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Team-based home rehabilitation after hip fracture in older adults

Effects, experiences and impact of dementia

Åsa Karlsson

Akademisk avhandling

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Fakultetsopponent: Docent, Anna Cristina Åberg
Akademin Utbildning, hälsa och samhälle, Högskolan Dalarna, Falun och IFV/Geriatrik, Uppsala Universitet, Uppsala, Sverige.

Institutionen för Samhällsmedicin och Rehabilitering, Geriatrik och Fysioterapi, Umeå Universitet, Sverige

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Åsa Karlsson

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Abstract
Objective: The aim of the thesis was to investigate the effects of early discharge followed by geriatric interdisciplinary home rehabilitation (GIHR) for older adults with hip fracture, and specifically among those with dementia, vs. in-hospital geriatric care according to a multifactorial rehabilitation program. An additional aim was to explore how older adults experienced their rehabilitation and recovery during the year following the fracture.
Methods: The thesis evaluated a randomized controlled trial including 205 participants with hip fracture, aged ≥70, living in ordinary housing or residential care facilities. The individually designed GIHR intervention aimed for early discharge and focused on walking ability, independence in activities of daily living (ADL) and multifactorial fall prevention for a maximum of 10 weeks. Participants were assessed in-hospital and at 3- and 12-month follow-up visits. Walking ability was assessed in an interview along with gait speed tests. Independence in ADL was measured using the Barthel ADL Index, and the ADL Staircase including the Katz ADL Index, and hospital length of stay (LOS) was recorded. The effects of the GIHR intervention among participants with dementia were investigated in a *post hoc* subgroup analysis where additional outcomes were falls, mortality, readmissions, and hospital days between discharge and 12 months. Individual interviews were performed with 20 selected participants just after the 12-month follow-up. Data were analysed using qualitative content analysis.
Results: The postoperative hospital LOS was reduced by a median of six days in the GIHR group compared to the control group, although not significantly reduced in the GIHR group for participants with dementia. Binary logistic regression analyses revealed no significant differences between the GIHR and control groups regarding independent walking ability, the ability to walk without a walking device, or independence in ADL at 3 and 12 months. Gait speed was comparable between the two groups at 3 and 12 months. Interaction analyses showed that the GIHR vs. control groups had comparable effects on walking ability and ADL, and on falls and mortality after discharge, regardless of whether the participants had dementia or not. The number of readmissions and hospital days after discharge was comparable between GIHR and control groups in the dementia subgroup. Overall, dementia was associated with significantly impaired walking ability and greater dependence in ADL and with increased risk of falling and increased mortality compared to participants without dementia. Analysis of interview data revealed four themes: *Having support is vital for recovery*; *Getting to know a new me*; *Striving for independence despite obstacles*; and *Living an altered but acceptable life*.
Conclusion: In older adults with hip fracture, early discharge followed by GIHR reduced postoperative hospital LOS. Functional recovery was nevertheless comparable to in-hospital geriatric care according to a multifactorial rehabilitation program. GIHR seems appropriate also for older adults with dementia, although hospital LOS was not reduced in the dementia subgroup. Further studies with larger samples are needed to validate these results. Overall, dementia was associated with a substantial negative impact on the outcomes. According to participants' experiences, rehabilitation and support seems crucial for successful recovery. Negative psychological reactions were common, suggesting that future interventions should consider both physical and psychological aspects. Rehabilitation should be adjusted to the wishes and needs of older adults and may be carried out in different settings, where rehabilitation in the home is one appreciated alternative. The findings of this thesis indicate that team-based HR after hip fracture can be an alternative and a complement to in-hospital care and rehabilitation for older adults with and without dementia.

Keywords
Hip fracture, Geriatrics, Dementia, Home rehabilitation, Interdisciplinary rehabilitation, Walking ability, Activities of daily living, Recovery, Length of stay, Accidental falls, Qualitative

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