



Review

Quality of life after hip fracture in the elderly: A systematic literature review



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ABSTRACT

**Background:** With an increasing ageing population, hip fractures have become a major public health issue in the elderly. It is important to examine the health status (HS) and health-related quality of life (HRQOL) of the elderly faced with the epidemic of hip fractures.

**Objective:** To provide an overview of reported HS and HRQOL in elderly patients with a hip fracture.  
**Design:** A systematic literature search was performed in Embase, Medline, Web of Science, Scopus, CINAHL, Cochrane, PsycINFO, Pubmed, and Google Scholar in July 2014. Studies which reported the HS or HRQOL based on standardised questionnaires in patients older than 65 years with a hip fracture were considered eligible for inclusion.

**Results:** After inspecting the 2725 potentially eligible studies, 49 fulfilled the inclusion criteria. All included studies were randomised controlled trials or prospective cohort studies. The methodological quality of the studies was moderate. Patients' functioning on the physical, social, and emotional domains were affected after a hip fracture. The HS and HRQOL of the majority of patients recovered in the first 6 months after fracture. However, their HS did not return to prefracture level. Mental state, prefracture functioning on physical and psychosocial domains, comorbidity, female gender, nutritional status, postoperative pain, length of hospital stay, and complications were factors associated with HS or HRQOL. Treatment with total hip arthroplasty or hemi-arthroplasty provided better HS than treatment with internal fixation with displaced femoral neck fractures. Supportive psychotherapy in "low-functioning" patients, (home) rehabilitation programmes and nutritional supplementation appeared to have beneficial effects on HS.

**Conclusions:** Optimizing nutrition intake, (home) rehabilitation programmes, and the possibility for psychological counselling in patients with difficulties in the psychosocial dimensions would be recommended after hip fracture surgery. Besides HS questionnaires like EQ-5D and SF-36, adequate measurements like the WHOQOL-Bref or ICECAP-O are warranted in future studies regarding hip fracture surgery and postoperative treatment options.

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## Introduction

A hip fracture is a common public health problem throughout the world. The incidence increases substantially with a growing and continuously ageing population [1–3]. Due to the high mortality, morbidity, and disability rate hip fracture patients are a major challenge for the healthcare system as well as for society [4–8].

In order to assess the impact of a hip fracture and the efficacy of (surgical) interventions, a measurement of patient-based outcomes, such as health status (HS) and health-related quality of life (HRQOL), is required. These multidimensional concepts are not unequivocally defined. In general, HRQOL focuses mainly on the physical, emotional, and social well-being after diagnosis and treatment of a disease in combination with perceived functioning (i.e., health status; HS) [9–12]. Thus, HS represents the perceived impact of a disease only on the level of a patients' physical, emotional and social functioning [13]. In other words, HS refers to perceived functioning, while HRQOL measures internal experiences.

As long as the ageing population is steadily increasing in the countries over the world, it is important to expand clinical research efforts into the HRQOL of the elderly faced with the epidemic of hip fractures. Often small groups of homogeneous populations are used to obtain information about the consequences of a hip fracture. However, the elderly population cannot be regarded as homogeneous due to their comorbidity, social environments, and different perspectives on life, and should be understood as individuals. This is the first systematic review focusing on all published studies which reported HS or HRQOL after hip fracture in elderly patients above 65 years old to provide a rich variety of perspectives to compose a heterogeneous view on the impact of this health problem. The aims of this systematic review were (i) to provide an extensive overview of reported HS and HRQOL in the elderly patients faced with the hip fracture epidemic, (ii) to describe factors of influence on HS or HRQOL, and (iii) to examine the influence of strength training, psychological counselling and nutritional care in relation to HS and HRQOL.

## Methods

### Search strategy

A systematic search of the literature was carried out in July 2014. Electronic databases (EMBASE, Medline (OvidSP), Web-of-Science, Scopus, CINAHL, Cochrane, PsycINFO (OvidSP), Pubmed, Google scholar) were used to identify relevant studies since their inception up to July 2014. An overview of the search strategy is presented in [Table 1](#) and [Appendix 1](#).

### Inclusion and exclusion criteria

Studies were included in this systematic review if the following inclusion criteria were fulfilled: (i) the study describes HRQOL after hip fracture treatment with or without surgery in the elderly ( $\geq 65$  years); (ii) patients are diagnosed with high- or low-energy traumatic per- or intertrochanteric femur fracture or (supcapital) femoral neck fracture; (iii) HS or HRQOL was measured with a standardised questionnaire, which contained at least a physical, psychological and social dimension, reflecting the World Health Organization's definition of health [14]; (iv) a full text of the article is available; (v) the study is published in English, Dutch or German. Comments, editorials, case reports, reviews, letters, guidelines and protocols were excluded.

### Study selection

One reviewer (CP) examined article titles and abstracts for eligibility. Subsequently, the full texts of potential studies were screened to determine final eligibility for inclusion in this review. Uncertainty concerning the inclusion of the studies was solved in a single consensus meeting with a second reviewer (JV). In addition, reference lists of included articles were screened for eligible studies that were not found in the search. The selection of studies is shown in [Fig. 1](#).

**Table 1**  
Search strategy in Medline.

<pre>((hip[tiab] OR intertrochant*[tiab] OR femur neck*[tiab] OR femur head*[tiab] OR femoral neck*[tiab] OR femoral head*[tiab] OR subcapital[tiab] OR intracapsular[tiab] OR pertrochant*[tiab] OR subtrochant*[tiab] OR trochant*[tiab] OR proximal femoral*[tiab] OR collum[tiab]) AND fracture*[tiab])</pre>
AND
<pre>(quality of life*[tiab] OR QoL[tiab] OR HRQoL[tiab] OR HRQL[tiab] OR mental health*[tiab] OR well being*[tiab] OR wellbeing[tiab] OR satisf*[tiab])</pre>
AND
<pre>(inventor*[tiab] OR questionnaire*[tiab] OR scale*[tiab] OR score*[tiab] OR scoring[tiab] OR rating[tiab] OR checklist*[tiab] OR instrument*[tiab] OR tool*[tiab] OR measur*[tiab] OR collect*[tiab] OR index*[tiab] OR indice*[tiab])</pre>

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