

The Effect of Hatha, Pranayama, and Raja yoga on the Feeling of Fatigue of Women Suffering from Multiple Sclerosis (MS)

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Abstract: Multiple sclerosis (MS) is one of the most significant diseases that change people's lives and causes many side effects for the patients. Fatigue is one of the most common symptoms reported in those who are suffering from MS. This study aims to investigate the effect of Hatha, Pranayama, and Raja yoga techniques on the feeling of fatigue in women suffering from MS. This research is a clinical trial study, conducted on 60 MS patients in Kohgiluyeh and Boyer-Ahmad province in 2009. The method for collecting data was a questionnaire including the demographic information of the patients as well as the Fatigue Severity Scale (FSS). Patients were randomly divided into two control and study groups, each having 30 members. The fatigue of both groups was assessed before intervention. The study group was treated with eight 1-1.5-hour sessions per month, for three months while no intervention was done on the control group. The patients' fatigue was assessed again 12 weeks after beginning yoga techniques and one month after finishing with the techniques. Patients' fatigue was assessed again and compared with one another. The collected data was analyzed using descriptive statistics tests, paired t-test, independent t-test, and variance analysis with repeated measurement. The average age of the samples was 31.6 ± 8 and the range of age was between 18 and 45. Among the people in the samples, 42 people (70%) were married and 18 people (30%) were single. 44 people (73.3%) had high school education, 16 people (26.6%) had university education. The majority of them (63.3%) were housewives. Concerning the effect of yoga techniques on the feeling of fatigue in the patients, the results gained from statistical tests indicated that there was not a significant difference in the amount of fatigue in the control group and the study group before the intervention, while this difference became significant after the intervention ($p < 0.05$). Doing yoga techniques decreases the amount of fatigue in the patients suffering from MS who took part in this study. Therefore, due to their low cost, accessibility, and rapid learning of these techniques, teaching and recommending them to MS infected patients could be effective in regard to improving their situation.

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Introduction:

Multiple Sclerosis (MS) is among the chronic and disabling diseases that is the cause of many disabilities in the young and old people (1). Based on the conducted estimations, there 2.5 people in the world who are suffering from this disease (2). In recent years, MS has become even more common in the world and in Iran (3). In spite of the different cures for this disease, it is still considered one of the most disabling diseases that affect different aspects of the individuals' life and thus affects the quality of life of the patients (4).

MS is one of the most severe diseases in regard to changing people's life (5). It brings about many complications for those infected and fatigue is among the most common of the reported complications (6). More than 90% of those affected with MS, experience fatigue in a way that it inhibits the usual daily

activities, performance, and quality of life of the patients (7). In fact, the feeling of fatigue related to MS is an abnormal general lack of energy that significantly limits the physical and mental capability of the patients and decreases the energy and causes an unpleasant feeling, weakness in motion, and problems in concentration (8).

Different combined medical and non-medical therapies are usually used in order to treat the fatigue in MS patients. Yoga and aerobics exercises are among the non-medical recommended techniques that are in need of further investigation (9). Yoga means the unity and coordination of body and soul, or in other words the control of thought-waves. Yoga is generally based on three principles of doing subtle postures (hathayoga) breathing exercises or absorbing life force using yoga breathing (pranayama), and concentration and control of the mind through meditation (raja yoga). Doing

daily breathing and meditation exercises in yoga will lead to peace of mind and reduction of stress as well as an improvement in the body and soul of individuals (10). Therefore, this study aims to investigate the effect of Hatha, Pranayama, and Raja yoga on the feeling fatigue in the women suffering from MS.

Methodology

This research is a clinical trialed study, conducted on 60 MS patients in Kohgilooyeh and Boyrahmad province in 2009. First the patients' name was collected from the Department of Treatment of the universities and hospitals. Then, those who had the condition of being in the sample were selected through phone calling or going to their houses. The selected people were divided into two case and control groups, each with 30 patients, through random allocation.

Through the cooperation of the Yoga Society of the province, invitations were sent to the patients and they were also invited to attend yoga classes through phone calls. Tools of collecting data were a questionnaire consisting of the demographic data of the patients as well as FSS questionnaire. This scale includes 9 questions that were answered through Likert. The score of each questions was graded from 1 to 7, 1 indicating strong disagreement and 7 indicating agreement. The total score was obtained through the division of the sum of scores to 9, being a figure between 1 to 7, 1 standing for lack of fatigue and 7 showing the highest amount of fatigue in the individual.

In order to determine the validity of the questionnaire, the content validity method and in order to determine its reliability the test-retest method was used, leading to the correlation coefficient of 0.78.

In order to implement intervention, first the fatigue of the patients was assessed using the abovementioned questionnaire. For a period of three months, case group performed yoga exercises for eight 1-1.5-hour sessions per month with the help of a yoga instructor. The general system of yoga used for these patients was based on three principles: subtle exercises (Hathayoga), breathing exercises or absorbing the life force using yoga breathing (Pranayama) and concentration and mental control through meditation (Raja yoga). No intervention was conducted on the control group. 12 weeks after beginning the yoga exercises and 1 month after the last session, the fatigue of the patients was assessed once more and compared. The selection of the patients was with regard to having similar conditions such as having similar therapy methods, not having any other disease, having at least 14 years old, capability of doing yoga exercises, and a minimum of 2 years of being infected with MS. In

addition all the informants were selected among women as the number of women was by far more than men and thus it was possible to find similar informants and having random allocation. On the other hand, it was necessary to do yoga techniques with the supervision of one instructor and under similar circumstances. Since it was necessary to wear comfortable clothes during the exercises and the obligation to observe religious matters, yoga instructions was done by a woman who had passed yoga courses and was a member of the province's Yoga Society. Data analysis was done using descriptive statistics tests, paired t-test, independent t-test, and variance analysis with repeated measurement.

It should be mentioned that this research has been conducted with the permission of the Research Department of Yasuj Medical University as well as the Ethical committee of this department along with obtaining the consent of the patients. The patients were told that taking part in the study or stopping it at any stage is voluntarily and there written consent was collected.

Findings:

The average age of the informants was 31.6 ± 8 and the age range was 18-45 years. In the case group, 20 people (67%) were married and 10 (33%) were single. In the control group, 22 people (73%) were married and 8 (27%) were single. From the educational point of view, in the case group, 23 people (77%) had high school education and 7 (23%) had academic education. In the control group, 21 people (70%) had high school education and 9 (30%) had academic education. With regard to employment, in the case group, 18 people (60%) were housewives, 4 people (13%) were students, 3 (10%) were clerks, and 3 (10%) were unemployed. In the control group, 20 people (67%) were housewives, 4 people (13%) were students, 4 people (13%) were clerks, and 2 people (7%) were unemployed. With regard to the effect of yoga techniques on the feeling of fatigue in the patients, the results gained from statistical tests indicated that there was not a significant difference in the fatigue of the case and control group before and after the test; however, the difference became significant after the intervention (Table 1).

Table 1 indicates that there was not a significant difference in the amount of fatigue felt by the patients in the case and control groups before the intervention ($p < 0.05$) while this difference was significant after the intervention ($< 0.05P$).

Table 1. Comparison of the average fatigue in the patients suffering from MS in the study and control groups, before and after the intervention

Time \ Group	Case	Control	Meaningful Level
Before Intervention	5.42±0.24	5.37±0.43	p>0.05
After Intervention	4.48±0.1	5.41±0.85	P<0.05
One Month after the end of Intervention	5.44±1.11	4±0.23	P<0.05

Discussion:

Based on the findings of this research, it can be said that the average fatigue felt by the patients in the two groups was not significantly different before the intervention, while it showed a significant difference after doing yoga exercises. In the intervention group, doing yoga led to a decrease in the fatigue. The study conducted by Rasooli et al () titled the affect of energy preservation techniques on the fatigue felt by female patients suffering from MS (11). The results of the study by Ghafari et al. (2008) titled, the effect of progressive muscle relaxation on the fatigue felt by MS patients, demonstrated that these techniques decrease the amount of fatigue felt by the patients (12). In another study by Soorka et al. (2004), titled the effect of aerobics exercises on the fatigue felt by men and women infected with MS, the results showed that such exercises decrease the fatigue in women but do not affect the amount of fatigue felt by men (13).

Fatigue is one of the most common and most disabling symptoms of MS (14). The results gained from a study conducted in the US indicate that 75-90 percent of MS patients suffer from fatigue and 50-60 percent of patients have reported that fatigue creates problems in different aspects of their lives (15). Numerous studies have been conducted in order to determine the cause of fatigue in these patients, however, the main pathogen factors have yet to be determined. Fatigue can have direct relationship with the mechanism of the disease (primary fatigue) or it could be secondary fatigue related to the non-specific factors of the disease. The primary type could be the result of inflammation, demyelinating, or reduction of axons. Some are of the conviction that re-generation of the performance of the cortex of brain needs great amount of energy that causes fatigue in the individual. In addition, high amounts of some immunity markers have been found in the MS patients suffering from fatigue, however, this has not been confirmed in other studies. Moreover, fatigue could be secondary and the result of sleep disorder as such disorder appears in the patients as the result of such complications as urinary problems, spasms, pain and anxiety, as well as insomnia. In addition medical treatments could cause

fatigue in the patients (14). Studies have revealed that yoga techniques could reduce hormones associated with stress and anxiety and thus affect brain activities. Moreover, such techniques improve patients' quality of sleep (16), therefore, it could be sent that these factors are among the issues which affect the level of fatigue in the patients infected with MS and the result is a reduction of fatigue in these patients.

Conclusion:

Reappearance of MS, lack of definite cure, and its progressive nature force MS patients to be admitted to hospital repeatedly to undergo treatment. Therefore, the instructions given by nurses, as the people who have direct relationship with patients, could greatly affect the quality of patients' lives and preserve their capability in taking care of themselves. On the other hand, the low cost of yoga exercises, their accessibility, and possibility of fast learning encourages teaching these techniques to the diseases infected with MS. Therefore, it is necessary for the nurses to have enough information and to recommend these techniques to the patients.

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References:

1. Delisa JA.Rehabilitation Medicine:Principels and practice.3th ed. Philadelphia :Lippincott-Ranen publisher.1998:1014-1028.
1. 2 .Clinical trial on MS related fatigue of MSS. Available at: [http:// www. mss](http://www.mss). Accessed 2000.
2. Multiple Sclerosis its effects on you and those you love. Available at: [http://www.Velotoursp. Com/entxt/information/ms effects.Htm](http://www.Velotoursp.Com/entxt/information/ms%20effects.Htm).2003.
3. Kesselring J.Rehabilitation in multiple sclerosis .Journal of ACNR 2002;2(6):6-8
4. Holland NJ, Madonna M. Nursing grand rounds: Multiple Sclerosis J Nero Nurs 2005; 37(1): 15-19.

5. Kinkel RP. Fatigue in multiple sclerosis: reducing the impact through comprehensive management. *International journal of MS care* 2000; 4:43-49.
6. Kesselring J. *Multiple Sclerosis*. 2th ed, London: Cambridge Univercity 2001; 54.
7. Bethoux F. Fatigue and multiple sclerosis. *Ann Readapt Med Phys*. 2006 Jul; 49(6): 265-71.
8. Pozzilli C ,Sbardella E, De Gigilo L,Tomassini V.Treatment of multiple sclerosis-related fatigue :pharmacological and non pharmacological approaches. [Neurol Sci](#).2006;27(4):297-299.
9. Sovami, Shivananda. *Yoga Dictionary*. Translted by Reza Rafer, Sales Publication. Second edition, 2003: 33-34.
10. Rasooli, N., Ahmadi, F., Nabavi, M., and Hajizadeh, A. Investigating the effect of techniques of preserving energy on the fatigue of women infected with MS. *Empowerment Quarterly*. 2006. Period 7. Number 24. 43-48.
11. Ghafari, s., Ahmadi, F., Nabavi, S.M., Memarian, R. and Kazemnazhad, A. The effect of progressive muscle relaxation on the fatigue felt by MS patients. *Shahrekord Medical University Journal*, period 10. Number 68. 1-61.
12. Surakka J et al.Effect of aerobic and strength exercise on motor fatigue in men and women with multiple sclerosis : a randomized conrolled trial. [Clin Rehabil](#).2004: 18(7):737-46.
13. Kos D, Kerckhofs E, Nagels G, D'hooghe MB, Ilsbroukx S. Origin of Fatigue in Multiple Sclerosis: Review of the Literature. *Neurorehabilitation and Neural Repair*:2008:22(1): 91-100 .
14. Zifko U. Treatment of fatigue in patients with multiple sclerosis. *Wien Med wochenschr*. 2003;153(3-4): 65-72.
15. Wood C.Mood change and perceptional of vitality; a comparison of the effects of relaxation, visualization and yoga. *Journal of Royal Society of medicine*.1993;89:254-258.

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