Cover Page

The handle http://hdl.handle.net/1887/38701 holds various files of this Leiden University dissertation.

Author: Visschedijk, Johannes Hermanus Maria (Jan)
Title: Fear of falling in older patients after hip fracture
Issue Date: 2016-03-31

SUMMARY

Most older patients with a hip fracture undergo a surgical procedure in the hospital. Many of them are, after a short admission period in the hospital, discharged to a skilled nursing facility (SNF) in a nursing home for rehabilitation. In the SNF a multidisciplinary plan is made by the elderly care physician to outline the rehabilitation process. Unfortunately only a minority of the older people regain their previous level of functioning after rehabilitation. FoF has been identified as possibly one of the most important factors for these poor outcomes. However, FoF in older patients with a hip fracture has rarely been studied. Therefore, the aim of this thesis, is to give more insight into FoF in older patients after a hip fracture. The main research questions focus on the prevalence of FoF, factors related to FoF, the course of FoF during the rehabilitation process, possible interventions to reduce FoF and instruments to properly measure FoF.

Chapter 1 offers a general introduction about FoF in older patients after a hip fracture. It provides, based on recent literature, basic information on falls and hip fractures in older persons. Subsequently, chapter 1 discusses the rehabilitation process in general and fear of falling in particular. It presents a definition of FoF and elaborates on some conceptual issues, related to FoF and terms such as fall-related self-efficacy, which are also reflected in the instruments used to measure FoF.

Chapter 2 provides a systematic literature review about fear of falling in patients after a hip fracture. It focusses on measurement instruments for FoF, the prevalence of FoF, factors associated with FoF and interventions that may reduce FoF. Fifteen relevant studies were found through a systematic assessment of the literature by searching several databases including PubMed, Embase, PsychINFO and CINAHL. These studies indicated that 50% or more of the older patients suffer from FoF after a hip fracture. However, these figures have to be interpreted with caution since the instruments used were not validated for older patients with hip fractures. The literature review demonstrated that FoF was associated with negative outcomes, such as loss of mobility, institutionalization and mortality. FoF was also related to reduced training time and an increased number of falls. Knowledge about risk factors and the course of FoF over a longer time period was limited. Furthermore, the review revealed that most studies suffer from a selection bias, because patients with physical and cognitive disorders were mostly excluded.

The Falls Efficacy Scale-International (FES-I) is mostly used to measure FoF. The FES- I is an instrument with 16 items and reflects concern about falling when somebody carries out 16 activities of daily living, such as taking a shower or going to the shop. The response to

S

the FES-I consists of 4 levels from "not at all concerned" to "very concerned". Chapter 3 explores the measurement properties of the FES-I in patients aged ≥ 65 years rehabilitating in 10 SNF in the Netherlands after a hip fracture. The measurement properties indicate whether the FES-I is a suitable instrument to measure FoF in this population. In a sample of 100 patients from a cross-sectional study important properties of the FES-I, such as the structural validity and construct validity, were studied. For the structural validity a so-called confirmatory factor analysis was carried out and for construct validity predetermined hypotheses were tested. The factor analysis yielded strong evidence that the FES-I is uni-dimensional in patients with a hip fracture. When assessing the construct validity, the FES-I was more closely related to functional performance constructs than to psychological constructs. Though there was a strong correlation between the FES-I and the 1-item fear of falling instrument, it also suggests that the concept measured by the FES-I may not capture all aspects of fear of falling. Finally, in another sample of 21 older patients the inter-rater reliability of the FES-I was evaluated. The intraclass correlation coefficient was 0.72, which indicates that the reliability was good.

The prevalence of FoF in older patients after a hip fracture and the relation of FoF with time after a fracture is studied in chapter 4, as well as the relation between FoF and other psychological factors, such as depression, anxiety and self-efficacy. The same sample from the cross-sectional study of 100 older patient rehabilitating in 10 SNF was used. The study demonstrated that 36% had a little FoF, and 27% had quite a bit or very much FoF. The scores of the FES-I were 31 [range 16-64] in the first 4 weeks after hip fracture, 36 in the second 4 weeks, and 29 in the period of ≥8 weeks after hip fracture. A higher/lower score indicates more/less FoF. In these 3 periods, the prevalence of FoF was quite high, 62%, 68%, and 59% respectively. The study demonstrated that FoF is common in patients after a hip fracture and is correlated with anxiety and self-efficacy. Furthermore, FoF was highest in the second 4 weeks after hip fracture.

Chapter 5 examines the factors which explain differences in patients with high and low levels of FoF after a hip fracture. The same cross-sectional study sample as in chapter 3 was used. Patients were divided in 2 groups, those with low and those with high level of FoF. Data on factors that could be correlated with FoF were collected, such as demographic variables, aspects of functioning, psychological factors and comorbidities. The study demonstrated that walking ability before fracture, activities of daily living after fracture, and anxiety were independently associated with FoF. Particularly because the last two factors are modifiable, this information is useful for the development of specific interventions for older persons with high levels of FoF.

FoF is also regarded as a major constraint for successful rehabilitation in other groups of older rehabilitating patients. Hence, chapter 6 studies FoF in older people with different types of underlying diseases. Data on FoF were derived from a longitudinal study in which patients who rehabilitate in a skilled nursing facility were assessed at admission, at discharge and 4 weeks after discharge. With these data the prevalence of FoF could be measured during and after rehabilitation. In addition, differences between those with and without FoF were assessed, as well as the relation between FoF and participation after discharge. Based on the answer to an one-item instrument patients were divided in a group with no FoF and in a group with FoF. To study FoF after discharge the one-item instrument as well as the short Falls Efficacy Scale-International (FES-I) were used. Participation after discharge was assessed with the Frenchay Activities Index (FAI). The study revealed significant differences between the group with and the group without FoF for age, gender, diagnosis, average number of falls per week, depressive symptoms and self-efficacy. The analysis also reveals that four weeks after discharge 82% of the participants had FoF. When measuring participation after discharge the FAI was respectively 27 and 35 for participants with and without FoF. Hence it can be concluded that FoF is common among older persons who rehabilitate in a SNF, irrespectively of the underlying disease. FoF seems to be quiet persistent and may even increase during and after rehabilitation, hampering participation after discharge.

In chapter 7 the major findings are presented and discussed. This chapter also reflects on important methodological and conceptual issues in this thesis. It indicates that the number of studies on FoF in patients after a hip fracture is still limited and that most research on FoF in these patients suffers from selection bias, because vulnerable older persons with high level of comorbidity are mostly excluded. In that sense, our cross-sectional study gives more insight in FoF among older vulnerable patients after a hip fracture. Also the variables used in this study are mostly routinely administered instruments used by professionals to monitor rehabilitation of older persons. Hence, in clinical practise it will be rather easy to identify older persons at risk for FoF.

In the literature, but also in clinical practise, different definitions are used for FoF. Since we have used Tinetti's definition, which describes FoF, as "*a lasting concern about falling that leads to an individual avoiding activities that he/she remains capable of performing",* and we have used the FES-I as measurement instrument for FoF, some aspects of FoF, e.g. the physiological or emotional, may have been addressed only superficially.
Nevertheless, the findings in this thesis have important implications for both future clinical practise and research. The study underlines the importance to measure FoF in all patients during rehabilitation. Measurements should be carried out not only at the start, but also during the rehabilitation process and after discharge. The FES-I can be regarded as a suitable instrument for these measurements.

This thesis also stresses the need for longitudinal studies to identify the real determinants of FoF and to measure FoF over a longer time period to study the course of FoF. Furthermore, more research is needed to get a better understanding of the relation between FoF and vulnerability. This requires that research also has to focus on older patients with higher levels of comorbidity and on patients with cognitive disorders, which may require new instruments to measure FoF for these patients. But maybe even more important, intervention studies are required to study whether FoF can be reduced and better outcomes can be established by identifying older persons with FoF and offering them a special programme to reduce FoF.