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Prediction of Resiliency on the Basis of Social Support in Patients With Multiple Sclerosis

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Background: Multiple sclerosis (MS) is a chronic inflammatory disease that affects the nervous system and predominantly occurs in women between 20 to 40 years old. Various geographical, familial, genetic, environmental factors, and factors involved in the immune system and infections in childhood are involved in this disease. Motor, sensory, balance, vision, and sphincter systems are affected by MS; therefore, it is a major negative event in the life that will have adverse effects on health and social life. Social support is one of the factors involved in the resiliency of these patients.
Objectives: The purpose of this study was to predict resiliency on the basis of social support in patients with MS.
Patients and Methods: In this descriptive study, 108 patients with MS were selected in Farshchian Hospital of Hamadan. Data were collected by Connor-Davidson Resilience Scale (CD-RISC) and Social Support Appraisals (SS-A) questionnaire. Data analyses were conducted by SPSS in two descriptive and regression statistical levels.
Results: There was a significant association between social support and resiliency. Moreover, there was a strong and positive association between social support and resiliency ($r = 0.449$, $P < 0.01$); therefore, the association was significant and the higher the total amount of social support of patients with MS is the higher the level their resiliency would be.
Conclusions: Components of social support, totally account for 19% of resiliency variance value of patient; the components of social support, family, friends, and other people's support at only had lower contribution in predicting resiliency. Support of this group of people to increase their resiliency seems necessary.

Keywords: Multiple Sclerosis; Questionnaires; Patients

1. Background

Multiple sclerosis (MS), also known as disseminated sclerosis or encephalomyelitis disseminate, is an inflammatory disease in which the insulating covers of nerve cells in the brain and spinal cord are damaged with the loss of the myelin sheath of nerves in the brain in areas as small patches (plaques). MS is characterized by disturbances in the transmission of nerve impulses. This damage disrupts the ability of parts of the nervous system to communicate, resulting in a wide range of signs and symptoms (1). Probably the virus enters the body before the age of 15 and after an incubation period of several years, the disease usually begins between the ages of 20 and 50 and is twice as common in women as in men. The reason of more prevalence of this disease in woman might be related to sex hormones, especially in women who are at an age when hormones are most active (2). Types of MS are relapsing-remitting, secondary progressive, primary progressive, and progressive relapsing (3). MS is the most common neurologic disorder in young adults and depending on geographical region, the incidence of the disease is between 3.5% and 47%. The most extensively damaged area in MS is white matter of the brain. Since there are many pathways of controlling the function of various systems of the body in the white matter of the brain, the symptoms of this disease are quite various. For example, if the destruction of the myelin sheath occurs in the part of the brain, the memory, thinking, and feeling of the individual may be affected. If the plaques are developed in the cerebellum, the person will lose his balance and he will have difficulty in movement. If myelin membrane gets destroyed in different parts of the spinal cord, it may prevent the transfer of cerebral messages to the down and the individual cannot have any control on his hand or foot. Life expectancy is on average five to 10 years lower than that of the unaffected population (4). Because MS has no definitive treatment, the patients should adapt and comply themselves with this chronic disease in order to be able to perform their duties and responsibilities (5). One of the variables affecting this conformity and harmony, which has been considered in recent years and studied by positive psychology, is resiliency that refers to dynamic process of positive adaptation with grim experiences (6). Resiliency and adaptability process successfully

deal with life-threatening situation or a challenging and emotional recovery with positive affective and cognitive outcomes (7). Resiliency is not only stability against injuries or threatening conditions and it is not passive in the face of dangerous conditions, but it is the active and creative participation of individuals in their surrounding environment and includes the ability of individuals in establishing biologic and psychology when faced with a dangerous situation (8). The studies showed that high levels of resiliency help the individual to use positive emotions and excitement to leave behind the unpleasant experience and return to the desired situation. As if the person is an elastic cord tied to one of the problems helps when things were bad, they back up (9). One of the psychologic concepts that have been recently raised by scientists of Educational Sciences is social support. Researchers' findings have shown that perception of social support may prevent the occurrence of the adverse physiologic effects of the disease on a person, increase the self-care and self-confidence of the individual, positively influence the physical, psychologic, and social situation of the individual, and obviously increase the performance of the individual (10). Studies have emphasized on moderating role of social support on stress; results showed that people with high social support and fewer interpersonal conflicts had more resistance in dealing with stressful life events and therefore, they had fewer symptoms of depression or psychologic distress (11).

2. Objectives

Due to the lack of definitive treatment and the need for adaptation and coordination of patients with chronic disease, we measured the effect of social support on resiliency in patients with MS.

3. Patients and Methods

In terms of objective, the present study is applied study. The research method was quantitative in nature and descriptive correlation in terms of data collection. The statistical population of the present study consists of 1136 patients with MS in Hamadan City. The number of study subjects was 108 collected by convenient sampling. The questionnaires were administered on an individual basis. The questions were explained for illiterate people or people with low education level. Data collection tools included the followings:

1) Social Support Scale (SS-A): This scale has been prepared by Vaux, Phillips, Holly, Thompson, Williams, and Stewart in 1986 and its theoretical structure is based on the definition of Cobb on social support (12). This scale has 23 items that considers the three areas of family, friends, and others. The scoring of this scale is based on a four-point scoring of answers, i.e. highly agree, agree, disagree, and highly disagree, which are scored consecutively from 4 to 1. Scores of 3, 10, 13, 21, and 22 are inversely scored.

2) Connor-Davidson Resilience Scale (CD-RISC): This questionnaire was prepared by Connor and Davidson, who reviewed the research resources of 1979 and 1991 in the field of resiliency (8). This is a 25-item instrument that measures resiliency in five-point Likert scale from zero to four. The minimum score of resiliency of subjects in this scale is zero and the maximum score is hundred.

4. Results

Participants included 108 individuals aged 14 to 51 years. Approximately 60% of patients were married and 40% were single. Age of 40 patients (37%) ranged from 23 to 31 years, 36 (33%) ranged from 32 to 40 years, 21 (19%) ranged from 41 to 51 years, and 11 (10%) ranged from 14 to 22 years. Education level was bachelor in 29%, diploma in 23%, middle school degree in 20%, associate degree in 10%, elementary school degree in 8%, Master's Degree in 6%, illiterate and educational level in 2%, and PhD degree in 2% of patients. According to Table 1 25% questions were used to measure resiliency. The mean of resiliency scores in the studied population was 58 ± 17 (range, 18 - 93) and the resiliency scores of more than half of respondents laid between 41 and 75.

Information of Table 2 shows that among the components of social support, "others' support" and "family support" with the weighted average score of 2.94 were the strongest components and "friends support" with an average score of 85.2 was the weakest component of social support. The score of total mean of cognitive distortions was 66.98, which was higher than the expected average of 46. Pearson correlation coefficients show a strong and positive correlation of 0.45between the "total social support" and "resiliency" ($r = 0.449$, $P < 0.01$) (Table 3); therefore the association was significant and in other words, the higher was the total amount of social support, the higher would be the level of their resiliency. None of the components of perceived social support including family support ($\beta = 0.159$, $P < 0.05$), the support of friends ($\beta = 0.052$, $P < 0.05$), and support by others ($\beta = 0.285$, $P < 0.05$), alone and regardless of other components, had a unique and significant contribution to the prediction of the patients resiliency due to the t value > 0.05 in each of them (Table 4). However, the sum of these components, i.e. total perceived social support, could predict the patient's resiliency. Table 4 shows the results of the univariate regression analysis in which total perceived social support has been considered as a predictive variable. According to Table 5, total perceived social support has positive and significant effect on increasing resiliency of patients. This variable affects the increase of resiliency of patients with equal 0.45 ($\beta = 0.449$, $P < 0.01$).Therefore, based on the data in Table 5, in order to predict the level of resiliency of patients with MS on the basis of perceived social support, the regression equation can be written as follows:

(1) Resiliency of patients with MS on the basis of the total perceived social support = (score of perceived social support × 0.66 + 14.12)

Table 1. Descriptive Statistics of Resiliency Scores

Variable	Number of Questions	Range of Scores	Mean ± SD
Resiliency	25	18 - 93	58.01 ± 16.64

Table 2. Descriptive Statistics of the Scores of Social Support and its Components

Components	Number of Questions	Range of Scores	Mean ± SD	Weighted Average
Social Support				
Others' Support	8	14 - 31	23.52 ± 3.88	2.94
Family Support	8	8 - 32	23.50 ± 5.23	2.94
Friends Support	7	11 - 28	19.96 ± 3.85	2.85
Total Social Support	23	41 - 90	66.98 ± 11.40	2.91

Table 3. Results of Pearson Correlation Coefficients for Studying the Association Between Social Support and Resiliency (n = 108)

Variables	Mean ± SD	r	P Value
Social Support	66.98 ± 11.40	0.449 [a]	0.001
Resiliency	58.01 ± 16.64	0.449 [a]	0.001

[a] $P < 0.01$.

Table 4. Beta Coefficients to Identify the Effect of Each of the Components of Social Support on Resiliency [a]

	B	SE [b]	Beta	t	P Value
Fixed Amount	12.781	9.228	-	1.385	0.169
Family Support	0.506	0.444	0.159	1.140	0.257
Friends Support	0.226	0.502	0.052	0.451	0.653
Others' Support	1.226	0.679	0.285	1.806	0.074

[a] Predictive variable, the components of perceived social support; Criterion variable, Resiliency.
[b] Standard error.

Table 5. Beta Coefficients to Identify the Impact of Each of the Components of Social Support on Resiliency [a]

Variables	B	SE [b]	Beta	t	P value
Fixed amount	14.1222	9.228	-	3.641	0.001
Total Social Support	0.655	0.127	0.449	5.172	0.001

[a] Predictive variables, the components of perceived social support; Criterion variables, Resiliency.
[b] Standard error.

5. Discussion

The purpose of the present study, is to predict resiliency on the basis of social support in patients with MS, the proposed model is based on the assumption that there is a significant association between social support and resiliency in patients with MS. Given that the significant level of obtained correlation in this study was < 0.01 ($r = 0.449$, $P < 0.01$), the higher the total amount of social support of patients with MS is, the higher the level of their resiliency will be. Studies conducted on the individuals who have high resiliency have shown that resiliency is as a protecting mediator variable that protects individuals against difficult circumstances. Therefore high resiliency can reduce the negative effects of stress on health. In this study, patients with MS who had social support reported higher resiliency. Chan et al. showed that the hypothesis that perceived social support can positively influence the physical, psychologic, and social situation and obviously enhances the performance of the individual (10). According to the study by Krokavcova et al. and Dennison et al. social support can be increase adaptation in people with MS (13, 14). Hadavand Khani et al. suggested a positive correlation between the hardiness, social support, and mental health. They stated a significant positive correlation between hardiness, mental health, and social support in women with MS. In other words, a woman with MS with higher hardiness is likely to has a better mental health (15). Schroevers et al. found that social support resources can play a definite role in the adaptive process, specificity

with life crises such as chronic diseases (16). In a research on the relationship between social support and quality of life in patients with MS, Ghasemi and Nazari found a direct association between group membership and network with quality of life. People with higher quality of life were more involved in social relationships (17). Components of social support account for 19% of resiliency variance value of patient; however, each of the components of social support, i.e. family, friends, and other people's support had lower contribution in predicting resiliency. Support of this group of people to increase the patient's resiliency seems necessary.

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