

地域在住高齢者を対象とした集団型二重課題運動による 身体機能と認知機能への効果

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【要旨】

地域在住高齢者を対象にモトタイルを用いて, 運動と認知課題を併用した二重課題運動を集団で週2回, 12週間実施し, 身体機能と認知機能, 生活機能への効果を検討した. 高齢者21人を基本チェックリスト(KCL)の認知領域の低下に該当がない12人(1群), 該当した9人(2群)に分けた. この結果, チェアースタンド, ファンクショナルリーチ, アップアンドゴーに経時効果が認められた. 20秒間マーチ時の歩行周期(左脚)の変動係数が小さくなった. KCLの総合点, 運動領域点, 認知領域点に経時効果が認められた. しかし, 認知機能テスト(単純反応課題, Go/Nogo反応, Flanker課題, Stroop課題)に有意な変化が認められなかった. KCL総合点, KCL認知領域点は2群が1群に比べて運動後の変化が大きかった. 一方, 認知機能テストは両群で有意な変化が認められなかった. 地域在住高齢者に対する集団型による二重課題運動で身体機能, 生活機能(KCL総合点と認知領域点)の一部改善が認められ, 地域型運動として有効とみられたが, 認知機能への効果についてはさらなる検討が求められる.

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Effects of dual-task exercises using Moto tiles on the functional fitness and cognitive function of older adults living in the community

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[Abstract]

The purpose of the present study was to examine effects on the physical and cognitive functions of older adults living in the community of a dual-task exercise that combines exercise and cognitive tasks using Moto tiles, that is, 10 interactive tiles with built-in LED lights that are said to improve the balance, strength, endurance, mobility, and agility of older adults. The participants, 21 older adults, completed the memory domain items of the basic checklist (KCL) of the Ministry of Health, Labour and Welfare and, on the basis of the results, were divided into two groups: 12 with no decline (Group 1) and 9 with decline (Group 2). The following functional fitness parameters were examined: 30-sec chair stand (CS30), functional reach (FR), timed up-and-go (TUG), and 20-sec march test cycle time (pace, right foot, left foot), and the coefficient of variation (CV) was calculated. Cognitive function was evaluated using a simple reaction task, a Go/No-go reaction time task, the Eriksen flanker task, and the color-word Stroop task. The participants did the exercises twice a week for 12 weeks at the local community center. A repeated measures ANOVA showed a time effect for the 30-second chair stand, functional reach, timed up-and-go, checklist total scores, and the memory and physical domain scores on the checklist. The coefficient of variation of the left leg walking cycle during the 20-sec march test decreased significantly. After exercise, the changes in checklist total scores and cognitive region scores were larger in Group 2 than in Group 1. However, no significant change was observed on any of the cognitive function tests. In the present study, the group-based dual-task exercise for these older adults was associated with some improvement in their functional fitness and living function, so these exercises seem to be useful as a community-based exercise. However, further studies are required on the effects of the exercises on cognitive function.