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Investigating a Minimum Effective Dose and Effect of Rebound Exercise in Community -Dwelling Adults with Neurological Disorders: A Pre -Post Interventional Study.

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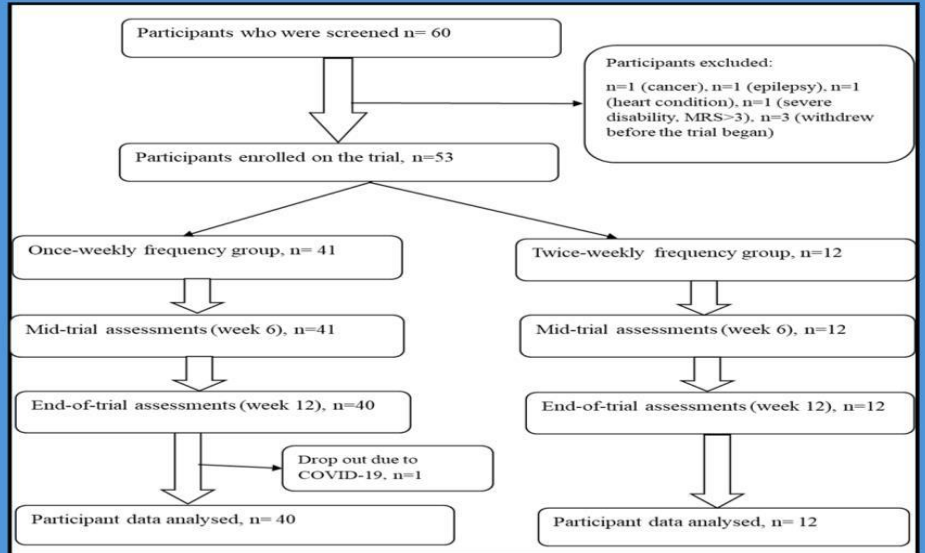
Background and purpose

Studies show that performing rebound exercises (RE) thrice weekly can improve mobility for patients with neurological disorders (ND) in a hospital setting. However, it is unclear whether the same result can be achieved in the community with less frequent intervention. Therefore, this study aimed to identify a low effective frequency dose of RE and its impact on the physiological and physical functions of adults with ND living in the community.

Method

The study involved 52 individuals (17 men and 35 women) with ND who could walk independently for at least two minutes. The participants engaged in a 30-minute RE once or twice weekly, based on their preference. The study measured their blood pressure (BP), heart rate (HR), balance, walking speed (WS), physical activity level (PAL), and quality of life (QoL) at the baseline, six weeks, and 12 weeks. Statistical tests like Repeated measures ANOVA, Friedman, Independent t-test, and Mann-Whitney U tests were used to test for significant differences within and between groups for the normally distributed and skewed data. The analysis was conducted using SPSS software, version 28.

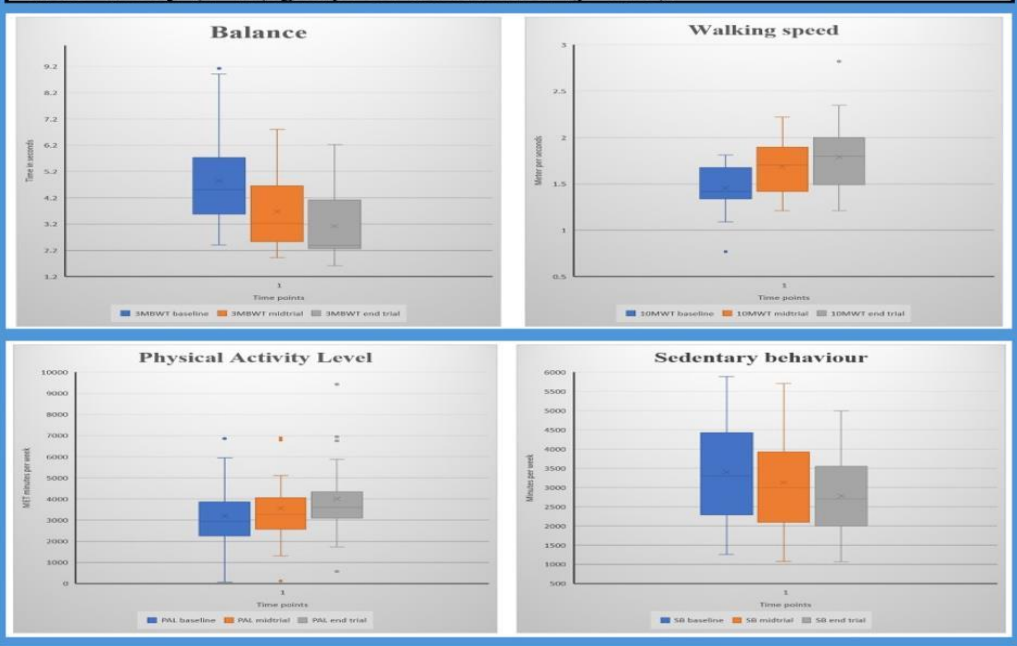


Acknowledgement

I want to express my gratitude to the participants who participated in this study and to Parkinson's Disease UK for their support in the recruitment process.

Result

The majority of the participants were female (67.3%), married (46.2%), retired (55.8%), non-smokers (90.4%) and were within the 65-74 years age range (50%). Most of them attended the rebound exercise once a week (76.9%), had Parkinson's disease (50%) and had been diagnosed within the previous 3-4 years (34.6%). The study found significant differences in the participants' BP ($p<0.05$), HR ($p=0.021$), balance ($p=0.000$), WS ($p<0.05$), PAL ($p=0.000$) and QoL ($p<0.05$) across all time points. However, no significant difference was found between participants who attended once-weekly (n=40) and those who attended twice-weekly (n=12) groups for all outcomes ($p>0.05$).



Conclusion

Rebound exercise has shown promising results in improving the physiological and physical function of community-dwelling adults with neurological disorders. The study found that a once-a-week frequency improves these outcomes in this population. Identifying a minimum effective frequency dose holds significant implications for enhancing the accessibility and feasibility of rebound exercise interventions in community-based rehabilitation programs.

References

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