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Relation between personality disorders and characteristics of multiple sclerosis patients and their parents

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Abstract:

AIM AND BACKGROUND: Given the fact that immune system is greatly affected by people's emotional characteristics and since these characteristics are mainly formed through interactions with one's parents, this study aims to determine the relation between personality characteristics and disorders of multiple sclerosis (MS) patients and their parents.

METHODS: This is an applied, descriptive study on 88 MS patients and 63 parents who had visited two physiotherapy clinics in Tehran between January and August 2016. Participants who met the inclusion criteria were selected using convenient sampling method. After acquiring their consent, participants were asked to fill the millon personality questionnaire. Gathered data were analyzed using Pearson and Spearman tests. R statistical software was also used to draw histogram of the data.

RESULTS: The most common personality disorder in MS patients includes histrionic personality disorder while the most common problems among their parents included histrionic personality disorder and obsessive character traits. There was also a direct, significant relation between histrionic personality disorder and narcissistic traits in parents and patients.

CONCLUSIONS: Due to unknown nature and progress of MS, studying personality characteristics of patients and their parents can help determine better treatment methods along with advances in neurological treatments.

Keywords:

Multiple sclerosis, personality disorders, personality trait

Introduction

Multiple sclerosis (MS) is one of the most common neurological disorders with around 2 million patients worldwide.^[1,2] In Iran, out of every 1000 people, 15–30 people suffer from MS.^[3] The importance of this disorder in psychology is due to its wide range of psychological and neurological effects with studies showing 5% of MS patients suffering from acute psychological disorders.^[4] Studies regarding psychological dimensions of neurological disorders generally focus on cognitive and neurophysiological changes and rarely

investigate psychological disorders in these patients.^[5] Stress and negative emotions are among factors which accelerate the progression of MS. This effect is so important that treatment plans usually emphasis stress management as much as medication.^[6] On the other hand, our immune system is affected by attitudes, emotions, coping mechanisms, and other personal and interpersonal characteristics.^[7] Therefore, it appears that personality can be among factors affecting the quality of life in MS patients. From a generalized perspective, the abnormal response of body's immune system in MS is accompanied with abnormal

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psychological responses. In other words, based on the integrity between body and mind functions, MS patients must have self-critical tendencies and specific characteristics at the psychological level.^[8] Various studies have shown that stressful lifestyles are related to MS.^[9] Studies have also shown a correlation between bipolar disorder and MS.^[10] Bipolar symptoms might occur before neurological symptoms of MS, and some reports even show that MS can be seen as mania.^[11] Changes in emotions and personality have also been reported along with MS with significant differences being observed between MS patients and control groups.^[12-14] Currently, various studies emphasize the important role of personality in clinical neurology.^[15] Regarding personal characteristics, studies have shown that MS patients are different from healthy individuals in some personality characteristic.^[16] MS patients show higher amounts of neuroticism and lower level of conscious.^[11,17] Regarding psychological and personality disorders, to this day no studies have been conducted on sufficiently large number of participants. However, one study has shown clear abnormalities, especially regarding personality characteristics.^[18] Another study showed some personality characteristics being intensified or inhibited by MS with some going as far as becoming personality disorders.^[19] In another study,^[20] the results showed a significant difference between MS patients and healthy individuals in the prevalence of aggressive-passive personality disorder, avoidance, and borderline personality disorder.

In general, it appears that psychological disorders can greatly affect various aspects of MS patients' lives.^[21] Due to chronic nature of this condition and its various disabling symptoms, it is often accompanied with several psychological and mental disorders affecting patients at emotional and personality levels.^[22] On the other hand, different personality characteristics can lead to different neurological outcomes while changes in central nervous system can also lead to changes in personality.^[23] Therefore, it can be concluded that psychological symptoms are not only effective in creating MS but can also be used for its treatment.

Some studies have shown that some psychological disorders are more prevalent among biological relatives of MS patients which can be evidence of genetic factors. Relevant literature also mentioned childcare styles and personality characteristics of parents. Therefore, it can be said that parents can create certain personality characteristics in their children through both genetics and their childcare style.^[24] However, to this day, no study has investigated personality disorders in MS patients in Iran and their relation to personality characteristics of patients' biological relatives. Personality characteristics and disorders can account for a part of various findings

based on the measuring methods used. As a result, given the fact that personality characteristics of biological relatives, especially parents are one of the factors affecting mental health and interpersonal relations in people^[25] and since personality characteristics of parents of MS patients (as main caregivers) can be among stressor factors, the current study aims to determine the relation between personality disorders and characteristics of MS patients and that of their parents.

Methods

This is a correlation study with applied aim. Sample size was determined using Cochran equation to be 88 individuals. Participants were customers visiting two physiotherapy centers in Tehran for treatment between January and August 2016 who met the inclusion criteria and were selected using convenient sampling.

To achieve the study's aims, parents of the patients were also asked to participate in the study. This resulted in participation of 63 parents.

Inclusion criteria included definitive diagnosis of MS by a neurologist specialist (patients were introduced to physiotherapy center and clinical psychologist in a letter from the specialist and fellowship); minimum age of 18 years, lack of pregnancy, minimum of eight grades of education, at least 6 months being passed since diagnosis, no experience of acute or chronic stress in the last 6 months (which was determined through interview with clinical psychologist and questions regarding loss of close relatives or other hard or traumatizing experiences), and personal consent for participating the in the study.

The tool used in this study for clinical testing was millon clinical multi axial inventory. This is a self-assessment inventory with 175 yes/no items which assesses 14 clinical personality patterns and 10 clinical indicators and is used for adults older than 18 years. This inventory is created based on Millon's mental inventory^[26] and has been revised twice since its initial publication. For personality disorder scales, an average correlation between 58% and 93% (depressed) or an average of 90% for all scales has been reported.^[27] The different scales of the questionnaire, their items and scoring are as follows:

- a. Clinical personality scales – Schizoid (16 items), avoidance (16 items), depressed (15 items), dependent (16 items), histrionic (17 items), narcissistic (24 items), antisocial (17 items), sadistic (20 items), obsessive (17 items), pessimistic (16 items), masochism (15 items)
- b. Severe personality disorders – Schizotypal (16 items), borderline (16 items), paranoid (17 items)
- c. Clinical indicators – Anxiety disorder (16 items), pseudophysical disorder (12 items), bipolar (13

- items), mood depression disorder (14 items), alcohol dependence (15 items), posttraumatic stress disorder (16 items), drug dependence (14 items)
- d. Severe clinical indicators – Thought disorder (17 items), major depression (17 items), delusional disorder (13 items)
- e. Correction scales – Validity (3 items), disclosure (0 items), negativity (33 items)
- f. Comparison of personality disorders led to various correlations from 0.58 to 0.93 with average of 0.78.^[28] Other studies in Iran indicate good reliability of this questionnaire. For example, in a study by Sharifi, the correlation of scores between first test and retest was reported in the range of 0.82 (delusional disorder) to 0.98 (schizotypal personality disorder).

In the implementation phase, the main goal and important role of participants were explained. Then, after acquiring the verbal consent of patients, each individual patient was asked to fill Million 3 questionnaire provided by the researcher. For patients who were unable to personally fill the questionnaire due to disabilities, items were read to them without any directions, and their exact answers were recorded. Since this test was a personality test, to reduce participants resistance, they were assured that their answers will remain confidential.

After gathering the questionnaires, data were entered in SPSS software package V.18 (California, USA). Description of variables was carried out using average and standard deviation. Normality of variables of patients and their parents scores was investigated. Then, Pearson and Spearman correlation tests were used for normal and nonnormal scores, respectively. R statistical software was used to draw profile chart of patient and parent personalities. R is one of the most common software for statistical analysis, which is free of charge.

Results

A total of 69.3% of patients were female, 34.1% were married, and 54.5% had associate or bachelor degrees. The majority of participants were between 17 and 58 years (33.03 ± 9.032). The duration of MS condition was between 5 months to 23 years (7.57 ± 5.396) for the majority of participants. To better investigate personality disorders in patients, simultaneity of various disorders was investigated. Among 88 patients, 47.7% (42 patients) had no personality disorders. Nearly 34.1% (30 patients) had only one disorder, 12.5% (11 patients) had two simultaneous disorders, 3.4% (3 patients) had three simultaneous disorders, and 2.3% (2 patients) had four simultaneous disorders.

Table 1 shows average and standard deviation of personality dimensions as well as frequency of personality disorders and characteristics in patients. Histrionic disorder with frequency of 28.4% was the most common personality disorder among patients; with depression being the next frequent disorder with frequency of 12.5%. Histrionic dimension was also the most common personality dimension with the frequency of 28.4% with the next common personality dimension among patients being Narcissistic dimension with the frequency of 18.2%.

Among 88 participating patients, the parents of only 63 patients participated in the study. The following section investigates the correlation between personality characteristics and disorders of patients and that of their parents. About 50.8% of parents participating in the study were mother of the patients. Parents were in the age range of 46–69 years (average of 59.40 and standard deviation of 6.031).

Average and standard deviation of each personality dimension and disorder as well as the number of

Table 1: Descriptive characteristics of personality dimensions

Personality dimension	Personality dimension score (average±SD)	Personality disorder, frequency (%)	Personality characteristic, frequency (percent)
Schizoid	43.91±24.795	1 (1.14)	6 (6.82)
Avoidance	44.75±25.460	3 (3.41)	9 (10.23)
Depressed	57.02±29.329	11 (12.50)	10 (11.36)
Dependent	42.41±26.464	6 (6.82)	5 (5.68)
Histrionic	70.58±25.836	25 (28.41)	25 (28.41)
Narcissistic	53.27±20.947	1 (1.14)	16 (18.18)
Antisocial	40.22±22.401	0	6 (6.82)
Sadistic-aggressive-hurtful	40.21±22.383	2 (2.27)	5 (5.68)
Obsessive	57.16±21.591	7 (7.95)	13 (14.77)
Pessimistic-passive aggressive	51.13±25.539	5 (5.68)	10 (11.36)
Masochistic	41.44±24.522	0	9 (10.23)
Schizotypal	42.57±22.885	3 (3.41)	2 (2.27)
Borderline	46.15±23.119	3 (3.41)	6 (6.82)
Paranoid	46.25±22.747	2 (2.27)	6 (6.82)

SD=Standard deviation

individuals with each dimension and disorder are shown in Table 1.

The personality profile chart for 24 scales of the questionnaire was drawn based on average scores of MS patients and their parents[Figure 1].

Table 2 shows the average and standard deviation of each personality dimension and clinical characteristics and also correlation coefficient between the scores of 63 patients and their parents. Due to lack of normality, Spearman correlation coefficient was calculated.

According to the results presented in Table 2, there is a direct and significant correlation between histrionic

scores of patients and their parents. There is also a direct and significant relation between scores of narcissistic dimensions in patients and their parents. However, neither of these correlation coefficients show a strong correlation. In case of clinical characteristics, there is only an inverse and significant relation between drug dependence in patients and their parents.

Discussion

The results of the current study showed that the most prevalent personality disorders based on average scores of millon questionnaire were histrionic and depression, while the most common personality characteristics were histrionic and narcissistic personalities. These results were different from those reported in the study by Mirzaei *et al.*^[20] Investigating literature on causes of personality disorders shows that people with histrionic personalities have strict fathers and histrionic mothers. The results of the current study are in agreement with this causation because the most common disorders and characteristics in parents were determined to be histrionic and obsessive personalities. Furthermore, theoretical principals state that these results cannot be the result of a single cause which is due to correlated and multivariable nature of personality disorders

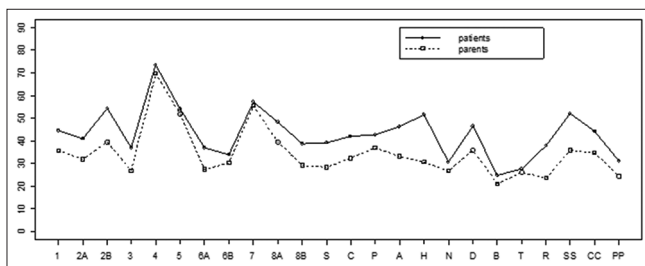


Figure 1: Comparison of personality profile between patients and their parents (63 peoples)

Table 2: The correlation between personality dimensions and clinical characteristics of patients and their parents (63 individuals)

	Personality dimension	Personality dimension or clinical score (average±SD)		Correlation coefficient	P
		Patients	Parents		
Personality dimensions	Schizoid	44.51±26.293	35.60±21.682	0.026	0.841
	Avoidance	40.89±24.770	31.90±26.985	0.095	0.461
	Depressed	54.44±31.199	39.57±29.084	0.005	0.971
	Dependent	36.86±25.563	26.83±24.755	0.085	0.507
	Histrionic	73.38±24.716	69.68±29.755	0.265	0.036**
	Narcissistic	54.19±20.870	51.79±19.582	0.325	0.009**
	Anti-social	36.86±22.808	27.33±19.149	0.093	0.467
	Sadistic-aggressive-hurtful	33.94±20.136	30.40±18.672	0.073	0.570
	Obsessive	57.05±21.939	55.54±23.667	0.033	0.797
	Pessimistic-passive aggressive	48.16±27.402	39.49±26.365	-0.070	0.585
	Masochistic	38.68±24.539	29.17±23.571	-0.055	0.671
	Schizotypal	39.27±23.760	28.41±22.011	-0.063	0.622
	Borderline	41.92±22.750	32.43±25.557	-0.076	0.552
	Paranoid	42.76±22.748	36.87±22.599	-0.035	0.787
Clinical characteristics	Anxiety disorder	46.16±23.259	33.24±26.686	-0.038	0.768
	Pseudophysical	51.68±24.260	30.57±26.582	-0.135	0.290
	Manic	30.68±26.643	26.71±25.170	-0.110	0.391
	Mood depression	46.60±29.566	35.95±27.335	0.017	0.897
	Alcohol dependence	24.71±19.633	21.05±18.679	-0.114	0.372
	Drug dependence	27.65±18.411	26.08±19.711	-0.313	0.013**
	PTSD	37.86±28.533	23.62±24.154	0.084	0.513
	Thought disorder	51.94±22.232	35.83±23.016	0.014	0.914
	Major depression	44.32±24.623	34.70±25.562	0.009	0.943
	Delusional disorder	31.03±23.194	24.24±20.219	-0.090	0.481

** Significance level is 0.05. SD=Standard deviation, PTSD=Posttraumatic stress disorder

(which include psychological, medical, and physical factors). In regards to personality characteristics, studies have shown that these people are different from normal people in some personality characteristics.^[16] Except in one case,^[20] the majority of studies regarding personality characteristics of MS patients have used Neo's five-factor questionnaire while other studies have determined the relation between some factors of this questionnaire and a number of personality disorders. Some studies have shown that MS patients have higher extraversion and openness and lower agreeability compared to normal people.^[15,19,26,27] In a number of studies on people with histrionic personality, these people scored higher in openness and extraversion and lower in agreeability and responsibility in the five-factor questionnaire.^[28] Other than histrionic personality, the agreeability factor in Neo's questionnaire has a good correlation with narcissistic personality disorder in a way that people with lower agreeability scores in Neo's questionnaire, had higher scores in narcissistic personality.^[29] This is similar with the result of the current study which showed that the most common personality disorders among MS patients were histrionic and narcissistic disorders. There is no exact data regarding the reason for formation of histrionic personality; however, it appears that people with histrionic personality have a family history of histrionic personality and that genetics and education affect the formation of this personality disorder. The reason is that children receive attention and acceptance when following the behaviors of their parents. It also appears that people with histrionic personality have received unpredictable attention as children and that this personality disorder affects the method people use for dealing with stress.^[30] Previous results in this regard were somewhat contradictory. For example, some studies showed that no difference between MS patients and control group regarding of personality characteristics^[31] while others showed a significant difference.^[19] The result of the current study showed that the diagnosis of MS alone is not enough for creating meaningful changes in patients' personalities,^[32] but it is possible for people with personality disorders to experience personality changes.^[33] One reason for this can be the fact that different forms of parenting which are a mixture of parents' behaviors and occur in different conditions lead to different levels of stability in children. This means that personality characteristics of parents can affect their parenting methods. Furthermore, psychologists believe that various factors affect the formation of any phenomenon, all of which must be investigated.

The results of the current study were not in agreement with results reported by Mirzaei *et al.*^[20] Their results showed that the majority of MS patients suffer from avoidance personality disorder. One important difference between these two studies is that Mirzaei *et al.* selected

their sample from neurologist's office while we selected participants from physiotherapy clinics. This means that our participants had volunteered for physiotherapy after diagnosis and were attending physiotherapy sessions on their own which can be important for the results. The reason is that physiotherapy environment requires a high level of commitment and cooperation of MS patients during treatment which means that these types of activities involving physical activities, talking to others, and being seen might not be easy for people with avoidance personality disorder. This means that the result of our study might compliment the results reported by Mirzaei *et al.*,^[20] while also indicating that personality characteristics might act as barriers during treatment. Despite the prevalence of lack of exercise in MS patients,^[34] recent studies have shown that therapeutic exercises and physiotherapy can be important in reducing the symptoms of MS. Furthermore, therapeutic exercises can help MS patients to improve their physical abilities which have degraded due to their condition.^[35] The participants in our study were selected among MS patients who were participating in therapeutic exercises and physiotherapy in a related clinic. Since no comparison was made between these patients and healthy individuals, the results might not contradict the results reported by Mirzaei *et al.*^[20] In other words, these results only show that personality characteristics are correlated to following treatment (physiotherapy) plans which can help reduce symptoms in patients. Therefore, it is necessary for psychological studies to be conducted in the area of physiotherapy to determine personality characteristics which inhibit participation in and following the treatment plan. Otherwise, some patients will not fully follow-up their treatment plans due to personality problems.

Histrionic disorder was the most common personality disorder among the parents of MS patients while the most common personality characteristic was obsessive personality. Since environmental stressors have an important role in MS, histrionic personality disorder in parents leads to obsessive preoccupation with outside phenomena, thus creating an empty shell. In other words, limiting the emotions and cognitions of daily life due to this disorder leads to loss of opportunities for learning new behaviors and self-improvement. This limiting of learning opportunities means that people get stuck in a cycle of dependence on others and these numerous deprivations sometime lead to emotional disorders. Based on the desire of histrionic individuals for communication with others and their ambitious nature, it is possible for these individuals to suffer from chronic disorders. Furthermore, based on childhood experiences, children of these parents attempt to find methods to reduce feelings of dissatisfaction, worthlessness, and nonacceptance. One of these methods is for these

individuals to attempt self-consultation, believing themselves to be valuable and talented individuals. The final product of this process is people without self-esteem regarding their abilities who constantly seek attention and acceptance.^[36] One of the mentioned causes for histrionic personality is a strict father and a histrionic mother which can, along with other factors, lead to histrionic personality in their children. The reward people with histrionic personality receive for roleplaying instead of effectiveness means that they will always play a role and never attempt to expand their abilities. This also means that when faced with problems, these people attempt deceit instead of a brave response. Since participants showed good cooperation during interviews, they had a long history of self-made hurt and use of emotional tools. They also frequently use denial defense mechanism against negative emotions such as fear and anger and sexual desires.^[37]

In regards to the correlation between histrionic and Narcissistic personality patterns between patients and their parents, it is possible for these patterns to have been transferred to patients through their parents' parenting methods. The relevant literature mentions the relation between parenting method and personality characteristics of parents. Therefore, it can be said that parents facilitate the formation of certain personality patterns in their children through their personality characteristics and genetic background of their children. Studies have also shown that similar psychological disorders are more prevalent among biological relatives of patients which shows the effectiveness of genetic factors.^[24] MS can also be the reason for intensification of the symptoms of these personality disorders.

Conclusions

The current study showed that the highest scores belonged to histrionic personality characteristic and disorder in MS patients and histrionic personality disorder and obsessive characteristic in their parents. There was also a correlation between histrionic and narcissistic personality dimensions of patients and their parents.

Studying the personality patterns of patients and their parents can help better identify the problems and facilitate treatment. These results also have implications for education and improvement of mental health in MS patients. This helps the families of these patients to better adapt to their society and environment and reduces the changes of psychological conditions and disorders. The results of the current study can be used by physicians and counselors in various treatment centers. Knowing these effects also helps parents and caregivers of MS patients

to better understand their interactions and enables them to provide better and more empathic care for patients. This helps parents to better participate in personality management and can improve patients' responses to treatment.

It is worth mentioning that answering the questions was difficult for patients due to their weakened physical conditions. This limitation was somewhat fixed with the help of the researcher and by dividing the questions into several parts. One of the advantages of this study was the fact that patients were introduced to the researcher by neurologist specialist and fellowship of psychotherapy center.

Suggestions

Given the chronic and long treatment of MS, we suggest that a more comprehensive treatment plan to be used by treatment groups by considering biopsychological aspects of this condition.

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Conflicts of interest

There are no conflicts of interest.

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