

## To Compare Personality Characteristics of Asthmatic Patients and Healthy Persons

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### ABSTRACT

**Background:** among great numbers of chronic diseases, asthma considers as chronic disorders of respiratory system which has significant prevalence. Psychological situations such as stress, anxiety, were identified to accelerate asthmatic attack and to decrease these people's life quality. Therefore, present study was performed to compare personality characteristics of patients who suffer from asthma and healthy people.

**Materials and methodology:** this study was carried out by a causal-comparative method. Among 120 asthmatic patients who received their specialized pulmonary diagnosis on infection to asthma, 92 persons were selected regarding sample size defining table of population size (Krejcie-Morgan chart) by means of simple random sampling method. Data collection was done by means of personality inventory revised questionnaire (NEO) and was analyzed according to statistical test.

**Results:** the results showed that since calculated  $t$  of neuroticism, extraversion, openness, respectively ( $t_{\mu}=2.20$ ), ( $t_{\mu}=2.23$ ), ( $t_{\mu}=2.49$ ) was higher than critical table  $t$  ( $t_{\beta}=1.98$ ), null hypothesis was rejected and study hypothesis was approved. Also, since calculated  $t$  of agreeableness and conscientiousness, respectively ( $t_{\mu}=1.13$ ), ( $t_{\mu}=0.61$ ) was lower than critical table  $t$  ( $t_{\beta}=1.98$ ), therefore, null hypothesis approved and study hypothesis was rejected.

**Conclusion:** The results showed that there is significant variation between personal characteristics of neuroticism and extraversion and openness in asthmatic and healthy persons. But, no significant variation was seen between agreeableness and conscientiousness in two groups.

**KEYWORDS:** asthma, neuroticism, extraversion, openness, agreeableness, conscientiousness.

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### 1. INTRODUCTION

Today chronic pulmonary disease consider as most common diseases which cause disability and mortality in human society. Among numerous numbers of chronic diseases, asthma considers as most common chronic disorders of respiratory system which shows significant prevalence and demonstration. The impact of mental and physical situation has well approved and it has shown that psychological factors play important role on physical diseases since psychological stresses become chronic and unsolvable due to special personality structure, therefore, person will be prone to physical diseases. Among common and important psychosomatic disorders which psychological factors have been proved for them are asthma and allergy. Asthma is chronic respiratory disorder with periodic acute attacks which will intensify by physical activity, stress, air pollution and also some medicine and it will be intolerable for patients and will disturb person job and social function and will provide ground for dangerous respiratory and cardio vascular diseases, due to lack of appropriate treatment which lead to chronic disease. When we discuss about one's personality, in fact, we refer to fairly fixed set of emotions and behaviors which basically formed by environmental and genetic factors. Personality doesn't form suddenly and randomly, but is a product of some factors which distinguish one person from another. In summary, personality was defined by various factors such as inheritance, culture, social rank and family influences which are interact with each other. Inheritance provides us talents which may be reinforced and developed by environment. Regarding high prevalence of asthma during young age, youth who infected asthma, due to regular need to medicine and limited sport-social activity are faced with problems, also, asthma affects significantly on their relationship especially when hospitalization will be necessary. So, more knowledge about predisposing and permanent factors of this disorder is important. Physical factors do not consider as only identifier of disease intensity, studies show that psychological variables interact with traumatic physical factors of this disease and are it's predisposing. Mahmood Alilou et al, in their survey titled: "to compare asthmatic patients and healthy persons in terms of experiencing negative emotions, social inhibition and gender factor interaction", was done according to matching method, found that experience of negative emotions ( hostility , anger, anxiety, depression) and social inhibition in asthmatic patients is significantly different from control group. Ansarian et al, in the survey titled by "comparison of the asthmatic patients and healthy persons in terms of personality type and experienced negative and positive emotions A and gender role", found that asthmatic

patients are significantly different from healthy persons in terms of personality type and patients are mostly placed in personality type A rather than healthy group. Also, significant variation was seen between patient group and healthy group in terms of experiencing level of negative and positive emotions. Therefore, asthmatic patients experience more negative emotions and low positive emotions in comparison to healthy persons. In this study, the role of gender function and its relationship with positive and negative emotions and incidence of asthma was reviewed and the results showed that there is positive and significant relationship between negative emotions and incidence of asthma in men. Dehestani et al, in the survey about reviewing depression in asthmatic persons who referred to Shohadaye Kargar Hospital in Yazd, found that 79% of asthmatic patients showed some level of depression which is significantly high (34% prevalence) in comparison to common population of Yazd city. No significant relationship was seen between women and men in terms of suffering from depression. Depression levels were related with education level in which by increasing education, the level of depression decrease. Also, significant statistical relationship was observed between age and the level of depression ( $p=0.007$ ). Also, there was significant relationship between risk of incidence of depression and increase in asthma history ( $p= 0.012$ ). In general, depression prevalence in asthmatic persons is more than population of society and it means direct relationship with history of infected to asthma. Macro et al, performed survey titled by: "strong relation and correlation between anxiety, depression and asthma control" in 2009. Study results showed that weak control of asthma was observed in women, old people, fat people and those who suffer from anxiety and depression.

Final results of this survey showed strong correlation between anxiety, depression and weak control of asthma. In 2003, survey was carried out by Matthews, titled by:" depression and pulmonary function in asthmatic out-patients "with the purpose of reviewing the relationship between depression, anxiety and pulmonary function in asthmatic patients. 38 asthmatic patients were tested psychometrically in this survey by means of DSSI/SAD questionnaire. Most of these patients suffered from low grade chronic asthma and 26 symptoms of anxiety and 25 symptoms of depression were reported. Oraka et al(2010) in the survey about asthma and serious psychological problems found that incidence of serious psychological problems , addiction to cigarette or alcohol and other chronic diseases were observed more in asthmatic patients specially from low social-economical situation. Fernandes et al (2005) carried out survey about personality characteristics of asthmatic patients on 300 asthmatics between 17-79 years old. This survey showed that the feature of neuroticism was high in this people , but extroversion , conscientiousness, openness against experience were low rather than general public of Portugal. Kotrotsion et al (2011) performed survey about anxiety and depression in asthmatic young and adolescent on 1148 students between 15-25 years old. In this survey, the questionnaire about asthma (European society questionnaire about assessing respiratory health), depression and anxiety was performed. In this study 31.1% of participants were men and 68.9% were women and the mean age was 18.9 years old. Researchers found that among asthmatic youth, anxiety, depression showed more prevalence. Since more surveys were carried out about anxiety and depression and asthmatic patients quality of life and less attention was paid on personality characteristics and 5 great personality factors. In this survey, researcher intends to assess this issue whether there is relationship between asthma and personality characteristics or not? Or whether there is variation between asthmatic personality characteristics and normal persons?

## MATERIAL AND METHOD

Present study is in the form of causal-comparative (post traumatic) consisting of 120 asthmatic patients who referred to pulmonology clinic- Dr Ali Sharifpour- and received asthma diagnosis by him (pulmonology specialist).

Due to statistical sampling by Kerjenci-Morgan table, 92 patients were selected by simple random sampling method and 2 files were excluded from statistical analysis because of inadequacy and 90 patients were tested and control group among those who accompanied with patients referred to specialized pulmonology clinic were selected by matching method and were assessed. Control group among those who accompanied with patients to specialized pulmonology clinic were selected by matching method and were tested in terms of patients demographic features such as age, gender, and level of education. Two groups are equal in terms of gender.

### Data collection tool:

In present study, NEO five factor inventories were performed to collect data. NEO is one of personality test which its name originated from 3 basic factors of neuroticism, extraversion and openness. This test consists of 5 main scae(factor) and each factor with assess by 12 items. Scoring method for items is in the form of 5 point Likert scale: strongly disagree(0), disagree(1),neither agree or disagree(2),agree(3),strongly agree(4). Some questions are scored reversely. Results of several studies about NEO-FFI reliability showed well internal consistency of NEO-FFI subscales. This questionnaire was standardization in Iran by Garoosi (1998). By means of test-retest method, the questionnaire reliability for 208 students during 3 months was acquired 0.83, 0.75, 0.80, 0.79, 0.79 for factors of N,E,O,A,C , respectively. To analyze data, two descriptive and inferential statistic

methods were used and SPSS 16 software and T statistical test were used to assess study hypothesis and to compare independent groups, respectively.

**RESULT**

**Hypothesis 1: neuroticism characteristic is different in asthmatic persons & healthy ones.**

**Table 1: data analysis of hypothesis 1 by means of t test for two independent groups**

statistical indices	N	M	SD	t <sub>u</sub>	df	t <sub>β</sub>	sig	α
groups								
asthmatic patients	90	22.90	5.72	2.20	178	1.98	0.029	0.05
healthy persons	90	20.86	6.60					

According to data from above table, since calculated t (t<sub>u</sub>=2.20) at confidence level of 95% (α=5%) & degree of freedom df=178 is higher than t of critical table (t<sub>β</sub>=1.98), therefore, null hypothesis will reject and study hypothesis will approve. We can result that by confidence of %95, neuroticism characteristic is different in asthmatic persons & healthy ones.

**Hypothesis 2: extroversion characteristic is different in asthmatic persons & healthy Ones.**

**Table 2: data analysis of hypothesis 2 by means of t test for two independent groups**

statistical indices	N	M	SD	t <sub>u</sub>	df	t <sub>β</sub>	sig	α
groups								
asthmatic patients	90	27.54	5.13	2.23	178	1.98	0.027	0.05
healthy persons	90	29.13	4.37					

According to data from above table, since calculated t (t<sub>u</sub>=2.23) at confidence level of 95% (α=5%) & degree of freedom df=178 is higher than t of critical table (t<sub>β</sub>=1.98), therefore, null hypothesis will reject and study hypothesis will approve. we can result that by confidence of %95, extroversion characteristic is different in asthmatic persons & healthy ones.

**Hypothesis 3: openness characteristic is different in asthmatic persons & healthy ones.**

**Table 3: data analysis of hypothesis 3 by means of t test for two independent groups**

statistical indices	N	M	SD	t <sub>u</sub>	df	t <sub>β</sub>	sig	α
groups								
asthmatic patients	90	25.14	4.15	2.49	178	1.98	0.014	0.05
healthy persons	90	26.70	4.21					

According to data from above table, since calculated t (t<sub>u</sub>=2.49) at confidence level of 95% (α=5%) & degree of freedom df=178 is higher than t of critical table (t<sub>β</sub>=1.98), therefore, null hypothesis will reject and study hypothesis will approve. We can result that by confidence of %95, openness characteristic is different in asthmatic persons & healthy ones.

**Hypothesis 4: agreeableness characteristic is different in asthmatic persons & healthy ones.**

**Table 4: data analysis of hypothesis 4 by means of t test for two independent groups**

statistical indices	N	M	SD	t <sub>u</sub>	df	t <sub>β</sub>	sig	α
groups								
asthmatic patients	90	31.5	5.42	1.13	178	1.98	0.256	0.05
healthy persons	90	32.41	5.31					

According to data from above table, since calculated t (t<sub>u</sub>=1.13) at confidence level of 95% (α=5%) & degree of freedom df=178 is higher than t of critical table (t<sub>β</sub>=1.98), therefore, null hypothesis will approve and study hypothesis will reject. We can result that by confidence of %95, desirableness characteristic is not different in asthmatic persons & healthy ones.

**Hypothesis 5: conscientiousness characteristic is different in asthmatic persons & healthy ones.**

**Table 5: data analysis of hypothesis 5 by means of t test for two independent groups**

statistical indices	N	M	SD	$t_{\mu}$	df	$t_{\beta}$	sig	$\alpha$
groups								
asthmatic patients	90	32.45	4.56	0.61	178	1.98	0.538	0.05
healthy persons	90	32.02	4.84					

According to data from above table, since calculated  $t$  ( $t_{\mu}=0.61$ ) at confidence level of 95% ( $\alpha=5\%$ ) & degree of freedom  $df=178$  is higher than  $t$  of critical table ( $t_{\beta}=1.98$ ), therefore, null hypothesis will approve and study hypothesis will reject. We can result that by confidence of %95, conscientiousness characteristic is not different in asthmatic persons & healthy ones.

## Conclusion

The results of present study showed that there is significant variation between neuroticism, extroversion and openness in asthmatic patients and healthy persons. In other word, asthmatic patients are more neurotic, extravert and flexible than healthy persons. It should be noted that neuroticism consists of traits such as anxiety, depression, aggression, shyness, impetuosity and vulnerability. Friedman stated that personality can affect health or illness by internal physiology or external behaviour. Many studies emphasized that high score in neuroticism can help weakness in individuals healthy moods. It means that poor confront of neurotic against stressful factors may lead to high probability of psychiatry and psychosomatic diseases in these persons. Neurotic persons, due to more activity of sympathetic system against physical changes, shows over sensitivity. In addition by illogical interpreting of these changes, as disease symptoms, they would increase their concern and therefore mostly observed as patient. Also, this disease effects on all person's functional aspects. Depression, anxiety and negative emotion in asthmatic patients is more than non-asthmatic one, while the relationship of these 3 factors with asthma symptoms is apparent, the factors which adjust or explain this relationship are less apparent. Also, since mental factors such as experiencing negative emotions play important role on asthma, we can explain that psychological factors especially negative emotions such as anger, considers as significant collateral for asthma. Negative emotions before asthma attack can help its occurrence. In contrast, positive and desirable emotions predicts better pulmonary function in healthy persons. Also, these persons in stressful situation may perform emotionally focused method (avoid problem or disturbance) which in long term can disturb mental cohesion, physical health and emotional distress. Since positive emotions consider as one of subsets in showing extroversion feature and asthmatic patients have less positive emotions, therefore, asthmatic patients extroversion is less than healthy persons and it shows significant variation statistically. Also, openness considers as one of personality characteristics. Flexible persons are curious about both external and internal world and their life is full of experiences. They intend to accept new beliefs. They are not only predicting events, but also if situation does not keep on according to what they expect, they can adjust desirably. Those who acquire low score in openness are intending to show common behaviour and keep their perspectives. These persons prefer more familiar news and their emotional responses are very limited. It seems that asthmatic persons show lower flexibility due to physical problems and it's approved negative impact on function and life quality. Also, there were no significant variation between agreeableness and conscientiousness in asthmatic persons and healthy ones according to present study results. This part of survey does not conform to Fernandes *et al* (2005). Agreeableness like extroversion is an aspect of interpersonal attitudes. An agreeable person basically is altruist and will sympathize with others and is eager to help others. These persons are intend to make conformity and are easily get along with others and avoid struggle and discussion. It seems that these persons due to their chronic disease and because of possible support from others, this part of their personality is not different from those healthy ones. Also, according to lack of significant variation between conscientiousness feature in asthmatic patients and healthy ones, it can be said that conscientiousness (responsibility) can describe power of impulses in the way that become desirable for society and is facilitator of task-based and target-based behaviour. Responsibility covers characteristics such as think before done, delay to satisfy needs, regard laws and norms and organize and prioritize tasks. It seems that referring these patients for treatment is considers as their responsibility. The results of this survey is align with studies of Mahmood Alilou *et al* (2008), Dehestani *et al* (2007), Ansarin *et al* (2007), Kotrotsion *et al* (2011), Fernandes *et al* (2009), Fernandes *et al* (2005) and Matthews(2003).

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