Smyrna Tıp Dergisi ***Araştırma Makalesi***

Evaluation of Elders 85 Years and Older in Social and Sanitary Aspects
85 Yaş ve Üstü Yaşlıların Sosyal ve Sağlık Yönünden Değerlendirilmesi

Hasan Huseyin Eker[1], Aclan Ozder[2], Mehmet Akif Karan[3], Isin Baral Kulaksızoğlu[3], Turgut Sahinöz[4], Nurullah Yücel[5]

[1] Assoc.Prof., Bezmialem Vakif University, Faculty of Medicine, Istanbul, Turkey
[2] Assist.Prof., Bezmialem Vakif University, Faculty of Medicine, Istanbul, Turkey
[3] Prof., Istanbul University, Faculty of Medicine, Istanbul, Turkey,
[4] Assist.Prof., Gümüşhane University, Higher School of Health Sciences, Gumushane, Turkey,
[5] Istanbul Metropolitan Municipality, Health and Social Affairs Department, Istanbul, Turkey

Abstract
Objective: This study has been conducted to evaluate the quality of life, dementia and nutritional status and factors affecting these topics of elders 85 years old and over.
Material and Method: This cross-sectional type study has been conducted in Istanbul Darulaceze Management in January 2010. For the evaluation of 70 elders which were 85 years old and over; an inventory form including Mininutritional Assessment (MA) test, Mini Mental Status Assessment (MMSA) test has been applied via face-to-face interview.
Results: A serious cognitive disorder has been found in 61,3% (n:38) of elders. A positive correlation has been detected between cognitive disorder and increasing age ($p<0.05$). There was serious nutritional disorder in 70% of elders while more serious nutritional defects were found in elders with lower level of education ($p<0.001$).
Conclusion: Although these results suggest that regarding the drug therapy, individuals were treated with proper drugs and doses, but a significant number of old people are subject to serious nutritional disorder and to cognitive disorder.
Key words: Dementia, elders, nursing home, nutritional disorder

Özet
Amaç: Bu çalışmada 85 yaş ve üstü yaşlıların yaşam kaliteleri, demans ve beslenme durumları ile bunları etkileyen faktörleri değerlendirmek amaçlanmıştır.
Gereç ve Yöntem: Bu kesitsel çalışma Ocak 2010 tarihinde İstanbul Darülaceze Kurumunda gerçekleştirilmiştir. 85 yaş ve üstündeki 70 katılımcının değerlendirilmesinde Mininutrisyonel Değerlendirme (MD) testi ve Mini Mental Durum Değerlendirme (MMDD) testlerini içeren bir anket yüz yüze görüşme şeklinde uygulanmıştır.
Bulgular: Yaşlıların %61,3'ünde (n:38) ciddi bilişsel bozukluk saptandı. Bilişsel bozukluk ile ilerleyen yaş arasında pozitif bir ilişki tespit edildi ($p<0.05$). Düşük eğitimli yaşlılarda daha ciddi beslenme bozuklukları saptanırken ($p<0.001$) yaşlıların %70'inde ciddi beslenme bozukluğu olduğu görüldü.
Sonuç: Her ne kadar ilaç tedavisiyle ilgili sonuçlarımız yaşlıların uygun ilaç ve dozlarla tedavi edildiklerini gösterse de, yaşlıların büyük çoğunluğunun ciddi beslenme bozukluğu ve bilişsel bozukluklar ile karşı karşıya olduğu sonucuna varıldı.
Anahtar kelimeler: Demans, yaşlılar, huzurevi, beslenme bozukluğu

Kabul Tarihi: 29.Ekim.2014

Introduction

The world population is growing older and the expected life span is increasing. The life span is expected to be longer and in 21st century; ratio of elderly 85 years and over is expected to be 20% of world's population with this increase (1). The average life span is increasing in Turkey too. As for the data of Registration and Citizenship Affairs Administration of 7th February, 2003, though the population increase is 24,9% regarding 1990 data, the population of elderly 85 years old and over has increased five-fold (2).

With increasing elderly population, there is an increase in sanitary problems encountered in that pouplation too. Elderly, paralel to their nature, might confront many complicated health issues that result in diseases and hospitalization (3). There is a significant increase in chronic disease frequency in elderly and cognitive capability declines. As a result of psychological problems and care problems missing meals and/or nutritional problems frequently occurs (35-40%). All these lead to malnutrition (4). Increasing sanitary problems with increasing age brings along long term and multiple medication usage. Multi drug usage is frequent among elderly living in nursing homes and retirement homes. But this situation leads to risks related to side effects and drug interactions as well. (5). These issues form a vicious circle. To stop and break this vicious circle; frequency of chronic diseases, cognitive level and presence of malnutrition should be carefully considered in elderly patients.

It would be profitable that helathcare givers are aware of nutritional status, chronic diseases and levels of multi drug usage of elderly so as to provide qualified and satisfactory sanitary care for elderly 85 years old and over in our country.

Material and Method

This cross-sectional study has been conducted in Istanbul Darülaceze Management in January, 2010. Of 785 elderly that were living in Darülaceze Management those who were 85 years old and over have been included in this study. Elderly who received special care, those who did not want to participate or those with communication problems arising from language issues have been excluded. As 3 of 73 (9,2%) elderly 85 years and over participants have passed away during study, the study has been completed with 70 elderly. In evaluation of elderly an inventory form including Mininutritional Assessment (MA) Test and Mini Mental Status Assessment (MMSA) Test together with a test consisiting of sanitarial and demographic features of elderly have been filled with face to face interview. Of 70 included elderly, MMSA could only be applied to 63.

The MA test consists of 18 questions; 15 of which is verbal questionnaire and 3 antropometric measurements and whole nutritional scoring is done over 30 points. Total points between 23,5 and 30 indicate normal nutritional status while a point between 17 and 23 indicates a malnutrition risk and a point below 17 points represents an actual malnutrition (6). MMSA test has been used in the study to evaluate mental status of elderly (7,8,9,10). In Mini Mental Test, points between 24 and 30 indicate normal cognitive function while points between 20-23 indicate a mild cognitive disorder, points between 10-19 show moderate and points between 0-9 indicate a severe cognitive disorder. Data inventory form has been figured using Standardized Mini-Mental Test (SMMT) that has been prepared seperately for elderly with low or no level of education (8,9).

Data achieved have been evaluated using SPSS 11.5 package program. Chi-square test and ANOVA analyse have been used in paired group evaluations besides definitive statistics. A value of $P<0.05$ has been accepted as statistically significant.

Results

Of participating elderly 21,4% (n:15) were males, 78,6% (n:55) were females, 54,1% have never gone to school, 50% had green cards for social security and 64,3% were divorced or widow/widowers (Table 1).

The mean age and standart deviation of participating elderly was 89,07 (3,81) (min:85, max:100) while the mean age and standart deviation for males was 87,75 (0,7) (min:85, max:93) and for females was 89,85 (0,6) (min:85, max:100) with the difference being not statistically significant ($p\geq0.05$).

No statistically significant difference was detected between genders regarding age, level of education, social security and marital status of elderly ($p\geq0.05$).

In all elderly participants there was at least one chronic disease, while the mean number and standart deviation of chronic diseases was 4,42 (2,016) for females, 4,80 (2,274) for males and 4,50 (2,06) for general elderly population. No statistically significant difference was detected between average number of chronic diseases and age, gender, level of education, social security and marital status of elderly ($p\geq0.05$) (Table 2).

***Table 1**. Some demographic features of elders*

Variables		
Gender	**Number**	**%**
Female	55	78.6
Male	15	21.4
Level of Education		
Never gone to school	38	54.3
Gone to School	26	37.1
Marital Status		
Married	19	27.1
Single	4	5.7
Widow-Widower/divorced	45	64.3
Age Group		
85-89 years	44	62.9
90 years and over	26	37.1
Social Security		
None	5	7.1
Green card	35	50.0
Social Security Foundation	14	20.0
Superannuation Fund	13	18.6
Occupational Pension Fund	3	4.3

Table 2. *Dispersion of mean numbers of Daily consumed doses of drugs, chronic diseases and monthly consumed boxes of drugs regarding some demographic features of elders*

Variables	**Number of chronic diseases**	**Number of boxes of drugs**	**Number of doses of drugs**
TOTAL	4,50 (2,06)	6,31 (3,36)	8,60 (5,10)
Gender			
Female (55)	4,42 (2,016)	6,58 (3,354)	8,62 (4,875)
Male (15)	4,80 (2,274)	5,33 (3,352)	8,53 (6,058)
P	M-U=500 p=,617	M-U=,258 p=,796	M-U=-1,116 p=,264
Level of Education			
Never gone to school (38)	4,42 (1,855)	5,97 (3,071)	8,01 (4,941)
Gone to school (26)	4,50 (2,267)	6,88 (3,850)	9,52 (5,474)
P	M-U=249 p=,803	M-U=1,042 p=,297	M-U=736 p=,462
Marital Status			
Married (19)	4,21 (1,475)	5,95 (2,635)	7,95 (3,519)
Single (4)	3,50 (2,517)	3,50 (2,517)	6,00 (6,782)
Widow-widower/divorced (45)	4,53 (2,117)	6,62 (3,664)	8,89 (5,529)
P	K-W=1,115 p=,573	K-W=1,871 p=,392	K-W=3,468 p=,177
Age group			
85-89 years (44)	4,52 (2,287)	6,73 (3,592)	9,34 (5,145)
90 years and over (26)	4,46 (1,655)	5,62 (2,886)	7,35 (4,874)
P	M-U=098 p=,922	M-U=1,676 p=,094	M-U=1,101 p=,271
Social security			
None			
Green card (35)	4,80 (2,055)	6,86 (3,474)	9,47 (5,169)
Social Security Foundation (14)	4,07 (2,129)	5,21 (3,401)	6,86 (5,447)
Superannuation Fund (13)	4,23 (1,423)	6,69 (3,276)	9,19 (4,626)
Occupational Pension Fund (3)	3,67 (577)	4,33 (2,517)	5,00 (1,732)
P	K-W=2,740 p=,433	K-W=6,380 p=,095	K-W=4,948 p=,176

**Data are as means (SD).*

The mean number and standart deviation of monthly consumed drug boxes was 5,33 (3,352) for males and 6,58 (3,354) for females; while this mean was found to be 6,31 (3,36) in general elderly population. The mean number and standart deviation of daily consumed doses of drugs was 8,53 (6,058) for males, 8,62 (4,875) for females and 8,60 (5,10) in general elderly population. No statistically significant difference was detected between gender, age, level of education, social security, marital status of elderly and the average number of daily consumed doses of drugs and the average number of consumed boxes of drugs ($p \geq 0.05$) (Table 2).

There was a strong corelation between daily consumed number of doses of drugs, number of monthly consumed boxes of drugs and chronic diseases in elderly; for number of monthly consumed boxes of drugs (r=670 p=,000), for number of daily consumed doses of drugs (r=678 p=,000). Of participants, 2,9% were using single drug, 5,7% were using two drugs, 5,7% were using three drugs, 7,1% were using four drugs and 78,6% were using five or more drugs.

Regarding SMMT points, 22,6% had severe (SMMT points:0–9) and 38,7% had moderate (SMMT points:10–19) and in total 61,3% (SMMT points:0-19) had significant cognitive disorders making a sum of 80,6% cognitive disorder frequency. Number of chronic diseases, average numbers of daily consumed doses of drugs and monthly consumed boxes of drugs have been found to occur in lower ratios in elderly with severe cognitive disorder levels compared to those at less severe levels of cognitive disorders ($p<0.05$) (Table 3).

Table 3. *Dispersion of mean numbers of daily consumed doses of drugs, chronic diseases and monthly consumed boxes of drugs regarding nutritional and cognitive levels of elders*

Variables	**Number**	**%**	**Number of chronic diseases**	**Number of boxes of drugs**	**Number of doses of drugs**
Cognitive level					
0–9 (Severe) 14	14	22,6	3,14 (1,51)	3,29 (2,12)	4,14 (2,77)
10–19 (Moderate) 24	24	38,7	5,04 (2,15)	7,33 (3,34)	11,06(5,57)
20–23 (Mild) 12	12	19,4	5,42 (1,56)	7,33 (2,42)	9,58 (3,02)
24–30 (Normal) 12	12	19,4	5,33 (1,72)	7,83 (3,38)	9,50 (5,23)
			p =,004	,000	,000
Level of Education					
Below 17 (severe malnutrition)	49	70.0	4,41 (2,11)	6,20 (3,64)	8,27 (5,28)
17–23,5 (malnutrition risk)	17	24.3	4,71 (1,82)	6,47 (2,57)	9,24 (4,67)
24–30 (Normal)	4	5.7	4,75 (2,87)	7,00 (3,55)	10,00(5,47)
			P =,825	P =,715	P =,476

**Data are as means (SD) or in numbers (%).*

There was not a statistically significant difference between cognitive disorder levels regarding gender, age group, education, social security and marital status ($p \geq 0.05$) (Table 4). But, there was a negative corelation between increasing age and SMMT scores (r=-288, P=,023). The average age of elderly with severe cognitive disorder has been found to be higher compared to those at different levels of cognitive disorder.

As for MA test, 70% had high levels of malnutrition, 24,3% had risk for malnutrition and only 5,7% had normal nutritional scores. The difference between chronic diseases, daily number of consumed doses of drugs, monthly consumed number of consumed boxes of drugs has not been found to be statistically significant regarding levels of nutrition of elderly ($p \geq 0.05$) (Table 3). No statistically significant difference was detected between gender, age group, level of education, social security, marital status of elderly and nutritional levels ($p \geq 0.05$). But, there happened to be more nutritional disorders in elderly who have gone to any school ($p<0.05$) (Table 4).

Table 4. *Cognitive and nutritional levels of elders regarding some demographic features*

Variables	**Total Number**	**Nutritional Disorder**			**Total Number**	**Cognitive Disorder**	
Gender		**Severe malnutrition**	**Malnutrition risk**	**Normal**		**Present**	**None**
Females	55	35 (63.6)	16 (29.1)	4 (7.3)	47	38 (80.9)	9 (19.1)
Males	15	14 (93.3)	1 (6.7)	0 (0)	15	12 (80.0)	3 (20.0)
P				.081			1.000
Level Of Education							
Never gone to school	38	24 (63.2)	12 (31.6)	2 (5.3)	35	30 (85.7)	5 (14.3)
Gone to school	26	23 (88.5)	2 (7.7)	1 (3.8)	22	16 (72.7)	6 (27.3)
P				.066			.305
Marital Status							
Married	19	16 (84.2)	3 (15.8)	0 (0)	16	12 (75.0)	4 (25.0)
Single	4	2 (50.0)	2 (50.0)	0 (0)	4	4 (100.0)	0 (0)
Widow-widover/divorced	45	30 (66.7)	11 (24.4)	4 (8.9)	40	32 (80.0)	8 (20.0)
P				.334			.535
Age group							
85-89 years	44	32 (72.7)	9 (20.5)	3 (6.8)	38	30 (78.9)	8 (21.1)
90 years and over	26	17 (65.4)	8 (30.8)	1 (3.8)	24	20 (83.3)	4 (16.7)
P				.579			.752
Social security							
None							
Green Card	35	26 (74.3)	8 (22.9)	1 (2.9)	32	23 (71.9)	9 (28.1)
Social Security Foundation	14	12 (85.7)	2 (14.3)	0 (0)	11	10 (90.9)	1 (9.1)
Superannuation Fund	13	8 (61.5)	3 (23.1)	2 (15.4)	11	10 (90.9)	1 (9.1)
Occupational Pension Fund	3	2 (66.7)	1 (33.3)	0 (0)	3	2 (66.7)	1 (33.3)
P				491			372

**Data are as means (SD).*

Discussion

Elderly had at least one chronic disease and the mean number and standart deviation of chronic diseases was detected as 4,50 (2,06) (1,2,3,4,5,9). No statistically significant difference was detected between mean number of chronic diseases and age, gender, level of education, social security, marital status of elderly. In a study conducted at primary step it was found that 56% of elderly had 2 or more chronic diseases and the mean number and standart deviation of chronic diseases was stated as 3,2 (1,7) (10). In another study, the mean number of diagnosed chronic disease was 2.44, the average being 2,7 in females and 2,1 in males (11). In a different study, 78,8% of elderly living in a nursing home have been diagnosed to have one and 47,2% have been diagnosed to have more than one chronic disease (12). The main reason that the average number of chronic diseases in our study participant elderly could be that the group consisted of participating elderly who were 85 years old and over.

It had detected that the elderly were consuming drugs heavily. All males and females were consuming at least one dose of drug per day. The mean number and standart deviation of daily consumed doses of drugs have been found 8,53 (6,058) in males, 8,62 (4,875) in females and 8,60 (5,10) in general elderly population. No statistically significant difference was detected between the mean number of daily consumed doses of drugs, consumed boxes of drugs and gender, age, level of education, social security, marital status of elderly ($p \geq 0.05$). Polypharmacy (multi drug usage) can be seen more frequently in nursing homes in which elderly are provided with care for long terms and where medical service is given (13).

Data extracted form 11 studies that were conducted in different cities in Turkey between 1998–2005 which investigate drug usage in elderly reveal that the average number of drugs was 3.25 per person (14). The average number of drugs per capita has been found to be lowest in Ankara (2.16) nursing homes (15), and highest (4,5) in Izmir nursing homes among dwelling elderly (16).

In a study conducted in Canada the average daily drug consumption of drugs was found to be 6,2 (17). It was reported that females in Sweden who were 70 years of old and over consumed an average of 3,8, and that males consumed 3,5 drugs and these rates tended to increase with ager (18). In an Italian study, similar results (females:3,8 and males:3,2) were reported (19). In this study 78,6% of elderly have been using five or more drugs. In a study conducted with elderly living in different 23 nursing homes throughout our country, 17,3% of elderly have been using five or more drugs (20).

The average number of daily consumed doses of drugs and more frequent drug usage have been found to be higher in our study compared to studies from nursing homes. In studies, the average age of elderly living nursing homes was 72,6–77,2 (20) while the mean age and standart deviation of elderly was 89.07 (3.81) (min:85,max:100). The elderly being in advanced age and them having more chronic diseases lead to the point that the average number of doses and boxes of drugs to be relatively increased in the study. There was a strong corelation between daily consumed doses of drugs of elderly and chronic diseases (r=678 p=,000).

Regarding SMMT points, 22,6% had severe (SMMT points: 0–9) and 38,7% had moderate (SMMT points: 10–19) and in total 61,3% (SMMT points: 0-19) had significant cognitive disorders making a sum of 80,6% cognitive disorder frequency.

In a study conducted among citizens living in Erzurum metropol region using SMMT, 13,7% of elderly had mild, 9,3% had moderate and 1,7% had severe cognitive disorder (21). Among individuals living in retirement homes, dementia frequency is higher as 45-59% (22). Cognitive disorder has been detected in 36% of elderly living in retirement homes in Turkey (23). In a study conducted in retirement home, cognitive disorder has been spotted in 40% of elderly in age group 70–79 and 76,9% in age group 80 and over (24). This difference between groups has been found statistically significant ($p<0.05$); the difference originating from age group 80 and over. As age increases, so does the frequency of cognitive disorder. Güngen et al. have found that the average SMMT score in age group 80 and over is relatively lower in a validity and reliability study (25). Maral et al. have detected cognitive disorder in 56% of age group 75 and over (26). In another study, cognitivie disorder was present in 71,7% of age group 75–94 years (27). Many other studies conducted on this topic support the study. In studies corelation between cognitive disorder and age, gender, level of education, marital status has been demonstrated (24,25,26,27,28). But in this study there was not a statistically significant difference between cognitive levels of elderly and gender, age group, level of education, social security, marital status ($p\geq0.05$). Nevertheless, there was a negative corelation between increasing age and SMMT scores (r=-288, P=,023). Deteriorating cognitive level with increasing age shows parallelism with data from literature but the high ratio of cognitive disorder stems from the study group being composed of participants in highly advanced age. Again, the reason that there was not a statistical difference between cognitive levels of elderly and gender, age group, level of education, social security, marital status could be that in highly advanced age groups these differences tend to disappear. The main reason that the average number of daily consumed doses and consumed boxes of drugs being lower in elderly with severely impaired cognitive levels might stem from the fact that it is more difficult to diagnose diseases in this age group and thus the number of doses and boxes tend to be less. In this study, as for MA test, 70% had absolute malnutrition, 24,3% had risk for malnutrition and only 5,7% had normal nutritional scores. There was not a significant difference between gender, age group, level of education, social security, marital status of elderly and nutritional levels. In a study with elderly, as for MA scores, malnutrition or malnutrition risk has been found in 16% of elderly in age group 65-74, in 15% of 75-84 age group and in 40% of elderly 85 years old and over (29).

Guigoz et al. have gathered data from 21 studies in which malnutrition prevalance has been evaluated with MA (14149 patients) in a meta-analysis and have found malnutrition rate 2±0.1% and risk of malnutrition 24±0.4% among elderly living independent to any nursing or retirement home community (30). In a similar study conducted using MA, malnutrition or risk of malnutrition has been found in 1%-5% of elderly living in community (31). As the study group is from nursing home and consists of elderly 85 years of age and older, malnutrition or risk of malnutrition was present in 94%.

Conclusion

An increase in chronic disease, severe cognitive disorder and malnutrition together with increase in number of doses of daily consumed drugs have been indicated with increasing age. Regarding level of education, more frequent malnutrition have been seen in elderly who had not gone to school. As for the study group consisting of advanced aged elderly, no statistically significant differrence was detected between gender, age, level of education, social security, marital status of elderly and average number of chronic diseases, average number of daily consumed doses of drug, average number of consumed boxes of drugs, cognitive and nutritional disorder levels.

References

1. Gelder M, Gath D, Mayou R, Cowen P. Oxford Textbook of Psychiatry. 1996; 4th ed. Oxford: Oxford University Press. Oxford.
2. Engin S, Engin N. İstanbul Büyükşehir Belediyesi'nde Yaşlılara Yönelik Koruyucu Hekimlik Çalışmaları. Türkiye Fiziksel Tıp ve Rehabilitasyon Dergisi 2006;52(1):32-5.
3. Mette C. Wellbeing and Dependency among the European Elders: The Role of Social Integration. European Network of Economic Policy Research Institutes (ENEPRI). 2005 July. Research Report No:12 Contract No: HPRNCT-2002-00330.
4. Morley JE. Anorexia of aging: physiologic and pathologic. Am J Clin Nutr 1997;66:760-73.
5. Beers MH, Berkow R. (ed) Merck Manual of Geriatrics, Merck & Co Inc, USA, 2000; 13-74.
6. Vellas B, Guigoz Y, Garry PJ, Nourhashemi F, Bennahum D, Lauque S, et al. The mini nutritional assessment (MNA) and its use in grading the nutritional state of elders patients. Nutrition 1999;15:116-22.
7. Folstein MF, Folstein SE, McHugh PR. Mini Mental State: A practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res 1975;12:189-98.
8. Güngen C, Ertan T, Eker E. (ed) The Standardized Mini Mental State Examination in Turkish. 1999 Aug 15-20. Proceedings of the 9th Congress of the International Psychogeriatric Association, Vancouver, Canada.
9. Deborah B. Psychiatric rating scales. In: Sadock BJ, Sadock VA (ed) Comprehensive Textbook of Psychiatry, Lippincott Williams & Wilkins, Philadelphia, 2000. Vol II, 755-83.
10. Dişçigil G, Gemalmaz A, Başak O, Gürel SF, Tekin N. Birinci basamakta geriatrik yaş grubunda depresyon. Turkish Journal of Geriatrics 2005;8(3):129-33.
11. Esengen Ş, Seçkin Ü, Borman P, Bodur H, Gökçe Kutsal Y, Yücel M. Huzurevinde yaşayan bir grup yaşlıda fonksiyonel-kognitif değerlendirme ve ilaç kullanımı. Turk J Geriatrics 2000;3(1):6-10.
12. Uncu Y, Özçakır A, Sadıkoğlu G, Alper Z, Özdemir H, Bilgel N. Bursa huzurevi yaşlılarının sosyodemografik özellikleri ve sağlık taraması sonuçları. Uludağ Üniversitesi Tıp Fakültesi Dergisi 2002;28(3):65-9.
13. Gupta S, Rappaport HM, Bennett LT. Polypharmacy among nursing home geriatric medicaid recipients. Ann Pharmacother, 1997;31:823-29.
14. Akıcı A. Akılcı ilaç kullanımı ilkeleri doğrultusunda yaşlılarda reçete yazma ve Türkiye'de yaşlılarda ilaç kullanımının boyutları. Turkish Journal of Geriatrics, Özel sayı; 2006;19-27.
15. Seçkin Ü, Bodur H, Gökçe KY. Yaşlılarda ilaç tüketimi. Turk Journal of Geriatrics 1998;1(1):36-8.
16. Arslan Ş, Atalay A, Gökçe KY. Yaşlılarda ilaç tüketimi. Turk Journal of Geriatrics 1998;3(2):56-60.
17. Yang JC, Tomlinson G, Naglie G. Medication lists for elders patients: Clinic-derived versus in-home inspection and interview. J Gen Intern Med 2001;16(2):112-5.
18. Lernfelt B, Samuelsson O, Skoog I, Landahl S. Changes in drug treatment in the elders between 1971 and 2000. Eur J Clin Pharmacol 2003;59:637-44.
19. Nobili A, Tettamanti M, Frattura L, Spagnoli A, Ferraro L, Marrazzo E et al. Drug use by the elders in Italy. Ann Pharmacother, 1997;31(4):416-22.

20. Arslan Ş, Atalay A, Gökçe KY. Yaşlılarda ilaç tüketimi. Turkish Journal of Geriatrics 2000;3(2):56-60.
21. Şahin A, Karalar F, Öztürk I, Aydın N, Kırpınar İ. Erzurum il merkezinde yaşayan 65 yaş ve üzeri populasyonda bilişsel bozuklukların yaygınlığı ve sosyodemografik özellikleri ile ilişkisi. 2004 June 10-12. 5. Ulusal Geropsikiyatri Sempozyumu Bildiriler Kitabı, İstanbul, Turkey.
22. Fries BE, Mehr DR, Schneider D, Foley WJ, Burke R. Mental dysfunction and resource use in nursing homes. Medical Care 1993;31(10):898-920.
23. Kurtoğlu D, Rezaki SM. Huzurevindeki yaşlılarda depresyon, bilişsel bozukluk ve yeti yitimi. Türk Psikiyatri Dergisi 1999;10:173-9.
24. Çuhadar D, Sertbaş G, Tutkun H. Huzurevinde yaşayan yaşlıların bilişsel işlev ve günlük yaşam etkinliği düzeyleri arasındaki ilişki. Anatolian Journal of Psychiatry 2006;7:232-9.
25. Güngen C. Standardize mini mental testin Türk yaşlı popülasyonunda demansiyel sendromların tanınmasında eğitim düzeylerine göre geçerlilik ve güvenilirliğinin incelenmesi. 1999. Istanbul Universitesi Cerrahpasa Tip Fakultesi Psikiyatri ABD, Istanbul.
26. Maral I, Aslan S, İlhan MN, Yıldırım A, Candansayar S, Bumin M. Depresyon yaygınlığı ve risk etkenleri: huzurevinde ve evde kalan yaşlılarda karşılaştırılmalı bir çalışma. Türk Psikiyatri Dergisi 2001;12:251–9.
27. Yoldaşcan E, Yurdakul RS. Adana Huzurevinde yaşayan yaşlıların bilişsel durumları ve etkileyen faktörlerin belirlenmesi. Anatolian Journal of Psychiatry 2006;7:232-9.
28. Gülseren Ş, Koçyiğit H, Erol AL, Bay H, Kültür S, Memiş A et al. Huzurevinde yaşamakta olan bir grup yaşlıda bilişsel işlevler, ruhsal bozukluklar, depresif belirti düzeyi ve yaşam kalitesi. Geriatri 2000;3:133-40.
29. Saka B, Özkulluk H. İç Hastalıkları polikliniğine başvuran yaşlı hastalarda nütrisyonel durumun değerlendirilmesi ve malnütrisyonun diğer geriatrik sendromlarla ilişkisi. Gülhane Tıp Dergisi 2008;50:151-7.
30. Guigoz Y. The Mini Nutritional Assessment (MNA) review of the literatüre-What does it tell us? J Nutr Health Aging 2006;10:466-85.

Correspondence:
Assist.Prof.Dr. Aclan Özder
Bezmialem Vakif University,
Faculty of Medicine, Depart. of Family Medicine, Istanbul, Turkey
Tel: +90.532.2030079
E-mail: aclanozder@gmail.com