

Introduction and Purpose

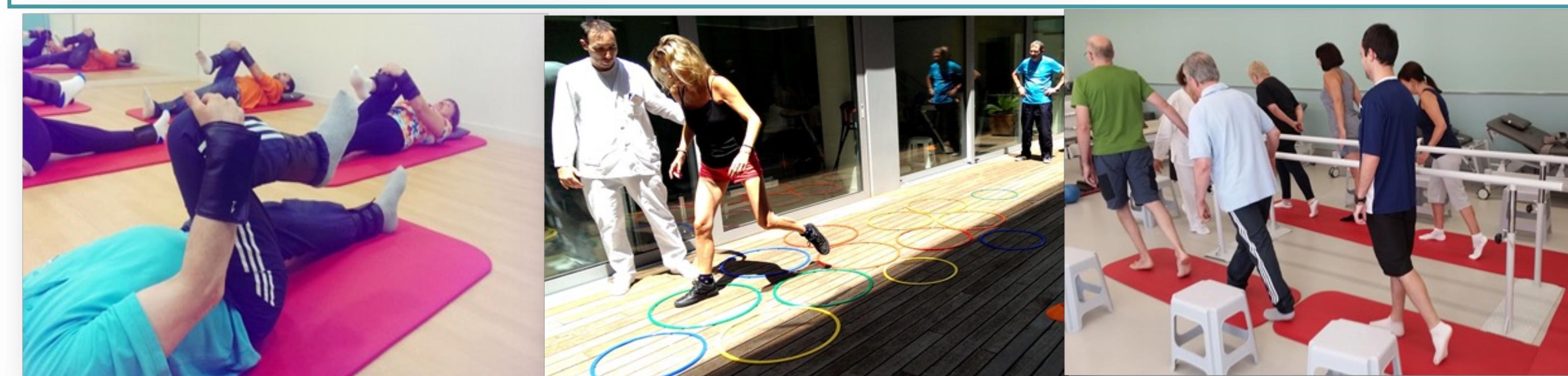
Up to 90% of PwMS experience some degree of reduced mobility that limits their independence, hence the need to establish rehabilitation programs aimed at improving balance and gait disturbances caused by muscle weakness, spasticity, fatigue, lack of coordination motor skills and maintaining their functional level.

Our objective is to analyze the impact of our periodic outpatient rehabilitation program on gait function and balance according to the level of disability.

Patients and Methods

Present a report of a retrospective cohort of 907 patients who participated in several periods of multidisciplinary rehabilitation of 4 months with variable intervals without treatment of 1 or 2 years, followed up from 2007 to 2019. During these periods the patients were attended to 3 times per week. The sessions included three major components adapted according to the individual patient's capacity and functional needs: muscular training (including strengthening and stretching sessions), balance training (in standing position and with the fit ball), and gait reeducation strategies.

Outcome measures were collected retrospectively from the clinical database used in usual clinical practice including the Berg Balance Scale (BBS), the Ten Meter Walking Test (TMWT), and the Tinetti test (TT). Data were analyzed by student t-test and paired t-test distributed according to the disability level measured by the Expanded Disability Status Scale (EDSS).

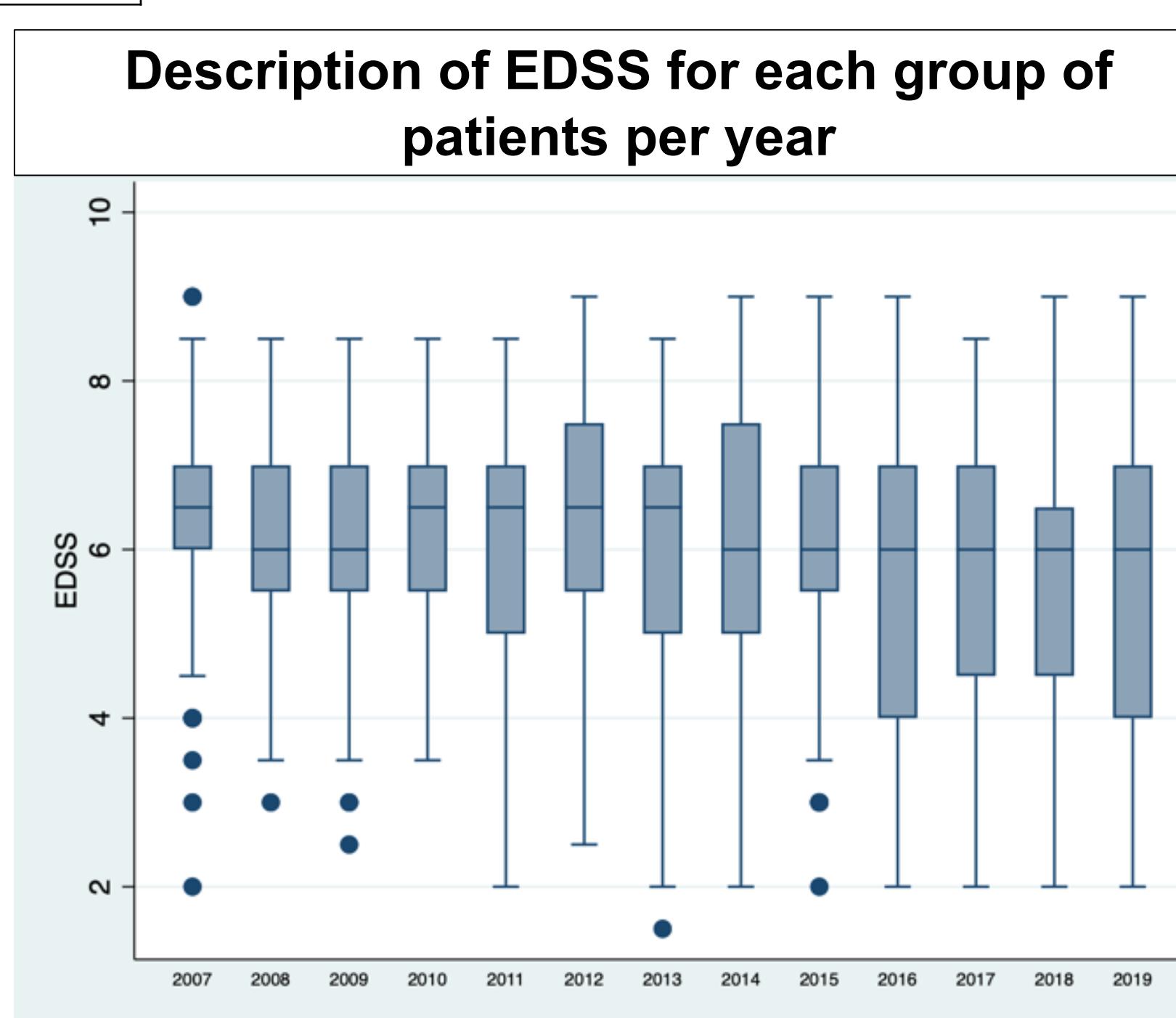
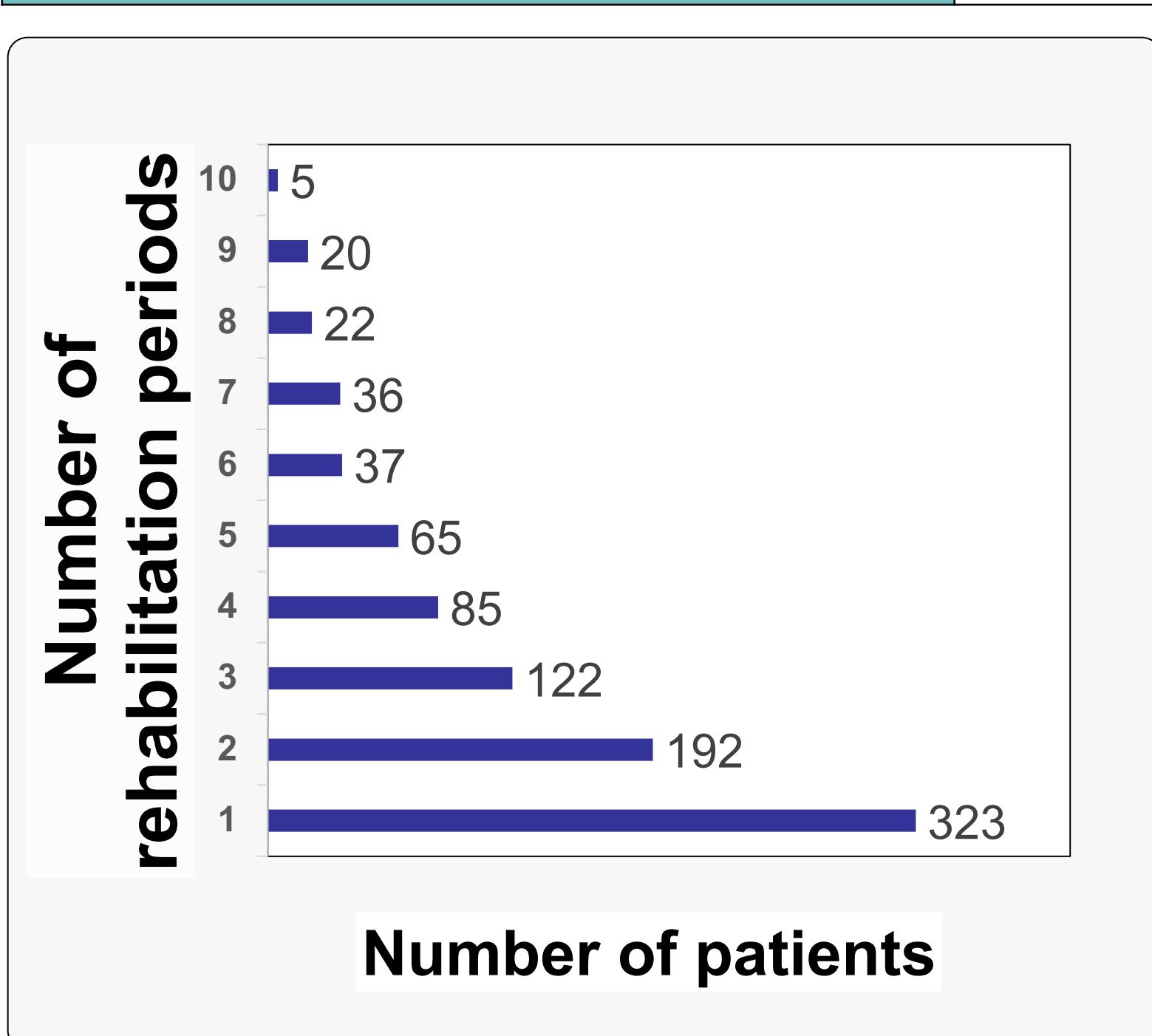
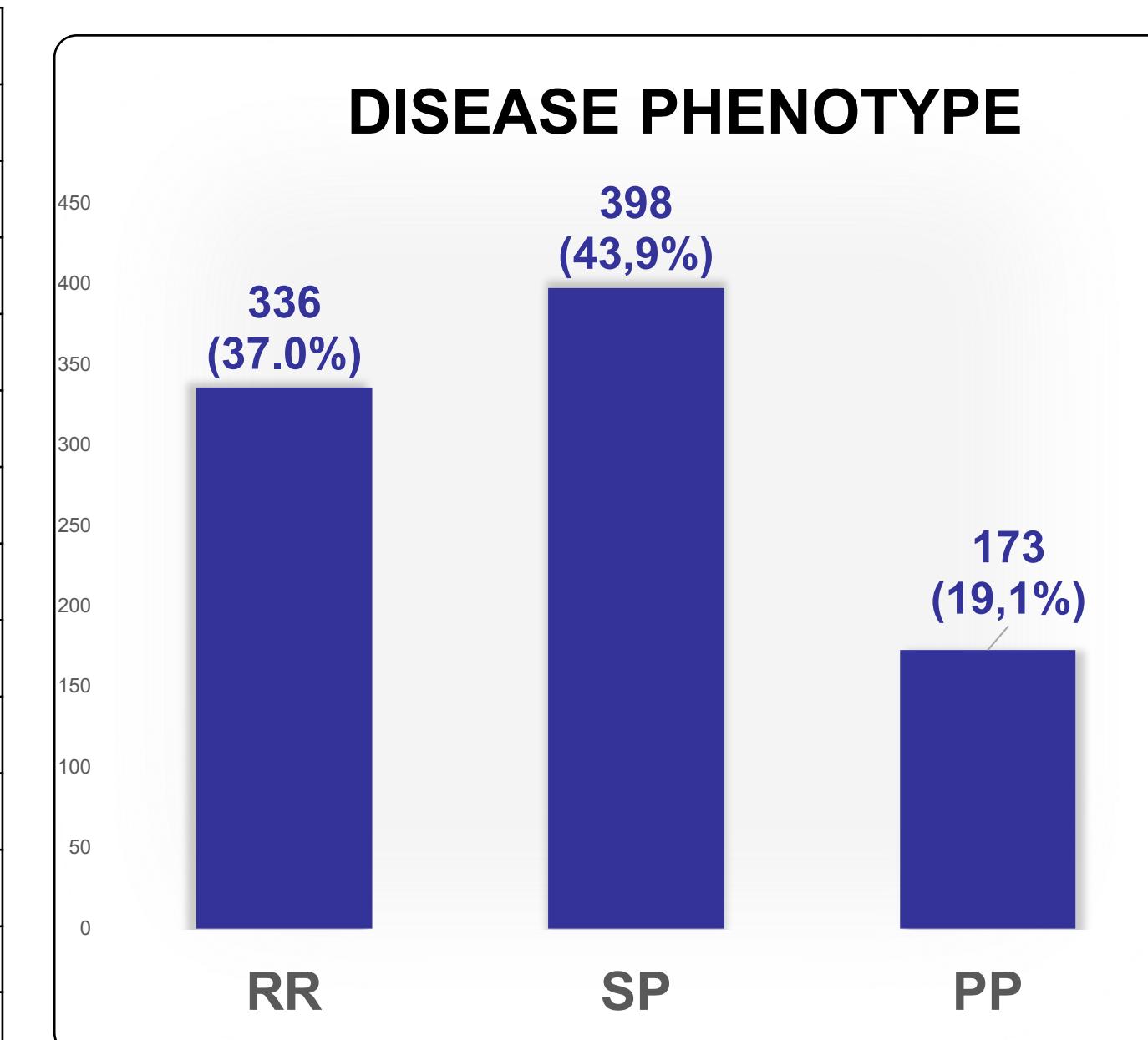


Results

Of the total sample, 61.9% were female, with a mean age of 53.45 years (SD 11.53), mean years of evolution of 16.92 (SD 10.06), and mean EDSS of 5.89 (SD 1.65). Significant changes were observed in balance and gait measures after each rehabilitation period (BBS p <0.005; TMWT p <0.005; TT p=0.54), although we observed a loss in rehabilitation effect in-between rehabilitation periods and an increase of disability over time.

The effect on walking speed differed according to the EDSS, observing an absolute difference of 0.14 m/s (p<0.005) in the group with EDSS 1-3.5; 0.08 m/s (p <0.005) in the EDSS 4.0-6.0 group after the rehabilitation period.

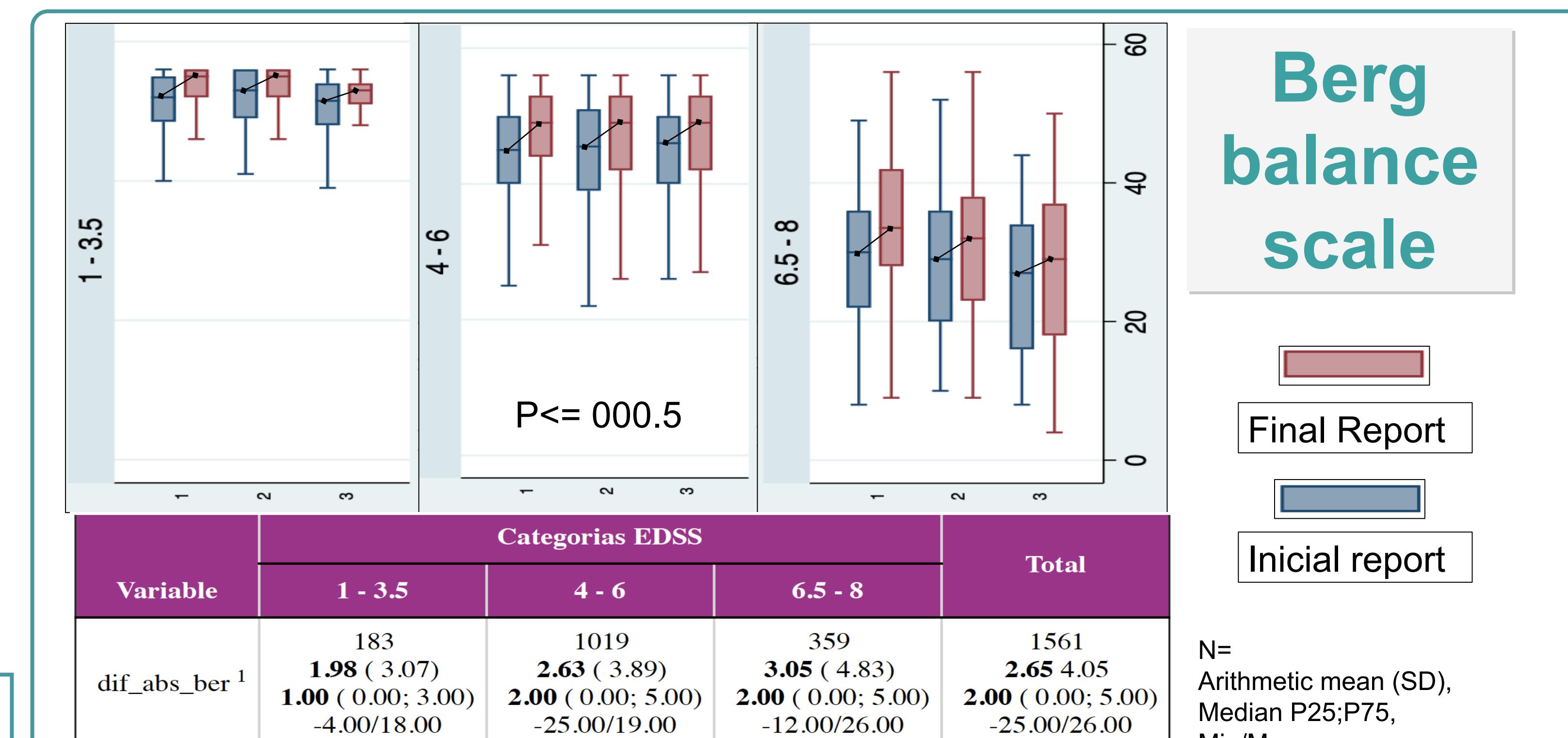
COHORT DESCRIPTION	
Female [n(%)]	561 (61.85 %)
Male [n(%)]	346 (38.15 %)
Median age [y(SD)]	53.45 (11.57)
Median disease duration [y(SD)]	16.92 (10.06)
Relapsing-remitting [n(%)]	336 (37%)
Secondary progressive [n(%)]	398 (43.9 %)
Primary progressive [n(%)]	173 (19.1%)
Evolution Years [y(SD)]	16.92 (10.06)
Median EDSS [n(%)]	5.89 (1.65)
EDSS 1-3,5	108 (12%)
EDSS 4-6	375 (41.7%)
EDSS 6,5-8	358 (39.8%)
EDSS 8,5-10	58 (6.5%)



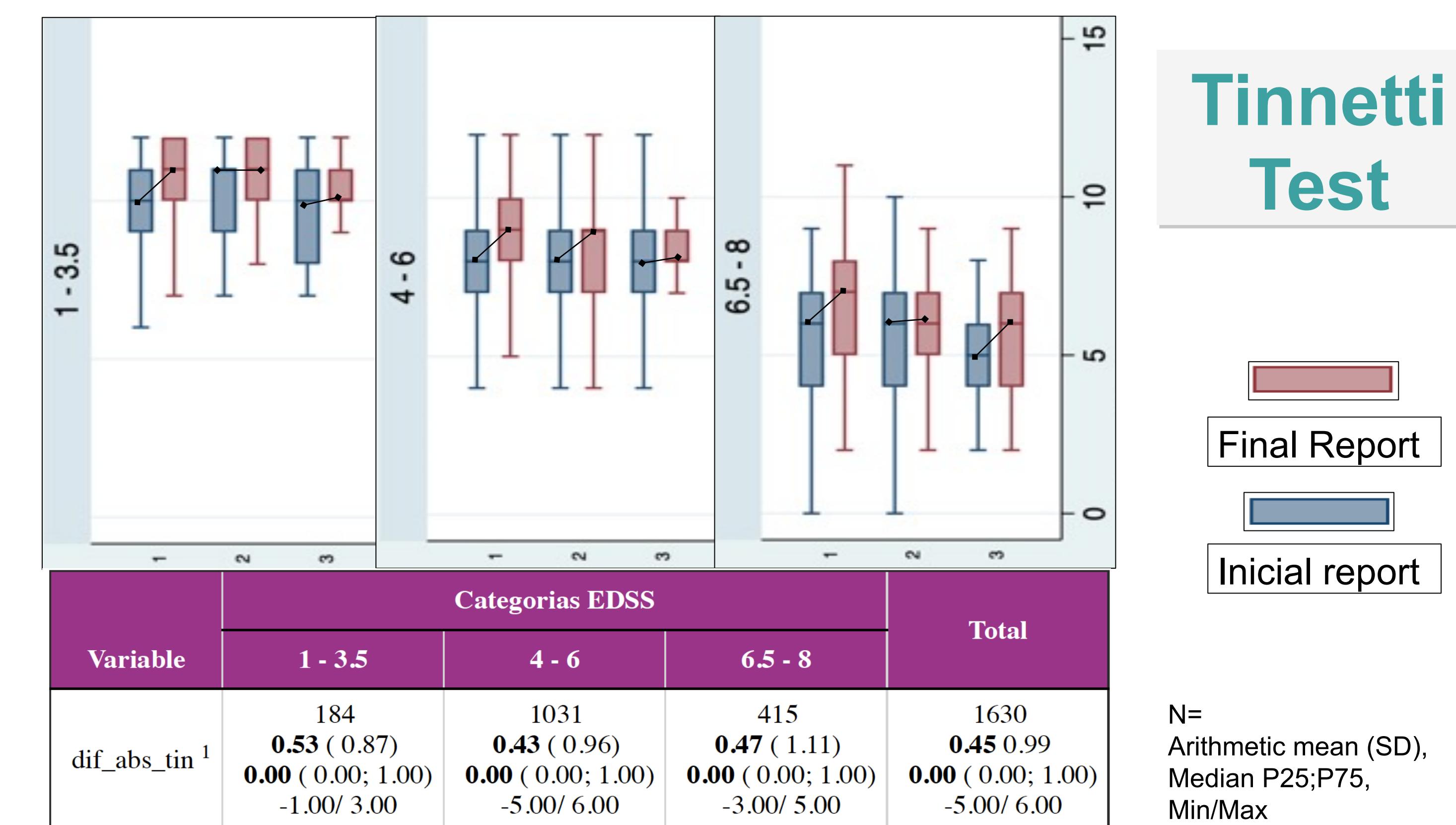
Impact of balance and gait training in a cohort of patients with multiple sclerosis (PwMS) over 13 years.

E.-R. Meza-Murillo, G. Loyola, I. Galán Cartaña , C. Santoyo, S. Sanchez, M. Janer, D. Fabregas, X. Montalban

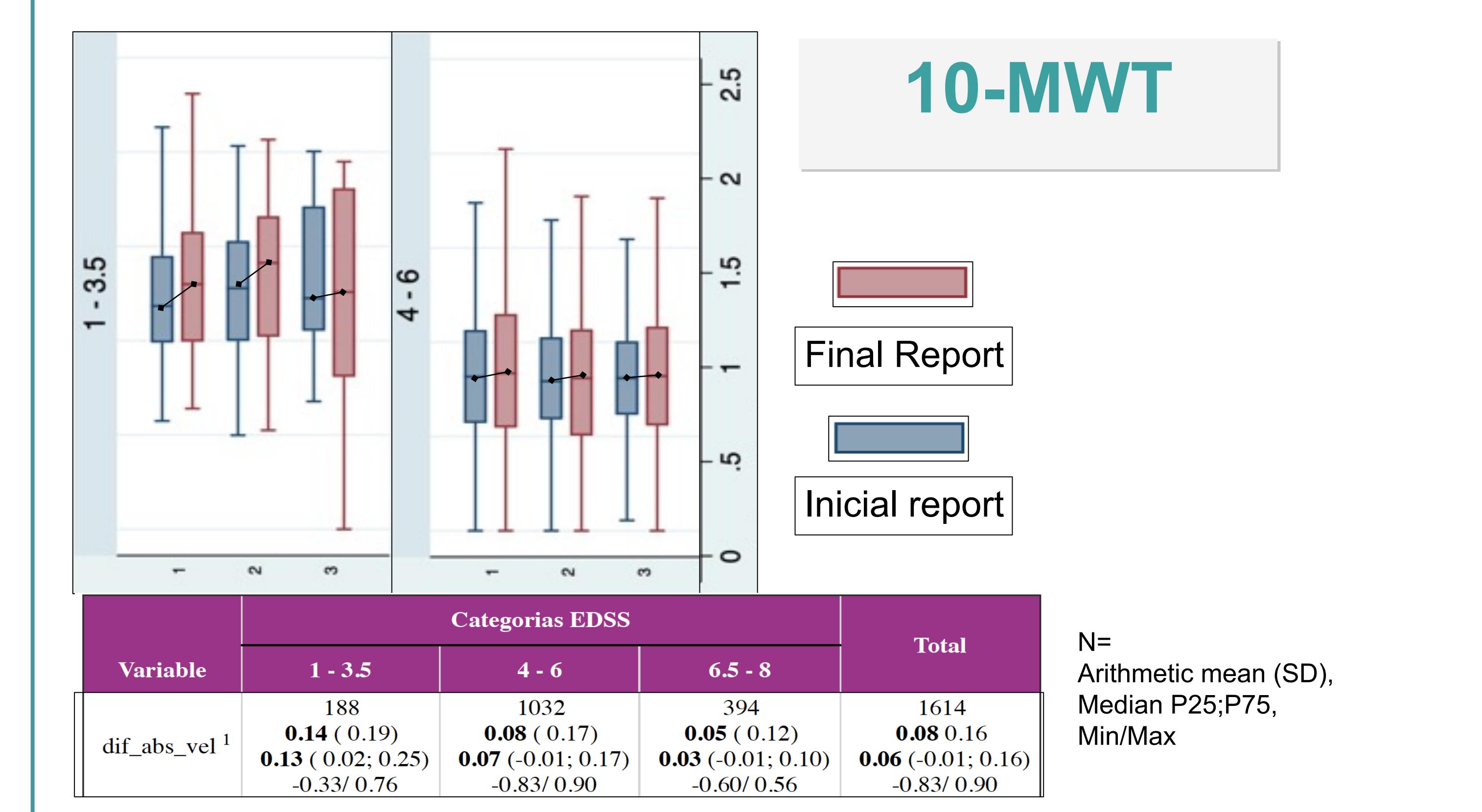
Multiple Sclerosis Center of Catalonia (Cemcat). Barcelona, Spain.



The Berg scale comprises 14 items (score between 0-4). Total scores range from 0 (balance severely impaired) to 56 (balance excellent).



The higher the score, the better performance. The maximum score for the gait subscale is 12, and for the balance is 16. The sum of both scores evaluates the risk of falls. The higher the score, the lower the risk.



Conclusions

The current study provides valuable data related to the positive effects of an integrated physical rehabilitation program on ambulation and balance, we have observed how there is an immediate positive effect at the end of each rehabilitation period, although the global evolutionary balance shows the progressive effect of the illness. As a hypothesis, we could conclude that sustained physical activity can be a modifier of the disease, although we do not have a control group to confirm our hypothesis.

Discussion

Although our study presents some important limitations, as we didn't report the type of disease-modifying treatment received by patients we can observe that the rehabilitation programs had a beneficial effect on gait and balance function in our cohort. More research is warranted to investigate if multidisciplinary rehabilitation could favor the functional reserve of PwMS.

Disclosures None