therapeutic environments. Also, it conclude that

high level of neuroticism and low level of openness to experiences are the characteristic of alexithymic people based on Big-five.

Limitation

The first limitation was using of self-report instruments for measuring variables, because bias is almost inevitable in such questionnaire. The second limitation was problem in generalizing the results of present study to public, because of level of age (average age about 22) and education (high). Thus; we recommend studying this research in other levels of age and education and among other population out of universities.

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