

# The survey of mindfulness in multiple sclerosis patients and its association with attachment style

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## ABSTRACT

**Background:** Mindfulness may be conceptualized as a dispositional trait which differs across individuals, so this study was, therefore, designed to determine the survey of mindfulness in multiple sclerosis (MS) patients and its association with attachment style. **Materials and Methods:** This was a cross-sectional study which was conducted in Kashani Hospital affiliated to Isfahan University of Medical Sciences, Iran, in 2013. Samples were 210 adult patients who suffered from MS completed demographic and disease characteristics questionnaire, Five Factor Mindfulness Questionnaire and adult attachment style. The SPSS version 16 software was used to conduct statistical tests including *t*-test, NOVA, and Pearson correlation. **Results:** The means of age and duration of illness were (33/96 ± 9/5) years and (24/3 ± 6/3) month, respectively. Most patients were married (66/1%), without university education (62/8%) and with incomes suffice (63%). The majority of the patients had received beta-interferon (55/4%) as their main treatment. The mean ± standard deviation attachment style and mindfulness were 25/6 ± 11/6 and 79/8 ± 25/6, respectively. Furthermore, there was a significant negative correlation between the attachment style score and mindfulness score ( $P = 0.001, r = -0.32$ ). **Conclusion:** The result shows that stronger association between mindfulness and attachment can reflect the beneficial effects of mindfulness interventions on both mindfulness and attachment and it can provide some evidence that mindfulness interventions may enhance secure attachment.

**Key words:** Attachment style, mindfulness, multiple sclerosis

## INTRODUCTION

Multiple sclerosis is a chronic and unpredictable disease that is developed due to inflammation and destruction of the myelin sheath and conductivity of nerve impulses is impaired in the central nervous system.<sup>[1]</sup> Nervous system damage can be so severe that can be associated with severe physical and cognitive disability in this group of patients.<sup>[2]</sup>

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This disease is one of the most important diseases that can change one's life because it usually damages the best time of patient's life (20–40 years) and gradually takes him toward disability. It is worth noting that in this disease, in addition to physical problems related to the disease process patients experience a wide range of neurological-emotional symptoms. While in most cases, patients with these psychological problems that also arise from chronic clinical problems, are adapted without treatment.<sup>[3]</sup> Meanwhile, studies have shown that of effective factors on patients mental patterns is immediacy. In other words, when people encounter with low mood or problems in their lives, they face with rumination

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**This article may be cited as:** Mohamadirizi S, Shaygannejad V, Mohamadirizi S. The survey of mindfulness in multiple sclerosis patients and its association with attachment style. *J Edu Health Promot* 2017;6:7.

Access this article online	
Quick Response Code:	Website: <a href="http://www.jehp.net">www.jehp.net</a>
	DOI: 10.4103/jehp.jehp_114_14

and downward mobility in contrast to their feelings and thoughts. Meanwhile, self-awareness or mindfulness against negative mental patterns leads to increase physical and mental ability in this group of patients. So that according to the studies in the field increased mindfulness is associated with the amplification of immune system which could be good news for people with chronic disease.<sup>[4]</sup> Mindfulness is usually defined as a mode of realizing and being aware of what is happening at the moment mindfulness, is clear awareness of the individual about what occurs inside and in interaction with the external environment, in successive moments consciousness, awareness and attention, which sometimes are confused, should be distinguished that generally involves concept of mindfulness, awareness, and attention.<sup>[5,6]</sup> The researchers suggest that the increased mindfulness is associated with a variety of health outcomes such as pain, anxiety, depression and stress reduction. Furthermore, the mindfulness scan also releases people from the automatic thoughts, habits, and unhealthy behavior patterns. And, therefore, play an important role in regulating behavior. In addition, by adding clarity and life to experiences can bring health and happiness.<sup>[7]</sup> As many theories of psychopathology and psychotherapy have discussed the importance of awareness, presence, and observing are in mental health.<sup>[7]</sup> So that, Mills and Allen in their study on multiple sclerosis (MS) patients regarding the impact of programs of mindfulness as a coping strategy in these patients came to the conclusion that Programs of mindfulness on body movements are associated with better management of symptoms in this group of patients ( $t = 1.96, P \leq 0.5$ ).<sup>[8]</sup> In the study of Mohamadirizi *et al.* Mindfulness-based cognitive therapy programs have a significant impact on mental well-being and hope of patients with MS. In other words, the researchers believe that mindfulness plays an important role as a mediating factor in the improvement of MS signs in this group of patients.<sup>[7]</sup>

It is worth noting that the mindfulness is associated with many positive psychological outcomes such as the satisfaction of intimate communication, a high level of well-being and self-confidence and on the contrary low mindfulness is associated with high levels of psychological problems and difficulty in regulating emotions. In fact, the mindfulness is an efficient and useful way for people to change the thoughts and feelings in different ways. In other words, mindfulness means creating peace by thoughts and feelings toward try to make a change or disregard them, as in various studies mindfulness is defined as regarding a specific way to a specific purpose, in the present moment, without prejudice.<sup>[9]</sup> So, mindfulness includes description and observation of the individual's inner experiences (thoughts, emotions, and feelings) without reacting to them. In this regard, Sullivan in his study states that mindfulness involves being committed, living a purposeful life, focusing on the present time and acting without prejudice.<sup>[10]</sup> Of factors affecting the mindfulness, attachment manner can be mentioned.<sup>[8]</sup> The attachment has a significant impact on personal behavior on starting and continuing intimate communication and also resolving stressful situations during the disease process.<sup>[11]</sup> In other words, since MS seizure onset

in middle age can lead to disorder in personal and social life of patients so the majority of people in the course of the disease will need some degree of help. The amount and nature of this assistance will increase as the disease progresses. Previous independence in these patients makes it difficult to accept help from others, so one of the most important effective psychological factors in accepting help from their spouses and families by the patients is their attachment manner.

Attachment is permanent emotional link that is identified with the desire to seek and maintain exposure to a specific individual when stress emerges. Attachment behavior appears gradually during normal evolution, by ensuring the emotional relationships between an adult with other adult throughout life these emotional relationships depends on the condition of attachment behavior integration in the context of his personality.<sup>[12]</sup> In adults, thoughts, feelings, and attitudes toward attachment relationship will undoubtedly be effective on how individual behaves. Previous studies have also pointed that the pattern of attachment can be effective on how individual faces with important issues in life such as suffering from a disease and can specify individual's attitude to the problems. As the results of studies in this field show that attachment style is associated with emotional responses to the disease as well as its subsequent consequences.<sup>[11]</sup>

In addition, attachment style determines one's willingness to resolve the problems, and it is reactions of him against the social problems and failures. People with secure attachment style in dealing with problems use active coping strategies and to reduce negative emotions use opposed cognitions to affection pattern (the best way to re-read positive information) while insecure people use adherent cognitions with emotion pattern (the worst way to re-read positive information).<sup>[12]</sup> Attachment patterns are divided into two main categories of secure attachment and insecure attachment. Insecure attachment itself is divided into two subcategories of anxious/avoidant attachment and ambivalent insecure attachment.<sup>[13]</sup> Secure attachment style is often due to warm and positive interactions. People with secure attachment style think positive about themselves and their favorite people and have a positive look to their interpersonal relations, in addition, these people are satisfied from their relationships, and they often want to establish a balance between intimacy and autonomy in their relationships. This is while insecure attachment properties are negative attitude towards themselves and distrustful attitude towards the others. Accordingly, people with avoidant attachment style control their fears and anxiety by avoiding interpersonal relationships and to get closer emotionally and physically they stop their feelings in a way and are reluctant to show their feelings. In ambivalent insecure style people are usually jealous and unsure about their close relationships and have uneasiness and fear about exclusion from others.

So attachment styles have predicting importance in people's mental health because secure attachment style results in sense of safety and the outcome of insecure attachment is creating

fear in people. Since, physical and mental health of patients, especially those with MS, is very important and deserves attention and is one of the duties of health care systems and also considering that no study has been conducted to investigate the mindfulness and its relationship with the attachment in MS patients in Iran so the researcher decided to conducted a study on mindfulness and its relationship with attachment style in MS patients who has referred to MS clinic of Ayatollah Kashani Hospital in 2013.

## MATERIALS AND METHODS

This was a descriptive study which was conducted in Ayatollah Kashani Hospital affiliated to Isfahan University of Medical Sciences. This hospital is a reference center in Isfahan and patients with MS. In this study, 210 patients with MS were conveniently selected according to the inclusion criteria. First, the researcher selected the qualified individuals based on the inclusion criteria. Inclusion criteria were as follows: Signing a written consent to participate in the study, age between 18 and 65 years, having the ability to read and write Farsi (Persian), having the desire and physical and mental ability to participate in the study, passing at least 6 months from the date of MS diagnosis, not having other medical illnesses, such as: thyroid, diabetes, hypertension, cardiovascular disease, kidney, nervous with the approval of the relevant doctor.

After sufficient explanation and satisfying them, the patients were asked to complete a questionnaire related to the study in a quiet place alone or accompanied or by researcher. The instrument used in this study included demographic, family and patient questionnaire (10 items), adult attachment questionnaire with 18 items, questionnaire of mindfulness with 39 questions which were completed by patients. Demographic/family and disease questionnaire included 10 questions which its validity was determined by content validity. So that, this instrument was prepared by reading the latest books and articles on the topic of study and then it was given to the number of experts and professors in order to assess. To measure attachment, revised adult attachment questionnaire was used. Revised adult attachment questionnaire with 18 items includes three subgroups of intimacy (items 1-7-9-13-15-17) avoidance (items 1-2-5-6-7-8-12-13-14-16-17-18) and anxiety (items 3-4-9-10-11-15). The minimum score is 18 and the maximum score is 90. Furthermore, scores of each aspects are the sum of the scores of all items. Furthermore, in this questionnaire as a whole and each of the aspects items with less than one mean deviation of all scores are considered as noise in that aspect. Content validity of the questionnaire was confirmed by Collins and Read<sup>[14]</sup> and its reliability in Simpson study has been reported with Cronbach's alpha coefficient 0.7.<sup>[15]</sup> Also in Vafaiyan study validity of translated copy of the questionnaire was confirmed and reliability has been reported by calculating Cronbach's alpha 0.78.<sup>[16]</sup> To access the information about the mindfulness, the Five Factor Mindfulness Questionnaire was used. The questionnaire includes 39 items with five subscales of observation,

description, acting with awareness, nonjudging, nonreactivity, that based on Likret's 6-point scale it has been graded from 1 (never) to 5 (always). Scores range is from 8 to 40 for each subgroup other except for a subgroup of nonreaction (7-35). Higher scores indicate a higher mindfulness. In addition, scores below average were considered as noise in mindfulness. Mindfulness validity of questionnaire was confirmed by Baer et al. Also its reliability was confirmed using Cronbach's alpha coefficient (0.7).<sup>[17]</sup> Data was analyzed using Data were analyzed using SPSS 11.5 (SPSS Inc, Chicago, IL, USA).  $P \leq 0.05$  was considered as statistically significant level.

## RESULTS

The results showed that the highest and lowest percentage of the patients was women (%89) and men (11%), 33.9% single, and 66.1% married. Also with nonacademic education (%62.8) and moderate socioeconomic status (%63). Also, 55.4% of patients Interferon beta was use as original treatment. The other demographic and disease characteristics are summarized in Table 1.

In this research, results showed that 69.1%of patients had mindfulness disorder [Table 2].

Also, results of Spearman correlation showed that there is a significant negative relationship between the total scores of attachment style and mindfulness ( $P = 0.11$ ,  $r = -0.42$ ) [Table 3].

## DISCUSSION

The present study is one of the few studies that examine the mindfulness and its relationship with the attachment in MS patients. In this study, the majority of samples (69.1%)

**Table 1: The mean and standard deviation of age, night and daily sleep, exercise weekly duration (h) and disease duration in multiple sclerosis patient**

Variables	Mean±SD
Age (years)	33.96±9.5
Night sleep (h)	6.9±1.8
Daily sleep (h)	1.3±0.2
Exercise weekly duration (h)	3.4±1.3
Disease duration (months)	24.3±6.3

SD=Standard deviation

**Table 2: Frequency distribution of mindfulness, attachment style in each of the dimensions**

Variables	Number (%)
Mindfulness disorder (%)	
Yes	145 (69.1)
No	65 (30.9)
Attachment style (%)	
Intimacy	40 (19.4)
Avoidance	115 (54.7)
Anxiety	55 (26.19)

**Table 3: The relationship between attachment style in general and each of the dimensions with the score of mindfulness in patients with multiple sclerosis**

Attachment styles dimension	Mindfulness dimension					Description	Observation
	Total mindfulness score	Nonreactivity	Nonjudging	Acting with awareness			
Avoidance							
<i>P</i>	0.01	0.002	0.002	0.05	0.05	0.001	
<i>r</i>	0.17	0.15	0.23	0.29	0.23	0.26	
Intimacy							
<i>P</i>	0.006	0.04	0.23	0.05	0.01	0.001	
<i>r</i>	0.09	0.10*	0.20*	0.38*	0.39*	0.36*	
Anxiety							
<i>P</i>	0.001	0.01	0.002	0.001	0.06	0.001	
<i>r</i>	0.42	0.32*	0.13*	0.14*	0.12*	0.38	
Total attachment style score							
<i>P</i>	0.001	0.05	0.001	0.01	0.03	0.02	
<i>r</i>	0.26	0.15	0.32	0.23	0.35	0.48	

\*Sign of significance. *P* with the level of significance of less than 0.05 considered as significant

suffer from disorders in mindfulness. Of the reasons for the disorders of mindfulness in patients with MS given that no study to date has been reported about specific studying of the mindfulness in patients with MS but it can be attributed to this issue entirety of the person will be threatened subsequent of MS. In other words, since MS is a debilitating, progressive and unpredictable disease that from the moment of first symptoms, considerable anxiety will be created after the health of patients is threatened.<sup>[18]</sup>

Therefore, in patients with MS several reasons including chronic conditions of disease, lack of awareness of the disease and its treatment, fear of the unknown future of disease, lack of control over disease symptoms lead to increased stress and distress in these patients and have limited their ability to dedicated focus and ultimately lead to reduction of mindfulness in patients with MS. In this regard, Sullivan in his study pointed out that increased stress in patients with MS in addition to worsening the symptoms of the disease provides the background for disorders of mindfulness in these patients and therefore suggests the use of biofeedback techniques or techniques of mindfulness-based intervention effective in increasing the mindfulness in these patients. In other words, he believes that by changing of mind in facing with stimulant and stressful factors can change body's physiological response effectively and efficiently in facing with these factors. Results of other studies in this area also reflects this fact as Grossman *et al.* study results showed that training related to the increased mindfulness in patients with MS leads to improvement of the quality of life, decrease fatigue and depression in this group of patients.<sup>[19]</sup> In this study, more than half of research units had avoidance and anxiety insecure attachment style (respectively 54.7%, 26.19%). Avoidant attachment style is related to one's comfortability in intimate relationships, and the anxiety subgroup is related to one's concern about being rejected and unpopular. According to Bowlby adults as well as children have an attachment system that has formed around searching for important others in the case of requirement. This attachment system is active in whole

of individual's life, therefore changing internal active patterns is not limited to the relationship between parent and child but also it is influenced by the relationship between adults and others.<sup>[20]</sup> It is worth noting that these internal patterns can also be influenced by different environmental variables. Among these, fear of abandonment and rejection by others as well as being different than others, and some disabilities in this group of patients can be respectively as a factor for developing anxiety and avoidant insecure attachment styles in patients with MS. Other objectives of the present study were to determine the relationship between mindfulness with attachment style that results showed that there is a significant inverse relation between the mindfulness and attachment style. Pepping *et al.*<sup>[4]</sup> study confirmed our study results that in this study there was a significant correlation between the two mentioned variables ( $P = 0/005$ ,  $r = 0/37$ ).

In a study of Goodall *et al.* there was a significant relationship between total score of Mindfulness and total score of attachment style.<sup>[21]</sup> In relation to the aspects of mindfulness, the observation and non reactivity had the highest and lowest correlation with anxiety and avoidant attachment subgroups.

In the present study, subgroup of avoidant investigates feelings of individual in time of attachment to others or at the time that they need them. People with avoidant style are upset in intimate and emotional relationships and deny their attachment in these relationships. According to available studies, people with avoidant style have repressive and defensive thoughts. Anxiety style is characterized with an intense fear of abandonment and rejection from an intimate relationship. In other words, anxiety style is related to rumination and concern about access to important people in life. According to various studies, anxiety and avoidant attachment style is associated with poor psychological consequences while secure attachment style (reducing anxiety and avoidance) is associated with positive social and psychological consequences.<sup>[4,22]</sup>



It should be noted that the results of this study should be considered along with its limitations. First, the cross-sectional design of our study made it impossible for us to determine causality. In addition, in this study, it was not possible to determine the status of attachment style and mindfulness before developing MS and also it was not possible to compare with the current situation due to administrative problems.

## CONCLUSION

In total, according to the results of this research, healthcare team will be able to have better and more comprehensive understanding of the mental status of patients with MS and to use interventions that can improve their mental status. So that, in this study, it was found that anxiety and avoidant style is inversely associated with mindfulness. Therefore, according to the results of this study, it is suggested to perform mindfulness-based interventions in patients with MS with aim of reducing the avoidance and anxiety style.

## Acknowledgments

We would like to gratefully acknowledge multiple sclerosis clinic located at the Isfahan Kashani Hospital conducted to the Isfahan Neurosciences Research Centre for the valuable moral co-operation in respect to providing patients and collaboration of all staff. Special thanks to Prof. Fereshteh Ashtari, head of Isfahan Kashani Neurology ward for her kind, patience, and scientific support.

## Financial support and sponsorship

Isfahan University of Medical Science and Isfahan Neuroscience Research Center.

## Conflicts of interest

There are no conflicts of interest.

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