Clinical and Experimental Health Sciences

Examination of Health Data of Elderly Individuals Registered with Family Medicine: A Retrospective Study

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ABSTRACT

Objective: The research aims to determine the utilization of health services by elderly individuals registered in family medicine according to their sociodemographic characteristics and mobile service usage.

Methods: The population of the research consists of 417 individuals aged 65 and over who are registered with a family health center in the west of Türkiye. The retrospective research method was used in this research. In the study, the information of elderly people aged 65 and over registered with family medicine was used.

Results: In the study, it was determined that there was a statistically significant relationship between old age and gender, educational status, place of residence, and mobile service availability. It has been determined that mobile services are the most used in middle age (55.2%). Additionally, it was determined that 97.8% of mobile service users had not been vaccinated (Influenza Vaccine, Hepatitis B Vaccine, Tetanus-Diphtheria Vaccine).

Conclusion: The results revealed that mobile health services are inadequate for elderly individuals. As a solution, it is recommended to increase the number of days of mobile health service for rural areas or to establish a family medicine unit in these villages.

Keyword: Elderly, family medicine, health services, mobile health services.

1. INTRODUCTION

As life expectancy at birth increases in society, related diseases are increasing, which causes many health problems in old age (1,2). While the number of elderly people aged 60 and over worldwide was 600 million in 2000, it is expected to double in 2025 and triple in 2050 (17%, meaning an average of 1.6 billion) (3,4). Likewise, it is seen that the elderly population has increased in Türkiye, especially after the 1960s (5–7). According to the report of the Turkish Health Institutes Presidency (TÜSEB), in Türkiye, the elderly population aged 65 and over is close to 8 million in 2020, while the proportion of the population in the total population is 9.5% (1,8). Moreover, according to studies, the elderly population in Türkiye is expected to be 10.2% in 2023, 16% in 2040, 20.8% in 2050, over 25% in 2060 (at least 24 million), and 27.7% in 2075. If this happens, Türkiye will be in the group of countries with very elderly populations in 2075 (1,4,8).

In the study conducted by the Ministry of Health of the Republic of Türkiye in 2021 on non-communicable diseases and risk factors; It has been reported that 46% of elderly individuals aged 65 and over have more than two chronic diseases (1,9). Chronic diseases are among the diseases that most commonly cause disability or death in the world and account for 70% of deaths (9,10). In Türkiye, the mortality rate of chronic diseases is 89%, while the premature death rate (under 70 years of age) is 16% (10). For these reasons, it is thought that it is important to examine the health status of elderly individuals living in Türkiye.

The workload of chronic diseases is quite high at all levels of healthcare, especially primary healthcare (11,12). Since the follow-up and treatment of these diseases are long-term, monitoring them in primary health care is very important in terms of process management. It aims to monitor chronic diseases by providing health services for individuals and society with the "Chronic Diseases Monitoring in Primary Health Care Services" and "Health Transformation Program" carried out by family physicians in Türkiye (1,13).

Preventive health services: ensure that the individual, family, and society are more beneficial physically, psychologically,

economically, and socially. As a result, while individuals are encouraged to have a healthy lifestyle, health services improve, and by providing a more effective and efficient service, both the health status of society increases, and the welfare level of the society increase (1,14,15). Protective and preventive health services play a very important role in eliminating all kinds of problems that pose a risk to protect and improve public health at the highest level. Preventive health services for individuals and society in Türkiye; It is provided in Family Health Centers (FHC) and Community Health Centers (CHM) (14,15). With immunization programs, which are among the preventive health services, to elderly individuals; Individuals are protected from diseases by administering vaccines such as tetanus-diphtheria, pneumococcal, influenza, and COVID-19 vaccines (16,17). Considering the COVID-19 epidemic, which has caused the death of millions of people around the world, especially people aged 65 and over and those with chronic diseases are listed as risk groups (18). Research results show that the case fatality rate from COVID-19 is higher in patients aged 65 and over (19–21).

In addition, mobile health services are provided within the scope of family medicine. Mobile health service refers to the health service that the family physician and family health personnel will provide on-site by going to settlements such as remote neighborhoods, towns, villages and hamlets determined by the directorate, in accordance with the procedures and principles determined by the Public Health Institution of Türkiye (22).

The research aims to determine the utilization of health services by elderly individuals registered with family medicine according to their sociodemographic characteristics and mobile service usage and to contribute to health policymakers and the literature.

2. METHODS

2.1. Design and Sample

In the study, health and sociodemographic data of elderly individuals aged 65 and over who were registered to the Family Medicine Unit at a Family Health Center in the west of Türkiye were examined. Sample selection was made using convenience sampling. A family medicine clinic in the region where the researchers lived was selected. This research is a descriptive retrospective type of research. The population of the research consists of 417 individuals aged 65 and over, recorded in the registration system of this family practice. The entire population was included in the research without choosing a sample. In the family health unit where the research was conducted; A family doctor and a midwife were on duty, serving a population of 3450, serving 5 remote villages and those in the city. In the family health unit where the research was conducted; immunization, diagnosis, treatment, monitoring of chronic diseases, pregnant monitoring, maternity monitoring, baby monitoring, reproductive health, monitoring of women aged 15-49, elderly health monitoring, and mobile health services are provided.

2.2. Data Collection Tools

Research data was collected between March 1 and May 31, 2023. Research data was collected with a data collection form prepared by the researcher. The research form consists of two parts: sociodemographic characteristics and health status characteristics. In the surname demographic characteristics section, there are 5 statements including the individual's age, gender, education level, place of residence, and mobile service availability. In the health status characteristics section, the individual's acute and chronic diseases, vaccination status, mobile service availability, etc. It consists of 18 statements. Family Medicine Information Management System was used to collect data.

2.3. Statistical Analysis

The data analysis of the research was evaluated using the SPSS (IBM SPSS Statistics 27) package program. Frequency tables and descriptive statistics were used to interpret the findings. "Pearson-$\chi 2$" cross-tabulations were used to examine the relationships between two qualitative variables. In the study, $p < .05$ value was considered statistically significant.

2.4. Ethical Considerations

Ethical approval was obtained from the Non-Interventional Clinical Research Ethics Committee of Kütahya Health Sciences University (dated 11.01.2023 and numbered 2023/01-25) and institutional permission numbered 2021/14 was obtained from the Kütahya Governorship Provincial Health Directorate. While conducting the research, the Declaration of Helsinki was followed, and scientific and universal ethical principles were followed.

3. RESULTS

It was determined that 50.7% of the youngest-old age group was male, 59.0% of the middle-old group, 73.3% of the elderly group were female, and 53.5% of the total elderly individuals were female. It was determined that 59.1% of the young-old age group were primary school graduates, 73.3% of the middle-aged group and 100.0% of the elderly group did not attend any school. It was determined that there were no elderly individuals whose education level was secondary school or high school, and 49.6% of the elderly individuals in total did not attend any school. While the rate of people living in the district in youngest-old age was 53.9%, it was determined that this rate increased to 73.3% during the old age period. Additionally, it was determined that 54.2% of the elderly lived in the village. Considering the status of receiving mobile service; It has been determined that mobile services are mostly used in middle age (55.2%), while the rate of mobile service usage in youngest-old age is 39.0%, this rate is 46.7% in old age. Additionally, it was determined that 43.6% of elderly individuals use mobile services (Table 1).

Table 1. *The relationship between sociodemographic characteristics and old age periods*

Sociodemographic Characteristics	Old Age Period								Statistical analysis* Possibility
	Youngest-old (65-74)		Middle-old (75-84)		Oldest-old (85 and older)		Total		
	n	%	n	%	n	%	n	%	
Gender									
Female	139	49.3	62	59.0	22	73.3	223	53.5	χ²=8.050
Male	143	50.7	43	41.0	8	26.7	194	46.5	**p= .018**
Educational status									
Without any graduation	100	35.5	77	73.3	30	100.0	207	49.6	
Elementary school	167	59.1	27	25.7	-	-	194	46.6	χ²=77.245
Middle school	12	4.3	1	1.0	-	-	13	3.1	**p< .001**
High school	3	1.1	-	0.0	-	-	3	0.7	
Living place									
County	152	53.9	31	29.5	8	26.7	191	45.8	χ²=23.084
Village	130	46.1	74	70.5	22	73.3	226	54.2	**p< .001**
Mobile service usage status									
Yes	110	39.0	58	55.2	14	46.7	182	43.6	χ²=8.315
No	172	61.0	47	44.8	16	53.3	235	56.4	**p= .016**

* In examining the relationships of two qualitative variables "Pearson-χ2" cross table.

Table 2. *Relationship between mobile service usage and vaccination*

Variables	Mobile service usage situation						Statistical analysis* Possibility
	Yes		No		Total		
	n	%	n	%	n	%	
Vaccination Status							
Yes	4	2.2	46	19.6	50	12.0	χ²=29.348
No	178	97.8	189	80.4	367	88.0	**p< .001**
Vaccination Administered							
Influenza Vaccine	3	100.0	44	93.6	47	94.0	χ²=0.204
Hepatitis B Vaccine	-	-	1	2.1	1	2.0	p= .903
Tetanus-Diphtheria Vaccine	-	-	2	4.3	2	4.0	
Status of getting COVID-19 vaccine							
Yes	140	76.9	184	78.3	324	77.7	χ²=0.112
No	42	23.1	51	21.7	93	22.3	p= .738
COVID-19 Vaccine Dosage							
1 or 2 doses	15	10.7	26	14.1	41	12.6	χ²=12.829
3 doses	124	87.9	139	75.1	263	80.7	**p= .002**
4 doses	2	1.4	20	10.8	22	6.7	

* In examining the relationships of two qualitative variables "Pearson-χ2" cross table.

In this research, it was determined that the distribution of old age periods differs according to gender. According to these findings, the rate of men in youngest-old age is 50.7%, the rate of men in middle-old is 41%, and the rate of men in oldest-old is 26.7% (p<.05).

In this research, it was determined that the educational status of individuals varies according to their old age. According to these findings, the rate of those who did not graduate from any school in their youngest-old age is 35.5%, the rate of those who did not graduate from any school in their middle-old is 73.3%, and the rate of those who did not graduate from any school in their oldest-old age is 100% (p< .001).

In this research, it was determined that the residential situation of individuals varies according to their old age. According to these findings, the rate of people living in the village in their youngest-old age is 46.1%, the rate of people living in the village in their middle-old is 70.5%, and the rate of people living in the village in their oldest-old age is 73.3% (p< .001).

In this research, it was determined that individuals' use of mobile services varies depending on their age. Additionally, it was determined that 97.8% of mobile service users had not been vaccinated (Influenza Vaccine, Hepatitis B Vaccine, Tetanus-Diphtheria Vaccine) (p< .05). According to these findings, the rate of using mobile services in the youngest-old age is 39%, the rate of using mobile services in the middle-old age is 55.2%, and the rate of using mobile services in the oldest-old age is 46.7% (p<.05).

A statistically significant relationship was determined between the use of mobile health services by elderly individuals and

Table 3. *Disease and drug use status according to old age*

Disease and drug use	Old Age Period								Statistical analysis* Possibility
	Youngest-old (65-74)		Middle-old (75-84)		Oldest-old (85 andolder)		Total		
	n	%	n	%	n	%	n	%	
Chronic disease									
Yes	218	77.3	90	85.7	27	90.0	335	80.3	χ²=5.336
No	64	22.7	15	14.3	3	10.0	82	19.7	p= .069
Number of chronic diseases									
One disease	65	29.8	21	23.3	6	22.2	92	27.5	
Two diseases	46	21.1	20	22.3	6	22.2	72	21.5	χ²=1.789 p= .774
Three or more diseases	107	49.1	49	54.4	15	55.6	171	51.0	
Regular medication use									
Yes	217	77.0	89	84.8	27	90.0	333	79.9	χ²=4.970
No	65	23.0	16	15.2	3	10.0	84	20.1	p= .083
Multiple drug use									
Yes	154	54.6	69	65.7	21	70.0	244	58.5	χ²=5.643
No	128	45.4	36	34.3	9	30.0	173	41.5	p= .060
* In examining the relationships of two qualitative variables "Pearson-χ2" cross table.									

their vaccination status and COVID-19 vaccine doses. It has been determined that 97.8% of individuals using mobile health services have not been vaccinated. It was determined that 87.9 percent of those using mobile health services had received 3 doses of the COVID-19 vaccine (p< .001) (Table 2). It was determined that 75.1% of those who did not receive mobile health services had 3 doses of COVID-19 vaccine (p<.05) (Table 2).

Chronic disease and medication use status by age groups are shown in Table 3. There is no statistically significant relationship between chronic disease status according to old age groups (p> .05). 83.7% of the youngest-old, 87.6% of the middle-old, and 83.3% of the oldest-old had at least one chronic disease. When the number of chronic diseases in elderly individuals was examined, it was determined that 51% had three or more chronic diseases, 25.5% had a single chronic disease, and 21.5% had two chronic diseases.

There is no statistically significant relationship between regular drug use according to age groups (p> .05). It was determined that 77% of the youngest-old, 84.8% of the middle-old, and 90% of the oldest-old used their medications regularly. There is no statistically significant relationship between polypharmacy status according to age groups (p> .05). It was determined that 54.6% of the youngest-old, 65.7% of the middle-old, and 70% of the oldest-old used multiple medications.

4. DISCUSSION

The research aims to determine the utilization of health services by elderly individuals registered in family medicine according to their sociodemographic characteristics and mobile service usage.

In this study, it was determined that the rate of people using mobile health services to receive 3 doses of COVID-19 vaccine

was higher than those who did not use mobile health services (p< .05). The reason for this situation may be that the vaccination service was brought to the region where people live in a planned manner during the COVID-10 pandemic period.

In this research, it was determined that mobile service usage was highest in middle age. It has also been determined that most elderly individuals use mobile services (p< .05). Additionally, it was determined that 97.8% of mobile service users had not been vaccinated (p< .05). The Ministry of Health has planned to provide mobile health services once or twice a week, depending on the population, for towns, villages, hamlets, remote neighborhoods, and similar settlements where access to health services is difficult (22). It is advantageous for individuals living in those settlements to go to settlements far from the center to provide mobile service outside the FHC. However, the results of this research show that the vaccination rate of mobile service recipients is very low. The reason for this situation suggests that the mobile health service provided once or twice a week is insufficient.

This study determined that the status of having a chronic disease did not change according to older age groups. Additionally, most elderly individuals had at least one chronic disease, and more than half had three or more chronic diseases. In their study on elderly individuals living in nursing homes, Özcan and Alpaslan determined that 75% of elderly individuals had at least one chronic disease (23). Şahan et al. it was determined that 72% of elderly individuals had chronic diseases (24). Kaçan and Değer found that 78.3% of elderly individuals had hypertension (25). It seems that our results are compatible with the literature results.

In this study, it was determined that the majority of elderly individuals used their drugs regularly. Özcan and Alparslan found that 78.3% of elderly individuals used medication regularly (23). Ünlü and Olgun determined that 60% of elderly

individuals use medication regularly. The results of our research are like the results of research in the literature (23-25).

In this study, it was determined that most elderly individuals used multiple medications. Hsu et al. determined that the prevalence of polypharmacy in older adults ranged from 7-45% (26). Wastesson et al. determined that 45% of elderly individuals use multiple medications (27). In our study, the rate of polypharmacy appears to be higher than in other studies.

The study shows that there is a statistically significant relationship between old age and gender. It has been determined that the elderly and total elderly individuals in advanced old age are mostly women, and the proportion of men gradually decreases with age (p<0.05). In different studies conducted in Türkiye, it has been determined that women are the majority in the gender distribution of elderly individuals (18,28). According to the 2022 data from the Turkish Statistical Institute, the rate of the female population in Türkiye is 52.2% in the 60-74 age group and 72.4% in the 90 and over age group (29). It appears that the results of our research are like other results in the literature.

In this research, it was determined that the rate of not going to any school increases with age, there are no elderly people who are secondary school or high school graduates, and most elderly individuals do not go to any school (p< .05). In a study conducted in Türkiye, it was determined that the education level of most elderly individuals was primary school (30). Another study reported that the proportion of illiterate elderly was higher (31). Considering the elderly individuals over the age of 65 in our research, considering the conditions of the region and individuals in the past, the inadequacies in educational institutions, and the society's perspective on reading, it is a predictable situation that the rate of illiterate elderly is high.

The research shows that there is a statistically significant relationship between old age and place of residence and that the proportion of elderly people living in villages increases as they get older (p< .05). Turkish society is getting older, so chronic diseases are becoming an important problem related to aging (32). Elderly individuals' need for healthcare is a public health priority (33). Therefore, we recommend increasing public health practices in rural areas. It can be thought that it will be difficult for elderly individuals living in rural areas to access health services due to distance, transportation, low-income levels, and lack of health service providers, especially in areas requiring expertise.

5. CONCLUSION

In this study, it was determined that among individuals over the age of 65, the proportion of men decreased with age. Future studies may examine why men live shorter lives than women. In this research, it was determined that most elderly people live in villages. In addition, it has been determined that mobile health services are provided in villages with difficult access and that the vaccination rate of elderly individuals receiving mobile services is low. As a solution, the number

of days of mobile health service can be increased in these regions or a family medicine unit can be established in these villages. The results of this study and studies conducted in other countries differ in terms of polypharmacy rates. In future studies, cross-country comparisons can be made regarding polypharmacy. Since our research was conducted in a family medicine unit in the west of Türkiye, it cannot be generalized about the utilization of primary health care services by individuals aged 65 and over throughout the country.

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Research idea: MN, FBE
Design of the study: MN, FBE
Acquisition of data for the study: FBE, MN
Analysis of data for the study: MN, FBE
Interpretation of data for the study: MN, FBE
Drafting the manuscript: MN, FBE
Revising it critically for important intellectual content: MN, FBE
Final approval of the version to be published: MN, FBE

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