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COMPARISON OF ANXIETY, DEPRESSION AND COGNITIVE IMPAIRMENT IN MULTIPLE SCLEROSIS PATIENTS WITH THE GENERAL POPULATION

SAHAR ASHRAFI[i], S.ABDOLMAJID BAHRAINIAN[ii]

[1]: Department of Psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran

[2:] Department of Clinical Psychology, Shahid Beheshti University of medical sciences, Tehran, Iran

ABSTRACT

Multiple sclerosis is a chronically atrophying disease of central neurotic cells and is appeared in the young and lead to the physical limitations and psychiatric consequences in patients. The purpose of this study is to investigate anxiety, depression andcognitive disorders in patients with multiple sclerosis in a normal population contrastively. In a contrastive-based study, 54 patients with multiple sclerosis are selected accidently in Bandar Abbas city and are compared with 54 normal people and then contrasted. The psychological assessment is done by interviewing with two clinical psychologists with M.A. degree, depression-anxiety stress scale (DASS) and also mini-mental state examination (MMSE) and analyzed by the descriptive statistics and independent t-test by the use of software SPSS. The findings of the study shows that anxiety, depression and cognitive state between the two groups under study are meaningfully different when p<0/01. The results of the study reveals that the level of the cognitive problems in patients with multiple sclerosis is reported higher than normal people. This fact necessitates researchers' special attention to patients with multiple sclerosis disease.

Keywords: Anxiety, Depression, Cognitive Disorder, Multiple Sclerosis (MS)

INTRODUCTION

Multiple sclerosis disease, MS, is one of the most commonly chronic and often atrophying diseases of central neurotic cells and there is no recognizable reason for it. The multiple

sclerosis disease is a self-immunity disease of the neurotic system in all ages but in young adults, from 20 to 40 years, is most common. Furthermore, women are afflicted twice than men and it is the third reason for inability among the adolescents. In Iran, according to the presented information, in every 100 persons, about 15 to 30 persons are afflicted by this disease as well. According to researchersof Iran multiplesclerosis association, in each year, approximately 5000 people are newly afflicted to this disease. Lack of certainty, various and unpredictable nature of this disease cause many serious inabilities which influence patients concerning their future programs and medical choice.

The psychological study of MS traced back to early 20thcentury. Katrin and Wilson (1926) classified psychological signs of these patients in three kinds: mental, emotional, psychiatric one (6). The most common signs of this disease include vision problems, the physical weakness in lower organs, the muscular disorder, tactile disorder, swallowing problems, mood change, tiredness (contusion), vibration, dizziness, problems of cefecation, vocal problems, depression, the sexual problems, cognitive disorders (7). The exasperatingly cognitive performance of these patients is a kind of hidden disease and causes many operational problem in their daily life. This problemper se can cause anxiety and depression (8). The study showed that 50% of patients with MS experience pathological effects up to 45 to 60% of patients. These patients are afflicted with the faint pathological effects, difficulty in short memories, difficulty in static attention, executive performance and difficulty in information processing which have noticeable influence patients' daily activities (10, 9), which can be independent from the physical inability or its innate influences (8).

The two common disorders in patients with MS is movement disorder and psychological disorder. (12), there are many evidences showed that the occurrence and time period of this disease can influence the psychological state of patients (13), anxiety disorder (14), and mood disorder including depression (15, 16, 17, 18) are the most common psychiatric diagnosis in patients with MS more than normal people. Furthermore,decrease of cognitive state is alsoanother kind of disorder reported in these patients (19, 20, and 21).

Feinstein (2006) and Midlton (2006) believed that three kinds of disorders can be seen in patients simultaneously(22,23), Thomas et al. (2007) reported that there was

a relation between the mood disorders, anxiety, wrath, emotionality and physical disorder and patients afflicted with MS (24). The study reported that depression and boredom can cause slow information processing and memory (22, 25). Moreover, the study showed that psychological disorders could cause many problems and consequences and spend many therapeutic services and many disorders in persons' operations (26). Researchers knew there was often a relation between anxiety, depression and psychological signs including slow short memory operation, slow information processing, little attention, concentration and executive operations in patients with MS; also, exasperatingly cognitive operations whichper se is a hidden disease, can cause anxiety and depression. Therefore, based on the mentioned information, the main question of this study is whether there is any difference between patients with MS and normal populations in terms of stress, anxiety, depression and psychological disorders in Bandar Abbascity?

METHODOLOGY

This study is carried out between two groups of subjects contrastively. The final population of subjects under study is 60 patients from among 120 patients with MS based on the internal criteria including being residents of Bandar Abbas city, being aware satisfactorily of participating in the study, being distinguished sick by proficient doctors, at least being able to read and write, having maximum age of 50 years. Using Morgan's table, 54 people are selected accidently from those patients resorted to medical cooperation of Shahid Mohammad hospital of Bandar Abbas city in the second half of 1393. Then, subjects are compared with 54 of normal people in terms of age and gender. Next, they are compared and contrasted in terms of anxiety, stress, depression andpsychological disorders. Finally, both groups will be appreciated for their cooperation in this study.

In order to investigate the cognitive state, the questionnaire including 30 questions, the short form of the cognitive- state test, is used. This questionnaire, which Fuldstein introduced in 1975, examines orientation, memory recording, attention, calculation, short memory, and language and visual-structural abilities. The total score for this questionnaire is 30 and a score less than 25 shows the possibility of the cognitive disorder (27). The score more than 21 demonstrates the weak cognitive disorder, the score from 10 to 20 demonstrates the medium cognitive disorder and the score less than 9 demonstrates severe cognitive

disorder. The Persian version of this test is introduced by Saedian et al.(1386) ; andbased on the alpha coefficient of Cronbach, the internal reliability of this questionnaire is reported 0/81 (28).

In order to investigate anxiety, depression and stress, DASS test is used. The original version of DASS includes 42 expressions and each of the triplecriteria of depression, anxiety and stress includes 14 expressions. Lovi Bond reported that the internal reliability for depression, anxiety, and stress is .91, .83, and .89 respectively. Bourn et al.also reported that the internal reliability coefficientsfor three criteria are .96, .89 and .93 respectively and results of re-test coefficients are.71, .79, and .83 respectively. Conclusively, the shorter version of DASStest is made in 21 expressions. In order to investigate the reliability and validity of this nonclinicalIranian cases, by using the internal reliabilityis calculated .93 for depression criterion and.90 for anxiety and stress. By calculating re-test coefficients, reliabilityfor three criteria is .84, .89 and .90 percent respectively (29).

In order to make sure of normalized distributionof data resulted from measuring for both groups three dependent variables taken from Kolmogorov–Smirnov and Shipiro-Wilk's tests are used and the validity of data distribution is confirmed. Moreover, the independent t- test is used to analyze data by software SPSS.

Results

As it is shown in table.1 in the MS group, 42.6% (23) of subjects are male and 57.4 % (31) of them are female. Also, in the normal group 46.3% (25) of subjects are male and 53.7 (29) of them are female.Regarding age, in the group of patients with MS, 11.1% (6) are aged lower than 20 years, 37.0% (20) from 21-30 years and 40.7% (22) from 31-40 and 11.1% (6) are from 41-50 years old. In the normal group, the least subjectsare 9.3% (5) in the age group younger than 20 years and 35.2% (19) in the age group of 21-30 years. Also, the most subjects are 46.3% (25) in the age group of31-40 yearsand 9.3 %(5) in the age group of 41-50 years.

Furthermore, according to studies in table. 2 amount of anxiety in patients with MS (m: 18.11, SD: 4.18, t (106): 5.96, f: 3.93, P>0.01) is more than the normal (m: 13.87, SD: 3.12, t(106):5.96, f:3.93, P>0.01) and difference between these two groups are statistically significant. The amount of depression in patients with MS (m: 17.87, SD: 3.40, t (106):4.97, f: 0.714, P>0.01) is also more than the normal (m: 14.87, SD: 2.82, t (106):4.97, f: 0.714, P>0.01) anddifference between the two groups are

meaningfully significant. Moreover, the amount of cognitive disorder in patients with MS (m: 15.52, SD: 2.22, t (106):4.70, f: 19.71, P>0.01) is less than in the normal (m: 18.52, SD: 4.16, t (106):4.70, f: 18.71, P>0.01) and the difference between the two groups in terms of cognitive disorders are statistically significant.

Table. 1. Demographic features in both groups

Variable		Group	
		The diseased	The normal
Gender	Male	23 (42.6)	25(46.3)
	Female	31(53.4)	29(53.7)
Age	20<	6(11.1)	5(9.3)
	21-30	20(37.0)	19(35.2)
	31-40	22(40.7)	25(46.3)
	41-50	6(11.1)	5(9.3)

Table 2. Standard deviation, average and t n both groups

Variables		N	M	SD	FD	T	V	Sig.
Anxiety	The diseased	54	18.11	4.18	106	3.93	5.96	0.01
	The normal	54	13.87	3.12				
Depression	The diseased	54	17.87	3.40	106	0.714	4.97	0.01
	The normal	54	14.87	2.82				
Cognitive state	The diseased	54	15.52	2.22	106	19.71	4.70	0.01
	The normal	54	18.52	4.16				

DISCUSSION AND CONCLUSION

Is there any difference in the level of anxiety, depression and cognitive disorders between patients with MS and the normal? The results shows that the amount of anxiety and depression in patients with MS is more than that in the normal. These findings are in line with other findings including Mindon's (2000). He believed that emotional or psychological disorders influence the mood state of patients with MS and the most common disorder in patients with MS is mood disorder which can include general depression, dysthymiaandbipolar disorder(30). Also, Kohan and Labroun (2009), Mitchell and Dawson (2004) considered the most common kind of emotional disorder which at maximum is seen in 2/3 of patients with MS as depression (31, 32). Saw (2008) knew depression among patients with MS as the resultof disease, activity limitation, unpredictability of disease and cure procedure (33). Additionally, Atari Moghadam, Shaebani and Panaghi (2004) reported the constant amount of mood disorders in patients with MS about 34.5 % which includes 15.6% of unclassified depression disorder, 8.2 % bipolar disorder kind one, 5.9% dysthymic disorder , 2.2 % bipolar disorder kind 2 (34). Bradly, Darwf,

Fenich, Marsden (1996) reported that although various signs can be seen in patients in early stages of MS, psychic responses of these patients is almost common among all patients, they experienced anxiety and qualm (35). Also, studies informed that there were anxiety and depression in these patients, Johnson (2003) reported that there were depression and anxiety in patients with MS (36).

Moreover, some studies stated that three kinds of disorders, anxiety, depression and cognitive disorder, can occur simultaneously. Johnson and Van Doren and et al. (2003) believed that one spectrum of neurotic-psychological signs including the cognitive, emotional and anxioussigns can be observed in patients with MS (37). Feinstein (2006), Midlton, Danni, Lynch and Parmenter (2006) assumed that depression can aggregate pathological disorders in patients with MS. The most common pathological disorders are slow short memory operation, and slow information processing in patients with MS (22, 23). Kuhn and Labrounsupposed that depression was not clearly related to specific cerebral loss in MS disease but often comes with signs such as tiresome and cognitive disorders (31). Diamond and et al. (2008) reported that depression and tiresome can cause slow information processing and memory (25).

SUGGESTIONS

The fact that whether there is any significant difference between patients with MS and the normal in terms of anxiety, depression, and cognitive state or not? or whether the same result is found in patients with chronic disease? and this difference resulted from which factors is the subject that ventures more studies. Also, the mechanism of other cognitive signs involved in occurring and aggravating this disease and the kind of its relation with other social factors is needed to be studied in future researches. In addition, it is advised that the therapist concentrates on this group of patients on his/her workshop on the psychiatric relations. It is also suggested to the family of these patients to engage and support the patients who are not able to take part effectively in social communications. Additionally, it is suggested to supporting organizations to provide funds for sessions on decreasing anxiety, depression and similar problems.

Accordingly, it can be referred to some examples of possible limitations in the use of the findings of this study such as rejecting or hiding the disease and patients' unwillingness of others' awareness of their disease, especially, it is seen more in male patients than female ones.

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REFERENCES

[1] Drew M, Tippett LJ, Starkey NJ, Isler RB. "Executive dysfunction and cognitive impairment in a large community-based sample with Multiple Sclerosis from New Zealand: A descriptive study", Original Research Article Archives of Clinical Neuropsychology, 2008; 23(1): 1-19.

[2] Dennison L, Moss-Morris R, Silber E, Galea I, Chalder T."Cognitive and behavioural correlates of different domains of psychological adjustment in early-stage multiple sclerosis, Original Research Article Journal of Psychosomatic Research, 2010; 69(4): 353-361.

[3] Vosoughi R." Freedman MS. Therapy of MS. J Neurol neurosurg; 112: 365-85. Atlas multiple sclerosis resources in the world(2008), ISBN 978 92 4 156375 8 (NLM classification: WL 360);2010. (Persian).

[4] Toft T, Fink P, Oernboel E, Christensen K, Frostholm L, Olesen F.Mental. "disorders in primary care: prevalence and co-morbidity amongdisorders. Results from the functional illness in primary care (FIP) study. Psychol Med, 2005; 35: 1175–1184.

[5] DeWaal M.W, Arnold I.A, Eekhof J.A, Assendelft W.J, van Hemert A.M."Follow-up study on health care use of patients with somatoform, anxiety and depressive disorders in primary care. BMC Fam Pract; 2008: 9-5.

[6] Cottrell, S.S & Wilson S.A.K. The affective symptomatology of disseminated sclerosis. Journal of Neurology and Psychopathology; 1926;7:1-30.

[7] Yktamram SA, Nazam Dah K." Rehabilitation when in persons with multiple sclerosis, was commissioned by the Department of Rehabilitation Welfare Organization, 2010.

[8] Rao S.M, Leo G.J, Bernadin L, Unverzagt T. "Cognitive dysfunction inmultiple sclerosis I. Frequency,

patterns, and prediction. Neurology, 1991;41:685.

[9] Porcel J, Montalban X. "Anticholinesterasics in the treatment of cognitive impairment in multiple sclerosis Original Research Article Journal of the Neurological Sciences, 2006; 245(1-2):2177-181.

[10] Jonsson A, Andresen J, Storr L, Tscherning TH, Sørensen P.S, Ravnborg M." Cognitive impairment in newly diagnosed multiple sclerosis patients: A 4-year follow-up study Original Research Article Journal of the Neurological Sciences, 2006; 245(1-2):77-85.

[11] Sartori E, Edan G." Assessment of cognitive dysfunction in multiple sclerosis Original Research Article Journal of the Neurological Sciences, 2006; 245(1-2): 169-175.

[12] Bednarz A, Kosteczko K, Krysta K, Krupka-Matuszczyk I, " Comparison of two clinical cases of anxiety disorders and depression in multiple sclerosis (MS)"European Psychiatry, 2012; 27(1): P 1.

[13] Deghani F, Nashat Doust MT, Molavi H, Nilfrooshzade MA. The Effect of Cognitive- Behavioral Stress Management Therapy on Depression and Anxiety of Females with Alopecia Areata, Journal of Clinical Psychology, 2009;1(2): 1-9.(Persian).

[14] Papari CA, Cozaru CG, Papar A." Clinical aspects of anxiety and depression in multiple sclerosis"European Psychiatry, Volume 25, Supplement, 2010; 1: 360.

[15] Bruce JM, Lynch SHG." Personality traits in multiple sclerosis: Association with mood and anxiety disorders, journal of psychosomatic research, 2011;70: 479-485.

[16] Da Silva AM, Vilhena E, Lopes A, Santos E, Gonçalves MA, Pinto C, Moreira I, Mendonça D, Cavaco S." Depression and anxiety in a Portuguese MS population: Associations with physical disability and severity of disease, Original Research Article Journal of the Neurological Sciences, 2011; 306(1-2): 66-70.

[17] Voss WD, Arnett PA, Higginson CHI, Randolph JJ, Campos MD, Dyck DG." Contributing factors to depressed mood in multiple sclerosis, Original Research Article

Archives of Clinical Neuropsychology, 2002; 2: 103-115.

[18] Giordano A, Granella F, Lugaresi A, Martinelli V, Trojano M, Confalonieri P, Radice D. " Alessandra Solari, on behalf of the SIMS-Trial group Anxiety and depression in multiple sclerosis patients around diagnosis, Original Research Article Journal of the Neurological Sciences, 2011; 307(1-2): 86-91.

[19] Sastre-Garriga J, Arévalo MJ, Renom M, Alonso J, González I, Galán I, Montalban X, Rovira A. "Brain volumetry counterparts of cognitive impairment in patients with multiple sclerosis, Original Research Article Journal of the Neurological Sciences, 2009; 282(1–2): 120-124.

[20] Lapshin H, O'Connor P, Lanctôt KL, Feinstein A. " Computerized cognitive testing for patients with multiple sclerosis, Review Article Multiple Sclerosis and Related Disorders, In Press, Corrected Proof, Available online 25;2012.

[21] Schwid SR, Goodman AD, Weinstein A, Mc Dermott MP, Johnson KP." Cognitive function in relapsing multiple sclerosis: Minimal changes in a 10-year clinical trial, Original Research Article Journal of the Neurological Sciences,2007; 255(1-2): 57-63.

[22] FeinsteinA." Mood diorders in multiple sclerosis and the effects on cognition "Original Research Article Journal of the Neurological Sciences, 2006; 245(1–2): P 63-66.

[23] Middleton LS, Denney DR, Lynch SHG, Parmenter B."The relationship between perceived and objective cognitive functioning in multiple sclerosis, Original Research Article Archives of Clinical Neuropsychology, 2006; 21(5): 487-494.

[24] Thomas P.W, Thomas S, Hillier C, Galvin K, Baker R.(2007). The CochraneCollaboration.
Psychological interventions for multiple sclerosis(review). The cochrane library, vol. 1. John Wiley & Sons, Ltd. Publishers; 2007: 1–51.

[25] Diamond BJ, Johnson SK, Kaufman M, Graves L, "Relationships between information processing, depression, fatigue and cognition in multiple sclerosis" Original

Research ArticleArchives of Clinical Neuropsychology, 2008; 23(2): 189-199.

[26] Lebrun C, Cohen M, "Dépression et sclérose en plaques, Original Research Article Revue Neurologique, Volume 165, Supplement 2009; 4: P156-162.

[27] Folstein MF, Folstein SE & McHugh, PR. "Mini-mental state": A practical method for grading the cognitive state of patients for the clinician, Journal of Psychiatric Research, 1975; 12: 189-198.

[28] Saidian M, Fallah M, Norouzian M, Najat S, Delaware A, GHasm Zadeh. H. Préparation de valider la version persane de l'essai court de l'état mental. Journal of Medical Conseil de la République islamique d'Iran, 2007; 25 (4): 408-414.(Persian).

[29] Asghari Moghaddam MA,Saead F, Dibaj Nia P, Zanganeh J. Étude préliminaire de la validité et de la fiabilité des mesures de la dépression, de l'anxiété). Et le stress (DASS). Shahed Université Research Journal, quinzième année, New Era; n 2008.(Persian).

[30] Minden S.L. Mood disorders in multiple sclerosis: diagnosis andtreatment. 1Brigham and Women's Hospital, Division of Psychiatry, 75 Francis Street, Boston, Massachusetts, MA 02115, USA; 2000.

[31] Lebrun C, Cohen M."Dépression et sclérose en plaques Original Research Article Revue Neurologique, 2009; 165(4): S156-S162.