

Analysis of the Impact of Mindfulness on Quality of Life in Patients with Multiple Sclerosis: Systematic Review

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Abstract

This study aimed to investigate the impact of the mindfulness-based interventions program on the quality of life of patients with Multiple Sclerosis. A systematic review was carried out based on the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). For an updated perspective on the topic, the selected articles were published from March 2014 to March 2019. Thus, 10 articles were included in the review and were thoroughly compared. A detailed assessment was carried out to measure the impact of the mindfulness protocol both on the general quality of life and on its specific domains. It can be observed that there is some homogeneity of the results regarding the benefits of the practice of mindfulness in the patients' general quality of life. Moreover, there was greater evidence of the effects of meditative practice on the psychological domain when compared to the physical domain. Hence, the present study considers the mindfulness program a viable tool to address quality of life in patients with Multiple Sclerosis. The lack of Brazilian studies in the area is highlighted. Also, further studies to evaluate the practice of mindfulness continuously, such as cohort studies, are necessary to elucidate the long-term effects of the protocol.

Key words: *Mindfulness, Multiple Sclerosis, Quality of life, Meditation, Awareness.*

Introduction

Multiple sclerosis (MS) is a chronic neurodegenerative disease with an inflammatory character capable of causing functional and disabling changes. The worldwide incidence of the disease is increasing and its carriers are mostly female, aged between 30 and 50 years. The forms of presentation and the patients' clinical progression are varied, the most common of which is the relapsing-remitting (RR) course, which combines acute episodes of the disease with periods of remission. Consequently, it has a great economic and social impact.¹

Individuals with MS have poorer quality of life (QoL) than the general population, due to physical, psychological, and emotional involvement. Due to the uncertain course of the disease, depression and anxiety symptoms, stress, and apprehension are present from the moment of diagnosis. These are aggravating factors and are linked to an increased risk of flare-ups, brain damage, decreased compliance to drug therapy, and high risk of suicide in this population. Aiming at a holistic approach of care of patients with MS, non-pharmacological interventions focused on the psychological disorders of this population began to be studied.²

Currently, Mindfulness Based Interventions (MBI) are complementary health interventions available and used for the management of chronic inflammatory diseases. MBI is a protocol of meditative practices carried out over eight weeks, promoting non-judgmental thinking and full attention in the present. Thus, it allows control of attention, emotional regulation, and self-awareness. As a result, MBI is being implemented as an alternative for improving quality of life in patients with MS.³

Evidence emphasizes the beneficial effects of applying the MBI protocol to individuals with multiple sclerosis. This is so because, due to meditative practice, patients reached greater acceptance of the disease, decreased depression symptoms, less perception of pain and, consequently, increased quality of life.⁴

Given the relevance of the theme, the objective of this study is to analyze the impact of the application of the mindfulness protocol on the quality of life of patients with Multiple Sclerosis, observing its effects in articles published on the subject in the last 5 years.

1. Methodology

This article was conducted according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for systematic review and meta-analysis.

The research-guiding question was formulated following the acronym PICO, with “P” for study population (Multiple sclerosis patients); “I” for intervention performed (Subjects participating in the mindfulness program); “C” for control population (Subjects not participating in the mindfulness program); and “O” for outcome observed (Impact of the mindfulness program in the quality of life of multiple sclerosis patients).

The search of descriptors was carried out using MeSH (Medical Subjects Headings) and DeCS (Descriptors in Science and Health), with “Health Related Quality Of Life - HRQOL”, “Quality of Life”, “Mindfulness” and “Multiple Sclerosis” being selected for the review. The research included an American, a European, and a Brazilian database, with PubMed, EBSCO, and Scientific Electronic Library Online (Scielo) being respectively selected. As described in Table 1, the studies were identified according to individualized search strategies for each database consulted.

Table 1. Search strategy used in the different databases consulted.

PubMed (All fields)	((Mindfulness) AND HRQOL) AND Multiple Sclerosis Filters: published in the last 5 years
PubMed (All fields)	((Mindfulness) AND Quality of Life) AND Multiple Sclerosis Filters: published in the last 5 years
EBSCO (All fields)	Mindfulness AND multiple sclerosis AND quality of life Limiting factors – Full text Date of publication: 20140101-20191231
Scielo (All indices)	(Qualidade de vida) AND (Mindfulness) AND (Esclerose Múltipla)

The articles included were observational studies developed with patients with multiple sclerosis published between March 2014 and March 2019, in English, Portuguese, or Spanish. After searching the articles in the databases, two independent researchers evaluated and applied the inclusion criteria. First, duplicate articles were excluded; then, the titles and abstracts were analyzed. The pre-selected articles and those on which doubts remained regarding inclusion were fully read. For data collection, the articles were critically evaluated for their experimental methodology. Articles that did not involve patients with multiple sclerosis, which did not answer the research question, review articles, and experience reports were excluded.

The research was based on data collection: citation, country of research, population studied, methodology, and results/conclusion (Table 3). The instruments used in the studies to assess the participants’ quality of life and the population’s level of disability were also analyzed for comparative purposes.

2. Results

The database search resulted in 47 articles. They correspond to 27 articles from PubMed (with the descriptors “Mindfulness”, “HRQOL”, and “Multiple Sclerosis”), 12 articles from PubMed (with the descriptors “Mindfulness”, “Quality of Life”, and “Multiple Sclerosis”), and 8 articles from EBSCO. No articles were found in Scielo, the Brazilian database. Then, duplicate articles (16 articles) and those that did not meet the inclusion criteria (12 articles) were excluded. Nineteen articles were fully read, nine of which were excluded for not answering the work question or for not having completed the observational analysis. The flowchart with article selection steps is shown in Figure 1.

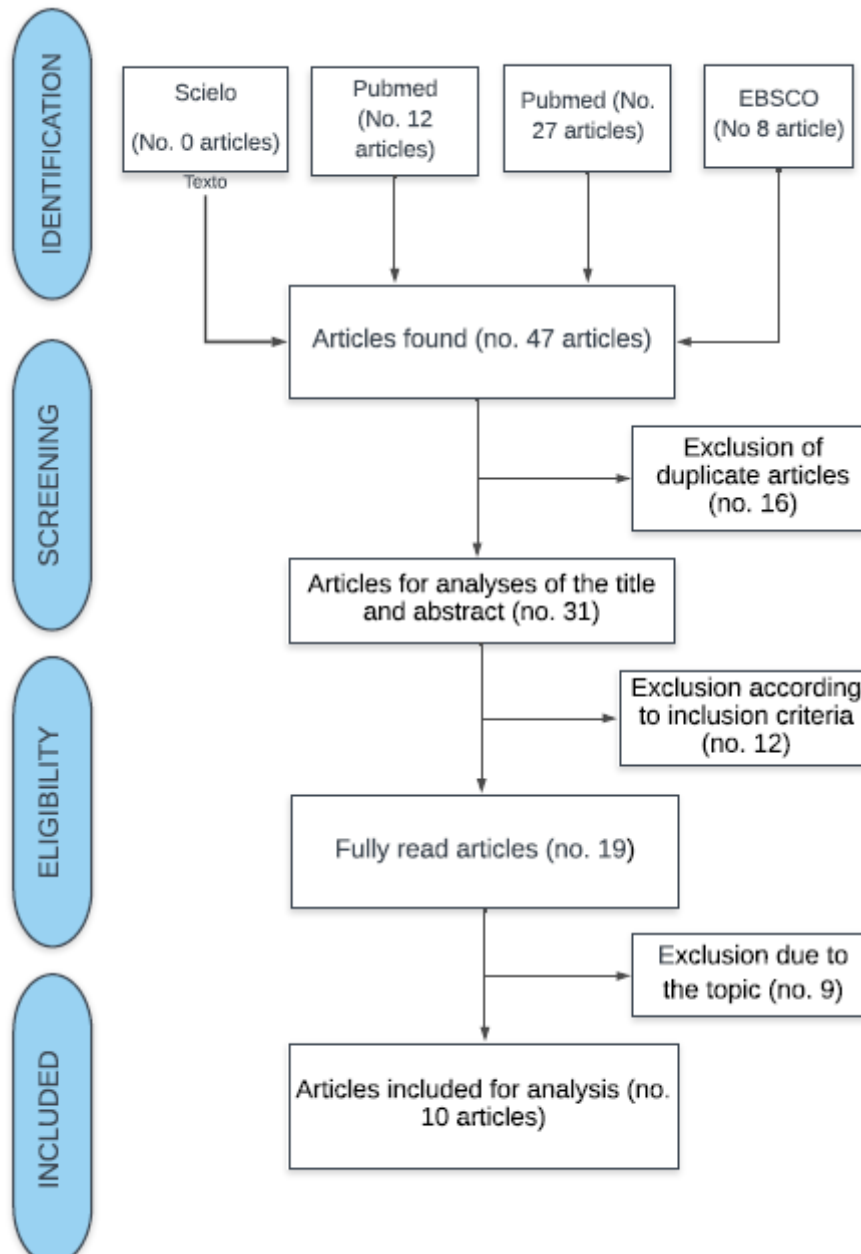


Figure 1. Flowchart of the work selection steps.

Table 2. Comparison of data collected from articles included in the study.

CITATION	COUNTRY	STUDY METHOD	POPULATION	RESULTS/CONCLUSION
(5)	Italy	Quantitative study, case control	139 patients with any type of multiple sclerosis.	Quality of life improved significantly in the post-intervention assessment, but this result was not seen in the reassessment 6 months after the intervention. These same findings were observed in depression and anxiety symptoms and in the quality of sleep. Fatigue symptoms decreased, but not significantly in all assessments. In addition, women reported higher quality of life after the intervention than men.
(6)	Italy	Quantitative study, case control	115 patients with any type of multiple sclerosis.	Improved quality of life, less depression and anxiety, lower levels of fatigue and higher quality of sleep were analyzed. Mindfulness was identified as a protective factor for stress and responsible for improving patients' psychological well-being. The results showed improved patients' general quality of life.
(7)	Australia and United Kingdom (UK)	Quantitative study, case control	100 patients with any type of multiple sclerosis.	Significant improvement in quality of life was observed. However, stress decreased in a non-significant way. In addition, the effects on quality of life were not maintained in the reassessment after 6 months
(2)	United States (USA)	Quantitative study, case control	62 patients with any type of multiple sclerosis.	A higher expectation of success was observed in the group performing MBI when compared to the group performing psychoeducational activities. In both groups, significant benefits were observed in the perception of stress, anxiety, depression, fatigue, and resilience in all analyzes. Improvement in quality of life was observed, but it was not significant. MBI showed a significantly better result compared to educational activity. Patients' perception of pain did not decrease significantly.
(8)	Netherlands	Quantitative study, case control	150 patients with any type of multiple sclerosis.	The results showed quality of life improvement and less depression symptoms in both the physical and psychological domains. There was less fatigue and improved ability to observe and describe their experiences with the disease.
(9)	Italy	Mixed method	71 patients with any type of multiple sclerosis.	The practice of mindfulness led to improvement in the general quality of life, concentration, fatigue, satisfaction, and acceptance of the disease. These effects were not seen in psychoeducation. In both groups, a significant reduction in depression, anxiety symptoms, and in self-perceived stress was observed. However, no significant decrease in fatigue was observed. The practice of mindfulness proved to be significantly superior to psychoeducation.
(10)	United States (USA)	Quantitative study, case control	22 patients with any type of multiple sclerosis.	Significant improvement in quality of life was observed, specifically in the physical and psychological domains. Also, there was a significant decrease in anxiety and depression symptoms and an increase in positive affect. Three months after the intervention, the reassessment showed that the psychological domain result did not remain significant.
(11)	United Kingdom (UK)	Quantitative study, case control	30 patients with any type of multiple sclerosis.	A minimal increase in quality of life was identified after the intervention and the effects were absent in the reassessment after three months. However, beneficial effects were observed on depression symptoms, positive affect, anxiety, and personal compassion in assessments after intervention and reassessment after three months
(14)	Iran	Quantitative study, case control	24 patients with any type of multiple sclerosis.	There was a significant decrease in anxiety and depression symptoms. In addition, significant improvement in the quality of life was observed in all its domains and in the general quality of life. There were no significant effects on self-perception of pain and social ability. Also, it was observed that mindfulness techniques promote greater self-acceptance.
(12)	United Kingdom (UK)	Mixed method	40 patients with primary and secondary progressive multiple sclerosis.	Significant improvement in quality of life was observed after the intervention. In addition, the rates of depression, anxiety, and psychological impact of the disease were significantly lower in all analyzes. However, the decrease in pain and in the physical impact of the disease and fatigue have not been significantly reduced.

An analysis of the year of publication shows the distribution of articles between 2014 and 2019. It can be observed that 80% of the studies were published from 2017 to 2019, expressing the recent and growing interest in the topic in question.^{2,5,6,7,8,9,10,11} Regarding the research countries, there is a high concentration of studies carried out in Italy and in the United Kingdom (UK), each responsible for 3 of the 10 articles present in this review. In addition, countries as the United States, Australia, Iran, and the Netherlands were also mentioned. There are no Brazilian studies in this research.

The study methods are similar, with 80% of the articles using the case-control quantitative study. Two articles used the mixed method.^{12,13}

In all studies, previous diagnosis of multiple sclerosis was one of the criteria for selecting the included population. As the disease has different clinical presentations, it should be noted that, in 10% of the studies, the progressive form of the disease was specified as an inclusion criterion.¹²

Regarding the instruments used to assess the quality of life of people with MS, 40% of the studies used the Multiple Sclerosis Quality of Life-54 (MSQOL-54) questionnaire that addresses general and specific aspects of quality of life in the disease.^{5,6,8,14} Also, the use of some questionnaires assessing domains of quality of life in general was observed, such as: *Health Status Questionnaire (SF-36)*, *WHO-Quality of Life-Bref (WHOQOL-Bref)*, and *Euro-Qol (EQ5D)* (Table 3).^{2,9,10,11,12}

Table 3. Research instruments used.

When evaluating the structure of the interventions carried out in the studies, it was observed that all articles report the application of the mindfulness based interventions (MBI) protocol along with the collection of pre- and post-test data.

It is worth mentioning that, despite the homogeneity of application of the protocol, some aspects are

Citation	Questionnaires used by studies to assess quality of life
(5)	<i>Multiple Sclerosis Quality of Life-54 (MSQOL-54)</i>
(6)	<i>Multiple Sclerosis Quality of Life-54 (MSQOL-54)</i>
(7)	<i>Multiple sclerosis international Quality of Life (MusiQoL)</i>
(2)	<i>Health Status Questionnaire (SF-36)</i>
(8)	<i>Multiple Sclerosis Quality of Life-54 (MSQOL-54)</i>
(9)	<i>WHO-Quality of Life-Bref (WHOQOL-Bref)</i>
(10)	<i>Health Status Questionnaire (SF-36)</i>
(11)	<i>Euro-Qol (EQ5D) e Multiple sclerosis international Quality of Life (MusiQoL)</i>
(14)	<i>Multiple Sclerosis Quality of Life-54 (MSQOL-54)</i>
(12)	<i>Euro-Qol (EQ5D)</i>

divergent, such as the way of application, the presence of activity in the control group, and the data collection interval. Regarding the form of application, it was identified that 30% of the studies used digital tools and online platforms for the intervention, while the other studies chose the face-to-face approach.^{5,6,12} As for the presence of activity in the control group, it was observed in 40% of the articles and psychoeducation was the action of choice in its entirety.^{2,5,6,9} In addition, in 2 of the 4 studies there was significant superiority of mindfulness techniques when compared to psychoeducative activities.^{2,9} With regard to the data collection interval, a variation from 1 week to 1 month in advance was observed in the pre-intervention collection. In the post-intervention period, the reassessment time ranged from 2 weeks to 2 months, with the latter interval being present in 40% of the articles.^{2,5,6,8} Long-term reassessment was absent in 30% of cases.^{8,10,14} However, in 50% of the studies, the chosen interval was 6 months or 12 months after the intervention (Table 4).^{2,5,6,7,9}

Table 4. Intervention used.

CITATION	FORM OF APPLICATION	CONTROL GROUP	DATA COLLECTION		
			BASELINE	POST-INTERVENTION	REASSESSMENT
(5)	Online	Active: psychoeducation	Yes	Yes: 2 months	Yes: 6 months
(6)	Online	Active: psychoeducation	Yes	Yes: 2 months	Yes: 6 months
(7)	Face-to-face	Passive	Yes	Yes: 1 month	Yes: 6 months
(2)	Face-to-face	Active: psychoeducation	Yes	Yes: 1 e 2 months	Yes: 12 months
(8)	Face-to-face	Passive	Yes	Yes: 2 months	No
(9)	Face-to-face	Active: psychoeducation	Yes	Yes	Yes: 6 months
(10)	Face-to-face	Passive	Yes	Yes	No
(11)	Face-to-face	Passive	Yes	Yes	Yes: 3 months
(14)	Face-to-face	Passive	Yes	Yes	No
(12)	Online	Passive	Yes	Yes	Yes: 3 months

The analysis of the practice of mindfulness in multiple sclerosis shows this practice has beneficial effects on patients' quality of life, since all articles report improvement of the quality of life post-intervention and 80% of them report significant improvement.^{5,6,7,8,9,10,12,14}

However, in the reassessment after 6 months of intervention, reported in 40% of the articles,^{5,6,7,9} 2 of them showed that the benefits of meditative practice in the quality of life were not continuous.^{5,7} As for depression and anxiety symptoms, patients showed a significant decrease in 7 of the 10 studies present in this review.^{2,5,6,9,10,12,14} Resilience, personal compassion, and greater acceptance of the disease were also better following mindfulness techniques application.^{2,9,10,11,14}

Nevertheless, no effect of mindfulness practice on pain perception was identified, considering that only 1 out of 10 articles showed non-significant improvement in this symptom.¹² In the other studies, the effects on this area were absent. Sleep quality and fatigue were also assessed, with the former improving significantly as shown in 20% of the articles, and the latter decreasing significantly as reported in 30% of the articles.^{2,5,6,9,8,9}

Currently, Kurtzke Expanded Disability Status Scale (EDSS) is used to quantify the disabilities taking place during the progression of MS. In 30% of the articles, the EDSS was used as an inclusion criterion.^{2,9,11} It was the scale chosen by 60% of the studies to measure the average disability of the population included.^{2,5,7,9,11,12}

When relating the level of disability of the disease of the studied population, as measured by the EDSS, with the effects of mindfulness on quality of life, an inverse proportion of the results is observed. The higher the EDSS, that is, the greater the participants' disability, the lesser the effects of mindfulness on the patients. This proportion was observed in 2 of the 3 articles where the studied population had an EDSS greater than or equal to 4.5.^{2,11} In contrast, the article with the highest average EDSS of the population studied (6.8) demonstrated a significant improvement in quality of life after practicing mindfulness (Table 5).¹²

Table 5. Correlation between EDSS and the impact on quality of life.

CITATION	EDSS		QUALITY OF LIFE
	INCLUSION CRITERIA	INTERVENTION GROUP AVERAGE	POST-INTERVENTION
(5)	Not used	3	Significant improvement in quality of life
(6)	Not used	Not used	Significant improvement in quality of life
(7)	Not used	2.6	Significant improvement in quality of life
(2)	8 or less	4.5	Non-significant improvement in quality of life
(8)	Not used	Not used	Significant improvement in quality of life
(9)	6.5 or less	2 – 2.5	Significant improvement in quality of life
(10)	Not used	Not used	Significant improvement in quality of life
(11)	7 or less	4.5	Non-significant improvement in quality of life
(14)	Not used	Not used	Significant improvement in quality of life
(12)	Not used	6.8	Significant improvement in quality of life

The studies in which quality of life improved non-significantly after the practice of mindfulness used similar study methods. First, the instrument chosen by both of them for assessing quality of life was the SF-36 inventory. In addition, both studies selected the face-to-face application and data collection in three stages. However, the reassessment time after practicing mindfulness was different in the articles, with 1 reassessing after 3 months of the intervention and the other after 12 months. The studies also differed regarding the presence of activity in the control group.^{2,11}

3. Discussion

The development of studies aimed at quality of life has become necessary recently. The complexity of the subject and the multiple factors that quality of life encompasses in the individual's health contributed to its importance in the global context. Therefore, in 1995, the WHO conceptualized it as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". Then, the instruments that measure quality of life were validated, which contributed to the increase of knowledge and availability of studies in the area.⁵ Instruments that measure quality of life in general, such as the SF-36, are very important for the scientific community because, when applied, they assess the health profile of the population. Their results are intended to make a broad comparison, in one aspect, among different populations. However, these questionnaires, when used to assess the benefits of a specific action or condition, do not specify in what aspect the changes occurred.¹⁶ In the current review, this fact is extremely important, as general questionnaires were used to measure the effects of MBI on the quality of life of patients with MS.^{2,7,9,10,11,12} Thus, the results generated from these studies may be compromised. Accordingly, it is worth mentioning that this assessment method was used in two studies in which the results did not show significant improvement in quality of life after the intervention.

Based on this, we shall highlight the importance of using questionnaires specifically focused on the disease. This is so because the domains evaluated are adjusted according to the conditions prevalent in the affected population. Thus, the results of specific questionnaires are more sensitive to variations, as they are more focused on the impact the disease has on the factors they measure.¹⁶ Thus, it is observed that recent studies have selected the use of the specific questionnaire responsible for measuring the quality of life in patients with MS, called Multiple Sclerosis Quality of Life-54 (MSQOL-54).^{5,6,8,14}

In data collection, there was a lack of Brazilian studies in the area. When evaluating the current context, there are some factors to explain this situation, such as the change in the medical education curricula and the implementation of mindfulness in Brazil. In 2014, the curricular guidelines and medical skills were reformulated to encourage medical training directed to a broad view of health and disease and the integral care of the individual.¹⁷ The clinical fragmentation of the patient and the practice of specialized medicine, consistent with the medical training provided for by the curriculum before the reformulation, explain the lack of studies on the subject. In addition, it was only in 2017 that meditative practice was included in the National Policy for Integrative and Complementary Practices in the Brazilian Public Health System (PNPIC)¹⁸, what explains the lack of studies on this approach in Brazil.

In the review, the case-control quantitative method predominates. The quantitative method is the method responsible for the classification and elaboration of reliable numerical results. On the other hand, a qualitative study has a descriptive purpose, aiming at assessing the subjective aspects of the research.¹⁹ Considering that quality of life encompasses multiple domains of the individual and acts in a unique way in the construction of the health and disease process, it is worth emphasizing the importance of the mixed method to elucidate subjective and numerical factors, especially in complex questions such as the one in this review.

The lack of cohort studies in the research is also observed. This method is essential to clarify the long-term effects of mindfulness in patients with MS, considering that its results have less bias and more evidence.²⁰ However, as it is a recent research field, the lack of studies with methodological rigor or longitudinal studies is natural.²¹ For this reason, this review aims to compile the conclusion of the articles found, to demonstrate a pattern and suggest the continuation of the research with results with greater evidence in the area.

Different aspects of the study method used by the articles included in this research are highlighted in the literature. First, there is homogeneity in the inclusion criteria chosen to define the population studied. The exception is one article including only patients with primary progressive (PP) and secondary progressive

(SP) types of the disease. According to its author, many interventions are focused on the RR type. Thus, aiming to direct more therapeutic options to patients with progressive disease, the objective of the article was to highlight the effects of MBI in this population.¹² In addition, current reviews strengthen the hypothesis and show that the results found are promising for clinical practice. This is so because patients with PP and SP presentations have a higher prevalence of severe symptoms of the disease.²² However, although the mindfulness program benefits patients with the progressive form of the disease, favorable results were also seen in studies that included all clinical presentations of MS.^{5,6,8}

In order to make MBI accessible to patients with multiple sclerosis, studies have opted for the online application of the meditation protocol.^{5,6,12} This way, patients could perform the intervention at home, avoiding mobility problems. Comparing the ways of application, the online method showed no inferiority when compared to the face-to-face application. The benefits of digital platforms have greater protocol viability, lower costs, and greater comfort for participants.⁶ Studies point to problems with the internet connection as the greatest difficulty with this form of application.¹²

The analysis of the time for reassessment of the articles included in the research allows the correlation between the interval intervention-data collection with the levels of quality of life. Thus, it is possible to observe the continuity of the effects of mindfulness on quality of life after months of intervention. It is important to highlight that the significant improvement in quality of life was not observed in the reassessments carried out after six months.^{5,6} This phenomenon is elucidated by the MBI guidelines, which indicate the daily meditative practice as responsible for the beneficial effects of the protocol. Therefore, these results demonstrate the need for continuous MBI practice to visualize its impact on the participants' health.²³

Analyzing the years of publication of the studies included we can observe growing interest in the theme, which is confirmed by the accelerated scientific production about the implementation of the mindfulness protocol in Multiple Sclerosis in the last two years. As already discussed, several factors contributed to this phenomenon. In addition to those already mentioned, the validation of the mindfulness program is one of the main factors. This is so because the rationale for the use of MBI in patients with chronic pain was presented in the 1980s by the specialist in the field Jon Kabat-Zinn.²⁴ After the demonstration of the beneficial effects of the technique, the method was later applied in other conditions and spread around the 2000s.²⁵

Thus, it was observed that the application of MBI in patients with Multiple Sclerosis affects several domains of quality of life. Additionally, the rigorous analysis of these effects allows the assessment of quality of life both in a fragmented way, considering each specific domain that it covers, and in general, considering QoL as a whole.

Thus, the analysis of the physical domain allows the assessment of symptoms such as fatigue, pain, and quality of sleep. In fatigue, the effects of MBI help both in lower self-perception and in its prevention.⁴ In addition, current reviews highlight the presence of homogeneous results of post-mindfulness effects in this symptomatology, because its practice is associated with a significant reduction of symptoms.²⁶ The literature shows divergences as to the effects of mindfulness on pain perception. This is because meditative practice directly and indirectly influences this condition. Directly, studies associate immunomodulation and neuroplasticity promoted by MBI as being responsible for the reduction of symptoms in patients who practice it.²⁷ Indirectly, the articles point out that the lower perception of pain is linked to greater resilience and acceptance of the disease provided by the benefits of meditation practice in the psychological domain.²⁸ Also, some improvement in the quality of sleep was also identified after the practice of mindfulness in patients with MS.²⁷ The effects on sleep effectiveness, sleep behavior, and its duration vary from medium to large.²⁹

Despite the effects elucidated previously, the favorable results in the physical domain are not as good as the benefits found in the psychological domain. Studies indicate the severity of physical and functional impairment of patients with MS as responsible for these outcomes.^{2,5,9,12,14}

In the psychological domain, the analysis of positive feelings, negative feelings, and self-esteem is included. In addition, some questionnaires include depression and anxiety symptoms in this domain. The practice of the MBI protocol is linked to a significant decrease in the perception of these symptoms in most studies of this research.^{5,7,8,12,30} The literature strengthens the results found and associates them with greater emotional stability promoted by the MBI techniques. They also point to greater emotional stability as an agent responsible for the significant increase in QoL after the intervention.^{28,31,32}

The analysis of the general quality of life allows the identification of a pattern of the results found, considering that the improvement in quality of life is seen in all articles analyzed in this research.^{6,9,10,14} The literature reaffirms this evidenced homogeneity.^{4,26,28} Despite this, it is worth mentioning that in some studies the non-significant improvement in quality of life is found as an outcome.^{2,11} This conclusion, as previously elucidated, is the result of the use of instruments for the general assessment of quality of life, and is due to the higher levels of disability in the population studied.

Therefore, it is evident that higher scores in the EDSS, that is, higher levels of disability of MS patients studied, have a negative influence on quality of life. Thus, the lack of significance in quality of life improvement is linked to restricted mobility and dependence on assistance for carrying out activities of daily living.³³ Consequently, these disorders hinder the practice of some activities of the mindfulness program and impact their results on the quality of life of patients with the disease.^{2,11}

This study highlights the importance of measuring the levels of disability of the population practicing mindfulness in order that the hypotheses mentioned above are elucidated in future articles. Thus, we suggest the inclusion of the evaluation of the EDSS in the next studies on the topic. Also, the use of specific questionnaires for MS is recommended, as they are more sensitive to changes in quality of life in patients with the disease. Thus, the outcomes of the mindfulness program in patients with Multiple Sclerosis will be evidenced with greater accuracy.

Conclusion

Multiple sclerosis is a chronic neurodegenerative disease that presents itself as a therapeutic challenge, due to its psychological, emotional, and physical impairment. Based on this, complementary therapies such as the mindfulness protocol are implemented in the treatment of patients with the disease. In this review, it was evidenced that MBI benefits the quality of life of these patients and its application shall be considered when approaching this population. Accordingly, the aim is a holistic care for multiple sclerosis, consistent with current medical practice. On the other hand, the need for further research with greater scientific evidence in the area, such as cohort studies, is emphasized. Therefore, we expect that the long-term effects of the meditative technique be demonstrated. In addition, the present review recommends the use of specific instruments to assess quality of life in patients with Multiple Sclerosis. It also highlights the importance of measuring disability levels in the population included in the study using the EDSS. Thus, the future studies in the area should aim at presenting individualized results to the specific conditions of Multiple Sclerosis.

Conflict of Interest

The authors declare that they have no conflict of interest.

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