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Original Article

Knowledge, Attitude and Behaviours regarding Medication Use among Older People Suffering from Chronic Diseases

Ilknur Ozkan [1], Feride Taskin Yilmaz [*2], Azime Karakoc Kumsar [3], Kamile Uyar [4]

1. Department of Nursing, Faculty of Health Sciences, Akdeniz University Kumluca, Antalya, Turkey
2. Department of Nursing, Health High School of Susehri, Sivas Cumhuriyet University, Sivas, Turkey
3. Department of Nursing, Faculty of Health Sciences, Biruni University, Istanbul, Turkey
4. Armutlu State Hospital, Yalova, Turkey

[*] **Corresponding Author:** Health High School of Susehri, Sivas Cumhuriyet University, Sivas, Turkey. **Tel:** +905065600018**, Email address**: feride_taskin@hotmail.com

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Introduction: Physiological changes occurring with aging increase prevalence of chronic diseases in elderly individuals. This situation brings about difficulties in medication use in elderly individuals. This study was conducted to determine knowledge, attitude and behaviours regarding medication use in elderly with chronic diseases.

Methods: Participants of this descriptive and cross-sectional study were 124 elderly individuals who were more than 65 years old, applied to Family Health Center in Yalova, Turkey between the dates of January- June 2018. Data were collected with data collection form including individual and disease information, medication use and knowledge, attitude and behaviours regarding medication use.

Results: Almost half of the elderly individuals (44.4%) expressed that they used medicine three times a day and 40.3% of them expressed that they used medicine six times and more a day. When the information about medication use of elderly individuals is evaluated, 75% of them stated that they did not receive any information on drug use and 82.3% of them did not know the side effects of drugs. When the attitudes of the individuals were evaluated, it was found that 6.5% of them liked to use medication, 67.7% of them had no dose, and 46% of them had stopped using medication without asking the physician. When the behaviors of elderly individuals were evaluated, 19.4% of them didn't use their medicines regularly, 46% of them discontinued their medication without asking their doctors, 82.3% of them didn't know side effect of the medicines, 81.5% of them used medicines without doctor's advice, 79.8% of them didn't read medicine usage instructions before using medicines, 12.9% of them kept their medicines in their bags and 55.6% of them kept them in a cabinet.

Conclusion: Significant problems such as lack of information about drug use in elderly individuals and self-medication use have been identified.

Keywords: Aged, Medication Use, Knowledge, Attitude, Behaviours

Introduction

Aging is addressed as a physiological case and it is defined as loss of physical and psychological powers irreversibly, decrease in potential of organism to balance between internal and external factors and deterioration of the individual's physically and psychologically (1). Elderly population has been increasing in Turkey and all over the world (2). It is predicted that elderly population will be 8.7% in 2018, 16.3% in 2040 and 25.6% in 2080 in Turkey (3).

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Changes with aging such as decrease in perception and creative abilities, lack of attention, slowing in thinking pace, weakness in short term memory affect course of life (4). Besides, physiological changes occurring with the aging increase incidence of chronic diseases in elderly individuals. This situation leads to difficulties regarding medication use in elderly individuals and the number of medications used and therefore might cause undesired side effects and medication interaction (5, 6). According to 2014 data of Turkey Pharmaceuticals and Medical Devices Agency, it was stated that 23.2% of the prescriptions written in Family Health Centers belonged to individuals over 65 years elderly (7). In addition to this, averagely four to six diseases and use of three to eight different medications in elderly people were observed in the studies (8, 9). Besides, it was stated in the literature that one third of reasons of elderly individuals' hospitalization stemmed from problems regarding medication use. (6).

Drug compliance is important in terms of both management of chronic diseases and preventing undesired situations stemming from the medication in elderly individuals. However, it was stated in the literature that drug compliance of elderly people with chronic diseases was insufficient (10, 11). In a study conducted with elderly hypertensive patients, the compliance of the participants with the drug was found to be moderate (12). In another study, the drug use error rate of elderly individuals was found to be 57.7% (13). Factors in elderly individuals such as socio-demographic characteristics, existence of more than one chronic disease, decrease in cognitive capacity, knowledge level regarding medication, the number of medications used, attitude towards medication use, beliefs about medicines, motivation, social support might affect rational medication use behaviors (14, 15). In addition, variables such as education of health professionals, the budget allocated to health, and the culture of the society affect the practices and behaviors related to drug use (16). Healthcare professionals have a significant role in planning and assessment of medication use in elderly people, education of the individual and his family about medication use, effects and side effects. For this purpose, healthcare professionals should firstly assess knowledge and behaviours of elderly individuals about effects, way of usage, hour and dose of medications, their side effects (17).

This research was done in order to assess knowledge, attitude and behaviours regarding medication use in elderly individuals with chronic diseases. We consider that this study will contribute to the literature with the aim of determining knowledge, attitude and behaviours of elderly individuals in order to draw attention to medication use and provide rational medication use in elderly individuals.

Methods

Procedure and sampling

It was a descriptive and cross- sectional research. Target population of the research was individuals over 65 year's elderly who applied to Family Health Center in Yalova, Turkey between the dates of 01 January- June 2018. The number of samples was calculated using the sampling method whose universe is known, with a deviation of 0.05 in the 95% confidence interval, with a probability of 50% [Nt2pq/d2 (N-1) + t2pq]. In this sense, 124 elderly individuals who were diagnosed by the doctor with a chronic disease requiring medication use for at least 6 months, were not diagnosed with dementia or Alzheimer' disease which might affect regular medication use, not having any verbal communication disability and accepted to participate in the study were included in the study.

Data collection tools

Research data were obtained using a questionnaire form including totally 46 questions prepared by researchers in line with literature review as 11 questions about individual information (age, marital status, educational level, with whom he lived, use of alcohol, smoking and etc.), 4 questions about disease information (disease diagnosed by the doctor, disease duration and etc.), 5 questions about medication use (medications used, duration of regular medication use, the number of medications used daily and etc.) and 26 questions about knowledge (3 questions), attitude (5 questions) and behaviours (18 questions) (liking medication use, using his medications regularly, paying attention to expiration date of the medication and etc.) regarding medication use (4, 8, 18-22).

Before collecting data, the data collection form was evaluated for clarity by three faculty members who are experts in gerontology. After the data forms were arranged in line with expert opinions, a pilot study was conducted with 20 elderly individuals. As a result of this study, the data collection tool was clearly understandable by individuals and finalized in line with the feedback received.

Data were collected by researchers with face to face interview method during application of the elderly individual to institution. It took nearly 20-25 minutes to fill data forms.

Ethical considerations

Before collecting data, written permission was taken from Cumhuriyet University Non-invasive Clinical Studies Ethical Committee (Decree no: 2017-11/01). All of the participants were informed about quality and objective of the research in detail and written and oral informed consents were taken from elderly individuals after assuring confidentiality of their information.

Data Analysis

Data were interpreted in SPSS 22.0 package program. Arithmetic average, number, percentage distribution and chi square test were used in data evaluation. If the expected value was under 5 in chi square tables, Fisher chi square test was used in tables with four cells and Yates correction chi-square was used in tables with more than four cells.

Results

Age average of elderly individuals was 71.70 ± 5.28 years and 50.8% of them were male and 40.3%

graduated from primary education. Economic situation of 62.1% of the participants was medium level, 7.3% of them did not have any health coverage, 18.5% of them lived alone, 14.5% of them were still smoking and 8.9% of them were still using alcohol. Approximately one-tenth of elderly individuals (9.7%) stated that they could not meet their physical needs on their own and 51.6% of them assessed their general health as good level (Table 1).

Of the elderly, 66.1% had hypertension, 49.2% had heart disease and 33.9% had diabetes and the mean duration of disease was 16.10 ± 9.77 years. 44.4% of them stated that they used medication three times a day and 40.3% of them stated that they used six and more medications a day and 75% of them stated that they did not take any education about medication use (Table 2).

When the information about medication use of elderly individuals is evaluated; 75% of them stated that they did not receive any training on drug use and 82.3% of them did not know the side effects of drugs.

When the attitudes about medication use of elderly individuals were evaluated, it was found that 6.5% of them liked to use medication, 67.7% of them had no dose, and 46% of them had stopped using medication without asking the physician, 40.3% of them did not pay attention to way of taking medications on an empty stomach or on a full stomach, 89.5% of them did not pay attention to food or beverages which they need to avoid during medication use.

When the behaviors about medication use of elderly individuals were evaluated, 19.4% of them didn't use their medicines regularly, 33.9% of them used reminders for adaptation to medication hours, 17.7% of them did not take their medications on their own, 19.4% of them did not use their medications regularly, 67.7% of them did not take some medication doses, 46% of them discontinued their medication without asking their doctors, 3.2% of them took two medication doses when they missed their medication doses, 58.1% of them took all oral medications at the same time, 96% of them took their medications by drinking water, 82.3% of them didn't know side effect of the medicines, 86.3% of them did not have any list consisting information about name, dose and taking time of medications, 71.8% of them have medications at home which they did not use although their doctors prescribed them, 81.5% of them used medicines without doctor's advice, 30.6% of them used medications of other individuals such as friend/ neighbor, 29.8% of them didn't control expiration date of the medicines, 79.8% of them didn't read medicine usage instructions before using medicines, 12.9% of them kept their medicines in their bags and 55.6% of them kept them in a cabinet (Table 3).

When socio-demographic characteristics and regular medication use behaviours of elderly individuals were compared in the study, statistical significance was found between educational level and regular medication use ($p < 0.05$) and it was confirmed that rates of regular medication use of individuals secondary school and higher education graduate were higher. Any statistical difference was not seen ($p > 0.05$) among gender, with whom he lived, situation of meeting personal needs on his own and general health assessment and regular medication use (Table 4).

Table 1. Socio-demographic characteristics of elderly individuals (N = 124)

Characteristics	N	%
Age (Mean ± SD) (yıl)	71.70 ± 5.28	
Gender		
Female	61	49.2
Male	63	50.8
Marital status		
Married	94	75.8
Single	30	24.2
Education		
Iliterate	33	26.6
Primary education	50	40.3
Secondary education	36	29.0
High education	5	4.1
Economical situation		
Good	16	12.9
Middle	77	62.1
Bad	31	25.0
Health insurance		
Yes	115	92.7
No	9	7.3
Who lived with		
Spouse	75	60.5
Spouses and children	18	14.5
Alone	23	18.5
Nursing home	8	6.5
Smoking habit		
Smoking	18	14.5
Never	62	50.0
Left	44	35.5
Alcohol habit		
Drinks	11	8.9
Never	75	60.5
Left	38	30.6
Ability to make individual needs		
Yes	112	90.3
No	12	9.7
General health assessment		
Good	64	51.6
Middle	50	40.3
Bad	10	8.1

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Table 2. Characteristics about disease and medication use of elderly individuals

Characteristics	N	%
Disease Duration (Avg ± SS) (year)	16.10 ± 9.77	
Duration of medication use (Avg ± SS) (year)	13.67 ± 9.26	
Disease diagnosed by the doctor*		
Hypertension	82	66.1
Heart disease /Heart failure	61	49.2
Diabetes	42	33.9
Dyslipidemia	26	21.0
Thyroid diseases	13	10.3
Asthma/Chronic Obstructive Pulmonary Disease	10	8.1
Rheumatismal diseases/osteoporosis	9	7.3
Other (Cancer, prostate hypertrophy, migraine and etc)	56	52.2
Taking information about his disease from healthcare professionals		
Yes	41	33.1
No	83	66.9
Frequency of staying in hospital due to his disease in the recent year		
None	114	91.9
Once	7	5.6
Twice and more	3	2.4
Type of medication used*		
Medications for cardiovascular system	110	88.7
Antidiabetics	42	33.9
Gastroprotective medications	35	28.2
Analgesics	33	26.6
Anxiolytic/antidepressant/sleeping pill	26	21.0
Anti-cholesterol medications	22	17.7
Medications for respiratory system	16	12.9
Thyroid medications	13	10.3
Medications consisting vitamin/mineral supplement	7	5.6
Other	47	37.9
Frequency of medication use within a day		
Once	16	12.9
Twice	38	30.6
Three times	55	44.4
Four times and more	15	12.1
The number of medications he used within a day		
One	14	11.3
Two- three	25	20.2
Four- five	35	28.2
Six and more	50	40.3
Taking education about medication use from healthcare professionals		
Yes	31	25.0
No	93	75.0

*n number changed because more than one options were marked.

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Table 3. Knowledge, attitude and behaviors regarding medication use of elderly individuals

Characteristics	N	%
Do you like using medication?		
Yes	8	6.5
No	116	93.5
Do you use reminders for adaptation to medication hours?		
Yes	42	33.9
No	82	66.1
Do you take your medications on your own?		
Yes	102	82.3
No	22	17.7
Is there any medication dose which you did not take despite doctor's recommendation?		
Yes	84	67.7
No	40	32.3
Have you ever discontinued your medications without consulting your doctor?		
Yes	57	46.0
No	67	54.0
Do you pay attention to way of taking medication as on an empty stomach or full stomach?		
Yes	74	59.7
No	50	40.3
Do you pay attention to food or beverages which you need to avoid during medication use?		
Yes	13	10.5
No	111	89.5
Do you know side effects of your medications?		
Yes	22	17.7
No	102	82.3
Do you have any list with you consisting information about name, dose and taking time of medications you use?		
Yes	17	13.7
No	107	86.3
Is there any medication you use without your doctor's recommendation?		
Yes	101	81.5
No	23	18.5
Do you use medications of other individuals without consulting to the doctor?		
Yes	38	30.6
No	86	69.4
Do you read the prospectus before using your medication?		
Yes	25	20.2
No	99	79.8
Do you control expiration date of your medication?		
Yes	87	70.2
No	37	29.8
Where do you keep your medications?		
In medication cabinet	20	16.1
In fridge	19	15.3
In any cabinet	69	55.6
In bag	16	12.9

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Table 4. Comparison of socio-demographic characteristics and regular medication use behaviours of elderly individuals

Characteristics	Regular medication use				X^2/p
	Yes (n = 100)		No (n = 24)		
	N	%	N	%	
Gender					
Female	51	51.0	10	41.7	0.675 / 0.277
Male	49	49.0	14	58.3	
Education					
Literate	24	24.0	9	37.5	6.018 / 0.022*
Primary education	38	38.0	12	50.0	
Secondary education	33	33.0	3	12.5	
High education	5	5.0	0	0.0	
Who lived with					
Spouse	63	63.0	12	50.0	0.259 / 0.458
Spouses and children	15	15.0	3	12.5	
Alone	16	16.0	7	29.2	
Nursing home	6	6.0	2	8.3	
Ability to make individual needs					
Yes	91	91.0	21	87.5	0.271 / 0.421
No	9	9.0	3	12.5	
General health assessment					
Good	8	8.0	2	8.3	0.099 / 0.952
Middle	41	41.0	9	37.5	
Bad	51	51.0	13	54.2	

*$p < 0.05$

Discussion

With physical changes occurring with aging and increase in incidence of chronic diseases, multi medication use makes safe medication use a current issue in elderly individuals (22-24). With the increase in the number of medications used in elderly individuals, possible mistakes such as over and missing doses, medication interactions and side effects have been increasing (25, 26). This research was done with the aim of determining knowledge, attitude and behaviours regarding medication use in elderly with chronic diseases.

Approximately one fifth of elderly individuals in our study stated that they lived alone and nearly all of them stated that they could meet their personal needs on their own. It is known that socio- demographic characteristics and social environment factors are very important in knowledge, attitude and behaviours regarding medication use of individuals (27). Education regarding medication use to be given for elderly individuals and their family members will support safe medication use in elderly individuals.

Incidence of chronic diseases increases with advancing age (24). Multi medication use might be inevitable with existing or accompanying diseases in elderly individuals (28). Multi medication use is a common clinical problem in elderly individuals and nearly 30% of elderly individuals take at least five or more medications within a day (29). Approximately half of elderly individuals in our study stated that they used medication three times a day and 40.3 % of them used six and more medications within a day and 75% of them stated that they did not take any education about medication use. In a similar study, it was determined that 34.6% of the participants used three medications, 21.5% of them used four medications and 44% of them used five and more medications a day (30). It was stated in another study in which age average of the participants was 59 ± 17 years that 67.7% of them used at least one medication and 13.4% of them used five and more medications (31). And it was seen in the study of Çakmur (22) that multi medication use was high in elderly individuals who used medication for more than 15 years. While medication use of elderly individuals were between three and six within a day in polyclinic patients, it was emphasized in literature that this number might be averagely 10 to 15 in patients staying in the hospital (25). It is thought - provoking that only one fourth of elderly individuals stated that they took education about medication use although nearly all of the elderly individuals had multi medication use history and elderly individuals were under risk more in terms of problems such as medication interaction which might stem from multi medication use, overdose, missing doses, increase in incidence of side effects. In this sense, it will be helpful to assess knowledge, attitude and behavior levels regarding

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medication use of elderly individuals regularly and provide required consulting and monitoring.

Failures in medication use behaviours such as using medication in doses which are recommended by the doctor and taking medications at right time are commonly seen in elderly individuals (28, 29). When knowledge, attitude and behaviours regarding medication use of elderly individuals were examined in our study, the most commonly made mistakes were stated as not using medications regularly, not taking double dose when missing a dose, discontinuing medications without consulting to the doctor, taking all medications at the same time, not paying attention to way of taking medications as on an empty or full stomach, not paying attention to food or beverages which he should avoid while using medication, etc. In another study, medication errors were determined as not taking medications in time, forgetting to take medication, mixing medications, taking the drug in the wrong dose, taking the drug in the wrong way, and releasing the drug on its own (13). Findings determined in a similar study such as elderly individuals' not knowing their medications' name, the reason why they used that medication, changing medication doses, not knowing that medications interact with food and beverages, not taking medication at right time, not paying attention to expiration date of the medication, using unprescribed medication, not taking medication when feeling well, using overdose medication and not having knowledge about medication use show similarity with our study results (18).

It was confirmed in a similar study conducted in adult individuals that more than half of the participants had safe medication use behaviours such as reading medication prospectuses, using prescribed medications completely although nearly half of the participants stated they did not applied to health institution when having any health problem (27). These results show that adult individuals including all age groups are more conscious about medication use than elderly individuals.

In the study, it was determined that individuals with secondary and higher education graduates had higher rates of regular drug use. Similarly, Pinto et al. (32) study, it was found that elderly individuals with low education level showed inadequate drug use. In another study, while there was no difference between drug use error and education level, the rate of drug use error was found to be higher in women who took three or more drugs a day and who did not read the package insert of the drug (13). Bosch-Lenders et al. (32) study, there was no difference between drug use knowledge and education level, and drug use knowledge level was better in those living with spouse than those living alone. The findings of the study reveal the importance of providing drug education appropriate for the education level in elderly individuals.

Conclusion

We can say that there are deficiencies and errors in the information, attitudes and behaviors of elderly individuals regarding drug use. For this reason, it is recommended that healthcare professionals evaluate the knowledge, attitude and behavior of the elderly individual regarding drug use in each health check; providing counseling for the elderly individual when necessary; preparing understandable documents about the use of drugs appropriate for the education level of the elderly individual; providing the necessary measures to eliminate problems such as forgetting to use the drug and unable to reach the drug in the elderly individuals.

Study limitations

That the results of the research are generalizable to its own target population is an important limitation because it was conducted with elderly individuals who applied to only one Family Health Center at a particular time and accepted to join the study. Also this study is very geographic, cultural and religious limited sample that may not be representative for Turkey. In addition, information to be obtained about medication use depends on self-reporting of the elderly individuals.

Conflicts of interest

No potential conflicts of interest were disclosed.

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Authors' contribution

Study conception and design: IO, FTY, AKK, KU.
Acquisition of data: IO, KU.
Analysis and interpretation of data: FTY, AKK.
Drafting of manuscript: IO, FTY, AKK.

All the authors have read the final manuscript and approved that.

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