Research Article

A COMPARATIVE STUDY OF ALEXITHYMIA BETWEEN THE WOMEN WHO SUFFER FROM MIGRAINE AND THE NORMAL ONES IN TEHRAN

*Mitra Jahani[1], Fahimeh Fath-ali Lavasani[2] and Ali Asghar Asghanejhad Farid[2]
[1]*Department of Psychology, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, Iran*
[2]*Medico Science University of Iran, Tehran, Iran*
*Author for Correspondence

ABSTRACT
The purpose of this study was to investigate alexithymia in women who suffer from migraine and comparing them with a normal group of women in Tehran. The present study is a descriptive Ex-Post Facto research. Research Population: included all normal women in Tehran and all women who suffer from migraine headache and visited neurologists in Tehran in the spring and summer of 2013. A sample of 25 people was selected as experimental group and 25 people as control group. These two groups matched up in terms of age, level of education and marital status. The 'TAS-20' questionnaire was used as a research tool. The data were analyzed by using SPSS-16through descriptive statistics and MANOVA. Findings: the results showed that women who suffer from migraine got higher scores in all components of alexithymia than normal group. Conclusion: the findings confirm previous studies regarding the role of alexithymia in the prevalence of psychosomatic disorders.

Keywords: Alexithymia, Migraine, Psychosomatic Disorders

INTRODUCTION
Headache is one of the mankind's problems and many people who suffer from headache report disorders in daily functions. International Headache Society (IHS) has divided headache into four categories based on history, physical and neurological examinations and laboratory studies. Migraineis a kind of headache which has a complex and debilitating nature (May, 2006).
Tension headache or migraine is one of the most common forms of chronic pain which is complex, variable and with ambiguous sensory, psychological and autonomic characteristics. Although there are different types of headache but three types of them are usually more common which include: migraine headaches, tension headaches and a mixture of both. These headaches cannot be diagnosed by physical examinations but they are recognized according to their differential signals (Kaufman, 1995). HIS classification divides migraine into two categories of with aura and without aura. Aura is a returnable neurological disorder which may be accompanied by numbness of the face and tingling of the scalp or changes in the senses of hearing, seeing, smelling or in speaking (Dekres, 2006). In conducted studies, more than 90% of patients who had referred to doctors for headache had been suffered from one of these three types of headache (Sarafino, 1994; Andrasick *et al.,* 1986; Kaufman, 1995). According to the recent studies, the reason of migraine is secondary vascular changes due to disorder in the function of brainstem's neurons. However, its main reason is still unknown (James and Alcott, 2003).
Based on the systematic researches from 1980 to 2008, a strong and bilateral relationship has been obtained between migraine and psychological disorders. It has also been discovered that the diagnosis of migraine and depression in women is four times more than men and the possibility of being exposed to migraine (25% versus 9%) and major depression (24% versus 13%) in women with 30 years old is twice more than men (Goadsby, 2013). One of the psychological problems that may be related to migraine is alexithymia.
The term alexithymia was coined by Sifneos (1973) and indicates inability to express emotions (Lessser, 1985). Four main features of this phenomenon involves identifying and describing emotions, having difficulty in distinguishing between excitement steps and physical emotions, limited imagery activities, e.g. lack of dream and fantasizing and a recognition method with external orientation (Taylor *et al.,* 1991;

Research Article

Sifneos, 1973; Nimia and Sifneos, 1970). These individuals have problem with understanding and describing of their own and others' emotions and they also have little sympathy. Individuals with characteristics of alexithymia are unable to communicate with others in a good way and adapt easily, and they are prone to a variety of disorders and psychological problems. Therefore, alexithymia is a personality construct that leads to lack of individual adaptability and thus it has been under the focus of attention by researchers of behavioral sciences, psychologists and psychiatrists (Tylor and Begbi, 1996). Decrease in expressing emotions is primarily indicator of a kind of emotions' lack or bad regulation of emotions (Parker *et al.,* 2001). Similarly, damage to emotional processing capacities due to alexithymia may be a possible risk factor for psychological diseases such as psychotic disorders (Parker *et al.,* 2001). Alexithymia and stressful factors exacerbate vulnerability to psychosomatic diseases. The theory that emotional and cognitive disability exacerbates susceptibility to disease is completely consistent with psychosomatics which claims emotions and personality may significantly affect body performance and physical health (Martinez-Sanchez *et al.,* 1998). In this regard, Muftuoglu *et al.,* (2004) conducted a research to investigate the relationship between alexithymia and migraine without aura in two groups of healthy ones and patients who suffer from migraine of without aura with 50 subjects. The results indicate the prevalence of migraine among alexithymia sufferers. It is also found that alexithymia significantly correlated with anxiety than depression. Helmes *et al.,* (2008) conducted a research to investigate the relationship between alexithymia and defensive mechanisms in which based on the previous studies there is a strong relationship between these two. This study conducted by using correlation, multivariate regression and factor analysis techniques from three non-clinical groups in Australia and Canada. The results showed positive relationship between alexithymia and immature defensive styles.

Gata *et al.,* (2011) conducted a study regarding alexithymia in adults who suffer from primary headache. This study was started in 1990 by two groups: an experimental group of 32 people with tension-type headache and a control group of 32 people. The results showed that experimental group got higher scores than control group in alexithymia. Balaban *et al.,* (2012) conducted a research into the relationship between migraine and alexithymia and post-traumatic stress disorder among 250 medical students in Turkey. The results indicated that migraine is highly prevalent among medical students in Turkey and is associated with the alexithymic personality trait and psychiatric disorders including post-traumatic stress disorder.

With regard to psychological burden of mental disorders and comorbidity of these disorders with migraine in women and to emphasis on the role of psychological factors in the prevalence of migraine headaches, it can be said that alexithymia is also key to the outbreak of these headaches and development of mental disorders in women. So, the knowledge of and insight into these unconscious factors can be helpful to take good steps to reduce the psychological burden of mental disorders in women. The aim of this study was to compare alexithymia in women who suffer from migraine with normal ones.

MATERIALS AND METHODS
Methodology
The present study is a descriptive and Ex-Post Facto research. The statistical population of the research included all women in the general population of Tehran and all the women who referred to neurologists and headache clinics in the spring and summer of 2013 and based on the neurologists' diagnosis, they had been suffered from migraine headache. Since the method of this study is causal-comparative and Ex-Post Facto and the minimum size of samples in such researches is 25 to 30 people, so the researcher selected 25 people as experimental group, and 25 people as control group from general population of available women. These two groups matched up in terms of age, level of education and marital status. The inclusion criteria are: 1. be at the age range of 20 to 40; 2. their minimum level of education be diploma; 3. don't suffer from any acute psychiatric disorders such as anxiety, depression, etc.

In this study, the researcher collected his required sample by referring to neurologists and headache clinics in Tehran in the spring and summer of 2013, and to reduce the effect of psychiatric disorders associated with migraine as a moderator variable, the screening test of SCL90 was used and then, after

Research Article

ensuring that they don't suffer from any acute psychiatric disorder, differences between the two groups were evaluated by using tests of Toronto Alexithymia (TAS-20). The control group has also been selected from available women of general population and they completed the test of SCL90 (for testing psychological health) and the Toronto Alexithymia (TAS-20) questionnaire. It should be mentioned that ethics have been respected during the research, such as informed consent, being voluntary, justice and secrecy, etc. The obtained data was analyzed by SPSS and by using descriptive statistical indexes (frequency, percentage, mean and standard deviation) and also for analyzing the hypotheses, the multi-variate analysis of variance (MANOVA) was used.

Research Tools
The instruments used in this study are as follows:
1. The clinical diagnosis: based on examinations and diagnosis of neurologists.
2. Toronto Alexithymia Scale (TAS-20)
This questionnaire designed by Bgby *et al.,* and contains 20-items of self-report questions with three dimensions: difficulty in recognizing and identifying the feelings (7 items), difficulty in expressing the emotions (5 items) and focusing on external experiences (8 items). Questions are based on 5-point Likert scale from strongly agree (1) to strongly disagree (5). According to scoring key, scores above 60 is considered as strong alexithymia and scores below 52 as slight alexithymia (25). Reliability and validity of the test is acceptable. Its internal consistency measured by Cronbach's alpha was DIF=0.78, COM= 0.75 and EOT=0.66 and its reliability using test-retest was equal to 0.77 (Taylor, 1994).

The Test of SCL-90
This test was designed and introduced by Derogatis *et al.,* for analyzing the psychological aspects of physical and mental patients in 1973 (Derogatis, 1983; quoted by Yazdani-e Qichaq, 1996). The questionnaire analyzes a person in 9 dimensions which includes: somatization, compulsive obsession, sensitivity in interactions, depression, anxiety, aggression or hostility, phobic anxiety, paranoid ideation and psychoticism (Derogatis, 1983; Kaplan and Sadok, 1989; quoted by Yazdani-e Qichaq, 1996). Conducted studies on the reliability of this scale, including concurrent reliability with MMPI, showed high consistency from 73% to 36%. Based on the coefficients of Alpha and Kuder Richardson, the reliability of this test has also been satisfactory for all dimensions. The test-retest reliability with one week interval was showed reliability coefficients range of 0.78 to 0.9 (Derogatis, 1983; Derogatis, Leonard, 1976; quoted by Bagheri-e Yazdi, 1993; quoted by Yazdani-e Qichaq, 1996).

RESULTS AND DISCUSSION
Findings
The participants of the study were two groups of women who suffer from migraine and a normal group of women in which mean and deviation of them was 32.08 and 31.24, respectively. The two groups were partially at the same age. Their education levels were from diploma to MA and the frequency showed that the two groups are at the same range and most participants in the two groups had diploma.
In the descriptive part, the central tendencies of mean and standard deviation for dependent variables will be presented for both groups:

Table 1: Mean and Standard deviation (SD) of alexithymia with components

Dependent Variables	Control Group		Experimental Group	
	Mean	SD	Mean	SD
Difficulty in describing	9.8	2.32	15.56	1.35
Difficulty in identifying	9.72	1.73	25.24	4.84
Objective thinking	12.8	3.91	28.16	3.32
Total alexithymia	32.32	4.81	69.96	6.77

Research Article

In order to determine significant differences between the groups in terms of the variables of the study, the inferential analysis is used. The multivariate analysis of variance (MANOVA) along with default tests was used to analyze the hypotheses in the inferential part.

Results of the default tests indicate that the variances (P=0.176, F=1.88) and the covariance (P=0.08, F=1.88) of the two groups are equal.

In the following, overall result of the MANOVA will be presented to test the hypothesis that: there is a significant difference between the women who suffer from migraine and the healthy ones regarding dimensions of alexithymia (difficulty in identifying emotions, difficulty in describing emotions, objective thinking).

Table 2: The overall results of MANOVA

Test's type	Value	F	Hypothesis df	Error df	P	Eta-squared
Group Pillai's Trace	0.932	208.56	3	46	0.001	0.93
Wilks' Lambda	0.068	208.56	3	46	0.001	0.93
Hotelling's Trace	13.60	208.56	3	46	0.001	0.93
Roy's Largest Root	13.60	208.56	3	46	0.001	0.93

As the above table shows, the levels of significance for all tests allow using multivariate variance analysis. The results show that generally there are significant differences in the studied groups in terms of alexithymia (P<0.001, F=208.56, Lambda Whelks=0.06). The square of Eta shows that there is a significant difference between the groups with regard to alexithymia values and the amount of this difference based on the test of Lambda Whelks is 0.93.

In order to assess group differences in each variable, the output of ANOVA is represented:

Table 3: The results of ANOVA output for all the of research variables

Dependent variable	Sum of squares	Degree of freedom	Mean of squares	F	P	Eta
Group Objective thinking	2949.12	1	2949.12	230.04	0.001	0.82
Difficulty in identifying	3010.88	**1**	3010.88	194.87	0.001	0.80
Difficulty in describing	571.22	1	571.22	318.22	0.001	0.86

As table 3 shows the univariate analysis of variance (ANOVA) showed that there is a significant difference between the two groups in all three components (P<0.001). In another words, the group who suffer from migraine significantly got higher scores in components of difficulty in identifying emotions, difficulty in describing emotions and objective thinking. The values of Eta also show that the highest value of standardized difference is associated with the difficulty in describing the groups (0.86).

Discussion and Conclusion

The main purpose of the study was to investigate alexithymia in the women who suffer from migraine and comparing them with the healthy ones. Based on the findings of the study, the first hypothesis that "there is a significant difference between women who suffer from migraine and the healthy ones in terms of the dimensions of alexithymia" has approved. The results of the study showed that there is a significant

Research Article

difference between the mean scores of the two groups in terms of alexithymia and its dimensions. This finding is consistent with the other researches' results in the sense that the scores of Alexithymia and its dimensions in the women who suffer from migraine are significantly higher than the healthy women.

With respect to the emotional dimension of pain and emotional problems presented in alexithymia, it's expected that there must be relationship between this factor and migraine.

The existence of the common etiology between migraine and alexithymia can be an explanation for this finding. It means that the same neurobiological factors which influence migraine also have effect on patients with high levels of alexithymia. For example, Limbic System Dysfunction Hypothesis in the etiology of patients who suffer from migraine was proposed (Fathi, 1997) in which it is one of the mental areas that also has an important role in alexithymia.

In another explanation it should be mentioned that emotional failure (alexithymia) is equivalent to having difficulty in emotional self-regulation or disability in cognitive processing of emotional information and regulation of emotions (Taylor, 2000; Taylor and Bagby, 2000) and self-regulation is only a defensive mechanism for self-protecting against emotional distress associated with sever traumatic situations. Since individuals who suffer from migraine have lower self-regulating skills, they can't understand and evaluate the emotional information in cognitive processes and as a result, they suffer from emotional failure and self-cognition (Taylor and Bagby, 1997). Emotional self-regulation necessitates control of the conscious efforts and ability to act according to the self-directed plan and without receiving any reward and internal support; this is necessary for recognition, revision and changing the behaviors along with changing in environmental conditions (Brown *et al.,* 1996). With regard to this explanation, the healthy people with higher level of self-regulation than the people who suffer from migraine, do more mental efforts to control internal status, his/her processes and functions for attaining the objectives which can cause emotion adjustment and increasing the mental health and their psychological well-being; however, patients who suffer from migraine are more exposed to alexithymia due to low levels of self-regulating. In a research, Gatta *et al.,* (2011) showed that alexithymia in the patients who suffer from migraine is more than the control group. In another explanation, the studies have showed that the anxiety statuses are more prevalent among people who suffer from migraine headache and these feelings are one of the most important factors which stimulate migraine (Curone *et al.,* 2011). To give more complete explanation, it should be said that emotional stimulation is usually accompanied with psychological stimulation and accordingly, migraine sufferers who anxiety is more prevalent among them, in order to control the fear which is caused by physical reactions due to anxiety, restrict their emotional experiences and refrain from expressing emotional responses and showalexithymia characteristics (Motan and Jencoz, 2011). In fact the women who suffer from migraine compared to the healthy ones, are usually unable to recognize, understand or describe their emotions and they have limited ability to cope with stressful situations due to lack of emotional knowledge and disability in cognitive processing of emotions and yet these emotions should be released. If these emotions don't be released and the person can't express her negative emotions verbally, his/her anxiety will be increased. On the other hand, the study specified that the women who suffer from migraine face with stress and stressful situations due to the use of immature and neurotic defensive mechanisms such as false friends, cancellation and neglect, reasoning and physicalization. This denial and neglecting stress corresponds to the theories which believe the people who have problem with expressing their emotions don't feel anxiety very well (Myers and Derakshan, 2008) or they know this problem as a defense against stress-provoking event (Haviland *et al.,* 1988). Some of the limitations of the present study are: 1- The sample of the study was limited to the women who referred to the neurologists and headache clinics in Tehran which has effect on the generalization of the findings. 2- The patients' features such as their levels of education, age and so on make it difficult to generalize the findings. 3- Lack of separating the types of migraine is another limitation of the study. 4- The mere use of the questionnaire to collect data is another limitation.

Research Article

REFERENCES

Ahlberg J, Nikkila H, Kononen M, Partinen M, Lindholm H, Sarna S and Savolainen A (2004). Associations of Perceived Pain and Painless TMD-related Symptoms with Alexithymia and Depressive Mood in Media Personnel with or Without Irregular Shift Work. *Acta Odontologica Scandinavica* **62** 119-23.

Anderson JR (1985). *Cognitive Psychology and its Implications*, 2nd edition (New York: Freeman).

Babay JDA Parker (No Date). *Disorders of Affect Regulation Alexithymia in Medical Psychiatric Illness* (Cambridge: Cambrige University Press) 27 – 45.

Bagby RM and Taylor GJ (1997). Affect dysregulation and alexithymia. In: edited by GJ Taylor, R. M.

Balaban CD, Jacob RG and Furman JM (2011). Neurologic bases for comorbidity of balance disorders, anxiety disorders and migraine: neurotherapeutic implications. *Expert Review of Neurotherapeutics* **11**(3) 379-94.

Balaban H, Semiz M, Sentürk IA, Kavakçı O, Cınar Z, Dikici A and Topaktaş S (2012). Migraprevalence,alexithymia, and post-traumatic stress disorder among medical students in Turkey. *Journal of Headache Pain* [Epubahead of print].

Brown K, Atkins MS, Osborne ML and Millnamow M (1996). A revised teacher rating scale for reactive and proactive aggression. *Journal of Abnormal Child Psychology* **24**(4) 473-80.

Curone M, Tullo V, Mea E, Proietti -Cecchini A, Peccarisi C and Bussone G (2011). Psychopathological profile of patientswith chronic migraine and medication overuse: study and findings in 50 cases. *Neurological Sciences* **32**(Suppl 1) S177-S179.

Ducros A (2006). Mechanisms and genetics ofmigraine. *CNS Drugs* **20** Spec no.1 1-11.

Fathi M (1997). A Case Study of the Drug Resistant Migraine's Cure wi Hypnotism. *The Psychoteraphy Magazine News*, first year, numbers 3 and 4 71-80.

Gatta M, Canetta E, Zordan M, Spoto A, Ferruzza E, Manco I, Addis A, Zotto LD, Toldo I, Sartori S and Battistella PA (2011). Alexithymia in juvenile primary headache sufferers: a pilot study. *Journal of Headache Pain* **12** 71-80.

Goadsby PJ (2013). All that is obvious is not clear: what is the origin of throbbing pain in migraine? *Pain* **154**(7) 970-1.

Haviland MG, Shaw DG, Cummings MA and MacMurray JP (1988). Validation of Toronto alexithymia scale in substance abusers. *Psychotherapy and Psychosomatics* **50**(3) 81-7.

Huber A, Suman AL, Biasi G and Carli G (2009). Alexithymia in Fibromyalgia Syndrome: Associations with Ongoing Pain, Experimental Pain Sensitivity and Illness Behavior. *Journal of Psychosomatic Research* **66** 425-33.

Jams Benjamin and Sadock-virginia Alcott (2003). *Sadock-synopsis of Psychiatry,* chapter 1 and 2 399-359 New York **1** 37-46.

Kaufman DM (1995). *Clinical Neurology for Psychiatrists*, 4th edition (W. D. Saunders Company) New York.

Lesser IM (1985). Curent concepts in psychiatry. Alexithymia. *New England Journal of Medicine* 312– 690-692.

Martines–Sanchez F, Ato–Garcia M, Covocolos A and Dam E *et al.,* (1998). Stahility in alexithymialevels. a long infudinal analysis on various emotional auswer. *Personality Individual Difference* **24** 767-772.

May A (2006). Functional anatomy ofheadache. *Neurological Sciences* **27**(Suppl 2) S103-6.

Mehling WE and Krause N (2007). Alexithymia and 7.5-year Incidence of Compensated Low Back Pain in 1207 Urban Public Transit Operators. *Journal of Psychosomatic Research* **62** 667-74.

Motan I and Gencoz T (2007). The relationship between the dimensions of alexithymia and the intensity of depression and anxiety. *Turkish Journal of Psychiatry* **18**(4) 333-43.

Muftuoglu MN, Herken H, Demirci H, Virit O and Neyal A (2004). Alexithymic features in migraine patients. *European Archives of Psychiatry and Clinical Neuroscience* **254**(3) 182-6. 15.

Research Article

Myers LB and Derakshan N (2008). The repressive coping style and avoidance of negative affect. In: On emotional quotient inventory (EQ-i) in university students. *Journal of Personality and Individual Differences* **28**(4) 797-812.

Parker DA, Taylor G and Bagby RM (2001). The relationship between emotional intelligence andalexithymia. *Personality and Individual Differences* **30** 107 – 115.

Pompili M, Serafini G, Cosimo DD, Dominici G, Innamorati M, Lester D, Forte A, Girardi N, Filippis SD, Tatarelli R and Martelletti P (2010). Psychiatric comorbidity and suicide risk in patients with chronic migraine. *Journal of Neuropsychiatric Disease and Treatment* 81-91.

Reeve John Marshall (2008). *Understanding Motivation and Emotion Hardcover*.

Sarafino EP (1994). *Health Psychology,* 2nd edition (Chichester Biris Bone) New York.

Schultz D and Schultz S (2012). *Theories of Personality Loose Leaf* .

Sifneos PE (1973). The prevalence of alexithymic characteristics in psychosomatic patients. *Psychotherapy and Psychosomatics* **22** 255-262.

Taylor GJ and Bagby M (2000). An overview of the alexithymia construct. In: *The Handbook of Emotional Intelligence*, 1St edition, edited by Bar-On R and Parker JD (San Francisco: Jossey-Bass) 263-76.

Taylor GJ (2000). Recent developments in alexithymia theory and research. *Canadian Journal of Psychiatry* **45** 134-42.

Vaillant GE (1998). *Adaptation to Life* (Cambridge: Harvard University).

Vaillant GE (2000). Adaptive mental mechanisms: Their role in a positive psychology. *American Psychologist* **55**(6) 89-98.

Yazdani-e Qichaq S (1375). Investigation the some psychological features of the teenagers who try to suicide and to compare it with the teenagers who suffer from the mental disorders and the normal teenagers. The Ma Thesis, Unpublished, Psychology Institute, Tehran.