Research Paper

The Relationship Between Spiritual Health and the Levels of Fatigue and Depression in People With Multiple Sclerosis

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ABSTRACT

Background: Multiple sclerosis (MS) represents the most prevalent progressive neurological disorder among young individuals globally. Patients diagnosed with MS often experience a diverse array of psychological challenges. The current study sought to explore the correlation between spiritual wellbeing and fatigue and depression in individuals with MS who referred to the Tehran MS Association, Tehran City, Iran, in 2024.

Methods: This research employed a cross-sectional, descriptive-correlational design. The statistical population comprised individuals diagnosed with MS who sought assistance from the Tehran MS Association. From this population, 200 participants were selected through continuous sampling in accordance with established inclusion criteria. Data collection instruments included a demographic and disease characteristics questionnaire, the fatigue severity scale (FSS), the Beck depression inventory II (BDI-II), and the Paloutzian and Ellison spiritual wellbeing scale (SWBS). The data analysis was conducted using SPSS version 27, employing both descriptive and inferential statistical methods, including the Pearson correlation coefficient, independent t-test, and analysis of variance. The significance level for all tests was set at 0.05.

Results: The Mean±SD total scores for fatigue, depression, and spiritual health among the participants were 48.33±14.52, 19.11±13.04, and 92.41±25.09, respectively. Statistical analysis revealed a significant negative correlation between fatigue and spiritual health ($r=-0.294$, $P<0.001$). Additionally, a significant negative correlation was found between depression and spiritual health ($r=-0.650$, $P<0.001$).

Conclusion: The results of this study indicate an inverse relationship between spiritual wellbeing and the prevalent issues of fatigue and depression among individuals diagnosed with MS. Consequently, it is advisable to incorporate strategies that focus on enhancing spiritual wellbeing, as this may significantly alleviate the mental health challenges faced by these individuals.

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Highlights

- MS impacts the central nervous system, leading to a range of physical and psychological difficulties.
- Individuals with MS frequently experience fatigue and depression, which can reduce their QoL.
- The results indicate a statistically significant negative correlation between fatigue and spiritual wellbeing.
- The results also indicate a statistically significant negative correlation between depression and spiritual health.

Plain Language Summary

Multiple sclerosis (MS) is a prevalent condition affecting the central nervous system. It manifests with various physical symptoms such as limb paralysis, numbness, visual disturbances, double vision, bladder issues, and dizziness. Additionally, this condition is often associated with psychological challenges, with fatigue and depression being the most frequently observed symptoms. Conversely, spiritual health, recognized as a vital aspect of overall wellbeing, can enhance patients' resilience, particularly during challenging times. The study findings indicate a relationship between spiritual health and fatigue and depression experienced by these patients, suggesting that an increase in spiritual health is linked to a decrease in both fatigue and depression.

Introduction

Multiple sclerosis (MS) is a chronic inflammatory disorder impacting the central nervous system, marked by demyelination and axonal degeneration (Faissner et al., 2019). It is the most prevalent inflammatory and demyelinating disorder affecting the central nervous system (Kuhlmann et al., 2023). It is also acknowledged as the leading progressive neurological condition among young individuals worldwide. Research conducted in the United States found a 2.3% annual increase in MS prevalence from 2010 to 2017 (Wallin et al., 2019). Presently, MS affects about 2.5 million people globally, posing considerable challenges for individuals and society (Cantoni et al., 2022). A systematic review and meta-analysis in Iran estimated the MS prevalence at approximately 100 cases per 10000 individuals (Mirmosayyeb et al., 2022). There exist 4 classifications of MS: Relapsing-progressive, primary progressive, relapsing-remitting, and secondary progressive. Among these, relapsing-remitting MS (RRMS) is the predominant variant, impacting 85% of MS individuals. MS patients encounter a range of symptoms, with the most prevalent including visual disturbances, fatigue, and muscle spasms. Furthermore, it is not uncommon for MS to occur with additional health issues such as anxiety, depression, and sleep problems (Muñoz-Jurado et al., 2022). Fatigue and depression are especially common among individuals with MS (Tarasiuk et al., 2022).

Fatigue, defined as profound tiredness, is prevalent in neurological disorders. Its high occurrence significantly impacts daily life and quality of life (QoL), contributing to early retirement (Penner & Paul, 2017). Studies reveal that fatigue affects 35% to 97% of MS patients (Tarasiuk et al., 2022). The MS Association of America (MSAA) defined fatigue as a subjective lack of energy for usual activities (Guidelines, 1998). Fatigue in MS is divided into physical and cognitive types (Tarasiuk et al., 2022). Physical fatigue hinders mobility and balance. Furthermore, fatigue correlates with reduced cognitive function, lower work efficiency, psychological issues, and decreased social skills (Cortés-Pérez et al., 2021). Individuals with MS not only experience fatigue but are also at an elevated risk for developing depression (Kowalec et al., 2023). Depression is a critical health concern that can become chronic, negatively affecting QoL. Those with depression often experience severe symptoms such as fatigue, insomnia, and hopelessness (Fukai et al., 2020). The incidence of depressive disorders is high in MS patients, hindering their QoL and treatment adherence. This incidence escalates with disease progression, especially in the secondary progressive phase of MS (Solaro et al., 2018). The lifetime prevalence of depression in patients with MS has been reported to be between 40% and 50% (Wenger & Calabrese, 2021). The relationship between fatigue and depression in MS is complex, with fatigue occurring independently or as a depressive symptom. Typically, fatigue and depression are correlated, and treating depression may alleviate fa-

tigue (Feinstein et al., 2014). Various models exist for managing the challenges of chronic diseases, one of the most important of which is spiritual health (Shahabian et al., 2020).

The physical, psychological, social, and spiritual dimensions of human existence affect lifestyle and QoL (Abdekhodaie et al., 2018). A comprehensive healthy lifestyle includes 6 essential components: Physical activity, nutrition, health responsibility, spiritual growth, interpersonal relationships, and stress management. Prioritizing spiritual health can enhance one's QoL. Studies show that spiritual health and spirituality are vital in improving QoL and mitigating symptoms of chronic health issues (Jafari & Saberi, 2022). Spirituality provides a framework for individuals to find meaning in their experiences, promoting feelings of completeness, hope, and tranquility despite life's challenges (Shi et al., 2023). Spiritual health is essential in confronting life's challenges, encompassing both existential and religious aspects. Religious health is related to the fulfillment of connecting with a higher power, while existential health seeks to understand life's meaning and purpose (Sharifian et al., 2020). Numerous patients view spiritual health as crucial for instilling purpose and significance in their lives, thereby improving their QoL (Shahabian et al., 2020).

Spiritual health significantly influences overall well-being and the management of medical conditions. This interaction is reciprocal; certain health issues can adversely affect spiritual health. Studies reveal that spiritual care correlates with improved health outcomes and QoL, potentially enhancing resilience against mental health disorders (Sytsma et al., 2020). For instance, research indicates that young cancer patients experiencing anxiety, depression, or fatigue report lower levels of meaning, peace, and perceived divine presence in daily life (Grossoehme et al., 2020). Furthermore, a positive relationship exists between spiritual health and self-esteem in women with MS (Shaygannejad & Mohamadirizi, 2020). Additional studies on MS patients indicate that spiritual health is associated with better QoL and diminished death anxiety (Allahbakhshian et al., 2010; Mohammadizadeh et al., 2017). In diabetic populations, higher spiritual health correlates with reduced depression rates (Soudagar & Rambod, 2017). Similarly, patients with acute coronary syndrome who report elevated spiritual health demonstrate lower anxiety, depression, and stress levels (Afra & Zaheri, 2017). In cancer patients undergoing treatment, a negative relationship was identified between spiritual health and fatigue (Lewis et al., 2014).

Despite previous studies providing useful insights, research linking spiritual health and depression in patients with MS remains limited. Additionally, the relationship between spiritual health and fatigue in this demographic has not been examined. Thus, the present study aims to evaluate fatigue, depression, and spiritual health in MS patients and to investigate the correlations between spiritual health and levels of fatigue and depression in these patients.

Materials and Methods

Design, setting, and sample

This study utilized a cross-sectional, descriptive-correlational design. Individuals with MS were selected via continuous sampling from the Tehran MS Association. To determine the required sample size with a 95% confidence level and 80% statistical power, assuming that the correlation coefficient between spiritual health and fatigue and depression is not less than 0.2 (which indicates that the relationship between these two variables is statistically significant), the minimum sample size was estimated to be 200 using the Equation 1.

$$1.\ n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2}{w^2} + 3$$

The requirements for participation in the study included being at least 18 years old, having a confirmed MS diagnosis for at least 6 months, being fluent in Persian, not reporting any mental health disorders, and having a score of 7 or less on the expanded disability status scale (EDSS) (this tool was used only for sample inclusion). EDSS was developed by neurologist Kurtzke in 1983 to assess the severity of physical disability and incapacity in patients suffering from MS. It evaluates disability across 8 functional systems: Vision, sensory, urinary, excretory, brain, brainstem, cerebellum, and pyramidal tracts. The score can range from 0 (normal, with no physical problems or disorders affecting the system's functioning) to 10 (death), and may include decimals of 0.5. For example, a score of 5.5 indicates that the patient can walk approximately 100 meters without assistance or need to rest (Khosravi et al., 2023).

Data collection instruments

The study utilized a demographic and disease characteristics questionnaire, the fatigue severity scale (FSS), the Beck depression inventory II (BDI-II), and the Paloutzian and Ellison spiritual wellbeing scale (SWBS).

The demographic form collected data on variables including age, gender, educational level, marital status, employment, and the type and duration of MS.

FSS, developed by Krupp et al. in 1989, measures fatigue in chronic conditions such as MS and lupus. It consists of 9 items rated on a 7-point Likert scale (from 1=strongly disagree to 7=strongly agree), with scores ranging from 9 to 63, where scores below 36 suggest no fatigue and scores of 36 or higher warrant further medical assessment (Krupp et al., 1989; Safajou et al., 2020). A study on MS patients reported a Cronbach α coefficient of 0.81 (Krupp et al., 1989). The Persian adaptation of the scale demonstrated strong validity and reliability, with a Cronbach α of 0.96 and an intraclass correlation coefficient (ICC) of 0.93 (Shahvaroughi-Farahani et al., 2013).

BDI-II is a widely utilized self-report instrument comprising 21 items to evaluate depressive symptoms in adolescents and adults. Revised in 1996, it aligns with diagnostic and statistical manual of mental disorders IV (DSM-IV) depression criteria and asks respondents to reflect on experiences over 2 weeks, differing from the original 1-week period (Beck et al., 1996). Each item is scored from 0 to 3, yielding a total score from 0 to 63, interpreted as follows: 0-13 indicates minor depression, 14-19 mild depression, 20-28 moderate depression, and 29-63 severe depression. Completing the inventory typically takes 5 to 10 minutes (Sharifi et al., 2019; Badiee Aval et al., 2020). Research by Hamidi et al. confirmed the BDI II's strong validity and reliability among elderly Iranians, with a Cronbach α of 0.93 and an ICC of 0.81 (Hamidi et al., 2015).

SWBS is a self-administered scale with 20 items divided into two subscales. The religious wellbeing subscale (RWBS) evaluates the spiritual verticality through 10 items focused on the concept of God. Conversely, the existential wellbeing subscale (EWBS) assesses horizontal dimensions of wellbeing through 10 items related to life purpose and satisfaction (Bufford et al., 1991). Responses to the SWBS are rated on a scale of 1 to 6, yielding a cumulative score of 20 to 120. Positive items are designated by specific numbers, with "strongly agree" scoring 6 and "strongly disagree" scoring 1. Conversely, negative items are scored inversely, wherein "strongly agree" receives a score of 1 and "strongly disagree" a score of 6. The overall spiritual health score results from the sum of both positive and negative item scores: Scores between 20 and 40 indicate low spiritual health, 41 to 99 indicate moderate, and 100 to 120 indicate high spiritual health (Paloutzian & Ellison, 1991). The Persian version of the scale has demonstrated reliability, with a reported Cronbach α coefficient of 0.82 (Allahbakhshian et al., 2010).

The study's questionnaires were validated and content assessed by 4 distinguished faculty members from the School of Nursing and Midwifery at Iran University of Medical Sciences, including a PhD in Psychiatric Nursing. Additionally, the reliability of these instruments was examined using a sample of 30 individuals similar to the study participants. The resulting Cronbach α coefficients were 0.857 for the FSS, 0.885 for the BDI II, and 0.943 for the SWBS.

Study procedure

After obtaining ethical approval, the researcher secured an introduction letter from the Vice President for Research at Iran University of Medical Sciences. Coordination was made with the officials of the Tehran MS Association, and the study objectives and methods were communicated to them. The researcher then sampled participants from the target population who met the inclusion criteria. The research instruments were distributed to participants in a controlled environment, in the researcher's presence. The questionnaires took 30 to 40 minutes to complete. For participants facing challenges such as illiteracy or disabilities, the researcher read the questions aloud and recorded responses directly.

Data analysis

Data analysis was conducted using SPSS software, version 27. Frequency distribution tables were used for qualitative variables, while numerical indices such as minimum, maximum, Mean±SD were used for quantitative variables. The Pearson correlation coefficient was used to examine the relationships among spiritual health, fatigue, and depression. Additionally, an independent t-test and analysis of variance were conducted to examine relationships between demographic variables and the main variables. In the variance analysis test, the Tukey method was used to conduct pairwise comparisons. The significance level for all tests was set at 0.05.

Results

The study comprised 200 individuals with MS, predominantly female (69.5%). The subjects' ages ranged from 18 to 72 years, with a mean of 42.63±10.77. A notable 54% of participants had university-level education. Regarding marital status, 64.5% were married. Over half (55%) were unemployed.

Additionally, 43.5% were unaware of their specific type of MS, though the relapsing-remitting type was most common at 28%. The Mean±SD of disease duration was 137.25±104.87 months. Detailed demographic and clinical characteristics of the subjects are presented in Table 1. As illustrated in Table 1, a statistically significant association was observed between depression and employment status, revealing that depression levels were considerably lower among employed individuals compared to their unemployed counterparts, with no significant differences noted at other employment levels. Additionally, a significant positive correlation was found between fatigue and age. Moreover, a significant relationship was observed between fatigue and employment status, with lower fatigue levels in the employed group than in the unemployed and retired groups. Lastly, a statistically significant positive correlation was observed between fatigue and MS duration. The significance threshold for all tests is set at 0.05.

The findings for the frequency distributions, Mean±SD of fatigue, depression, spiritual health, and their related subscales are shown in Table 2.

The relationship between fatigue and spiritual health was examined using the Pearson correlation analysis. The results revealed a weak, significant negative correlation ($r=-0.294$, $P<0.001$), indicating that improved spiritual health correlates with decreased fatigue. A stronger negative correlation was found between fatigue and the existential aspect of spiritual health ($r=-0.382$, $P<0.001$). However, no significant correlation was observed between fatigue and the religious dimension of spiritual health ($r=-0.133$, $P=0.061$), reflecting weak overall associations (Table 3).

Likewise, a Pearson correlation test assessed the interplay between depression and spiritual health. The analysis indicated a significant negative correlation ($r=-0.650$, $P<0.001$), suggesting that greater spiritual health is associated with lower depression. A significant negative correlation was recorded between depression and the religious dimension of spiritual health ($r=-0.366$, $P\leq0.001$). Additionally, a robust negative correlation emerged between depression and the existential dimension of spiritual health ($r=-0.780$, $P\leq0.001$) (Table 4).

Discussion

This study aimed to investigate the correlations among spiritual health, fatigue, and depression among patients referred to the Tehran MS Association in 2024. The findings showed that 81.5% of participants experienced significant fatigue warranting medical consultation. The mean fatigue score was 48.33, indicating a considerable level of fatigue among subjects. This finding is consistent with those of Sparasci et al. (2022), who reported that a significant proportion (69%) of MS patients (surveyed using the FSS questionnaire) experienced fatigue. Furthermore, their mean fatigue score was 41.3, which closely resembles the outcomes observed in the current study.

Additionally, Broch et al. (2021) reported that 81% of MS patients experienced fatigue, assessed by the FSMC scale. Furthermore, our study results revealed that most participants displayed minor or mild depression. The mean depression score was 19.11, which is a relatively low score considering the maximum score of the questionnaire (63). These results are consistent with Sparasci et al. (2022), who found that 73.2% of individuals with MS reported minor or mild depression based on the BDI II scale. Additionally, the present study's outcomes support Lazarevic et al. (2021) findings, which showed that only 29.6% of participants experienced high levels of depression, as measured by the BDI II scale, a figure similar to the current results.

In our study, 50.5% of participants had high spiritual health. The mean spiritual health score was 92.41, indicating elevated spiritual health among most participants. Consequently, it can be concluded that the spiritual well-being of most participants in the study is elevated, as indicated by a mean score of 92.41, which is relatively high compared to the questionnaire's maximum possible score of 120. The mean score for the religious health subscale was 50.91, exceeding the median overall score. In contrast, the mean score for the existential health subscale was 41.5, which is below the median of the total scores. Consequently, it can be concluded that the subjects have exhibited a more favorable state of religious health. At the same time, the majority demonstrated a deficiency in the existential health dimension (about meaning in life). These findings are consistent with those of Najafi et al. (2022), who observed that 50.9% of their subjects reported high spiritual health, as measured by the SWBS scale. Similarly, another study reported that 61.8% of their participants had high spiritual health as assessed by the SWBS scale (Shaygannejad & Mohamadirizi, 2020).

Additionally, Niyazmand et al. (2018) reported a mean spiritual health score of 92.39 on the SWBS scale among MS patients, which aligns with the current study's results. In the research conducted by Iranmanesh et al. (2014), the mean spiritual health score was notably high at 93.81. The mean score for the religious health subscale was also relatively high at 50.80, while the mean score for existential health was relatively low at 43.01.

Table 1. The Mean±SD of fatigue, depression, and spiritual health in relation to the demographic and clinical characteristics of the research subjects (n=200)

Variables	Group	No. (%)	Fatigue		Depression		Spiritual Health	
			Mean±SD	Test Result	Mean±SD	Test Result	Mean±SD	Test Result
Gender	Male	61(30.5)	46.18±15.92	t=-1.393 df=198 P=0.165	18.1±11.44	t=0.726 df=198 P=0.469	86.84±29.61	t=-1.889 df=91.721 P=0.062
	Female	139(69.5)	49.28±13.81		19.55±13.7		94.86±22.51	
Educational attainment	Undergraduate	26(13)	49.38±13.6	F=0.506 P=0.604	22.04±10.27	F=1.361 P=0.259	89.42±20.25	F=0.703 P=0.496
	Diploma	66(33)	49.48±14.71		20.06±13.32		90.44±26.27	
	University	108(54)	47.38±14.68		17.82±13.39		94.33±25.44	
Marital status	Single	46(23)	46.41±16.4	F=1.340 P=0.264	18.2±13.48	F=0.150 P=0.861	93.83±24.03	F=0.467 P=0.628
	Married	129(64.5)	49.57±13.85		19.43±12.8		91.22±25.92	
	Divorced or spouse deceased	25(12.5)	45.52±14.02		19.16±13.87		95.96±22.99	
Employment situation	Employed	75(37.5)	42.79±15.93	F=9.689 P≤0.001	15.11±11.28	F=6.228 P=0.002	93.52±24.11	F=0.250 P=0.779
	Retired	15(7.5)	53.6±9.92		21.07±13.58		88.73±32.23	
	Unemployed	110(55)	51.44±12.92		21.73±13.47		91.94±24.87	
Type of MS	Relapsing-progressive	12(6)	32.08±13.7	F=5.408 P≤0.001	9.17±11.7	F=2.937 P=0.022	97.33±25.23	F=1.903 P=0.111
	Secondary progressive	21(10.5)	51.43±14,28		24.62±12.37		80.95±27.98	
	Primary progressive	24(12)	53.88±10.36		20.96±13.6		86.50±31.99	
	Relapsing-remitting	56(28)	49.27±12.48		18.57±13.26		93.68±23.33	
	Don't know	87(43.5)	47.7±15.47		18.99±12.49		95.31±22.72	
	No	111(55.5)	47.59±15.72		18.5±12.93		95.88±24.39	
Age (y)	Under 30	29(14.5)		r=0.201 P=0.004		r=0.101 P=0.156		r=0.019 P=0.794
	30-39	49(24.5)						
	40-50	75(37.5)						
	Over 50	47(23.5)						
	Mean±SD	42.63±10.77						
	Min-Max	18 - 72						
Duration since MS diagnosis (m)	6-120	106(53)		r=0.162 P=0.022		r=0.053 P=0.459		r=0.121 P=0.087
	121-240	62(31)						
	241-360	25(12.5)						
	361-480	7(3.5)						
	Mean±SD	147.25±104.87						
	Min-max	6-480						

Table 2. Frequency distribution, Mean±SD of fatigue, depression, spiritual health, and the related subscales (n=200)

Variables	Mean±SD	Min-Max	Subscale	No. (%)
Fatigue	48.33±14.52	9-63	Absence of fatigue (<36)	37(18.5)
			Requiring medical consultation	163(81.5)
Depression	19.11±13.04	0-54	Minimal depression (0-13)	80(40)
			Mild depression (14-19)	32(16)
			Moderate depression (20-28)	39(19.5)
			Severe depression (29-63)	49(24.5)
Spiritual health	92.41±25.09	20-120	Low spiritual health (20-40)	13(6.5)
			Moderate spiritual health (41-99)	86(43)
			High spiritual health (100-120)	101(50.5)
RWBS	50.91±13.51	10-60		
EWBS	41.5±14.57	10-60		

EWBS: Existential wellbeing subscale; RWBS: Religious wellbeing subscale.
Client- Centered Nursing Care

In this investigation, the Pearson correlation coefficient revealed a weak, significant negative correlation between fatigue and spiritual health, indicating that improvements in spiritual health are associated with decreased fatigue. Furthermore, a significant negative correlation was observed between fatigue and the existential aspect of spiritual health, whereas no significant correlation was found between fatigue and the spiritual dimension. It is noteworthy that these correlations were categorized as weak. The results are consistent with those of Lewis and colleagues (2014), who identified a significant negative relationship between fatigue and spiritual health in patients undergoing cancer treatment. Likewise, Yang et al. (2023) observed a significant negative correlation between spiritual health and fatigue among advanced cancer patients. Moreover, this study uncovered a relatively significant negative correlation between spiritual health and depression, suggesting that enhanced spiritual health correlates with reduced depression levels. A notable yet weak negative correlation was identified between depression and the religious-spiritual aspect, alongside a comparatively strong and significant negative correlation between depression and the existential aspect of spiritual wellbeing. These findings are in accordance with Dehghani et al. (2024), who investigated the relationship among spiritual health, stress, anxiety, and depression in MS patients. The results also corroborate Musa et al.'s (2018) findings, which demonstrated a significant negative correlation between spiritual health and depression among hemodialysis patients.

Besides, depression exhibited significant associations solely with employment status and MS type, with no notable links to other demographics. Tukey's 2-way comparison demonstrated that employed individuals reported lower depression levels than the unemployed, with no differences at other levels. In the research conducted by Honarmand et al. (2011), unemployed individuals exhibited elevated scores on the depression subscale. Furthermore, Tukey's analysis in our study revealed that individuals with relapsing-progressive MS had lower depression levels than those with secondary progressive MS, with no significant differences elsewhere. In the research conducted by Salehpoor et al. (2012), it was found that the incidence of depression was greater in patients with secondary progressive MS (SPMS) compared

Table 3. Correlation between spiritual health and fatigue of the research subjects

Variable	Spiritual Health		RWBS		EWBS	
	Pearson Correlation	P	Pearson Correlation	P	Pearson Correlation	P
Fatigue	-0.294	<0.001	-0.133	0.061	-0.382	<0.001

EWBS: Existential wellbeing subscale; RWBS: Religious wellbeing subscale.
Client- Centered Nursing Care

Table 4. Correlation between spiritual health and depression of the research subjects

Variable	Spiritual Health		RWBS		EWBS	
	Pearson Correlation	P	Pearson Correlation	P	Pearson Correlation	P
Depression	-0.650	<0.001	-0.366	<0.001	-0.780	<0.001

EWBS: Existential wellbeing subscale; RWBS: Religious wellbeing subscale.

Client- Centered Nursing Care

to those with RRMS. Generally, one potential explanation for the observed disparity between these two patient populations is the severity of the disease; specifically, individuals with SPMS frequently experience more enduring and severe symptoms than those with comparable conditions in RRMS.

Moreover, a significant positive correlation between fatigue and age was identified, indicating that fatigue increases with age. Additionally, a significant relationship was noted between fatigue and employment status. The Tukey 2-way comparison showed lower fatigue levels among the employed than among the unemployed and retired. Furthermore, a significant association between fatigue and MS type was found. Tukey's analysis indicated that individuals with relapsing-progressive MS experienced less fatigue than those with secondary progressive, primary progressive, relapsing-remitting, and those unaware of their MS type. A significant positive correlation between fatigue and MS duration was also observed, suggesting that fatigue increases with time since diagnosis. This study's results are consistent with a study that identified a link between fatigue and MS type and higher fatigue levels among the unemployed (Schmidt & Jöstingmeyer, 2019). Additionally, our findings are consistent with Broch et al. (2021), who reported a significant positive relationship between fatigue and participant age, as well as greater fatigue in progressive MS than in relapsing-remitting MS.

This research was conducted as a cross-sectional study, which inherently limits its ability to establish definitive cause-and-effect relationships, as it can only assess correlations. Furthermore, the reliance on self-report questionnaires for data collection may have led some participants to withhold truthful responses or provide inaccurate information. Additionally, factors such as forgetfulness or insufficient knowledge of their condition may have contributed to incorrect answers.

Conclusion

The current study sought to explore the correlation between spiritual wellbeing and the levels of fatigue and depression in individuals with MS who visited the Tehran MS Association in 2024. The findings of this research indicate that MS patients who report elevated spiritual health scores tend to experience reduced levels of fatigue and depression. Taking into account the findings of the current study alongside those of comparable research regarding the effects of spiritual health, fatigue, and depression on QoL, physical activity, and treatment adherence, it is crucial to design the treatment approach for individuals with MS by adopting a comprehensive perspective that considers their psychological and spiritual requirements.

This investigation was limited to clients residing in Tehran. Given that environmental and social factors can profoundly influence individuals' psychological wellbeing, it is recommended that similar studies be conducted across comparable populations in diverse climatic and social contexts. Additionally, in light of the notable correlation between spiritual health and depression and fatigue, it would be beneficial to conduct a quasi-experimental study examining the impact of spiritual education on fatigue and depression among individuals diagnosed with MS. Also, it is recommended that a qualitative investigation of the concepts of the current study be undertaken to achieve a deeper understanding of participants' experiences.

Ethical Considerations

Compliance with ethical guidelines

The present study was approved by the Ethics Committee of Iran University of Medical Sciences, Tehran, Iran (Code: IR.IUMS.REC.1403.114). Written informed consent was obtained from the participants after explaining the purpose of the study and ensuring confidentiality and anonymity.

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Authors' contributions

Study design, data collection, and writing: Fatemeh Mehrabi; Statistical analysis and data interpretation: Shima Haghani; Methodology and supervision: Mahnaz Seyedoshohadaee.

Conflict of interest

The authors declared no conflict of interest.

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