Comparison of the five personality factors, locus of control and coping with stress in patients with multiple sclerosis and healthy people in Alborz Province

Atieh Kaveh
PhD student in General Psychology, Islamic Azad University Sari Branch, Tehran, Iran

Abstract
Multiple sclerosis is the most common neurological disease. It is the result of damage caused by a substance called myelin. The main purpose of the present research is to compare five personality factors, locus of control and coping with stress in patients with multiple sclerosis and healthy people in Alborz Province. In the present research which was conducted via casual-comparative method, 191 patients with MS in Alborz province and 191 patients' caregivers were examined that they were matched in terms of age, gender, marital status and education level. Demographic questionnaire, NEO Five-Factor personality Inventory, Levenson's Locus of Control and Endler and Parker coping with stress questionnaires have been used as the instruments for the analysis. Results from the present research indicated that patients with MS differ from healthy people in NEO Five-Factor personality Inventory in two personality traits of neuroticism and responsibility and they differ from healthy people in locus of control in sub-scale of internal locus of control and chance. Further, these patients differ from healthy people in avoidance-coping strategy.

Key words- NEO Five-Factor personality, Locus of Control, coping with stress styles, Multiple sclerosis

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

Introduction

Multiple Sclerosis that is called MS in abbreviated form refers to a chronic disease of the nervous system characterized by degeneration of myelin-the nerves of the brain and spinal cord-caused by unknown factors. This disease is found with advanced disability in young and middle age, expressed with various aspects (Kalani, 2006). Multiple Sclerosis involved young, intelligent and active people in the community and to date no absolute cure has been provided for it. However, information on the disease complications, recognition of the personality aspects of the individuals with this disease and support measures can be effective in restoring these patients to productive lives (Pozzilli et al. 2004). In recent decades the importance of psychological processes in health and disease has been increasingly considered, in such a way that the main cause of the deaths which take place due to heart disease, cancer, stroke, blood pressure etc. is under influence of the factors such as stress, lifestyle, smoking, diet. In addition, in the chronic disease that has no cure, people with physical symptoms and emotional reactions cope with their disease; in such cases coping strategies and self-regulation are the most important aspects of maintaining health. Since Multiple Sclerosis has unknown etiology and complicated pathology, the person with this disease becomes vulnerable and weak psychologically and the areas for stress increase. Therefore, increased levels of stress in these patients may affect progression of symptoms and severity of the disease although with time delay.

Multiple sclerosis is the most common neurological disease. This disease is caused by damage to a substance called myelin and created several symptoms. Incidence age statistics is between the ages of 20 and 40 years and women are affected by this disease 2 to 3 times more than men (Aminof et al. 2009, trans- Shoarka et al. 2009). Multiple sclerosis can vary from a benign disease to a rapid progressive and debilitating illness that requires compliance in lifestyle. Inflammation and selective destruction of myelin in the central nervous system and healthy maintenance of peripheral nervous system are characteristics of this disease and other demyelinating disorders. Symptoms of MS are highly variable and depend on the location and severity of lesions in the central nervous system. Multiple sclerosis clinical symptoms are as follows: 1- weakness in limb muscles, 2- Visual symptoms, 3- Sensory symptoms such as Paresthesia(Abnormal sensations such as burning , tingling), 4- Ataxia, 5- Sexual dysfunction, 6-fatigue which this is the most common symptom for disability to work among patients, 7-depression which can be an endogenous reactive or a part of the disease itself; Suicide in

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

multiple sclerosis patients compared with control groups is more common 7.5 times more in terms of age. 8- Cognitive dysfunction may include loss of memory, inattention, and problem at issue, slow information processing and difficulty in movement.

Since multiple is a chronic disease with physical and debilitating symptoms. Most people with this disease have specific traits. This disease is followed by various psychiatric and psychological disorders, affecting emotional and personality aspects of individuals (Noy, 2004). Stress is a part of daily life. If stress is administrated properly, it can work out in a more positive way in helping you for better activity, but if it is administrated improperly or neglected, it will have negative complications. Under too much pressure, you may suffer from diseases caused by stress; too little pressure may also cause stress, so that fatigue, worthlessness or lack of self-esteem can cause stress (Hargervis, 2003; trans- Moghadami pour, 2004). Evidence suggests that stress affects performance of the immune system in the defense of the body. Some behaviors can make a person vulnerable to the disease. The man does not take care of himself when he is stressed; oblivious to behavioral sciences contributions to health behavior exacerbated the pressure on himself. But those who follow health-oriented behavior often report the events resolvable and dominate their life affairs. In this regards, health-oriented behavior can reduce the risk to some serious diseases (Atkinson et al. 1904; trans-Barahani et al. 2006). Stress can harm the human body, cause loss of appetite or weaken the immune system, and destroy activity of important tissues and cause insomnia, osteoporosis(osteoporosis) as well as neurological and mental symptoms such as anxiety and depression, palpitations and muscle aches(Turkington, 2005; trans-Balali & Baezat, 2006). In the present research, we intend to examine Big Five personality traits, locus of control and coping with stress in people with MS.

Significance of research

From the perspective of the World Health Organization, health implies having the highest performance and health that takes place despite the physical and psychological damage. Since multiple sclerosis intensifies, weakens and/or even progresses, it can be almost controlled by detecting factors affecting it such as stress, fostering physical and psychological states of patient and determining realistic goals. Trajectory of clinical symptoms of disease has been diverse, taken place as a benign disease. Debilitating nature of MS disease that affects personal, social, physical and mental health of the patients are very impressed by both the patient's point of view t because of serious concerns about the disease and experts’ and researchers’ point of

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

view, overcome theoretical and practical ambiguities and disabilities in the areas of disease diagnosis, especially etiology, prevention, prognosis and treatment of the disease. In retrospect to the increasing cases of the disease in recent years especially among youth, despite establishment of governmental and non-governmental organizations and associations with the purposes for supply of educational, health, social and welfare services and abundant research centers, unfortunately little attention has been paid to this disease.

Research method

In the present research, casual-comparative research method (prospective) was used and cause and effect (dependent and independent variable). Casual prospective plan refers to a plan in which the researcher has not the power to manipulate the independent variable and researcher examines the relationship between the factors and type of behavior which has existed before and pursues it through study on results (Almasifard,2013). Here the researcher has not the control group but has comparison group, i.e. the behavior of the participants is not observed but it is compared as the cause of behavior has taken place before (Khalaatbari, 2006).

Statistical population

In the present research, the statistical population consists of the patients with multiple sclerosis in Alborz Province (Hashtgerd, Nazarabad, Karaj four regions) that have been diagnosed by a neurologist and have case in Alborz MS Society and have the inclusion conditions to study as follows:

-Age range 20-40 years old

-lack of motor disorder

-lack of underlying disorder such as diabetes, hypothyroidism, hyperthyroidism, thalassemia

-lack of family history of MS

- passed at least 6 months diagnosis

According to the Alborz MS Society, these patients are 389.

Sampling method and sample size

In this research, a sample group (382 individuals) was used in two groups. The first group (191) consisted of the patients with MS, obtained based on determination of the required sample size from a certain population regarding Morgan and Kerjci table. Then, the sample group was selected among patients with MS qualified with the conditions above in Alborz Province (Hashtgerd, Nazarabad, Karaj four region) via stratified random sampling and a number of patients at any region qualified with the conditions above was selected as sample group. The

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

second group (191) was selected among the individuals who are not with MS or any other chronic disease. Both groups were matched in terms of the variables such as gender, age and marital status. The stratified random sampling refers to a process in which the population is divided into the homogenous groups that individuals have homogenous traits. After the population divided into homogenous groups or sub-groups, ratio of each group to population is calculated and then the calculated ratio in each group is multiplied by sample size. In this regards, number of individuals in each group to population is specified. Then the sample group is selected among each group in random (Hassan zadeh, 2004, p. 11).

Table 1. Sampling method

City / No	Hashtgerd	Nazarabad	District 1& 2	District 3	District 4	Sum
frequency of each class) Ni(	43	116	86	95	49	389
Ratio of each class to population $Pi = \frac{Ni}{N}$	0/11	0/30	0/22	0/24	0/12	1
Number of sample in each class N × Pi = ni	21	57	42	47	24	191

Research instruments

Data collection instruments include:

Demographic questionnaire was prepared by the researcher.

- 60-item NEO Five-Factor Inventory (NEO-FFI) (McCrae and Costa, 1985).
- 24-item Levenson's Locus of Control (LoC) Scale (1973)
- *48-item* Endler and Parker coping style questionnaire (1990)

Scoring method

This test includes 60 questions that 12 questions have considered for each item. Each of these questions have five items totally disagree, disagree, no idea, agree and totally agree and scores to 4 belong to these items. For this, 5 scores belong to 5 items for each person. The required

Received: 15-01-2018
Approved: 7-03-2018

time to fill questionnaire is 10-15 minutes. Among all the individuals who have performed this test, 38%, 24% and 24% of scores are at average, high and low level, respectively.

Table 2. 60-item NEO Five-Factor Inventory (NEO-FFI)

The

Neuroticism	-1	6	11	-16	21	26	-31	36	41	-46	51	56
Extroversion	2	7	-12	17	22	-27	-23	34	-42	47	52	-57
flexibility	-3	-8	13	-18	-23	28	-33	-38	43	-48	53	58
Agreeableness	4	-9	-14	19	-24	-29	34	-39	-44	49	-54	-59
Accountability	5	10	-15	20	25	-30	35	40	-45	50	-55	60

terms with negative sign are scored in an inverse way.

Reliability and validity of NEO test abroad

Concerning validity and reliability of 60-item NEO Five-Factor Inventory (NEO-FFI), it can say that this form has been performed on 208 students during 3 months that reliability coefficients 0.83, 0.75, 0.80, 0.79 and 0.79 have been obtained for factors Neuroticism, Extroversion, flexibility, Agreeableness and Accountability, respectively (Costa and McCrae, 1992; quoted by Garousi, 2003). Long-term reliability of Revised NEO Personality Inventory has been evaluated. A 6 -year longitudinal study has been conducted on the scales of neuroticism, extroversion and flexibility and displayed reliability coefficients 0.68 to 0.83 in individual reports and couples' reports. Reliability coefficients of two factors including agreeableness and Accountability have equaled to 0.79 and 0.63, respectively (Costa and McCrae, 1998; quoted by Garousi, 2003). In an 8-year longitudinal study of peers' evaluations used in the test, reliability coefficients have obtained for 18 secondary traits of neuroticism, extroversion, flexibility between 0.51-0.82 and obtained for five main traits among men and women between 0.63 to 0.81(Costa and McCrae, 1998; quoted by Garousi, 2003).

Reliability and validity of NEO test in Iran

Garousi et al.(2003) examined five personality traits in Iranian culture. This study was performed on 1717 students among students in Tabriz and Shiraz universities. Internal consistency of test among Iranian participants at scales neuroticism, extroversion, flexibility,

Received: 15-01-2018
Approved: 7-03-2018

agreeableness and accountability equals to 0.89, 0.73, 0.56, 0.68 and 0.87, respectively. To evaluate criterion validity of test, the correlation between two forms of Personal Report (Form S) and Viewer evaluation (Form R) has been used. Among the main factors, maximum correlation is to the extent of 0.66 in extroversion and the least correlation is to the extent of 0.45 in agreeableness. The results from abundant studies have focused on validity of personal research based on personal evaluations. Difference in extent of correlation relates to personal observability. The consistency between questions which is calculated via Cronbach's Coefficient Alpha is the most common approach used in reliability of tests. This has been conducted in this research. Cronbach's Coefficient Alpha of five main factors and their thirty secondary approaches have been compared with two American samples and two Spanish samples. In comparison of these five groups of data, it is observed that coefficients of Iranian samples in most cases are under the obtained coefficients in American samples except for some cases such as approaches of accountability in which the coefficient is greater in Iranian sample. This goes true in comparison of coefficients in two Spanish samples. For standardization of The Revised NEO Personality Inventory (NEO PI-R), Haghshans(1996) performed a research by making several preliminary research stages and preparing the Persian form for it among a sample of Shiraz population. Cronbach's Coefficient Alpha for scales has been between 0.71-0.83. Principal Components in VARIMAX rotation have been calculated, indicating the relationship between each sub-index and their series. For instance, the correlation coefficients between sub-indices of neuroticism and nervousness are between 59%-80%, and the neuroticism score has not a significant positive relationship with other sub-indices. Yet a negative significant relationship has been witnessed between neuroticism score and sub-indices of decisiveness and competence. Therefore, findings of research indicate that the individuals who have greater score of neuroticism have fewer score in indices of neuroticism and competence. To measure reliability, the re-test was made on 26 participants after 6-7 months after the first test. The results indicate correlation coefficients between 0.53-0.76 for principal scales. In most indices of test, the acceptable correlation coefficients were obtained in re-test.

Data analysis method

Descriptive statistics methods: frequency, frequency percent, chart, mean and standard deviation.

Inferential statistics methods: t-test to compare two independent groups was used to examine research hypotheses. The research data were analyzed via software SPSS18. In descriptive

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

statistics, chart, mean and standard deviation were used. In inferential statistics, t-test was used to examine research hypothesis. All the statistical analysis was made via software SPSS18. Individuals with high score at this scale are prone to have irrational beliefs and are less likely enable to control their impulses, coped with stress poorer than others (Garousi, 2003). These people are angry, anxious, prone to anxiety, irritable and prone to loneliness, depression and melancholy (McCrae and Costa, 2000). Tagha(2004) has mentioned sensitivity as the psychological and personality traits of people with MS. Further, Jarosław et al.(2011) showed that there is a significant relationship between neuroticism and quality of life; in other words, the individuals who gain high scores in neuroticism enjoy low quality of life. Harel et al (2007) have reported Comorbidity of mental disorders and multiple sclerosis to 67 percent. Korostil et al (2007), Nelson et al.(2003) have reported the level of anxiety and depression in patients with multiple sclerosis. Taylor et al.(2003) concluded that there is a positive correlation between high rates of depression as well as high scores in neuroticism factor in these patients and concerns about disease. Further, Merkelbach et al.(2003) concluded that high scores in neuroticism can lead to fatigue in these patients . This finding regarding results from the studies above can be explained in this way that since there is no cure for MS, it is not interesting that depression and hopelessness might be common in these patients. Neuroticism states including aggression and anger are normal in these patients who have low quality of life. Hence, since the patients with MS do not enjoy mental health, it can deduce that neuroticism has associated to this disease. Findings of research by Farahani & Alami(2006), Merkelbach et al.(2003), Jarosław et al.(2011), Bass and Lynch(2011), Benedict et al.(2001) confirm findings of the present research. The individuals who gain higher scores in this factor enjoy high social skills, considering the fact that sociability is one of the major features of extroversion and extrovert individuals have high motivation for interaction with others(Costa and McCrae, 1984; quoted from Garousi, 2003). This finding is consistent with the findings of research by Farahani & Alami(2006), Benedict et al.(2001) and inconsistent with findings of research by Bass and Lynch(2011) and Merkelbach et al(2003). Yet, in addition to the criteria to select the sample group, use of various personality questionnaires can be the reason for inconsistency of various studies in this context. However precise conclusion in this context requires further studies. Results from the present research are consistent with the findings of research by Merkelbach et al.(2003). However these findings are inconsistent with the findings of research by Bass & Lynch(2011), Benedict et al.(2001), because these researchers found in their research that

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

patients with MS than healthy people gain lower scores in agreeableness. Anyhow inconsistency of this finding with findings of other research can be due to instability of agreeableness, use of various personality questionnaires and cultural differences. Costa and McCrae (1991) quoted from Metoz(1998) stated that there is significant relationship between flexibility and emotions, i.e. positive relationship associates to positive emotions and negative relationship associates to negative emotions, and since he suffers from emotional problems, he experiences many negative emotions, it is expected that patients with MS gain lower scores in flexibility than healthy individuals. Since no significant difference was observed between means of two groups in flexibility, further studies are required. Lack of significant difference between means of two groups in flexibility can be stated in this way that since most of young, active and intelligent individuals suffer from multiple sclerosis disease in the society and the factor 'flexibility' in the questionnaire used in this research encompasses traits including creativity, curiosity and innovation, as a result no significant difference was observed between patients with MS and healthy individuals. Findings of research by Farahani & Alami(2006), Bass and Lynch(2011), Merkelbach et al.(2003), Benedict et al.(2001) confirm findings of the present research. It can explain this finding in this way that the patients with MS suffer from debilitating chronic diseases and fail to achieve their goals, while one of characteristics of individuals with high scores is their effort to achieve goals; since accountability is a major factor to predict satisfaction with life, happiness and prosperity and since patients with MS do not satisfy with their existing status and experience numerous negative emotions, low scores of these patients in accountability can be justified. Findings of research by Farahani & Alami(2006), Bass and Lynch(2011), Lee Mafz (2007), Benedict et al(2001). Farahani(1999) stated that internal controls in relation to health have complied with preventive care, and when disease occurs to them, they adjusts with it; with regard to findings of research by Sternberg(2001), patients with MS with better locus of control will enable to control symptoms of their disease. Further, results from studies by Patrick and Graham(1999) grounded on this fact that external controls compared to internal controls less likely tend to complete the treatment process can elaborate this finding that the patients with MS have gained less scores in extent of belief in internal locus of control than healthy people in this way that since a long time has passed from starting disease of a large number of patients with MS in sample group, they lost their motivation to treatment. Other findings of the present research in the context of locus of control le on this fact that since types of MS including relapsing-remitting

Received: 15-01-2018
Approved: 7-03-2018

Revista Publicando, 5 No 14. No. 1. 2018, 560-572. ISSN 1390-930

MS, primary progressive MS, secondary progressive MS, progressive relapsing MS were considered in a group, a significant difference was obtained in the sub-scale of internal locus of control and chance, but it is more likely to gain more precise results by separation of patients in four separate groups. This finding is consistent with the findings of research by Mazaheri et al.(2006), Brooke (1999) , MacLeod (1998). It can explain this finding in this way that since patients with MS suffer from a chronic and incurable disease who have not any role in being affected by this disease, these individuals believe in chance, accident and destiny more than healthy individuals, thus the patient with MS loses ability to control on events by intensifying his disease. Further, findings of research by Lazare(1993) indicated that external locus of control associates to intensification of symptoms in patients with MS. Further intensification of disease causes reduction in psychological and social adjustment in these patients and the patients lose the ability to control on life events. In addition, MacLeod(1998) in his research concluded that belief in chance in patients with MS associates to their depression. Finding of this research is consistent with the findings of research by Mazaheri et al.(2006), Farahani & Alami(2006), Brooke (1999) , MacLeod and MacLeod (1998). With regard to the results from the studies above, it can elaborate this finding in this way that patients with MS in sample group consist of young, educated and intelligent individuals whose progressive trend of disease is slow, under which a significant difference does not exist between patients with MS and healthy individuals in problem-oriented coping style. This finding is consistent with findings of research by Moradi & Shoae(2004). Moradi & Shoae(2004) in their study concluded that it can delay intensification in MS disease by controlling stressful life events and restricting their effect. Eber & Johnson (1999) in a research concluded that stress in patients with MS causes intensification in symptoms of disease. With regard to results from studies, it can elaborate this finding in this way that patients with MS in sample group as the result of long time passed from starting their disease and perceived with intensification of symptoms of their disease due to their stress strive to control stress so as to experience less undesirable emotions, under which there is no significant difference between patients with MS and healthy individuals in emotion-oriented coping style. Findings of this research are inconsistent with findings of research by Moradi & Shoae(2004), Godin (1999) , Paknham (1999) , Jane (1998). Yet, in addition to the criteria to select sample group, use of various coping style questionnaires can be the reason for inconsistency of various research in this context. However precise conclusion requires further research. This finding is consistent with findings of research by Aikens et al.(1997).

Received: 15-01-2018
Approved: 7-03-2018

References

A. Foroush Bastani, Z. Ahmadi, D. Damircheli (2016) .An adaptive algorithm for solving stochastic multi-point boundary value problems, Numerical Algorithms 74 (4), 1119-1143.

A. Foroush Bastani, Z. Ahmadi, D. Damircheli,(2013) .A Radial basis collocation method for pricing American options under regime-switching jump-diffusion models, Appl. Numer. Math. 65, 79–90,.

Abramowitz, A (2002). Medical help of MS family. Trans: Hemat khah , F. (2006). Tehran : Asr Ketab

Abrisham Kesh, S.(2006). Emotional expression styles in women with breast cancer . Master's thesis . University of Guilan. Faculty of Humanities.

Ahmadvand , K. (2007). AOM nerves (including five topics Mynvf 2002 graduate of Harrison , 2005). Tehran: Farhang Farda publication. Third edition.

Ahmadvand , MA (2006). Mental Health. Tehran: PNU .

Aikens, J.E; Fischer, J.S; Namey, M; Radick, R.A (1997). A replicated prospective investigation of life stress, coping and desperssive symptoms in multiple Sclerosis. Cleveland clinic foundation, USA.

Alekseeva , T.G; Enikolopova, E.V; Sadal, E; Enkolopov, S.N; Bolko, A.N. Complex evaluation of neuropsychological cognitive and emotional personality disorder in multiple Sclerosis. Journal in Russian; Russia 2003; 13(9): 94-115. American Academy of Neurology. U.S.A.

Atkinson , Rittal and colleagues (1904). Hylgard psychology . Trans: Baraheni , MN et al. (2006). Tehran: Roshd publication.

Baron, R.A. (2004). Psychology. Needham Heights. USA.

Baum, A; Newman, S; Weinman, J; West, R (1997). Cambridge Hand book of psychology, Health and Medicine. Cambridge university.

Benedict , H.B. Englert, Jessica; Schwartz, Eben; chapman, Ben; Weistock- Guttman, Bianca. Personality traits in women with multiple Sclerosis: Discrepancy in patient/ partner report and disease cours, Journal of psychosomatic Research. 2009; 66: 147- 154.

Carver , Charles S. Scheier, Michael. F.(1996). Personality theories. Translation: Rezvani , A. (1996). Mashhad, Razavi . Cultural Department .

Coon, D. (2003). Intruduction to psychology, exploration and application; Eight edition. Brooks/ cde publish inf company.

Cooper, C.L; Pervin, L.A. (1998). Personality, critical concepts in psychology. First published, Vol: II. London and newyork, Routlage.

Cooper, K. L.(1994). Stress and deal with it. Trans: Gharacheh Daghi; M. Shariyatzadeh, N. (1994). Tehran: Rosh publication.

Received: 15-01-2018
Approved: 7-03-2018

Costa, P.T; Mc Crae, R.R. Cross- Sectional studies of personality in a national Sample: I. Development and validation of survey measures. Psychology and Aging. 1986; 1: 140-143.

Coyel, K; Krupp, L.B. Significans of reactive lymph- serology in multiple Sclerosis. Ann. Neurology. 1993; 34: 748- 760.

Curtis , Anthony. J. (2000). health Psychology . Trans-Fathi Ashtiani , Ali , Azimi Ashtiani , H. (2004). Tehran . Besat Press .

Deneve, K; Cooper, H. The happy personality: a meta- analysis of 137 personality traits and subjective well- being. Psychological bulletin.1998; 124(8):197- 226.

Diaz, G. Neurosychiatric manifestations of Multiple Sclerosis, Journal psychiatr clin neuroscience. 1999; 61: 94-98.

Eber, G.C; Johnson, K.P. (1999). The relationship of MS to physical trauma and psychological Stress. American Academi of Neurology.

Endler, N.S; Parker, J.D.A. Multidimensional assessment of coping: A critical evaluation. Journal of personality and social psychology. 1990; 21: 219-239.

Esmaeili, M. Hosseini, F. "Check the stress variable in character, habits of thought and personal life in patients with MS referred to the MS Society of Iran " . Journal of Nursing Research (2009); 10 : 30-24 .

Etemad nia, M. (2010). The relationship between the components (dimensions) of personality(neo-test) and marital satisfaction in married teachers in 2010. Master's thesis . Tonekabon Branch of Islamic Azad University.

Evanse, A; Lucchinette,c; Lassman, H. Health locus of control and utilization of protease inhiditors among HIV- positive men. Journal of psychosomatic research. 2000; 2 : 12- 18.

Farahani , MN ; Alami , M. Compare the five- factor model of personality and locus of control in patients with multiple sclerosis and healthy individuals . Birjand University of Medical Sciences (2006) . .

Farahani, M.N;Cooper,M;Jin,P . Is locus of control undimensional: data from persion translation of Rotter's I-E scale and C scales. Psychol Resear. 1996; 3: 38-62.

Field, D; Millsap, R.E. Personality in advanced old age: Continuity or chang? Journal of Geronotology. 1991; 46: 229- 230.

Foley, F; Sarnoff, J. (2002). Raming stress in Multiple Sclerosis. National MS Society.

Folkman, S; Lazarus, R.S. An analysis of coping in a middle- aged community sample. Journal of Health and social Behavior. 1980; 21: 219-239.

Folkman, S; Lazarus, R; Gruen, R; Delongis, A. Appraisal, coping, Health status, and Pyschological symptoms. Journal of Personality

Received: 15-01-2018
Approved: 7-03-2018

Garousi Farshi, MT (2003) new approaches in personality assessment (application of factor analysis in the study of character). Tabriz publishing research community.

Hargrois, Gerard (1994). stress management . Trans: Moghaddami Pour , M. (2004). Mehraban Publication.

Kalani, H. (2006). Reported 20 cases of MS patients in Iran , presented at the twelfth Congress of Neurology and Clinical Physiology. Tehran .

Kaplan , Harold ; Sadok , Benjamin (1999). Summary of psychiatry. Trans: Pour Afkari , Nusratullah (1996). Alghadir publications.

M. Almasifard, "An econometric analysis of financial development's effects on the share of final consumption expenditure in gross domestic product", Eastern Mediterranean University, June 2013

Mayknbam , Donald (1997). Stress inoculation training. Trans: Mobin, S. (1996). Roshd Publications.

Mazaheri , S. ; Zarabian, MK ; Samadi , MJ . "Assessment of personality type and locus of control in patients with multiple sclerosis." Journal of Medical Sciences and Health Services, Hamadan , 2006 , episode 12 , Issue 1

Mehran , Diana (2009). The relationship between components of personality and coping methods and determine the effectiveness of teaching methods to deal with stress on the health of thalassemia patients in the city of Sari . Master's thesis . Branch of Islamic Azad University .

Schafer , Martin (1982) , the psychological pressure . Trans: Bolourchi , P. (1996). Tehran : Publication Pazhng.

Shoae , A. (2004). Compare the relationship between locus of control with stress and coping strategies in patients with MS and healthy individuals . Master's thesis . Tarbiat Modares University.

Spencer , rattus (1994). General Psychology. Translation: Ganji , H. (2004). Tehran: Virayesh Publication.

Vatankhah , HR ; Abolqasemi , Shahnam (2003). personality psychology . Tehran: Ahsan publication.

Received: 15-01-2018
Approved: 7-03-2018