Assessments

It is stated that the EDSS, which we use to evaluate the disability levels of RRMS patients, is not sensitive enough to evaluate functional parameters such as dexterity and cognition in MS (Korkmaz et al. 2018). Therefore, other specific assessment methods such as the Ataxia Rating and Rating Scale (SARA), the Nine-Hole Peg Test (NHPT), and the Dexterity Questionnaire-24 (DextQ-24) were used to determine the level of functioning. SARA is an internationally accepted scale that is frequently used in the evaluation of ataxia (Schmitz-Hubsch et al. 2006, Salcı et al. 2017). NHPT is the gold standard of performance-based assessment, which detects the patient's progress over time and is sensitive to changes in treatment (Feys et al. 2017, Korkmaz et al. 2019). DextQ-24, which was developed to measure manual dexterity and consists of 24 questions, is divided into five subgroups washing/care, dressing, food and kitchen, daily activities, TV/CD/DVD. The lowest total score is 24, and the highest is 96. An increase in the score means a decrease in dexterity (Vanbellingen et al. 2016). Beck Depression Inventory (BDI) is a valid and reliable depression scale for neurological diseases (Hisli 1989).

The Fatigue Severity Scale (FSS) was used to determine the severity of the fatigue levels of individuals during the day, and the Fatigue Impact Scale (FIS) was used to determine the effects of fatigue on activities of daily living. The Turkish validity and reliability study of both scales was conducted by Armutlu et al. (Rottoli et al. 2016, Lundgren-Nilsson et al. 2017, Armutlu et al. 2007). Static and dynamic fatigue levels in the coarse and pinch grip were assessed with a Jamar® digital hand dynamometer and pinch meter, respectively, in the standard measuring position recommended by the American Association of Hand Therapists (Fess 1992). For the Dynamic Fatigue Index, a maximum of 15 voluntary contractions were requested from the participant. No rest was given between contractions and the number of remaining contractions was reported to the participant. The highest value of the first 3 contractions (MVC1) and the highest value of the last 3 contractions (MVC2) were recorded and the dynamic fatigue index was calculated with the formula $100*[1–(MVC2/MVC1)]$ (Severijns et al. .2015). For the Static Fatigue Index, after a one-minute rest break, the participant was asked to maintain the maximum voluntary contraction for 30 seconds and the participant was not informed about the remaining time. Assuming that the participant can sustain the maximum voluntary contraction for 30 seconds, taking into account the area generated in the graph (Hypothetical Area Under the Force Curve [HAUC]) and the area calculated by the time the participant can walk (Actual Area Under the Power Curve [AUC]) Static Fatigue Index $100*[1- (AUC/HAUC)]$ formula (Severijns et al. 2015).

Statistical Analysis

The data obtained from the cases were recorded in the 21.0 version of the Statistical Package for the Social Sciences (SPSS) program (SPSS, Inc., Chicago, IL, USA). The mean and standard deviation were calculated for the descriptive data since parametric conditions could not meet, and the Mann-Whitney U test was used to compare individuals with RRMS and healthy individuals. The relationship between fatigue indices and other parameters was analyzed by Spearman Correlation Analysis. The significance level was taken as $p \leq 0.05$.