

ARAŞTIRMA

SELF-CARE AGENCY AND STATUS TO MAINTAIN ACTIVITIES OF DAILY LIVING ELDERLY PEOPLE WITH OSTEOARTHRITIS

Sami HİZMETLİ*

Havva TEL**

Hatice TEL***

Mustafa YILDIRIM****

Alınış Tarihi:08.07.2011

Kabul Tarihi:30.11.2011

ABSTRACT

The aim of the present research was to determine self care agency and maintenance of activities of daily living (ADL) of the elderly people with osteoarthritis. 191 elderly people were included in the research. Data were collected using Personal Information Form, Self-care Agency Scale, Katz's ADL Index and Lawton and Brody's Instrumental ADL Index. Self care agency and ADL are affected in elderly people with osteoarthritis (OA). Instrumental ADL scores of the elderly people who were aged between 75 and 79, used five and more drugs daily and whose disease lasted for more than 11 years were lower. There is a close correlation between self care agency and ADL among the elderly people with osteoarthritis. As the self-care agency increase among elderly people with osteoarthritis so does the level of maintenance of ADL. Osteoarthritis affects negatively continuation of self care agency and ADL. Self-care agency influence positively the status to perform ADL in patients with OA.

Keywords: Osteoarthritis; elderly; self-care; activities of daily living.

ÖZET

Osteoartritli Yaşlılarda Özbakım Gücü ve Günlük Yaşam Aktivitelerini Sürdürme Durumu

Bu çalışma osteoartritli yaşlılarda özbakım gücü ve günlük yaşam aktivitelerini (GYA)'sürdürme durumunu belirlemek amacı ile yapılmıştır. Araştırmaya osteoartrit (OA) tanılı 191 yaşlı birey alındı. Araştırma verileri kişisel bilgi formu, Özbakım gücü ölçeği, Katz'ın GYA ölçeği ve Lawton and Brody'nin enstrümantal GYA ölçeği kullanılarak toplanmıştır. Osteoartritli yaşlılarda özbakım gücü ve günlük yaşam aktiviteleri etkilenmektedir. 75-79 yaş grubunda, günlük beş ve daha fazla ilaç kullanan, hastalık süresi 11 yıl ve üzeri olan yaşlıların enstrümantal günlük yaşam aktiviteleri puanları daha düşüktür. Osteoartritli yaşlılarda özbakım gücü ve GYA arasında yakın bir ilişki vardır. Yaşlılarda özbakım gücü arttıkça GYA'ni sürdürme düzeyi de artmaktadır. Osteoartrit özbakım gücü ve GYA'ni sürdürmeyi olumsuz olarak etkilemektedir. Özbakım gücü OA'lı hastalarda GYA'ni yerine getirme durumunu olumlu etkilemektedir.

Anahtar Kelimeler: Osteoartrit; yaşlı; özbakım; günlük yaşam aktiviteleri.

INTRODUCTION

Osteoarthritis (OA) is a chronic disease that is quite common among elderly people, resulting in long-term loss of physical function and severe pain (Dominick, Ahern and Gold 2004). OA is a major cause of disabilities in developed and developing countries and its prevalence increases with age (Sangha 2000). OA affects a great majority of women and men over 65 years old and 80% of those over 75 years old (Lawrence, Helmick, Arnett, Deyo, Felson, Giannini et al.1998) Extended life

expectancy, increased obesity and sedentary lifestyle have led to a gradual increase in the frequency of OA in the community (Peat, Mc Carney and Croft 2001, Dawson, Linsell, Zondervan, Rose, Randall, Car et al. 2004). OA causes considerable limitation of physical movement in elderly people and also has a negative effect on the maintenance of physical activities, activities of daily living (ADL) and quality of life (Dominick, Ahern and Gold 2004, Sangha 2000).

*Cumhuriyet University Medical Faculty Department of Physical Therapy and Rehabilitation Sivas (Prof.)

**Cumhuriyet University Faculty of Health Sciences Nursing Department Psychiatric Nursing Sivas (Assoc. Prof)
Tel: 0532 743 36 46 Fax: 0346 2191261 e-mail: havvatel@yahoo.com

*** Cumhuriyet University Faculty of Health Sciences Nursing Department Medical Nursing Sivas (Assoc. Prof)

**** Cumhuriyet University Sıcak Çermik Physical Therapy and Rehabilitation Center Sivas (MSc)

Old people have difficulty in maintaining self-care activities due to health problems experienced in aging and senility period and, consequently, they become dependent on others (Çivi and Tanrikulu 2000). ADL are generally assessed as activities of daily living and instrumental activities of daily living (IADL). ADL include self-care behaviours (eating, dressing and undressing, bathing, personal care, transferring from bed to chair and back, using the toilet, voluntarily controlling urinary and fecal discharge, walking, climbing up/down the stairs) that should be performed every day. IADL include activities (preparing meals, doing housework, taking medication, performing outside tasks, money management, using the telephone) required for an individual to live independently in a community (Ulusel, Soyer and Uçku 2004, Güneş, Demircioğlu and Karaoğlu 2005). Self-care includes all activities performed by individuals to maintain life, good health and wellbeing. Individuals should have sufficient self-care agency in order to maintain ADL (Kara 2001, Kaya, Aslan, Vaizoğlu, Doruk, Dokur, Biçici et al. 2008). Osteoarthritis causes significant changes in the life style of the patients and leads to important treatment and rehabilitations costs (Lastowiecka, Bugajka, Najmiec, Rell-Bakalarska, Bownik, Kedryka-Goral 2006, Sindel 2011). Therefore, the treatment of osteoarthritis patient requires a holistic approach and multidisciplinary team work. The fact that nurse, a key member of this team, can plan the care by determining the state of self care and the maintenance of daily life activities of the patients with osteoarthritis will make huge contributions to the effective management of the disease by the patient and his quality of life (Holman and Lorig 1997). As OA has a considerable effect on the ADL, it is important to address self-care agency and to investigate the association between ADL and self-care agency. This study was carried out in order to determine the level of self-care agency and the ability to maintain ADL among elderly patients hospitalized with the diagnosis of OA.

MATERIAL AND METHODS

This study was conducted between January 1 and June 30, 2009 at the Physical Therapy and Rehabilitation centre of a university hospital.

Study Design and Participants

This study of descriptive character was carried out at the Physical Therapy and Rehabilitation centre of a university hospital. The population of the research was consisted of 203 patients who stayed at the hospital with osteoarthritis diagnosis at the Physical Treatment and Rehabilitation Center. The study included 191 elderly patients diagnosed with OA, and over 65 years old who consented to participate in the study.

Ethical Considerations

Necessary official permissions were obtained from the hospital. The responsible physicians of Physical Therapy and Rehabilitation Centre were conducted and study was conducted with their support. Furthermore, the elderly patients who volunteered to participate in the study were informed about the aim and the procedure of the study.

The Procedure

Research data were collected by means of Personal Information Form, Self-care Agency Scale, Katz Index of Independence in ADL and Lawton and Brody's IADL Index.

Personal Information Form: The form contains open-ended questions related to patient demographics and the disease process of patients.

Self-care Agency Scale: Self care agency scale was developed by Kearney and Fleischer. Validity and reliability tests in Turkey were performed by Nahcivan. This scale is a 5-point Likert-type scale, consisting of 35 items. The highest possible score is 140. When evaluating the scale, scores from 24 to 64 are considered as bad, 65 to 100 as moderate, 101 to 112 as good and 113 to 140 as very good (Nahcivan 2004).

Katz's ADL Index: Katz index of independence in activities of daily living, developed by Katz et al. in 1963, measures activities performed to meet the basic needs needed to maintain the living. This index consists of 6 questions related to bathing, dressing, using the toilet, mobility, urinary and eating activities. The scale is scored with 3 points if the individual performs the activities with full function, with 2 points if with help and with 1 point if unable to perform the activities. Scores from 0 to 6 are assessed as dependent, 7 to 12 as semi-dependent and 13 to 18 as independent (Katz, Ford, Moskowitz, Jackson and Jaffe 1963, Diker, Etiler, Yıldız and Şeref 2001).

Lawton and Brody's IADL Index: The Lawton and Brody's instrumental activities of daily living scale, developed by Lawton and Brody in 1969, measures instrumental daily living activities of the individuals. This index consists of 8 questions related to using the telephone, preparing meals, shopping, performing daily housework, laundering, getting on/off vehicles, taking medication and money management. The items above is assessed with 3 points if the individual performs the activities with full function, with 2 points if with help and with 1 point if unable to perform the activities. Scores from 0 to 8 are assessed as dependent, 9 to 16 as semi-dependent and 17 to 24 as independent (Lawton and Brody 1969, Diker, Etiler, Yıldız and Şeref 2001). These two indexes that measure daily living activities and instrumental daily living activities of the individuals are used widely both abroad and in our country (Katz, Ford, Moskowitz, Jackson and Jaffe 1963, Lawton and Brody 1969, Shelkey and Wallace 1999, Berberoğlu, Gül, Eskiocak, Ekuklu and Saltık 2002, Yıldırım ve Karadakovan 2004).

Data Analysis

Descriptive analysis was used to present demographic data. Pearson correlation analysis was used to determine relationships between self-care agency, ADL, IADL and duration of disease. ANOVA were used in the evaluation of self-care agency and the level of ADL according to socio-demographic characteristics.

RESULTS AND DISCUSSION

A total of 191 patients were included in this study. The ages of the study participants varied between 65 and 85 (average 69.71 + 4.02 years). It was found that 53.9% of the patients were in the age group 65 to 69 years, 61.5% were women; 69.1% were married; 57.6% were primary school graduates; 56.0% take 3 to 4 medications per day; and 49.7% had a duration of disease of 0 to 5 years. A significant positive correlation was found between self-care agency and ADL ($r= 0.199$, $p=0.005$) and IADL ($r= 0.202$, $p= 0.004$). It was determined that, as self-care agency increases, the level of ADL and IADL also increase. A significant negative association was found between the duration of disease and IADL ($r= -0.208$ $p=0.003$) and it was determined that, as the duration of disease increases, the level of IADL decreases.

Limitation of movement and severe pain due to OA constitute an impediment to the ADL and social activities, and thus lead to physical and psychosocial disabilities in elderly people (Bilici, Kuru, Gündüz and Alaylı 2000). In this study, a close association was found between self-care agency and ADL among elderly people, and it was determined that, as self-care agency increases, ADL also increases. The active lives of individuals may be restricted in old age due to chronic diseases. As a result, maintenance of self-care is hindered and quality of life decreases (Kaya, Aslan, Vaizoğlu, Doruk, Dokur, Biçici et al. 2008, Bakoğlu and Yetkin 2000).

Table 1. Scores of Patients with Regard to Self-care Agency and ADL According to Age Groups (n=191)

Age group	Self-care agency	ADL	IADL
	Mean± SD	Mean± SD	Mean± SD
65-69 years	125.38 ±13.48	13.29 ± 2.07	17.52 ± 2.98
70-74 years	123.39 ±10.44	13.16 ± 1.93	16.51 ± 3.93
75-79 years	122.27 ± 13.10	12.68 ±2.77	15.73 ±2.93
Total	124.25 ±2.67	13.14 ± 2.19	16.91 ± 3.31
F, p	F= .978 p=.378	F=1.083 p=.341	F=4.661, p=.011

Table 1 shows self-care agency and the level of ADL scores of the patients on the basis of age groups. No statistically significant age group-based difference was found ($p>0.05$) between the self-care agency and ADL scores of patients. However, the scores for self-care agency and ADL among patients in the 75 to 79 age group were relatively low. A statistically

significant difference was found ($p<0.05$) between IADL scores of patients according to age groups: IADL scores of patients in the 75 to 79 age group were low. A previous study suggested that people generally become dependent on others beyond 75 years of age (Kaya, Aslan, Vaizoğlu, Doruk, Dokur, Biçici et al. 2008,). Ford, Folmar, Salmon, Medalie, Roy

and Galazka (1988) determined that 45% of individuals aged 75 or older required help in at least one of the ADL.

Table 2. Scores of Patients with Regard to Self-care Agency and ADL According to the Number of Medications Used Daily (n:191)

Number of medication	Self-care agency	ADL	IADL
	Mean± SD	Mean± SD	Mean± SD
2 medications	123.60± 12.79	13.37 ± 1.83	16.90 ± 2.37
3-4 medications	125.75± 10.44	13.34 ± 2.36	17.52 ± 3.51
5and more medications	121.63± 13.54	12.61 ± 1.96	15.69 ± 3.05
Total	124.25 ± 12.67	13.14 ± 2.19	16.91 ± 3.31
F, p	F=1.963 p=.143	F=2.200 p=.114	F=5.801 p=.004

Table 2 shows the scores of patients with regard to self-care agency and the level of ADL according to the number of medications used daily. No statistically significant difference was found ($p>0.05$) between the self-care agency and ADL scores of patients according to the number of medications used daily; however, the scores related to self-care agency and activities of daily living in patients taking 5 and more types of medication per day were found to be lower. A statistically significant difference was found ($p<0.05$) between patients' IADL scores and the number of medications used daily and it was determined that IADL scores of patients taking 5 or more types of medication per day were low. It

was seen that elderly OA patients who use 5 and more medications per day had reduced maintenance of ADL. Elderly people with chronic diseases often require continuous use of multiple medications. As the losses causes by the disease increase, the individuals become more dependent (Çivi and Tanrikulu 2000, Brooks 2002). A previous study showed that elderly people with a chronic disease who use medication continually have difficulty in maintaining IADL (Tel, Tel and Sabancıoğulları 2006). It is also suggested that the side effects of medications used by elderly people with a chronic disease increase the level of dependency in maintaining ADL (Terakye and Güner 1997).

Table 3. Scores of Patients with Regard to Self-care Agency and ADL According to the Duration of Disease

Duration of disease	Self-care agency	ADL	IADL
	Mean± SD	Mean± SD	Mean± SD
1-5 years	125.51 ± 13.25	13.22 ± 2.10	17.47 ± 3.21
6-10 years	122.64 ± 12.28	13.36 ± 2.25	16.80 ± 3.03
11 + years	123.39 ± 11.82	12.72 ± 2.28	15.85 ± 3.61
Total	124.25 ±124.25	13.14 ±2.19	16.91 ± 3.31
F, p	F=.976 p=.379	F= 1.179 p=.310	F=3.879 p=.022

Table 3 shows self-care agency and ADL scores of patients on the basis of the duration of disease. No statistically significant duration-based difference was found ($p>0.05$) between the self-care agency and ADL scores of patients; however, the scores related to self-care agency and ADL in patients with a duration of disease of 11 years or more were relatively low compared with patients with shorter duration disease. A statistically significant difference was found ($p<0.05$) between IADL scores of patients according to the duration of disease and it was determined that IADL scores of patients with a disease duration of 11 years or more were low.

The study results showed that, as the duration of disease increased, self-care agency of elderly patients with OA decreased. This supports the findings of a previous study, which reported that, as the duration of disease increases in OA, disabilities due to chronic joint pain, limitation of movement and muscle weakness increase and the self-care agency decreases (Baird and Sands 2006).

In the present research, although it was determined that there was not a statistical difference between self care agency and maintenance of ADL in terms of OA patients' such variables as sex, marital status, educational

status ($p>0.05$); literature reported that there was a difference between self care agency and maintenance of ADL in terms of sex and educational status. It is emphasized that OA is seen more commonly and has a severe progress among the women (Bodur 2011) and patients with a low educational status experience more difficulty in coping with OA symptoms and in maintaining daily life activities (Schipplein and Andriacchi 1991, Leigh and Fries 1994).

CONCLUSIONS

The elderly people suffer from some kinds of restrictions in ADL and as a result their quality of life decrease. OA affects negatively self care agency and daily living of the elderly

REFERENCES

- Baird CL, Sands LP.** Effect of Guided İmagery With Relaxation on Health-Related Quality of Life in Older Women With Osteoarthritis. *Research in Nursing&Health* 2006; 29(5): 442-51.
- Bakoğlu E, Yetkin A.** The Evaluation of Self-Care Agency of Patients with Hypertension. *Cumhuriyet University Journal of The School of Nursing* 2000; 4(1): 41-49.
- Berberoğlu U, Gül H, Eskiocak M, Ekuklu G, Saltık AK.** Some Socio-Demographic Specialities and Daily Activities of The Elderly People According to The Katz Index Who Live in Edirne Rest House. *Turkish Journal of Geriatrics* 2002; 5(4): 144-149.
- Bilici A, Kuru Ö, Gündüz Ö, Alaylı G.** Correlation Between Pain and Physical And Psychosocial Disability in Elderly Osteoarthritis Patients. *Turkish Journal of Geriatrics* 2000; 3(1): 22-25.
- Bodur H.** Current World; Epidemiology and Socioeconomic Aspect. *Turkish Journal of Geriatrics* 2011;14 (Suppl 1): 7-14.
- Brooks P.** Impact of Osteoarthritis on Individuals and Society: How Much Disability? Social Consequences and Health Economic Implications. *Current Opinion in Rheumatology* 2002; 14(5): 573-7.
- Çivi S, Tanrikulu M.** An epidemiological Study to Evaluate The Level of Dependence and Physical Disability with The Prevalence of Chronic Diseases In The Elderly. *Turkish Journal of Geriatrics* 2000; 3(3): 85-90.
- Dawson J, Linsell L, Zondervan K, Rose P, Randall T, Car A et al.** Epidemiology of Hip and Knee Pain and Its Impact on Overall Health Status in Older Adults. *Rheumatology* 2004; 43(4): 497-504.
- Diker J, Etiler N, Yıldız M, Şeref B.** Association Between Cognitive Status and Activities of Daily Living, Life Quality and Some Demographic Variables in Older Than 65: A Field Study. *Anatolian Journal of Psychiatry* 2001; 2(2): 79-86.
- Dominick KL, Ahern FM, Gold CH.** Health-Related Quality of Life and Health Service Use Among Older Adults With Osteoarthritis. *Arthritis Rheumatism* 2004; 51(3): 326-331.
- Ford AB, Folmar SJ, Salmon RB, Medalie JH, Roy AW, Galazka SS.** Health And Function in The Old Very Old. *Journal of American Geriatrics Society* 1988; 36(3): 187-97.
- Güneş G, Demircioğlu N, Karaoğlu L.** Daily Living Activities, Social and Psychological Function Levels of Older Women Living in Central Malatya. *Turkish Journal of Geriatrics* 2005; 8(2): 78-83.
- Holman HR, Lorig KR.** Overcoming Barriers to Successful Aging: Self Management of Osteoarthritis. *Western Journal of Medicine* 1997; 167(4): 265-268.
- Kara B.** Definition and Conceptual Aspect of Self-Care. *Sendrom* 2001; 13(7): 25-28.
- Katz S, Ford AB, Moskowitz RW, Jackson BA, Jaffe MW.** Studies of Illness in Theaged. The Index of Adl: A Standardized Measure of Biologicaland Psychosocial Function. *JAMA* 1963; 21(185): 914-919.
- Kaya M, Aslan D, Vaizoğlu SA, Doruk C, Dokur U, Biçici V et al.** Determination of Life Quality of The Elderly and Related Factors in a District of Ankara, Turkey. *Turkish Journal of Geriatrics* 2008; 11(1): 12-17.
- Lastowiecka E, Bugajka J, Najmiec A, Rell-Bakalarska M, Bownik I, Jedryka-Goral A.** Occupational Work and Quality of Life in Osteoarthritis Patients. *Rheumatology International* 2006; 27(2): 131-139.
- Lawrence RC, Helmick CG, Arnett FC, Deyo RA, Felson DT, Giannini EH et al.** Estimates of The Prevalence of Arthritis and Selected Musculoskeletal

Disorders in The United States. *Arthritis Rheumatism* 1998; 41(5): 778-99.

Lawton MP, Brody EM. Assessment of Older People: Self-Maintaining and Instrumental Activities of Daily Living. *Gerontologist* 1969; 9(3): 179-186.

Leigh JP, Fries JF. Correlations Between Education And Arthritis in The 1971-1975 NHANES I. *Social Science & Medicine* 1994; 38(4): 575-83.

Nahcivan NO. Turkish Language Equivalence of Theexercise of Self-Care Agency Scale. *Western Journal of Nursing Research* 2004; 26(7): 813-24.

Peat G, McCarney R, Croft P. Knee Pain and Osteoarthritis in Older Adults: A Review of Community Burden and Current Use of Primary Health Care. *Annals of The Rheumatic Diseases* 2001; 60(2): 91-97.

Sangha O. Epidemiology of rheumatic disease. *Rheumatology* 2000; 39 (Suppl 2): 3-12.

Schipplein OD, Andriacchi TP. Interaction Between Active and Passive Knee Stabilizers During Level Walking. *Journal Orthopaedic Review* 1991; 1(9): 113-9.

Shelkey M, Wallace M, Katz. Index of Independence in Activities of Daily Living. *Journal of Gerontological Nursing* 1999; 25(3): 8-9.

Sindel D. What Should Be The Interdisciplinary Interaction and Approach to Patients with Osteoarthritis? *Turkish Journal of Geriatrics* 2011; 14 (Suppl 1): 89-94.

Tel H, Tel H, Sabancıoğulları S. Status of Maintenance of Activities of Daily Living and Experience of Loneliness in Elder Than 60 Years Old Living at Home and in Institutions. *Turkish Journal of Geriatrics* 2006; 9(1): 35-40.

Terakye G, Güner P. A Period with A Potential of Crisis: Elderly. *Journal of Crisis* 1997; 5 (2): 95-102.

Ulusel B, Soyer A, Uçku R. Dependence in Daily Living Activities Among Community Dwelling Elderly: Prevalence And Risk Factors. *Turkish Journal of Geriatrics* 2004; 7(4): 199-205.

Yıldırım YK, Karadakovan A. The Relationship Between Fear of Falling, Activities of Daily Living And Quality of Life Among Elderly Individuals. *Turkish Journal of Geriatrics* 2004; 7(2): 78-83.