

Relationship between Social Support, Time Perspective and Suicide Ideations in Patients with Multiple Sclerosis

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Abstract

Introduction: Patients with Multiple Sclerosis (MS) are at risk for Suicide Ideation (SI). The relationship between Social Support (SS) and Time Perspective (TP) with SI is important among patients with MS. This study was performed to determine the prevalence of SI and the correlation between SS and TP with SI in Iranian patients with MS in Nahavand and Malayer.

Methods: Using a cross-sectional analytic research design, we selected 79 participants among patients with MS in Nahavand and Malayer, Iran. Beck Scale for Suicidal Ideation, Multidimensional Scale of Perceived Social Support and Zimbardo's Time Perspective Inventory were used for collecting the data.

Results: The obtained results indicated that 30.3% of the patients with MS suffered from SI. There was a negative correlation between SS (from family, friends and significant other), Past Positive (PP) and Future (F) orientations and a positive correlation between Past Negative (PN) orientation and SI; SS from significant other and PP negatively predicted the SI in patients with MS.

Conclusion: Based on the obtained results, the relationship between SS, PN, PP, F and SI and the role of SS from significant other and PP in predicting the SI in Nahavand and Malayer patients with MS were confirmed. Thus, it is necessary to develop support systems and apply the TP-based treatments for patients with MS who are at risk for SI.

Keywords: suicide ideation, social support, time perspective, multiple sclerosis

1. Introduction

Multiple Sclerosis (MS) is an autoimmune disease of the central nervous system that results in demyelination and axonal degeneration. Individuals with MS suffer from many symptoms related to the neuronal tissue damage, such as visual loss, weakness, imbalance, change in sensation, movement disorders, bladder or bowel dysfunction, depression, and cognitive problems (Miller, Karpinski, & Jezewski, 2012). It affects approximately 2.5 million of people worldwide (Serafini, Pompili, Forte, Amore, & Girard, 2014). According to Bakhshani (2010), the prevalence of MS is about 15 to 30 cases per 100 thousand people in Iran (cited by Amirfakhraei, Babaei, & Zakipoor, 2015).

The cause of MS is still poorly understood and its treatment is a huge challenge (Rao, Huber, & Bornstein, 1992). Many secondary consequences of the MS, are fatigue (Bergamaschi, Romani, Versino, Poli, & Cosi, 1997; Strober & Arnett, 2005), depression (Minden & Schiffer, 1990; Sadovnik et al., 1996; Patten, Beck, Williams, Barbui, & Metz, 2003; Solari et al., 2004; Dahl, Stordal, Lydersen, & Midgard, 2009; Kang, Chen, & Lin, 2010; Dehghan & Memarian, 2013; Sarisoy, Terzi, Gümüş, & Pazvantoglu, 2013), sleep disturbance (Clark et al., 1992; Lobentanz et al., 2004; Razazian, Najafi, Mahdavi, & Aghaei, 2014) and anxiety (Shabani, Attari Moghadam, Leily Panaghi, & Seddigh, 2007; Dahl et al., 2009; Dehghan & Memarian, 2013). It is believed that suicide ideation (SI) and suicidal behavior occur more frequently in MS patients compared to the general population. The risk of suicide in patients with MS is more than general population in Denmark (Brønnum-Hansen, Stenager, Nylev Stenager, & Koch-Henriksen, 2005; Giannini et al., 2010). The proportion of death by suicide among

patients with MS is 7.5 times higher than for the general population in Canada (Sadovnick, Eisen, Ebers, & Paty, 1991). De Cerqueira et al. (2015) indicated that 8.3% of the MS patients had a past history of attempted suicide, and 8.3% had a current suicide risk. In the study of Askey-Jones, Silber, Shaw, Gray & David (2012), 16% of MS patients had made suicidal plans.

SI is one of the psychological problems associated with the risk of suicide in MS patients. It refers to self-reported thoughts of carrying out suicide-related behavior and includes thoughts and cognitions about suicidal behaviors (O'Carroll et al., 1996). Feinstein (2002) showed that depression, alcohol abuse, and social isolation are important factors related to SI and suicide attempts in patients with MS. In their study, the rate of SI and past suicide attempts was 28.6% and 6.4%, respectively. According to a review, most studies have documented a higher suicide rate in patients with MS compared to the general population (Pompili et al., 2012). A few studies have been carried out about the prevalence of SI in MS patients; for example, 22.1% of MS patients in Canada (Viner, Patten, Berzins, Bulloch, & Fiest, 2014) and 29.4% in northwestern United States (Turner et al., 2006) had SI. Other studies have pointed to SI among MS patients in Brazil (Fragoso et al., 2010) and Saudi Arabia (Alamri & Al-Busaidi, 2016).

Social Support (SS) is "the number of social relationships an individual has (structural support) and the quality of the resources that these relationships provide (functional support)" (Helgeson, 2003). Individuals with few SS resources are more vulnerable to stressors and tend to suffer from physical and psychological health problems (Boscarino, 1995). People with SI reported less support from their family and friends (Endo et al., 2014). Also, lower social interaction patterns and lower perceived SS were significantly related to SI in older adults (Rowe, Conwell, Schulberg, & Bruce, 2006). SS was related to quality of life (Jaracz et al., 2010; Costa, Sá, & Calheiros, 2012), resiliency (Golzari Movaghar, Aslani, Mazdeh, 2015) and depression (Bambara, Turner, Williams, & Haselkorn, 2014; Suh, Weikert, Dlugonski, Sandroff, & Motl, 2012; Beckner, Howard, Vella, & Mohr 2010) in MS patients.

The literature shows that the social isolation is increased risk for suicide in neurologic illness (Arciniegas & Anderson, 2002) and lower SS has been recognized as a risk factors for suicide in epilepsy patients (Hećimović & Popović, 2014). Lower SS was associated with SI in MS patients (Turner, Williams, Bowen, Kivlahan, & Haselkorn, 2006). Also, live alone was significantly predicted the suicidal intent in these patients (Feinstein, 2002).

Time perspective (TP) is "a fundamental dimension in the construction of psychology that emerges from the cognitive processes that partitions the human experience into past, present and the future" (Zimbardo & Boyd, 1999). According to Lewin (1951) TP is "the totality of the individual's views of psychological future and psychological past existing at a given time." (p. 75, cited in Zimbardo & Boyd, 1999). Five dimensions of TP are Past Negative (PN) [a pessimistic and aversive attitude towards the past], Past Positive (PP) [positive construction of the past], Present Hedonistic (PH) [orientation towards enjoyment and pleasure in the present], Present Fatalistic (PF) [hopeless, nihilistic attitude towards life] and Future (F) [planning for and achievement of future goals] (Bonniwell & Zimbardo, 2004). The literature shows that PH positively correlates with social connectivity (Zimbardo & Boyd, 2008); PN positively associates with neuroticism (Zhang et al., 2011), anxiety and depression (Zimbardo & Boyd, 1999) and negatively with happiness (Drake, Duncan, Sutherland, Abernethy, & Henry, 2008; Zhang, Howell, & Stolarski, 2012), social concordance (van Beek et al., 2010) and life satisfaction (Zhang et al., 2011; Zhang et al., 2012); PP positively associates with life satisfaction (Zhang et al., 2011; Zhang et al., 2012), social concordance (van Beek, Berghuis, Kerkhof, & Beekman 2010) and happiness (Drake et al., 2008; Zhang et al., 2012). The PF correlates positively with depression and anxiety and negatively with consideration of future outcomes (Zimbardo & Boyd, 1999) and social concordance (van Beek et al., 2010).

According to van Beek et al. (2010), NP and PF positively correlate to suicidality; but the correlation between PP and F with suicidality was negative. Future thinking (a component of future time perspective) moderates the impact of depressive symptoms on suicide preparation among high-risk students (Chin & Holden, 2013). Also, literature shows that people with severe SI significantly achieved higher scores on NP and PF than people without SI and people with severe SI compared to moderate obtained meaningfully lower scores on F and PH (Laghi, Baiocco, D'Alessio, & Gurrieri, 2009). Ariapooran and Amirimanesh (2014) indicated that PP, PH and F were negatively and PN and PF positively correlated to SI in female students with love failures.

This study was conducted to determine the prevalence of SI and the relationship between SS, TP and SI in Iranian patients with MS. Research about the prevalence of SI and variables related to SI of patients with MS is essential. Also, research has given insufficient attention to the role of TP in SI of MS patients; furthermore, predictive role of TP in SI can play an important role in highlighting the trainings based on TP for patients with

MS who suffer from SI. According to somatic and psychological symptoms of MS, SS systems in patients with MS are very important and its predictive role on SI can help researchers, psychologists, counselors and families to provide and improve the quality of SS systems in these patients.

2. Materials and Methods

2.1 Procedures

A correlational descriptive survey was used to investigate the prevalence of SI in patients with MS and the relationships of SS, TP and SI. In the present study, SS, TP were considered as predictive variables and the SI as criterion variable. This research lasted for four months starting from the beginning of 2015 in Nahavand and Malayer, Iran.

The population of the current study consisted of all female and male patients with MS in Nahavand and Malayer, Iran (N=88). We selected all patients as sample by convenience sampling method. Inclusion criteria were: having a medical file, age up 20, high school educational level, no history of hospitalization due to psychological problems, and no menstrual cycle in females. Some of patients were invited by phone calling to hospitals that they had medical files in them. The others participated in research in clinics of neurologists in Nahavand and Malayer. Nine patients were excluded from the sample. Three of them did not fill out the scales completely and 6 patients did not refer to hospitals for filling the questionnaires. Finally, our study sample consisted of 79 (55.7% female and 44.3% male) patients with MS. 64.6% of participants were employed and 35.4% unemployed; 75.9% were married and 24.1% single; 38.0% of individuals were under diploma, 40.5% diploma, 5% undergraduate and 16.5% had college education. Their mean age was 37.38 years old (SD=9.44) and the mean for duration of MS disease was 6.09 years (SD=4.69). The participants signed the informed consent sheets, and filled out the scales; they spent approximately 35-45 min filling out the scales.

In this study, the following instruments were used for data collection:

1). Beck Scale for Suicidal Ideation: Beck's Scale for SI measures the intensity of SI with 19 items; each item rated from 0 to 2. Total scores on the BSS can thus range from 0 to 38 points, with higher scores indicating greater levels of suicidality (Beck AT, Steer, 1991). In some previous studies on adult suicidality a score of 6 or more has been used as a cutoff threshold for clinically significant SI (e.g. Sokero et al., 2003). Anisi et al., performed semantic, technical, and criterion equivalence by translating and back translating the instrument into Persian and Concurrent validity of the scale with the General Health Questionnaire has been reported 0.76 And reliability using Cronbach's alpha is calculated 0.95 (Anisi, Fathie Ashtiani, Salimi, & Ahmadinodeh, 2005). In the present study the Cronbach alpha values for this scale was 0.82.

2). Multidimensional Scale of Perceived Social Support (MSPSS): The MSPSS is a 12-item self-report screening instrument designed to perceive SS from three sources of individuals' social lives: family, friends, and significant others (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS makes use of a 7-point Likert-type scale for its measurements, with ratings from "1=very strongly disagree" to "7=very strongly agree." The range of possible scores is 12 to 84. The Cronbach's coefficient alpha values were 0.91, 0.87, and 0.85 for significant other, family, and friends' subscales, respectively (Zimet et al., 1988). After translation of this scale by ariapooran (2013), has been recognized three dimensional scales (SS from family, friends and any significant person to them); the range of the Loadings was 0.71 to 0.85. The literature shows that MSPSS was negatively related to Social-Emotional Loneliness Scale for Adults-Short form of Ditommaso and Spinner (Salimi, Javkar, & Nikpoor, 2008). The Cronbach alpha values in Ariapooran (2013) study, were 0.91, 0.83 and 0.86 for the significant other, family and friend's subscales, respectively. In the present study the Cronbach alpha values for all items was 0.88.

3). Zimbardo's Time Perspective Inventory (ZTPI): ZTPI is composed of 56 items. People indicate on a 5-point Likert scale ("1=very untrue of me" to "7=very true of me") to what extent a statement applies to them. The ZTPI consist of five factors: PN (10 items), PH (15 items), PP (9 items), PF (9 items) and F (13 items). The Cronbach alpha values for these five factors were 0.82, 0.79, 0.80, 0.74 and 0.77, respectively. Psychometric properties of the five ZTPI scales were satisfactory (Cronbach's alphas ranging from 0.710 to 0.845) in university students of Greek (Anagnostopoulos & Griva, 2012). The Cronbach alpha values for all Items was 0.74 in Iran (Ariapooran, 2014). In the present study the Cronbach alpha values for PN, PH, PP, PF and F were 0.73, 0.81, 0.79, 0.70 and 0.76, respectively.

2.2 Data Analysis

All analyses were performed using SPSS, version 22. In this study, the SS and TP were specified as predictive variables and SI as the criterion one. The Pearson correlation coefficient was conducted to examine the

association between SS, TP and SI. Regression analysis with Enter method was used for predicting the SI by SS and TP. P values of 0.05 or less were interpreted as statistically significant.

3. Results

The prevalence of the SI in patients with MS is presented in Table 1. In the present study, self-reported scale of SI was used as instrument for measuring the rate of SI. According to previous studies a score of 6 or more in Beck Scale for SI has been used as a cutoff threshold for clinically significant SI (e.g. Sokero et al., 2003); in the present study, we used this cutoff threshold for selecting patients who are at risk of SI. Therefore 30.4% of the patients had clinically SI in the present study; their scores were higher than 6 in SI scale. The mean for duration of disease was 5.16 years (SD=6.05).

Table 1. Prevalence of SI in patients with MS

Patients with MS	N	%
Patients with scores higher than 6 in SI scale	24	30.3%
Patients with scores lower than 6 in SI scale	55	69.7%
All patients	79	100%

The results of Pierson correlation are displayed in Table 2. Results indicated that SS ($r=-0.398$; $P=0.001$), SS from family ($r=-0.25$; $P=0.026$), friends ($r=-0.262$; $P=0.02$) and significant other ($r=-0.278$; $P=0.01$) negatively correlated to SI in patients with MS. Also, PP ($r=-0.382$; $P=0.001$) and F ($r=-0.309$; $P=0.006$) negatively and PN ($r=0.30$; $P=0.01$) positively correlated to SI. But the relationship between PH and PF with SI wasn't meaningful.

Table 2. Mean (M), Standard Deviation (SD) of variables and summary of Pierson correlations of TP, SS and SI scores

Prediction Variables	M(SD)	Criterion Variable (SI)	
		r	Sig.(p)
SS from family	13.53(2.60)	-0.25	0.026
SS from friends	13.04(1.79)	-0.262	0.02
SS from significant other	13.45(2.29)	-0.278	0.013
SS	40.02(4.41)	-0.398	0.001
PN	12.49(1.98)	0.30	0.007
PP	29.11(5.58)	-0.382	0.001
PH	21.81(7.89)	-0.072	0.527
PF	20.72(7.47)	0.035	0.761
F	35.60(7.09)	-0.309	0.006
SI	5.16(6.05)	-	-

The results of regression are provided in Table 3. Multiple regression analysis by Enter method was used to test the role of SS and TP dimensions in predicting the scores of SI in patients with MS. The regression model was significant ($F=9.466$, $P=0.001$). According to Adjusted R Square, the model accounts for 32% of variance in SI. It was found that SS from significant others ($\beta=-0.229$, $P=0.02$) and PP ($\beta=0.354$, $P=0.001$) significantly predicted SI scores.

Table 3. Summary of regression analysis with enter method for SI scores by TP and SS dimensions

Prediction variables	B	SE	β	t	Sig.(p)
SS from family	-0.424	0.219	-0.184	-1.936	0.057
SS from friends	-0.640	0.335	-0.190	-1.909	0.060
SS from significant other	-0.601	0.258	-0.229	-2.323	0.023
PN	0.516	0.336	0.170	1.536	0.129
PP	-0.381	0.104	-0.354	-3.657	0.001
F	-0.082	0.094	-0.097	-0.881	0.381

4. Discussion

The present study confirmed the prevalence of the SI and the role of TP and the relationship between SS, TP and SI in Iranian patients with MS. According to the cut-off point above 6 for SI scale, the data indicated that 30.3% of patients suffered from clinically significant SI. Previous researches have indicated that 15% (Dickstein et al., 2015), 22.1% (Viner et al., 2014) and 29.4% (Turner et al., 2006) of patients with MS suffered from SI.

Patients with MS suffer from many physical and psychological problems such as visual problems, debility, imbalance, movement disorders, bladder or bowel dysfunction (Miler et al., 2012), fatigue (Bergamaschi et al., 1997; Strober & Arnett, 2005), depression (Minden & Schiffer, 1990; Sadovnik et al., 1996; Patten et al., 2003; Solari et al., 2004; Dahl et al., 2009; Kang et al., 2010; Dehghan et al., 2013; Sarisoy et al., 2013), and sleep disturbance (Clark et al., 1992; Lobentanz et al., 2004; Razazian et al., 2014). Accordingly, these problems can lead to concerns about health in them and these concerns are likely to cause negative thoughts such as suicide thoughts. In other words, MS patients' elevated worry was associated with fatigue, sleep disturbance, problem-solving deficits, pain, and disability status (Bruce JM, Arnett P, 2009) and this worry can excite high risk thoughts especially SI in them.

In our study, the rate of SI in MS patients is somewhat greater than previous researches. The reason is likely that we used self-reported scale for assessing the SI and answers to the questionnaire accompanied with bias in participants.

According to the results of the study, there is an inverse relationship between SS (from family, friends and significant other) and SI in people with MS; regression analysis showed that among dimensions of SS, only the negative role of SS from significant other was confirmed. Similar research has shown that lower SS was associated with SI (Turner et al., 2006) and live alone was significantly predicted the suicidal intent in MS patients (Feinstein, 2002). Also, research indicated that people who suffered from SI reported low SS from their family and friends (Endo et al., 2014; Rowe et al., 2006). Researchers have showed that a higher level of perceived SS was correlated to lower levels of SI (Ekramzadeh et al., 2012).

High SS creates opportunities for people to discuss about stressful life events and reduce the pressures caused by these events and help people to highlight the positive aspects of their life (Janoff-Bulman, 1999). Therefore, if patients with MS have the proper SS from family, friends and significant other, negative thoughts such as SI are probably reduced. Because, SS can decrease the feelings of loneliness and hopelessness, help the person recognize and evaluate stressors, and identify solutions to overcome stress (Orth-Gomer, 2000). In other words, researchers have also found that poor perceived SS may lead to depression (Meeks, Vahia, Lavretsky, Kulkarni, & Jeste, 2011) and depression is one of the risk factor of SI in patients with MS (Turner et al., 2006). The reason is that depression can decrease the functional level of patients, thereby increasing their level of disability (Feinstein, 2004). Therefore, decreasing in functional level, disability and poor levels of SS can likely led to SI in patient with MS.

In regression model, SS from significant other was the strongest predictor among SS dimensions for SI in patients with MS. In this regard, we can say that the most important people in life including physician, nurse and significant others can play important role in providing emotional and tangible support for patients with MS. Therefore, in our study, these individuals can have a major contribution in decreasing the SI in them.

The results indicated that PP and F negatively and PN positively correlated to SI in patients with MS. But there wasn't meaningful relationship between PH and PF with SI. According to regression analysis, among TP dimensions only the negative role of PP in predicting the SI was approved. Prior to this study, the relationship between TP and its dimensions with SI in patients with MS had not received necessary attention. But, among other samples the positive correlations between PN and PF and negative associations between PP and F with suicidality were approved (Beek & Steer, 2010). Also, these findings are consistent with previous findings (Laghi et al., 2009; Ariapooran and Amirmanesh, 2014). In Laghi et al. (2009) study, high school students with severe SI achieved higher scores on NP and FP and in Ariapooran and Amirmanesh (2014) research, the meaningful correlation between TP dimensions and SI in female students with love breakdown has been confirmed.

A person with a PP orientation can positively reassess the situation and accept responsibility for an existing problem (Bolotova & Hachaturova, 2013); he/she used cognitive and behavioral coping strategies (Bolotova & Hachaturova, 2013). People oriented to the F are disposed to think about and control all aspects of a difficult situation (Brissette & colleagues, 2002). Therefore, MS patients with PP and F can probably select positive coping strategies in dealing with disabilities caused by their disease, and these copings can help them to reduce their SI. But, people with PN tend to blame themselves for their failures and to deny their achievements (Laghi et

al., 2009); they used emotional coping strategies (Bolotova & Hachaturova, 2013). Hence, MS patients with this PN orientation may ignore positive aspects of life and negative thoughts (such as SI) arise in them. In other words, it can be said that perhaps one of the reasons for SI in MS patients with PN orientation, is using the emotional coping strategies among them.

In regression model, among the dimensions of TP the PP was the strongest predictor of SI in patients with MS. This dimension contains a warm, sentimental, nostalgic, and positive construction of the past. It was positively correlated with self-esteem (Zimbardo & Boyd, 1999), responsibility for health, and spirituality (Hamilton et al., 2003), and was negatively correlated to depression, and anxiety (Zimbardo & Boyd, 1999). Therefore, for patients with MS who are suffering from somatic and psychological problems, PP orientation can increase the responsibility toward somatic and psychological health and probably result in decreasing the rate of SI.

The important limitations of the current study were sample size, using the self-reported questionnaires and lack of a control group. Our sample size was limited to Nahavand and Malayer, Iran. This suggests that the results should be interpreted with caution and further research with different and large samples is required. We used Beck Scale for SI for the prevalence of the SI in people with MS disease. Thus, the diagnostic interview to assess the prevalence of SI is important in future studies and the results should be interpreted with caution. In addition, we didn't use the control group (healthy people) for comparing the rate of SI. It is suggested that the control group should be used in future research for comparing the rate of SI in MS patients and healthy people.

The results support the high rate of SI and the relationship between perceived SS and TP (NP, PP and F dimension) with SI in patients with MS in Nahavand and Malayer, Iran. It is suggested that attention to high rate of SI in Iranian patients with MS is very important for researchers, psychologists and counselors. Also, using the TP-based treatments for decreasing the rate of SI in patients with MS is suggested. Also, it is necessary to develop support systems for MS patients who are at risk of SI.

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