

Study and comparison of psychological disorders in normal students and students with multiple sclerosis in Shahrekord

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Abstract

Because various diseases could predispose people to psychiatric disorders that lead to numerous individual and therefore social problems, the aim of the present study was to study the difference in psychiatric disorders between students with multiple sclerosis (MS) and healthy students. In this prospective, causal-comparative type, samples were students living in Shahrekord. The number of participants, both male and female, was 200 (100 patients with MS and 100 healthy people); healthy participants were enrolled by two-stage cluster sampling and the people with MS by non-random convenience sampling. Symptom Checklist-90-2 was used to collect data and data analysis conducted by SPSS 20. The mean scores on psychological disorders and their dimensions were significantly higher in patient group than healthy group ($p < 0.05$). In healthy group, psychological disorders and their subscales were significantly higher in women ($P < 0.05$), and in patient group, phobia was significantly higher in women than men ($P < 0.05$), but no significant difference in the scores on psychological disorders and their subscales was seen between women and men in patient group ($P < 0.05$). MS could lead to psychiatric disorders and morbidity in both women and men.

Key words: Multiple sclerosis, Psychological disorders, Students, Shahrekord.

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Introduction

Multiple sclerosis (MS) is a chronic and progressive disease of the central nervous system in which the immune system demyelinates the nerves of the brain and spinal cord and therefore nerve signaling is slowed down. MS causes blurred vision, dysplasia, muscle weakness, loss of balance and coordination, sensation disturbance, depression, moderate to severe pain, cognitive impairment, forgetfulness, lack of concentration, fatigue, tremor, dizziness, and bowel, bladder, and sexual dysfunction. There is no definite treatment for this disease (1,2). The exact cause of MS is unknown but the most likely ones are genetic, immunologic, and viral (3).

Obviously, mental health plays a significant role in all life aspects including physical health; because MS affects physical, psychological, and social aspects of life adversely, it may lead to several psychiatric disorders including depression, anxiety, and high levels of stress (4). However, this issue remains insufficiently studied and the potentially involved factors should be further investigated (4,5). Given the significance of mental health and because psychiatric disorders lead to declined individual and family functioning and achievements, and therefore disequilibrium of individual status, illness, and dysfunction of the community (6,7), we investigated the difference in psychiatric disorders between students with MS and healthy students.

Materials and Methods

The study population of this prospective, causal-comparative study consisted of the students living in Shahrekord. A total of 200 people, both male and female, were enrolled. One hundred of participants had MS and the rest were healthy. Healthy participants were selected by convenience, two-stage cluster sampling. For this purpose, city was divided into 36 districts of which 12 were randomly selected. Then, systematic sampling was conducted in each district. More specifically speaking, every 10th house was chosen after a house was randomly selected as starting point (no. 1), and then the following selected houses were 11, 21, 31, 41, etc. Questionnaires were completed by one of the household members who were studying at university. Besides that, the samples with MS were selected by nonrandom convenience sampling. Briefly, we referred to the the Multiple Sclerosis Association of Shahrekord, and asked the eligible patients who were present there to complete questionnaires. Symptom Checklist (SCL)-90-2 was used to measure psychiatric disorders. SCL-90-2 is one of the most frequently used scales for diagnosing psychiatric disorders in the USA.

This scale, first developed to investigate the psychological aspects of physical and mental patients, consists of 90 items to evaluate psychological problems. This scale can also be used to differentiate healthy people from patients (8). The subscales of the SCL-90-2 are physical complaint, obsessive-compulsive disorder (OCD), sensitivity to

interactions, depression, anxiety, aggression, anxiety, paranoid thoughts, and psychosocialism collectively representing the score on psychiatric disorders. The items are rated on a 5-point (0-4) Likert scale. To calculate the score on psychiatric disorder and each subscale, each subscale is first summed and then divided by its respective number of items to obtain a mean score. The mean scores ≥ 1 represent morbidity and those > 3 do psychosocialism. A study to investigate the validity and reliability of the SCL-90-2 for Iranian population, has reported that both the subscales and the global severity index of this scale have high internal consistency (Cronbach's alpha coefficients: 0.75-0.92 and 0.98, respectively) (9).

Data were analyzed by descriptive statistics (mean, standard deviation, maximum, and minimum) and analytical statistics (independent t-test) in SPSS 20.

Results

Overall, 59% of the participants were female. The mean age of the participants was approximately 25 years (standard deviation: 3.750, range: 19-35 years). Eighty one percent of the participants were associate's and bachelor's degree students and the rest master's degree students.

Table 1 shows the descriptive data on psychiatric disorders and their subscales. In patient group, the mean scores on physical complaint and phobia were the highest and lowest scores, respectively; in healthy group, the mean scores on paranoid thoughts and phobia were the highest and lowest scores, respectively. The mean scores on psychiatric disorders and all of their subscales were higher in the participants with MS than healthy participants, and therefore, the morbidity associated with psychiatric disorders and all of subscales was seen in patient group. Besides that, in healthy group paranoid thoughts and OCD were seen but psychiatric disorders, their subscales, and associated morbidity were not seen (Table 1).

Independent t-test was used to investigate the difference in psychiatric disorders and their subscales between patient group and healthy group. There were significant differences in the mean scores on psychiatric disorders and their subscales between patient and healthy groups ($p < 0.05$) (Table 2). Therefore, psychiatric disorders and their subscales (physical complaint, OCD, sensitivity to interactions, depression, anxiety, aggression, anxiety, paranoid thoughts, and psychosocialism) were higher in patient group than healthy group (Table 1).

In addition, t-test was used to investigate differences in psychiatric disorders and their subscales between males and females. Results demonstrated that in patient group, the mean scores on psychiatric disorders and the subscales OCD, depression, anxiety, and psychosocialism were higher in females than males; and the mean scores on the subscales physical complaint, sensitivity to interactions, aggression, and paranoid thoughts were insignificantly higher in males than females ($p > 0.05$). But mean phobia score was significantly higher in females than males

Table 1. Central indices and distribution of the scores on psychiatric disorders and their subscales in healthy people and patients with multiple sclerosis

Psychiatric Disorders and Their Subscales	Groups	Min.	Max.	Mean	SD
Psychiatric Disorders	Patient	14	246	179.62	58.5
	Control	6	214	72.22	54.26
Physical complaint	Patient	2	46	28.23	11.8
	Control	0	27	7.58	7.16
OCD	Patient	4	32	23.09	7.707
	Control	1	31	10.94	6.31
Sensitivity to interactions	Patient	3	34	19.26	6.18
	Control	1	28	8.50	6.26
Depression	Patient	1	41	24.89	9.671
	Control	0	38	10.44	9.89
Anxiety	Patient	0	33	19.05	7.6
	Control	0	24	6.64	5.68
Aggression	Patient	1	21	11.22	5.47
	Control	1	22	5.70	5.38
Phobia	Patient	0	25	10.09	7.6
	Control	0	13	3.14	3.47
Paranoid thoughts	Patient	1	22	13.83	5.18
	Control	0	23	7.82	5.69
Psychosocialism	Patient	0	29	15.36	6.76
	Control	0	23	5.70	6.45

Table 2. T-test results on the differences in psychiatric disorders and their subscales between healthy people and patients with multiple sclerosis

Psychiatric Disorders and Their Subscales	Mean difference		f	t-test	P value
	Patient	Control			
Psychiatric Disorders	179.62	72.22	198	13.452	<0.001
Physical complaint	28.23	7.58	163.249	14.948	<0.001
OCD	23.09	10.94	190.611	12.196	<0.001
Sensitivity to interactions	19.26	8.50	198	12.231	<0.001
Depression	24.89	10.44	198	10.444	<0.001
Anxiety	19.05	6.64	182.273	12.981	<0.001
Aggression	11.22	5.70	198	7.188	<0.001
Phobia	10.09	3.14	138.040	8.256	<0.001
Paranoid thoughts	13.83	7.82	198	7.803	<0.001
Psychosocialism	15.36	5.70	198	10.331	<0.001

Table 3. T-test results on the differences in psychiatric disorders and their subscales between males and females in patient group

Psychiatric Disorders and Their Subscales	Mean in patient group		f	t-test	P value
	Male	Female			
Psychiatric Disorders	173.60	183.63	98	0.838	0.404
Physical complaint	29.30	27.52	98	-0.799	0.426
OCD	21.65	24.05	98	1.536	0.128
Sensitivity to interactions	20.60	18.37	98	-1.790	0.077
Depression	22.95	26.18	97.673	1.805	0.074
Anxiety	17.40	20.15	97.989	1.919	0.058
Aggression	11.60	10.97	91.945	-0.582	0.562
Phobia	6.70	12.35	90.362	4.377	<0.001
Paranoid thoughts	14.05	13.68	98	-0.345	0.731
Psychosocialism	14.0	16	95.855	1.288	0.201

Table 4. T-test results on the difference in psychiatric disorders and their subscales between males and females in healthy group

Psychiatric Disorders and Their Subscales	Mean in healthy group		f	t-test	P value
	Male	Female			
Psychiatric Disorders	49.10	88.97	98	3.87	<0.001
Physical complaint	4.52	9.79	96.664	4.007	<0.001
OCD	8.29	12.86	98	3.815	<0.001
Sensitivity to interactions	6.14	10.21	98	3.367	0.001
Depression	5.95	13.69	98	4.166	<0.001
Anxiety	4.76	8	98	2.918	0.004
Aggression	3.52	7.28	97.459	3.880	<0.001
Phobia	1.81	4.10	97.82	3.661	<0.001
Paranoid thoughts	5.71	9.34	98	-3/302	0.001
Psychosocialism	4.10	6.86	98	2.154	0.034

(Table 3). In healthy group, the mean scores on psychiatric disorders and all of their subscales were significantly higher in females than males ($p>0.05$) (Table 4).

Discussion

This study was conducted to comparatively investigate psychiatric disorders and all of their subscales (physical complaint, OCD, sensitivity to interactions, depression, anxiety, aggression, phobia, paranoid thoughts, and psychosocialism) in the students with MS and healthy students in Shahrekord,

Results showed the morbidity associated with psychiatric disorders and all of its subscales were present in MS patients. In healthy group, paranoid thoughts and OCD were seen but psychiatric disorders and other subscales of them were not seen.

Results also indicated that the mean scores on psychiatric disorders and all of their subscales were significantly higher in the participants with MS than healthy participants. This finding indicates that psychiatric disorders and their subscales (physical complaint, OCD, sensitivity to interactions, depression, anxiety, aggression, phobia, paranoid thoughts, and psychosocialism) are higher in the people with MS than healthy people. A study has shown that patients with MS are likely to develop certain disorders such as depression, anxiety, neuroticism, and impaired memory and concentration (10). Feinstein reported that only 28% of the patients were not diagnosed with psychiatric disorders, and these disorders were associated with neurological disorders and other aspects of MS (11). A study showed that MS patients' quality of life was significantly and directly correlated with neurological disability and SCL-90-R score, and mental distress significantly declined quality of life (12).

Hall et al. studied the relationship between cognitive functions, somatization, and behavioural coping in patients with multiple functional somatic symptoms, and observed that the physical symptoms influenced memory and psychological and behavioral symptoms. Therefore, our study is consistent with the findings of Hall et al. regarding higher psychiatric disorders in the people with physical diseases and problems. Evidence on the comparison of psychiatric disorders between MS patients and healthy people is scant, which highlights a strength of the current study. Another study has shown that the psychiatric disorders are predictors of other psychiatric disorders and even influence treatment course in the MS patients (14).

Certain psychiatric disorders in MS patients may be disregarded and be influenced by the main treatment. They may, therefore, be left untreated (11). This issue should be taken into special consideration.

In addition, in patient group, phobia was significantly higher in females than males. Studies have shown that psychiatric disorders including anxiety are higher in women (15-17). It can be argued that if the women with MS are left unsupported by men, their socioeconomic status is jeopardized, and they are therefore more predisposed to phobia. However, the scores on psychiatric disorders and other subscales were not significantly different between males and females. In healthy group, psychiatric disorders and all of their subscales were significantly higher in females than males, which is consistent with other findings (15-17)

Conclusion

Development of MS can lead to psychiatric disorders, and because MS causes psychiatric disorders and their subscales, as morbidity, to increase, then organizations such as the Ministry of Health, media, and the Multiple Sclerosis Association should take appropriate measures to decrease the psychiatric disorders in MS patients to help them cope better with MS.

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