

Pedagogical proposal of tele-exercise based on “square stepping exercise” in preschoolers: Study protocol

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Abstract

Early childhood education aims to achieve the motor, cognitive, emotional, and social development of preschoolers by providing them with a variety of learning opportunities. The square-stepping exercise (SSE) is a balance and lower limb strength training programme used to prevent falls and stimulate cognitive function in older adults. This project aims to propose an SSE tele-exercise (Tele-SSE) protocol to evaluate its effects on the motor and cognitive development of children aged between 3 and 6 years. A randomized controlled trial with experimental (Tele-SSE) and control (general education) groups will be carried out. The application of Tele-SSE will be performed for 9 months (three times per week) and one additional follow-up after the intervention at the beginning of the next academic year. One-hundred and two preschoolers will be recruited and randomly distributed into the two groups: experimental (n = 51) and control (n = 51). Although the main outcome will be balance due to the nature of the SSE, outcomes will include physical and motor (body mass index, waist circumference, handgrip and lower-limb strength, speed-agility, and cardiorespiratory fitness) and cognitive (executive functions and attention, episodic memory, and language assessment, using the Fitness Assessment in the Preschool Battery (PREFIT) and The National Institutes of Health Toolbox—Early Childhood Cognition Battery. This project aims to improve cognitive and motor skills in preschoolers aged between 3 and 6 years old, based on a 9-month Tele-SSE intervention. If this intervention proves to be effective, it could be implemented in those centres, entities and associations specializing in early childhood education. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

Author keywords

Balance; Cognitive skills; Early education; Pedagogy; Psychomotor skills; Tele-square-stepping exercise