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Original Article

Is depression associated with functional recovery after hip fracture in the elderly?

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ABSTRACT

Aim: The aim of this study was to examine the effects of depression on functional healing and the return to pre-fracture daily activities in elderly patients with a hip fracture.
Methods: The study comprised 104 elderly patients, who had a unilateral hip fracture between 2009 and 2012. To evaluate daily activities and functional healing of the cases, the study was designed as a prospective comparative study.
Results: The analysis results revealed that the change in the mean ADL scores was related to depression at a statistically significant level ($p = 0.000$).
Discussion: This study results showed that depression had a negative effect on the daily activity level of these cases.

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1. Introduction

As a result of developments in the medical field, there is an increasing elderly population in society. Together with increasing age, an increase in hip fractures is inevitable.[1] Hip fractures in individuals aged 65 years and over have increasing major medical problems of evident morbidity, functional disability and even mortality.[2–4] Despite all the developments in current surgery, anaesthesia techniques, postoperative care and rehabilitation, the mortality rate in the first year after a fracture has been reported as 14%–36%.[2–5]

The most important aim in the treatment of hip fractures in elderly patients is to provide mobilization in the shortest time and to regain the functionality of the pre-fracture period. However, compared with the pre-fracture period, 55%–75% of cases experience a loss of some activities in their daily life.[2–6] In studies during the treatment process, however much

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emphasis has been put on risk factors related to physical co-morbidities of the majority of hip fractures such as diabetes, hypertension and chronic obstructive pulmonary diseases, there has not been a reduced value recorded in practical life in morbidity and mortality rates. Therefore, a need has been identified in recent studies to include psychological health and social factors in addition to providing physical integrity in the treatment process.[7–8]

Although it is ignored in the majority of elderly patients, depression is the most common psychological disorder as a co-morbidity of hip fracture.[9] However, in the treatment process of a hip fracture, the extent to which a return to pre-depression functionality is effective, has not yet been understood. It has been reported in studies of depression in the rehabilitation period that the risk of falling causes problems in independent walking and there is an increased tendency to infections.[1,10,11]

The aim of this study was to examine the effects of depression on functional healing and a return to previous daily activities in elderly patients with a hip fracture.

2. Material methods

2.1. Study setting and sample

The study initially comprised 128 patients aged 65 years and above who were operated on in the Orthopaedics and Traumatology Clinic for a unilateral hip fracture as a result of a fall and had a partial endoprosthesis applied between 2009 and 2012. A total of 24 patients were excluded from the study for reasons of pathological fracture, multi-trauma, not of a sufficiently appropriate cognitive level or non-attendance at the 6-month follow-up examination. The remaining 104 cases were included in the prospective, comparative study for evaluation of daily living activities and functional improvements. The evaluations were conducted by face-to-face interviews with the patients by the same orthopaedist and psychiatrist at 6 weeks and 6 months.

With a sociodemographic form related to the socio-demographic and some clinical data of all the patients in the study, the Geriatric Depression Scale (GDS) was applied at 6 weeks and the Physical Self-Maintenance Scale – Activities of Daily Living (ADL) was applied at 6 weeks and 6 months to evaluate daily living activities and functional improvements.

Approval for the study was granted by the Local Ethics Committee and informed consent was obtained from all the participants.

2.2. Measurements

2.2.1. Geriatric Depression Scale (GDS)

This scale was especially developed to evaluate depression in the elderly population.[12] In the short version consisting of 15 items, various dimensions are examined related to mood such as self-esteem, stressful thoughts, positive attitudes to life and judgments. All questions are answered by yes or no and total scoring varies from 0 to 15. Patients with a score of 6 or above are categorized as depressed.

2.2.2. Physical Self-Maintenance Scale (ADL)

This scale evaluates performance related to physical activities in 6 items of toilet, self-feeding, self-dressing, self-grooming, self-ambulating and self bathing. A low total score indicates a high level of impairment of daily living activities. Total scoring varies from 0 to 6.[13]

2.3. Statistical analysis

The results were analysed using SPSS 15.0 (SPSS Inc., Chicago, IL, USA) software program. Descriptive statistics were stated as mean ± standard deviation (SD) for continuous variables and as number of cases (n) and percentage (%) for categorical variables. Normal distribution of data was examined with the Kolmogorov–Smirnov test. In the comparison of depression points between groups not showing normal distribution, the Mann–Whitney U-test was applied and in the analysis of groups showing normal distribution the Independent t-test was applied. ANOVA and ANCOVA models were applied in the analysis of the effect of depression on the changes in the score of the repeated daily living activity scale. In all analyses, a value of $p < 0.05$ was accepted as statistically significant.

3. Results

In the current study, the patients were separated into 2 groups of depressed and non-depressed according to the GDS applied in the 6th week. Sociodemographic characteristics of the patients, including age, gender, marital status, level of education and place of residence are shown in Table 1. It was determined that 76.9% of the patients were female, 63.5% were married, 73.1% had a primary school level of education and 62.5% lived together with a spouse or children.

Of the total cases, 46.2% were evaluated as depressed and of those, 72.9% were female. The depression points of the GDS were determined as 4.71 ± 2.79 for females and 3.33 ± 3.30 for

Table 1 – Descriptive and clinical characteristics of depressed and non-depressed groups.

	Cases (n = 104)	Depressed (n = 48)	Non-depressed (n = 56)
Age, mean(SD), years	78.79 (7.33)	76.48 (7.24)	81.1 (7.42)
Gender, n(%)			
Male	24 (23.1)	13 (27.1)	11 (19.6)
Female	80 (76.9)	35 (72.9)	45 (80.4)
Marital status, n(%)			
Married	66 (63.5)	25 (52.1)	41 (73.2)
Widowed	38 (36.5)	23 (47.9)	15 (26.8)
Education, n(%)			
Illiterate	7 (6.7)	5 (10.4)	2 (3.6)
Primary school	76 (73.1)	30 (62.5)	46 (82.1)
High school	13 (12.5)	8 (16.7)	5 (8.9)
University	8 (7.7)	5 (10.4)	3 (5.4)
Place of residence, n(%)			
Home alone	39 (37.5)	20 (41.7)	19 (33.9)
Home with others	65 (62.5)	28 (58.3)	37 (66.1)

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