Comparative study of self-concept, physical self-concept, and time perspective between the students with multiple sclerosis and healthy students in Shahrekord

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Abstract

Aim: To study difference in self-concept, physical self-concept, and time perspective between the students with multiple sclerosis (MS) and healthy students.

Material and Methods: The study population of this descriptive-correlational study consisted of the students living in Shahrekord of whom 200 people (100 males and 100 females) were selected by multistage cluster sampling. Data were collected by Sarasota's Self-concept Scale, Zimbardo Time Perspective Inventory, and a researcher-developed physical self-concept questionnaire.

Results: Patients' average scores on the subscales negative past, deterministic current, purposeful future, and transcendental future of the variable time perspective were higher than healthy students'. The average scores on the variable self-concept, the subscales physical, social, mood, academic, and rational of the variable physical self-concept, and the subscale positive past from the variable time perspective were significantly higher in healthy students than patients. Overall, there were significant and inverse correlations between self-concept, physical self-concept, and positive past, between self-concept and negative past, deterministic current, and hedonistic current as well as between physical self-concept and negative past, deterministic current, and transcen-

dental future. There were also significant and direct correlations between negative past, deterministic current, and hedonistic current as well as between self-concept and positive past, purposeful future, and transcendental future. In the patients, the females' scores on self-concept, purposeful future, and transcendental future were significantly higher than males', and males' scores on physical self-concept were significantly higher than females'. In healthy students, the average scores on self-concept, positive past, hedonistic current, and purposeful future were significantly higher in females than males.

Conclusion: Findings indicated that overall, the people with MS, compared to healthy people, have negative self-concept and self-concept as well as negative attitudes toward their own social relationships and moods. They also consider their intelligence and talent to be lower and more negative compared to those of healthy people, have negative attitudes toward their past, and consider their lives to be deterministic.

Key words: Multiple sclerosis, self-concept, physical self-concept, time perspective, Shahrekord students

Introduction

Multiple sclerosis (MS) is a debilitating neurological disorder that is presented with certain symptoms such as anxiety, weakness, and declined ability of solving problems, and leads to physical and mental disorders as well as neuromotor disorders. It is also a chronic and debilitating disorder of the nervous system that leads to the degeneration of the myelin of the central nervous system (brain and spinal cord) and subsequently the gradual loss of muscular strength (1,2). MS has many adverse physical, mental, and functional consequences and leads to different types of deprivation and change in lifestyle including dependency on others, sexual problems, lack of adjustment to new conditions and social attitudes, unemployment, change in familial duties and roles, and declined ability to achieve long-term purposes in life, anger, depression, anxiety, denial, lack of cooperation, stress due to physical complications, feeling of inefficiency and insufficiency, and fear of death (3-5). Besides that, MS has adverse economic consequences (6). Psychologists argue that the most common and important behavioral disorders are related to self (7). Self-concept includes coherence and unity between feelings, self-conscious and unconscious tendencies, understanding and recognition of identity, individual values and roles, physical existence, and how to understand one's self, mainly through social contacts with other people and experiences (8). Physical self-concept is a dimension of self and is considered a constituent of self-concept. This dimension consists of different aspects and is mainly concerned with one's perceptions of his/her own physical conditions or fitness (9). Studies have demonstrated that, if the people with chronic diseases have a positive self-concept, they adjust more efficiently, and if they are uncertain about their new identities, their self-esteem declines, which leads to nothing but negative self-concept (10,11). Time perspective is the "result of a process by which continuous currents of personal and social experiences are decomposed or assigned to time periods." (12). This can be influenced by chronic disease and lead to certain disorders in the affected individual (13).

Given the significance of MS and the effects of psychological factors on MS patients' physical and psychological conditions, we conducted this study to investigate difference in self-concept, physical self-concept, and time perspective between the students with MS and healthy students.

Materials and Methods

The study population of this correlational study consisted all patients with MS in Shahrekord in 2014-2015. Sample size was determined to be 200 (100 healthy students and 100 students with MS that had been filed by Shahrekord Multiple Sclerosis Association). Healthy samples were selected by multistage cluster random sampling and patient samples by nonrandom, convenience sampling. Questionnaires were given to the 200 participants, the significance of the study was explained to them, and they were asked to fill out the questionnaires as accurately as possible. Data were collected by Sarasota's Self-concept Scale, Zimbardo Time Perspective Inventory, and a researcher-developed physical self-concept questionnaire.

Sarasota's Self-concept Scale consists of 48 items to investigate six subscales: Physical, social, mood, academic, moral, and rational (each with eight items). The total score on self-concept is derived by summing the scores on the six subscales (14). The physical self-concept questionnaire used in the present study consisted of 10 four-choice items rated on a 4-point Likert scale (Never representing 4, a little representing 3, almost representing 2, and very much representing 1). The only exception is the item number 9 that is rated inversely. It is worth mentioning that the score on physical self-concept is derived by summing the items; the lower the respondent's score is, the lower level of physical self-concept he/she has and vice versa (15).

The validity of this questionnaire was investigated by content validity. For this purpose, the items were confirmed by a number of professors and psychologists after they were developed. For this questionnaire, Cronbach's alpha was derived 0.904 which is highly acceptable, in addition to wording the items accurately and giving necessary explanations to both questionnaire administrators and respondents.

Zimbardo Time Perspective Inventory, developed by Zimbardo and Boyd in 1999, consists of 66 items rated on a 5-point Likert scale ranging from Absolutely disagree to Absolutely agree. The items 9, 24, 25, 41, and 56 are rated inversely (12). After inversing the scores on these items, the scores on the items of each subscale are summed and then divided by the number of the respective items of that subscale. This inventory measures five time subscales, i.e. negative past, positive negative, deterministic current, hedonistic current and purposeful future.

Data analysis was conducted by descriptive statistics (mean, standard deviation, minimum, and maximum) and analytical statistics (t-test) in SPSS 16.

Results

Overall, 59% of the participants were female. Out of women, 60% had MS and 58% were healthy. Out of men, 40% had MS and 42% did not have. The mean age of the participants was approximately 25 years (standard deviation: 3.750, range: 19-35 years). Overall, 37.6% of the participants were studying in humanities, 28.4% in empirical sciences, 8.6% in mathematics and accounting, 6.1% in foreign languages, 6.1% in fine arts, and 13.2% in engineering courses. t-test was used to investigate the difference in self-concept and its subscales between the participants with MS and healthy ones (Table 1).

The average scores on self-concept and the subscales physical, social, mood, academic, and rational were significantly higher in healthy participants than the

Table 1. The results of independent t-test regarding difference in self-concept and its subscales between multiple sclerosis group and healthy group

Variables	Average scores		df	t-test	P value
	Control	Patient			
Self-concept	168.24	155.84	179.694	-4.671	<0.001
Physical subscale	30.10	26.32	198	-5.793	<0.001
Social subscale	28.88	26.06	192.948	-4.483	<0.001
Mood subscale	29.14	27.14	198	-3.430	0.001
Academic subscale	27.04	25.36	198	-2.229	0.027
Ethical subscale	29.60	29.17	198	-0.842	0.401
Rational subscale	23.48	21.79	173.829	-3.556	<0.001

Table 2. The results of independent t-test regarding difference in physical self-concept between multiple sclerosis group and healthy group

Variables	Average scores		df	t-test	P value
	Control	Patient			
Physical self-concept	37.02	31.25	174.570	-7.571	<0.001

Table 3. The results of independent t-test regarding difference in time perspective and its subscales between multiple sclerosis group and healthy group

Variables and their subscales	Average scores		df	t-test	P value
	Control	Patient			
Time perspective	211.76	228.35	174.774	6.075	<0.001
Negative past	29.40	36.73	182.189	7.019	<0.001
Positive past	30.24	27.85	198	-3.620	<0.001
Compulsivitism	26.42	31.52	198	6.053	<0.001
Epicureanism	50.54	51.04	198	0.484	0.629
Purposeful future	43.86	46.03	165.183	2.888	0.004
transcendental future	31.30	35.18	181.695	4.431	<0.001

participants with MS, indicating that healthy participants had better self-concept especially in terms of the above subscales. Because the significance level of t-test result on self-concept and its subscales was considered less than 0.05, this difference could not be accidental and was considered significant. In addition, there was not any significant difference in the moral subscale of self-concept between healthy participants and those with MS. This may indicate that the two groups had relatively similar concepts of moral values, and good and bad deeds (Table 1).

Independent t-test was used to investigate the difference in physical self-concept between the participants with MS and healthy ones (Table 2).

The average score on physical self-concept was higher in healthy group than the MS group. This finding indicated that healthy participants had better concepts of their appearances and bodies. Because this difference was significant at p<0.001, it was considered significant rather than accidental or by chance (Table 2). Independent t-test was used to investigate the difference in time perspective and its subscales between the participants with MS and healthy ones (Table 3).

The average score on total time perspective was significantly higher in MS group than healthy group (p<0.001). In addition, the average scores on the subscales negative past, deterministic current, purposeful future, and transcendental future were significantly higher in MS group than healthy group (p<0.05). This finding indicated that the participants with MS had more negative attitudes toward their past, had deterministic attitudes toward life, and made greater effort to achieve success.

In addition, the average score on the subscale positive past was significantly higher in healthy participants (p<0.001). This finding indicated that healthy participants were more optimist about their past. There was no significant difference in hedonistic current between the two groups.

Besides that, negative past and transcendental future were significantly and inversely correlated with physical self-concept in MS group, i.e. the more negative attitude toward the past one had, the more positive and optimist attitude toward his/her own body he/she had; and the more transcendental attitude toward the future one had, the more negative attitude toward his/her own body he/she had. The subscales positive past, deterministic current, hedonistic current, and purposeful future were not significantly correlated. In healthy group, negative past and hedonistic current were significantly and inversely correlated with physical self-concept. This indicated that the more negative attitude toward the past one had and the more he/she enjoyed the current time (risk taking, not considering the consequences of an action, etc.), the less positive attitude toward his/her own body he/she had.

Discussion

Overall, self-concept and all of its subscales were significantly and inversely correlated with negative past in MS group and all participants. This indicates that the higher and more positive self-concept and its subscales (physical, social, mood, academic, moral, and rational) one has, the less negative attitudes toward the past he/she has. In addition, in healthy group, the subscales academic and rational were not significantly correlated with negative past but were significantly correlated with the variable self-concept; and the subscales physical, social, mood, and moral were significantly and inversely correlated with negative past, i.e. the more positive attitudes toward one's own appearance, social relationships, mood, and moral values one has, the less negative attitude toward the past he/she has. In addition, self-concept and its subscales physical, mood, academic, moral, and rational were significantly and directly correlated with positive past in MS group. In other words, in this group, the higher the self-concept and its subscales were, the more positive the attitudes toward the past were. Besides that, self-concept and its subscales physical, mood, academic, moral, and rational were significantly and inversely correlated in MS group.

Results showed that self concept and the subscales mood, academic, moral, and rational were significantly and directly correlated with transcendental future in MS group. More clearly, the higher self-concept one has and the more aware of his/her own mood, moral values, intelligence, and talent he/she is, the more transcendental future he/she assumes for himself/herself.

In our study, the scores on variable self-concept and its subscales physical, social, mood, academic, and rational, the variable physical self-concept, and the positive past subscale of time perspective variable were significantly higher in healthy group than MS group.

Overall, MS challenges the cognitive structure and certain psychological domains in the patients (16), and declines many self-related domains such as self-esteem and self-acceptance (17). It is worth mentioning that self-related domains are interrelated in MS and change in one of them influences other domains as well (18). It has been reported that relationship quality and self-concept are significantly and directly correlated with illness acceptance (19). Regarding physical self-concept, the study of Barak et al. showed that lack of appropriate understanding of the body in MS patients can be seen even in remission (20). The study of Pfaffenberger et al. showed that physical self-concept in MS patients declined, which was influenced by gender (21).

The findings on MS group showed that the average scores on total time perspective and the subscales positive past, deterministic current, hedonistic current, purposeful future, and transcendental future were higher in females than males. In addition, in healthy group, the average scores on total time perspective and the subscales negative past, positive past, hedonistic current, purposeful future, and transcendental future were higher in females than males. Findings on MS group also showed that the variable self-concept and physical self-concept were significantly and inversely correlated with age. More clearly, positive self-concept and physical self-concept declined with increasing age. In addition, positive past was significantly and directly correlated with age; therefore, attitudes toward the past became more negative with increasing age. Time perspective is considered one of the important psychosocial factors that are effective on psychological distress in MS patients (13). A study with MS patients showed that they were ready to assess and to prepare for possible adverse outcomes of the illness. They also made attempt to use available resources for their own and loved ones' future in the most efficient manner (22). Any change in one's physical self-concept seriously disrupts his/her equilibrium. Such changes can be due to illness, accidents, or developmental changes in the structures and functions of the body's organs. Psychological self or personal identity is composed of perceptual, cognitive, and emotional perceptions that one has about himself/herself, and sexual identity is also a part of the overall sense of a person's identity and a picture that one perceives of himself/herself as a man or woman. Social self is defined by the roles that one agrees to do.

Conclusion

Findings indicated the average scores on self-concept and its subscales physical, social, mood, academic, and rational, the variable physical self-concept, and the subscale positive past of the variable time perspective were higher in healthy group than control group. Besides that, self-concept was significantly and inversely correlated with physical self-concept and positive past, self-concept was significantly and inversely correlated with negative past, deterministic current, and hedonistic current, and physical self-concept was significantly and inversely correlated with negative past, deterministic current, purposeful future, and transcendental future. In MS group, self-concept, purposeful future, and transcendental future were significantly higher in females than males; and physical self-concept was significantly higher in males than females.

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