

Article Title

Effect of a resistance training programme implemented with high levels of effort on physical fitness in people with intellectual disabilities (IDs) living in group homes: a randomised controlled trial

Article Citation

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Adaptive Sport/Recreation Categories

- Group home intervention
- Resistance training program
- Physical activity participation

Study Type: RCT, controlled longitudinal pre-post design with 14 weeks follow-up

- **Population:** Adults with mild to moderate IDs, Age between 18 to 65 years
- **Intervention:** 14-week resistance training program
- **Comparator:** Usual physical activity
- **Outcome:** Markers of physical fitness (body composition, static balance, and muscle strength)

Summary

Access to physical exercise programmes for people with IDs is hampered by personal and environmental factors. There is limited and heterogeneous information related to high-intensity training programs in individuals with IDs. Fifty-two individuals with IDs participated in this RCT study (experimental group n=27, control group n=25) with a pre and post-test assessing body composition, static balance, and muscle strength. The experimental group received three training sessions per week for 14 consecutive weeks (a total of 42 sessions) and was supervised by two specialized coaches. The intervention compared to the usual physical activity in the control group in individuals with IDs.

The adaptation of the training program is based on the theories that support the CrossFit training programmes that include four blocks: (1) dynamic bodyweight exercises, (2) dynamic exercises performed against external loads, (3) ballistic exercises, and (4) static exercises. Each session lasted about an hour and included a 10-minute warm-up that included walking, stretching, and joint mobility exercises, as well as 10 minutes of each programme block.

The premise was to improve participants' static and dynamic muscle strength and muscle mass, enrich postural balance performance, and in turn reduce body mass index. Thus, four dependent variables of motor measures were taken as outcome measures, where body composition was assessed using the InBody-230 recording system, static balance with a pressure platform, and muscle strength was recorded using a functional electromechanical dynamometer before and after the training intervention. In addition, physical activity levels were assessed before and during the intervention period.

The high-intensity training program was effective in improving muscle strength ($P < 0.05$) and decrement in body mass index ($P = 0.034$) after the intervention period in the experimental group than control group in individuals with IDs. The static balance was more significant in measures of Romberg's closed eyes during swing length ($P < 0.014$) and mediolateral displacement ($P = 0.003$), than anteroposterior displacement ($P = 0.294$) after the intervention.

Article Strengths

- Facility of resistance training intervention for individuals with IDs
- Community-based intervention
- Comprehensive 14-week program under supervision
- Recognition of the need to reduce BMI and improve muscle strength and balance.
- Use of cross-fit program theory and reinforcement strategies

Article Weaknesses

- Adverse events were not reported
- Varied groups of age criteria in included participants
- Loss of follow-up in individuals affected with COVID-19 and their adverse events not reported
- Lack of description of the intervention, though comprehensively conducted
- Lack of discussion regarding change in physical activity levels
- It is unclear whether motor skills alone will be adequate to modify physical activity levels
- Improvements in quality of life, and self-efficacy are not measured

Take Home Messages

- Participation in physical activity in individuals with IDs is an important precursor for the well-being factor, thus further research can target quality-of-life measures
- Improvements in greater muscle strength and lowering the body mass index can be expected who perform physical activities from moderate to vigorous intensity

Impacts on Clinical Practice

- Importance of prescribing specific moderate-high intensity physical activity programs in individuals with IDs
- Target exercise plans with reinforcement strategies and stair-case phenomena