Physical Activity in Young Relapsing Remitting Multiple Sclerosis Patients – A case-control study

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Abstract

Background: Physical activity (PA) is known to be beneficial in patients with Multiple Sclerosis (MS); nevertheless, previous studies reported lower PA rates among these patients as compared to healthy subjects. Our study aims to assess PA in Relapsing-remitting MS (RR-MS) patients and compare it with PA from healthy controls (HC). We also aim to access the correlation between PA, fatigue, and sleep health, and the impact of the COVID19 pandemic on PA levels.

Methods: A convenience sample including patients diagnosed with RR-MS (EDSS<4.0), followed in the Neurology-Demyelinating Diseases consultation of a tertiary hospital, who agreed to participate in the study, compared to age- and sex-matched controls, was evaluated for objective PA for 7 days, using a Xiaomi Mi Band 5® armband (MiBand). This instrument reported daily step count, kilometer (km) count, active time, hours of sleep, and sleep score. Subjective assessment was derived from self-reporting International Physical Activity Questionnaire (IPAQ) long version. Quality of sleep and fatigue in RR-MS patients were assessed using the SATED score and the Modified Fatigue Impact Scale (MFIS), respectively. Finally, we asked the participants if and how the COVID19 pandemic affected their daily PA.

Results: Twenty-three RR-MS patients and 21 matched HC were included. No differences were found in either IPAQ or MiBand regarding PA comparison between RR-MS patients and HC: RR-MS patients revealed a mean active time of 84.81 minutes/day, 6712 steps/day, and 4.28 km/day, while HC had 74.95 min/day, 5421 steps/day and 3.59 km/day. People who self-reported higher PA levels had higher measured active time (r 0.524; p=0.001). RR-MS patients with higher scores in MFIS (higher fatigue levels) showed lower PA levels (p=0.021) and lower SATED scores, meaning poor sleep health (p<0.001). Most participants reported a decrease in PA levels due to the COVID19 pandemic, irrespectively of being RR-MS patients or HC.

Conclusion: Self-reported physical activity correlates with objective measurements, while more fatigability and poor sleep health correlate with lower PA levels in RR-MS patients. Adequate evaluation is important to promote healthy physical activity habits. A bigger sample is needed to explore differences between groups regarding PA levels.

Keywords: Physical activity • Multiple sclerosis • MiBand • Sleep • Fatigue

Retraction Note

The article entitled "Physical Activity in Young Relapsing Remitting Multiple Sclerosis Patients – A case-control study" has been accepted for publication in the Journal of Multiple Sclerosis considering the statements provided in the article as personal opinion of the author which was found not having any conflict or biasness towards anything. As the article was a research one, information provided by the author was considered as an opinion to be expressed through publication. Publisher took decision to make the article online solely based on the reviewers suggestion which considered the article not but a personal opinion of the author. However, it is found that the author have some personal concerns and issues, therefore, being retracted from the journal.

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