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RESEARCH

ELDERLY HEALTH CARE NEEDS AND ASSOCIATED FACTORS IN TERMS OF HEALTH INEQUALITIES

ABSTRACT

Introduction: Having proper knowledge of the healthcare needs of the elderly is crucial in order to offer qualified and effective services. Therefore, the aim of this study was to identify the current healthcare needs of this population, examine the factors associated with these needs, and identify any disadvantages encountered by this group.

Materials and Method: This study was comprised of 7190 persons living in the community of Ödemiş, Turkey. The sample size of 365 participants who were each older than 64 years of age was calculated with a 95% confidence interval and 50% prevalence, along with a precision of 5% for the Ödemiş district. The 365 individuals in this study were then chosen via a stratified and systematic sampling method. The Community Health Intensity Rating Scale was used for determining the healthcare needs of the subjects. In addition, the participants evaluated their own perceived health status on a 100-point visual analogue scale.

Results: According to the logistic regression analysis results, being at 80 years and older age, being illiterate, living alone, having a poorly perceived income level or a poorly perceived health status, and residing in inadequate housing were the risk factors for the extensive healthcare needs of the elderly.

Conclusion: Healthcare delivery to the elderly should be prioritized for those who are older than 80 years of age, uneducated, and poor as well as for those who live alone in order to achieve equal healthcare service benefits.

Key Words: Aged; Needs Assessment; Socioeconomic Factors; Health Services Needs and Demand.



ARAŞTIRMA

SAĞLIKTA EŞİTSİZLİKLER AÇISINDAN YAŞLILARIN SAĞLIK BAKIM GEREKSİNİMLERİ VE İLİŞKİLİ FAKTÖRLER

Öz

Giriş: Yaşlı bireylerin sağlık bakım gereksinimine ilişkin özellikleri kaliteli ve etkili sağlık hizmet sunumu açısından önemli bir konudur. Bu çalışma yaşlılarda sağlık bakım gereksinimi ile ilişkili faktörleri ve dezavantajlı grupları belirlemek amacıyla yapılmıştır.

Gereç ve Yöntem: Bu çalışma Ödemiş İlçe Merkezinde toplum içinde yaşayan 7190 yaşlıda yürütülmüştür. Örnek büyüklüğü %95 GA, %50 prevalans ve %5 olasılık ile 365 kişi olarak hesaplanmıştır. Sonra, bu araştırmaya katılan 365 yaşlı tabakalı ve sistematik örnekleme yöntemi ile seçilmiştir. Sağlık bakım gereksinimini belirlemek için Toplum Sağlık Yoğunluğu Derecelendirme Ölçeği kullanılmıştır. Aynı zamanda yaşlılar kendi kendilerine algıladıkları sağlık bakım gereksinimi de 100 puanlık Görsel Analog Skalası ile değerlendirmişlerdir.

Bulgular: Yapılan lojistik regresyon analizi sonuçlarına göre, 80 ve üstü yaşta olmak, okuyamaz olmamak, yalnız yaşamak, algılanan gelir durumunun kötü olması, algılanan sağlık durumunun kötü ve çok kötü olması ve apartmanda veya gecekonduda yaşıyor olmak yoğun sağlık bakım gereksinimi için risk faktörleri olarak bulunmuştur.

Sonuç: Sağlık eşitsizlikleri ile mücadelede, yaşlılara sunulan sağlık hizmetlerinde 80 yaş ve üzerinde, eğitimsiz, yalnız yaşayan ve gelir düzeyi kötü olanlara öncelik verilmelidir.

Anahtar Sözcükler: Yaşlı; Sağlık Bakım Gereksinimi Değerlendirme; Sosyo-ekonomik Faktörler; Sağlık Gereksinimi.

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INTRODUCTION

“Equality in health” means everyone should have the chance to achieve their full health potential and have proper access to healthcare services whenever they need them (1). Based on this definition, when healthcare practices are associated directly with the needs of the community, the healthcare service providers are able to offer more effective and equitable services. In developing countries like Turkey, it is extremely important to completely and accurately determine the healthcare needs of the community so that equal and qualified services can be provided to adequately meet those needs (2).

Throughout the world, life expectancy is increasing, and aging has become a more critical issue (3). In the elderly, social and healthcare needs have expanded due to diseases, loss of function, and injuries along with the higher economic load. Therefore, identifying the needs and the factors associated with them can be used as a guide to provide continuous, coordinated, and equal healthcare services (3).

The needs of these individuals change constantly and cannot be measured only by examining each patient medically; other measuring tools are also necessary (4). In addition to the articulated/demanded needs, it is also important to discover those that are unspoken as well as those which are not as obvious. Several instruments can be used in this process, for example the data from an analysis of records and statistics, personal interviews, and home visits. Integrated measurement tools that take into account the individual, family, or community and evaluate them with regard to all parameters are vital for the determination of needs (5). The Community Health Intensity Rating Scale (CHIRS) used in this study is such an assessment tool, and it was found to be valid and reliable for the Turkish community by Çelebioğlu (6).

Community health assessment instruments are used as guides for the projection of healthcare services, (4) and identifying the primary needs allows for the management of resources to be allocated appropriately so as to reduce inequality by organizing the healthcare services in the most applicable ways. The purpose of this study was to determine the healthcare needs of the elderly population in the Ödemiş district and examine the factors associated with those needs.

MATERIALS AND METHOD

This research was conducted cross-sectionally, and the data was collected from the Ödemiş district in the Izmir province between September 2009 and March 2010. This district was chosen because it had the highest percentage of elderly

people (10.1%). The research population was made up of 7190 individuals who were 65 years of age and older, and the mean age for the participants was 73.66 ± 6.265 . The largest group (33.2%) was composed of 65-69 year olds. The necessary ethical approval was granted by the Ege University Faculty of Medicine ethics board, and written approval from each participant was obtained when the data was collected.

The sample size was calculated by considering the prevalence as 50%, and the smallest sample size was calculated as 365 people with 5% tolerance and 95% confidence interval (CI). The records of the participants from the Family Health Centers (FHCs) were examined. The subjects in this study were selected according to gender, age, and location of the FHCs using a stratified systematic sampling method in order to represent the whole population. In addition, this method was well suited for determining which individuals were chosen from each stratum for the sampling. Furthermore, it was the preeminent method for making the proportion of each sampled stratum identical to the proportion of the Ödemiş population. Subjects who were not at home when the three visits were made and who failed to respond to other attempts to contact them were not eligible for inclusion. In these cases, other individuals were chosen from the list of substitutes. In the end, only 10 substitutes were utilized in the sampling. The elderly who were not discharged from institutional care and who met the study criteria were included.

The data was obtained via a mutual interview, physical examination (blood pressure, height and weight measurements, lung and heart sound evaluations), and observation. Moreover, information gathered from home visits and face-to-face conversations featuring the question and answer method were also incorporated in the data collection. All measurements were performed by one researcher using identical instruments and the same data collection form to provide consistent data quality.

The dependent variable was the intensity of the healthcare need, and individual total scores were taken from the CHIRS to determine this (6). These scores ranged from a maximum of 60 to a minimum of 0 and were divided into two categories: 32 points and higher represented the necessity for intensive care while 31 points and lower signified the need for a moderate level of care combined with low maintenance. The cut-off point was calculated by adding a standard deviation (6.2) to the average scale score (23.9).

Sociodemographic independent variables such as age, gender, education level, marital status, family size, and family composition were taken into account in our study.



Additionally, socioeconomic variables such as working status, perceived income status, daily per capita income, health insurance, house ownership, the quality of the house, and the number of rooms per capita in the dwelling were studied. The perceived income status was composed of two groups. The first group contained those who identified their income level as “moderate” or “high”, and the second group was comprised of those who said that their income level was “low” or “very low”. The daily per capita income was also divided into two groups. One was made up of people with an income of one dollar or less per day, and the other was composed of those earning more than one dollar per day. The health insurance status was divided according to four categories: a) those with no health insurance or with a green card (an ID card for poor people), b) those enrolled in the State Pension Fund (SPF), c) those with SSK (the Turkish Social Security system for the private sector and blue-collar workers), and d) those with Bağ-Kur (Social Security Institution for the Self-Employed). The quality of the house was analyzed according to whether it was a family house/duplex, an apartment, or a tenement.

The need factors were determined to be perceived health status and the number of chronic diseases. The perceived health status was classified according to the scores given by the elderly participants themselves on a 100-point VAS, and it was found that the perceived average health score was 65.5 and the standard deviation was 17.3. In order to provide a reference score for a perceived health status of “good”, the data was divided into five equal percentiles. The cut-off point of the 60th percentile, which was equal to 70 on the VAS, was defined as the reference score, and those with a score of ≥ 70 were classified with perceived “good” health. The number of chronic diseases was analysed by whether the subject had no disease at all, one disease, or two or more diseases.

The Statistical Package for the Social Sciences (SPSS) version 16.9 software program for Windows (SPSS Inc., Chicago, Illinois, USA) was used for data analysis. The relationship between the dependent and independent variables was primarily assessed via a chi-square test. Multivariate analyses were conducted by analyzing the significant independent categorical variables (gender, age groups, educational levels, marital status, family size, family composition, social insurance, work status, perceived income, quality of home, number of chronic diseases, and perceived health status) obtained by the chi-square analysis. For the assessment of the relative importance of the independent variables that were used to explain the intensity of healthcare needs, a forward stepwise logistic regression analysis was performed. In this way, we obtained the odds ratio (OR) and 95% CI.

RESULTS

Approximately 46.3% of the elderly subjects in this study had an education level of primary school or lower. More than half of them (50.4%) were married, and approximately 40% were living with their spouse. The mean number of the people living in the same house was 2.15 ± 1.27 . Also, 2.75% of the participants had no health insurance, and 17.81% had a green card, which represents the lowest social insurance coverage. About half (50.4%) were housewives, and 34.5% were retired. In addition, 31.51% of participants were perceived as having a “low” or “very low” income status. Furthermore, 83.6% of the elderly subjects lived in their own place, with approximately 54% of these living in apartments. Most (96.2%) had at least one or more chronic disease, and approximately 85% had two or more. A majority (59%) perceived their health status to be at “poor” or “moderate” levels. It was also determined that 13.7% of the elderly subjects had extensive healthcare needs. The mean score of the CHIRS was 23.85 ± 6.206 .

There was a statistically significant difference between the CHIRS scores of the men and women. Most of the elderly with extensive healthcare needs were women. Those who were 80 years old or older, illiterate or barely literate, single, or living alone had more extensive healthcare needs than the other groups (Table 1).

We also found that those without social insurance and those with a green card had more extensive healthcare needs. When examining the work status, housewives had the highest need for extensive healthcare, whereas retired people had the lowest. The participants with a “low” or “very low” perceived income and those living in poor conditions also had more extensive healthcare needs than the other groups (Table 2).

In addition, those participants with two or more chronic diseases as well as those with a “low” perceived health status had significantly more extensive healthcare needs (Table 3).

The subjects who were 80 years old or older had 3.53 times more risk of having healthcare needs as the other groups, and those who were illiterate or barely literate had 3.6 times more risk. Those with a “low” and “very low” perceived income level had 8.02 times more risk factors while those with a “poor” or “moderate” perceived health status had 5.13 times more risk factors compared with the other groups. It was also found that the elderly participants who lived alone had a 3.41 times higher risk for having extensive healthcare needs, whereas those living with others had 2.72 times the risk compared with those living with their spouse. Additionally, living in apartments increased the risk of having extensive healthcare needs by 2.49 (Table 4).

**Table 1**— Healthcare Needs According to the Sociodemographic Characteristics

Variables	CHIRS Scores		Total %** (n)	Chi square	p
	>31 points % (n)	≤31 points % (n)			
Gender				14.789	<.001
Women	19.7 (41)	80.3 (167)	57.0 (208)		
Men	5.7 (9)	94.3 (148)	43.0 (157)		
Age				16.205	<.001
65-79	10.2 (30)	89.8 (265)	80.8 (295)		
≥80	28.6 (20)	71.4 (50)	19.2 (70)		
Educational level				36.724	<.001
Illiterate or barely literate	25.4 (43)	74.6 (126)	46.3 (169)		
Primary school or higher	3.6 (7)	96.4 (189)	53.7 (196)		
Marital Status				13.811	<.001
Married	7.1 (13)	92.9 (171)	50.4 (184)		
Others	20.4 (37)	79.6 (144)	49.6 (181)		
Family Size				16.762	<.001
1	24.1 (28)	75.9 (88)	31.8 (116)		
2	7.2 (12)	92.8 (154)	45.5 (166)		
3 or more	12.0 (10)	88.0 (73)	22.7 (83)		
Family Composition				0.868	<.001
Alone	25.0 (29)	75.0 (87)	31.8 (116)		
With wife	5.5 (8)	94.5 (137)	39.7 (145)		
With others	12.5 (13)	87.5 (91)	28.5 (104)		
TOTAL	13.7 (50)	86.3 (315)	100.0 (365)		

CHIRS: Community Health Intensity Rating Scale.

DISCUSSION

According to the findings of this study, the prioritized groups of elderly participants who needed more healthcare were as follows: those who were very old, those with low education levels, those living alone, those with a “low” perceived income, those with poor housing conditions, and those who perceived their health to be “poor”.

We found that individuals 80 years old and older had three and a half times more healthcare needs due to having more chronic diseases, injuries, and deficiencies associated with old age, and this correlated with the previous research (7). The Demographic and Health Survey of Turkey (TNSA)-2008 stated that the quality of life for people 85 years old and over is significantly lower (8).

Education has been found to be the most important factor associated with being healthy (9). Participants who are better educated obtain more information and have more socioeconomic resources. Therefore, it has been highlighted that edu-

cation reduces the need for healthcare (2,9). In addition, the quality of life is low for elderly people who are uneducated (8). The findings of this study concerning the impact of education on healthcare needs are consistent with the literature.

We also determined that 31.8% of the elderly participants in this study were living alone. In a study conducted in the Izmir province, it was discovered that the elderly do not generally live within a large family, and the size of the family is smaller than the national average (10). This could be attributed to changing lifestyles, living alone versus living with a spouse, and the general population structure of the province. Our study revealed that those living alone needed 3.4 times more care than those living with a spouse and that those living with somebody other than their spouse needed care 2.7 times more often. Elderly people who live alone use healthcare services more frequently (7) because of their high need of care and high risk levels. However, the World Health Organization (WHO) determined that the rate of elderly people living with their family has decreased, and the role of

**Table 2—** Elderly Healthcare Needs According to the Socioeconomic Characteristics

Variables	CHIRS Scores		Total %** (n)	Chi square	p
	>31 points % (n)	≤31 points % (n)			
Social Insurance				20.551	<.001
None/Green Card	28.0 (21)	72.0 (54)	20.5 (75)		
SSK	15.5 (16)	84.5 (87)	28.2 (103)		
SPF	8.2 (4)	91.8 (45)	13.4 (49)		
Bağ-Kur	6.5 (9)	93.5 (129)	37.8 (138)		
Work Status				11.509	0.003
Housewife	19.0 (36)	81.0 (153)	51.8 (189)		
Retired	5.6 (7)	94.4 (118)	34.2 (125)		
Other	13.7 (7)	86.3 (44)	14.0 (51)		
Perceived income				53.148	<.001
High/moderate	4.8 (12)	95.2 (238)	68.5 (250)		
Low/very low	33.0 (38)	67.0 (77)	31.5 (115)		
Daily per capita income				1.098	0.275
\$1 or lower	20.0 (6)	80.0 (24)	8.2 (30)		
More than \$1	13.1 (44)	86.9 (291)	91.8 (335)		
Home ownership				3.856	0.500
Own their house	12.1 (37)	87.9 (268)	83.6 (305)		
Do not own their house	21.7 (13)	78.3 (47)	16.4 (60)		
Quality of home				19.265	<.001
Tenement	46.2 (6)	53.8 (7)	3.6 (13)		
Family house/duplex	18.1 (28)	81.9 (127)	42.5 (155)		
Apartment	8.1 (16)	91.9 (181)	53.9 (197)		
TOTAL	13.7 (50)	86.3 (315)	100.0 (365)		

CHIRS: Community Health Intensity Rating Scale; SSK: Turkish Social Security System; SPF: State Pension Fund.

Table 3— Intensity of Elderly Healthcare Needs According to Need Factors

Variables	CHIRS Scores		Total %** (n)	Chi square	p
	>31 points % (n)	≤31 points % (n)			
Existence of chronic disease				0.529	0.703
No	7.1 (1)	92.9 (13)	3.8 (14)		
Yes	14.0 (49)	86.0 (302)	96.2 (351)		
Number of chronic disease (s)				5.902	0.015
Two or more	22.1 (47)	77.9 (251)	81.6 (298)		
One or none	9.0 (3)	91.0 (64)	18.4 (67)		
Scores of perceived health status				19.995	<.001
≥70 (good)	23.3 (35)	76.7 (115)	41.1 (150)		
<70 (moderate to bad)	7.0 (15)	93.0 (200)	58.9 (215)		
TOTAL	19.7 (72)	80.3 (293)	100.0 (365)		

CHIRS: Community Health Intensity Rating Scale.



Table 4— The Associated Factors Regarding the Intensity of Healthcare Needs According to the Logistic Regression Analysis

Variables	OR (95%CI)	p
Age groups		
65–79 (Ref.)		
80 and older	3.5 (1.86-6.71)	<.001
Educational level		
Primary school and higher (Ref.)		
Illiterate or barely literate	3.6 (1.4-9.2)	0.007
Person with whom they are living		
Spouse (Ref.)	3.4 (1.3-9.3)	0.016
No one	2.7 (1.1-6.6)	0.027
Others		
Perceived income		
Good/moderate (Ref.)		
Bad/very bad	8.0 (3.6-18.1)	<.001
Quality of the house		
Family house (Ref.)		
Tenement	0.25 (0.1-0.8)	0.022
Apartment	2.5 (1.3-4.8)	0.006
Perceived health		
Good (Ref.)		
Moderate to poor	5.1 (2.3-11.6)	<.001

Other variables in the model that were not found to be statistically significant were gender, family size, family composition, and number of the chronic disease(s). Ref: Reference Group OR: odds ratio; CI: confidence interval

social protection is also gradually being reduced throughout the world (11). The elderly were also identified as one of the heaviest consumers of healthcare services (12). Furthermore, it was also revealed in the literature that living alone is the strongest risk factor for unmet needs (13,14).

In this study, the men perceived their income to be “moderate” or “high” while the women generally perceived it as “low”. For men, working allows for better economic conditions at a later age. In other words, elderly men and women are not equal regarding income, economic freedom, and social security (15). Those with a perceived income of “poor” and “very poor” needed healthcare 8.02 times more than the other groups in this study. Income is directly associated with socioeconomic status (SES), an important social determinant of health. People with a low SES are in worse health conditions and, therefore, need more healthcare (7,16,17). Also, being poor is counted as one of the most important risk factors for many diseases, (17) and the quality of life was found to be lower for those with no income as well as for those with

low and medium levels (8). The findings of this study regarding this area are in agreement with the previous literature.

The condition and place of residence is also a good indicator of SES along with a low income level (18). It has been emphasized that health indicators, including a higher rate of chronic diseases, are also worse in regions with high numbers of inadequate housing environments (19). While the people with a good SES generally live in the center of Ödemiş in a family house or duplex, living in an apartment there is also an indicator of low SES.

The elderly participants with “moderate” or “poor” perceived health needed healthcare 5.13 times more often than the other participants in this study. The elderly’s poor perception of their own health, in turn, affects their health needs and use of healthcare services. Individuals who perceive their health as being “bad” are the ones with at least one chronic disease; hence, they are the ones who consequently need more care (4).

In conclusion, there are various inequalities in the intensity of healthcare needs in the most disadvantaged groups. With regard to the healthcare of the elderly, the following high risk groups need to be handled as a priority: the very old (80 years old and over), those living in poor housing conditions, those who cannot perform daily activities, those who are mentally or physically ill, those with one or more chronic diseases, and those with no social security. Improving the quality and results of healthcare given to the elderly and planning appropriate healthcare services based on their needs are determinants for providing equal healthcare service (20). In order to improve the physical condition of the elderly, life-long health should be prioritized, and social determinants should be used to decide which approach is best.

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Conflict of Interest

The authors of this manuscript declare that they have no conflict of interest that influenced their judgement when writing this article.



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