Institutionen för neurobiologi, vårdvetenskap och samhälle, Sektionen för sjukgymnastik

Individually tailored physical and daily activities for residents in nursing home settings - a Scandinavian multi-centre study

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ABSTRACT

The overall **purpose** of this thesis was to describe the impact of an individually tailored intervention programme, in nursing home settings, on physical capacity, degree of dependence in activities of daily living (ADL), long-term participation in physical and/or daily activities, and self-rated well-being.
The different **aims** were

to present the rationale and design of the study

to describe the levels of physical and cognitive function, dependence in ADL, and degree of well-being of the participants at baseline,

to investigate the feasibility of measuring muscle strength, mobility, balance function, dependence in ADL, physical activity level, and cognitive function in elderly nursing home residents, and also to detect any correlations between these measurements,

to describe the effect of three months of individually tailored physical and daily activities for elderly nursing home residents on muscle strength, mobility, balance function, fall-related self-efficacy, dependence in ADL, and physical activity level,

to evaluate the long-term effects, within and between groups, on well-being, cognitive function, mobility, dependence in ADL, physical activity level, and different dimensions of physical function three months after the intervention was completed

Material and methods: Elderly residents (n=322) from nursing homes in three Scandinavian countries were randomised to either an Intervention group (IG) or Control Group (CG). The intervention consisted of individually tailored physical and daily activities for three months. Reliable and valid tests of muscle strength, mobility, balance function, fall-related self-efficacy, dependence in ADL, physical activity level, well-being and cognitive function were used. All participants were measured at baseline, after three months of intervention, and after three months of post-training.

Results: The median age of the participants was 85.5 years, and 74% of them were women. The median length of stay was 15 months, 64% were able to walk with or without walking aids, and 60 % were able to rise from a chair once. The measurements seem feasible, and no floor or ceiling effects were detected. Sixty-eight per cent completed between 10 and 13 weeks of intervention with a mean exercise dose of 105 minutes per week. Following intervention, a significant difference was found between groups regarding balance function, transfer ability and physical activity level, where the IG had improved while the CG deteriorated. Also, within the IG a significant improvement regarding functional leg muscle strength and walking/wheelchair speed was demonstrated, while the results for balance and dependence in ADL were maintained during the intervention period. Between the 3- and 6-month follow-ups, the test results for functional leg muscle strength, balance function, physical activity level and the cognitive and social dimensions of ADL deteriorated within the IG. Within the CG, a significant deterioration in balance function, dependence in ADL, and transfer ability, but a significant improvement in physical activity level, were seen between baseline and the 3-month follow-up.

Conclusions: This study demonstrates that balance, transfer ability, and physical activity level can be improved or maintained following 3 months of intervention in nursing home residents. Within the IG, leg muscle strength and walking/wheelchair speed also improved. However, the effects regarding leg muscle strength, balance function, and physical activity level were lost during the post-training period, and dependence in social and cognitive dimensions of ADL deteriorated. The duration and frequency of the intervention and levels of cognition had some impact on the outcome values. Low physical activity level, physical function and dependence in ADL were related to poor well-being, low cognitive function and low fall-related self-efficacy. The instruments used for testing seem to be feasible for elderly nursing home residents.

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