

Determination of Health Literacy Levels and Effecting Factors of Elderly Living in the Turkish Republic of Northern Cyprus/Dikmen Region

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Abstract

BACKGROUND/AIMS: In this study, it was aimed to determine effect on some factors and the health literacy levels among elderly people, living at home in the Dikmen of the Turkish Republic of Northern Cyprus.

MATERIALS AND METHODS: The research was conducted during the home visit between April 2–May 30, 2018 as a cross-sectional type descriptive study. The sample consisted of the elderly people (n=134) who were determined using the simple random sampling method and agreed to participate in the study. The data were collected with the “Socio-Demographic Questionnaire” and “Adult Health Literacy Scale” developed by Sezer and Kadioğlu (2014) after. SPSS 21.00 statistical program was used for data analyze.

RESULTS: 60.4% of the participants were women and the age average was 72.20±6.23. The total score mean taken from the scale was 10.51±4.15. 86.6% of the participants stated that they did not know the health screening times and 61.2% did not know the patient rights. A statistically significant relationship was found only between age ($\chi^2=10.047$; $p=0.001$) and educational status ($\chi^2=9.536$; $p=0.023$) according to score means.

CONCLUSION: In this study, it was observed that the health literacy levels of the elderly people were not sufficient, they had difficulties in using health services and their knowledge about chronic disease management was not good. It is recommended that nurses working with elderly individuals should first evaluate the health literacy status of the elderly, and organize nursing interventions and health education activities accordingly.

Keywords: Health literacy, elderly, public health nursing

INTRODUCTION

Health literacy is defined by the World Health Organization (WHO) as “the cognitive and social skills of individuals about their access to health information, their ability to understand and use information, and their desire to maintain and improve their health”.¹ Individuals with inadequate health literacy have higher rates of hospital costs, they use of preventive health services less, they have higher mortality² and morbidity rates,

their chronic disease management is poor, they have prolonged hospitalization, their rates of unnecessary investigations and unnecessary emergency service usage are high. In the study show that limited health literacy is a frequent phenomenon in German adults aged 65 years and above. This was associated with financial deprivation (odds ratio: 3.05). Research on health literacy in old age and the role in health disparities is urgently needed.³ Similar results are found in other countries, e.g.

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Canada, Ireland and Greece.^{4,6} A recent European study shows that 58.1% of those aged 66 to 75 years report limited health literacy.⁷ This is more common among elderly people, especially those who have poor health literacy.⁸ But, while international studies identify older adults as an important target group for health literacy research and interventions a research gap exists concerning the detailed assessment of health literacy among different subpopulations of older adults and the associations between different levels of health literacy, demographic and socio-economic factors in those of old age.

In the world, Turkey and our country, due to the developments in science, technology, and living standards lifetime has prolonged, an increase has occurred in the elderly population.^{9,10} The elderly population constitutes the world's population about 8%,¹¹ Turkey's 8.3%,¹² and the Turkish Republic of Northern Cyprus's (TRNC) 8.8%.¹³ Increases in acute and chronic health problems are also observed with aging. In a study conducted in the Dikmen region of TRNC, at least one chronic disease was found in 87.4% of the elderly people. 75.6% of the elderly people have hypertension and diabetes was detected in 41.5% of them. Apart from hypertension and diabetes, heart-related diseases (24.5%), skeletal system diseases (13.8%), vertigo (11%), and other chronic diseases (26%) were detected.¹⁴

The capacity is the potential a person must do or accomplish something. Elderly people who need health information and services have to be health literacy skills. Generally, the elderly are individuals low formal education. Health literacy is also low due to low formal education levels.³⁻⁵ But, Another study show that the risk of low health literacy was high (43.4%) in the well-educated cohort.¹⁵ Therefore, they may have more difficulties in disease prevention and management.^{2,9} Many studies have shown that elderly people have problems in the health literacy level with joining health protection activities (vaccination, having screening tests, etc.) and managing chronic diseases. In the study, overall, 66.3% of all respondents aged 65 years and above had limited health literacy. Limited health literacy was especially prevalent among respondents above 76 years of age (80.6%).³

If they can find information and met their needs and preferences and understand the choices, consequences. They can act and respond to the meaning and usefulness of the information and services.¹⁶ Aging results in normal changes in cognition. Three specific changes occur reduced processing speed, greater tendency to be distracted, and reduced capacity to process and remember new information. So nine out of 10 adults struggle to understand and use health information when it is unfamiliar, complex or jargon-filled. Another problem is this age group is vision problems. About 2/3 of adults with vision problems are older than 65. Additionally, most of them loss hearing capability. Hearing problems affect one in three people older than 60 and

half of the those older than 85.^{6,17} Elderly people have problems in relaying their health messages to health workers and understanding the messages given by health workers correctly.² Health professions must repeat essential health information and focus on the important meaning of the information, that is, the gist. It is important that used plain language and communicate directions and advice that need to be followed. To make information easy to see and read, text should be printed with the highest possible contrast and 16 to 18 point size font or larger is best to use when developing materials for older adults. Elderly people with low vision may have difficulty finding the beginning of the next line when reading, so it is preferable for space between lines of text to be at least 25 percent of the point size. Health professions should consider providing audio information whenever necessary to reduce the number of hearing challenges (limit background noise, speak clearly with more volume, always talk face to face etc.¹⁷

In the literature, there is no study on the health literacy of elderly individuals throughout the TRNC. It is considered that this study will be a source of information for public health nurses and other health personnel working in the field.

In this study, it was aimed to determine effect on some factors and the health literacy levels among elderly people, living at home in the Dikmen of the Turkish Republic of Northern Cyprus.

MATERIALS AND METHODS

The type of Research: The study was conducted as a cross-sectional type descriptive study the health literacy status of elderly individuals.

Population-Sample: The population of the study consisted of elderly people who reside in the central boundary of Dikmen Municipality (n=301) according to the results of the 2011 population census. The sample consisted of the elderly people (n=134) who were determined using simple random sampling method with a 95% confidence interval and $p < 0.05$ significance level and agreed to participate in the study. In this study, participant' response rate is 44.5%.

Data Collection: Data were collected through the "Socio-Demographic Questionnaire" and the "Adult Health Literacy Scale".¹⁸ The socio-demographic properties of the participants (birth year, gender, educational status, occupation, health status, drug use status) were obtained by researchers using a 12-item form developed in accordance with the literature. "Adult Health Literacy Scale" developed by Sezer and Kadioğlu¹⁸ was used for health literacy levels. This scale consists of 23 questions (22 multiple choice and one question for recognition of the location of organs in the body). In the scale, among the questions, 13 of the questions are yes/no type, four of them are filling the blank type, four of them are multiple choice type, two of them are

matching type. The questions are scored as follows: “yes/no” questions 1/0, the blank-filling questions are one for the correct responders and zero points for the wrong answer. For multiple choice questions, two and more correct answer markers are given a score of one point, those who do not know or who are pointing the right answer with “wrong” answer is given a score of zero points. For questions with the matching type, one is given to more than two correct matches and zero is given to others. Scores that can be taken from the scale vary between zero and 23. The increased score indicates that health literacy level is high. Data were collected between April 2–May 30, 2018 during the home visits by face-to-face interview method and each interview lasted about 30 min.

Ethical Considerations

In order to apply the data collection forms, the “Institution Permit” from Dikmen Municipality and “Ethics Committee Approval” from Near East University’s Ethics Committee (YDU/2018/56-548) were obtained as written consent, the content of the study was explained and verbal consent was obtained from the participants.

Statistical Analysis

Data were analyzed using appropriate statistical methods in SPSS 21.00 statistical program. The percentage and frequency distributions of variables were examined in the study. Intergroup comparisons were made using One-Way ANOVA in parametric variables and Mann-Whitney U and Kruskal-Wallis tests in non-parametric variables. The results were evaluated at a 95% confidence interval and $p < 0.05$ significance level. In the study of Sezer and Kadioğlu¹⁸, general Cronbach’s Alpha value of the scale was 0.77; in this study, Cronbach’s Alpha value was found to be 0.74.

RESULTS

Table 1 presents the socio-demographic properties of elderly individuals who participated in the study. Accordingly, the average age of the participants was 72.20 ± 6.23 . It was determined that 60.4% of the participants were women, 45.5% were homemakers, 59% were graduated from primary school, and 77.6% had social security. 90.3% of the participants stated that their longest living place was a village and 63.4% stated that they perceived their economic status at a moderate level. While 34.3% of the elderly people defined their health status as “not bad”, only 6.7% stated that the first place of the application was “community clinic”. It was determined that 76.9% of the participants used drugs regularly and 73.1% of them had two and more than two diseases.

The score status of the participants taken from the scale is given in Table 2. The total score mean taken from the scale is 10.51 ± 4.15 (min=0, max=19). According to some socio-

demographic properties (age, gender, educational status, occupation, health status, social security, etc.) of the participants, scale score means were examined. A statistically significant difference was found only between age ($\chi^2=10.047$; $p=0.001$) and educational status ($\chi^2=9.536$; $p=0.023$) according to score means.

In Table 3, when the responses of the elderly people to the questions about preventive health services are examined, it is determined that 63.4% are not regularly weighed and 48.5% are not aware of the body mass index (BMI) values. 84.3% of elderly people do not know modern family planning methods and 86.6% of them do not know health screening times. However, 63.4% of elderly individuals have known the location of their body organs correctly.

Elderly participants were asked questions about their illnesses and treatments, it was detected that 58.2% did not know the symptoms of low blood pressure and 65.7% did not know the symptoms of high blood pressure. Of the participants, 64.9% did not know the “minimum body temperature” value, which indicates that a person has a “high” fever, and 55.2% do not know what should be done as a first intervention at home if his/her fever rises. Concerning the time of drug use, 50.7% of the elderly people know the “correct time” of a drug that should be taken every 12 h, while 51.5% of them do not know the “correct day” of the drug that should be taken every two days. 61.9% of elderly people have correct information about “taking drugs on an empty stomach” (Table 3).

About their use of health services and the communication with health personnel; 56.7% of the participants knew the service where they would apply if they had “burning, bloatedness, and indigestion in their stomach after eating” and 58.2% of them knew the service where they would apply if they had “complaints of burning and pain while urinating”. However, 45.5% did not know the clinic’s names with synonymous (internal diseases, etc.). It was determined that 61.2% of the elderly people did not know the rights of the patients and whether there is such a unit in the hospitals, and 67.9% of them had difficulty in applying to the health institution. However, 66.4% of them know how to get an appointment from the hospital. 82.8% stated that they had no difficulty in explaining their health problem to the doctor/nurse and 83.6% stated that he/she could ask questions to the doctor/nurse about his/her health status (Table 3).

In the questions of obtaining and understanding health information; 61.2% of the participants stated that they followed the health news on the radio or television, but 59.7% stated that they did not read the health-related news of the newspapers/magazines. It was also observed that 44.0% of elderly people had difficulty in reading and understanding health/disease related information brochures (Table 3).

DISCUSSION

With the aging of the population, the increase in chronic diseases and complications, depending on the decrease in the time allocated to the patient and decrease in the quality of service, even if health systems were developed; has become obliged to be informed about their own health and diseases, to take part in decision processes and to take responsibility.¹⁰

Due to the low level of health literacy (HL), especially the elderly people apply to the health system late, cannot benefit from preventive care such as early diagnosis and treatment, and their hospitalization rates are increased.¹⁹ In a study conducted in eight European Union (EU) countries, it was shown that approximately two people out of ten had insufficient levels of HL.⁷ In the study conducted with adults in Korea, the level of HL was found to be statistically low in elderly people, the less educated people, the rural people, those who think that they have barriers to obtain health information and those who find their sources of information (brochures, books, journals) expensive. There was no relationship between marital status, monthly income, current and past health history, sufficient time and health status perception.²⁰

In this study, the total score mean obtained from the health literacy scale was found to be moderate and it was found that this result was below the mean score of 'Adult Health Literacy Scale' used in the study.¹⁸

Today, many programs are being developed in many parts of the world to improve the health of society and prevent risky behavior. However, applied programs often do not produce positive results. The relationship between health behavior and HL has been shown in many studies.²¹ When the variables related to health literacy were examined, it was seen that the health literacy levels of those with the worst economic status were insufficient and social status, education, and age followed this. The gender variable has the least effect on health literacy level.⁷ In a study conducted in Japan, it was shown that there was a direct relationship between getting health-related information and positive health behavior applications in individuals with high levels of HL. These individuals can reach health information more easily and quickly and evaluate the information they obtain by comparing them with their available information. Moreover, they avoid risky behaviors and feel more effective in health promotion practices. However, the same study did not find a direct relationship between the level of HL and health status ($p > 0.05$).²²

According to a systematic study, if a change in health behavior is desired, concurrent intervention is also required in HL, this, a positive contribution can be made to the improvement of public health.^{23,24} In defining strategies in the provision of education and health services, it is important to identify risk groups with low HL levels and to determine factors associated with HL level.⁸

In this study, some socio-demographic properties and scale score means of the elderly people were compared and no statistically significant relationship was found between the other variables except age and educational status ($p < 0.05$) Age is an associated and unchanging factor in health literacy.²⁰

In this study, the average age of the participants was 72.20 ± 6.23 . According to WHO, the 64–75 age group is called “the young old”.²³ This age segment; although it positively affects the results of the current study, in the literature, health literacy decreases at later ages.^{3,6,18} In this context, it is considered that the participants are in the “risky group in terms of their future lives.

According to the study definition developed by the HLS-EU Consortium, health literacy is associated with general literacy.⁷ In this study, one in ten elderly people is illiterate, and the findings are consistent with the literature. It was found that there is a moderate, positive and significant relationship between health literacy of elderly and successful aging.¹⁶ If health literacy is high, the elderly will have healthy aging success.³

Individuals need to comply with primary protection measures for the protection and improvement of their health. Protecting health is always cheaper than treatment. Özaydın et al.²⁵ reported that 72.3% of elderly people did not know how to calculate the BMI. In this study, it was determined that more than half of the elderly people did not regularly weigh and 48.5% did not know the BMI values. Today, elderly people face both obesity and malnutrition problems. It is evaluated that regular weighing of elderly people, measurement of BMI, waist and hip ratios can be used as an objective and cost-effective criterion for increasing early diagnosis and elderly awareness. In Bozkurt and Demirci²⁶ study, 93.5% of the participants stated that they had difficulties deciding which health screening they needed. In the same study, it was reported that among the subjects in which the elderly people felt most inadequate were “adult vaccines and periodic examinations”.²⁶ In this study, most of the elderly people stated that they did not know the health screening times.

Another important issue is that at the secondary protection level, people can recognize changes in their health status; they can take simple measures by knowing the symptoms and complications of the disease. In the study, it was determined that more than half of the participants did not know the symptoms of low blood pressure, the symptoms of high blood pressure. In addition, they did not know the “minimum body temperature” value, which indicates that a person has a “high” fever, and what to do as a first intervention at home if his/her fever rises. In the study by Demirbağ and Timur²⁷, 61.1% of the elderly people did not have information about their drugs and 85.5% did not use their drugs regularly. Among the reasons for the non-regular use of drugs by elderly people, one in five (21.2%) was unable to adjust their medication hours. In this study, more than half

Table 1. The socio-demographic properties of elderly people (n=134)

Socio-demographic properties		Number (n)	Percentage (%)
Age	72.20±6.2		
Gender	Female	81	60.4
	Male	53	30.6
Marital status	Married	102	76.1
	Single	32	23.9
Occupation	Retired	56	41.8
	Housewife	61	45.5
	Other (farmer, driver)	17	12.7
Education	Not literate	13	9.7
	Primary school	79	59.0
	Secondary school	13	9.7
	High school	17	12.7
	University	12	8.9
Social security	No	30	22.4
	Yes	104	77.6
Longest living place	Village	121	90.3
	City center	13	9.7
Economic status	Good	10	7.5
	Moderate	85	63.4
	Bad	39	29.1
Health status	Pretty good	28	20.9
	Good	45	33.6
	Not bad	46	34.3
	Bad	15	11.2
Application place	Community clinic	9	6.7
	State	90	67.2
	Private	33	24.6
Drug use	Yes	103	76.9
	No	31	23.1

n: number.

of the participants answered the timing correctly for a drug to be taken on an empty stomach. However, almost half of the elderly people did not know the “correct time” of a drug that should be taken every 12 h, and the “right day” of a drug to be taken every two days. Additionally, associated with the level of health literacy, it was seen that almost one of three elderly did not control the expiration date of drugs, read the prospectus because they had visual problems.²⁷

The complex structure of health services and providing services by different units by separating services from each force service users.²⁸ In this study, more than half of the participants were aware of the units they could go about their health problems and had difficulty knowing the two-name clinics. In this study,

the participants know how to get an appointment from the hospital. In the study by Bozkurt and Demirci²⁶, the usage of health services was found to be 63.5%. In the study by Özyayın et al.²⁵, it was determined that 56% of the participants did not use the “hospital appointment system”.

In this study; the participants have information about the hospital appointment system. However, only a few of them have information about primary healthcare services or they are users. This result can be explained as a reflection of general health policies, it can be said that therapeutic health services are mostly known by the participants. But, most participants stated that they did not have any difficulty explaining their health problem to the doctor/nurse. And, they could ask

Table 2. Total score of the scale and Cronbach's Alpha Value (n=134)

Scale total score mean	Min-max score of the scale	Min-max score of this study	Cronbach's Alpha Value of scale	Cronbach's Alpha Value of this study
10.51±4.154	0–23	0–19	0.77	0.74

Min: minimum, Max: maximum, n: number.

Table 3. Scale items recognition status of elderly individuals (n=134)

Service area	Scale items	Recognizant/yes		Miscognizant/no	
		(n)	(%)	(n)	(%)
Preventive health services	Regular weighing	49	36.6	85	63.4
	BMI value	69	51.5	65	48.5
	Application time of screening test	18	13.4	116	86.6
	Family planning modern methods	21	15.7	113	84.3
	Place of the organs	85	63.4	49	36.6
Treatment services	Symptoms of the drop in the blood pressure	56	41.8	78	58.2
	Symptoms of the rise in the blood pressure	46	34.3	88	65.7
	Minimum value of the fever	47	35.1	87	64.9
	Intervention at home in case of fever	60	44.8	74	55.2
	Correct dose taking time	68	50.7	66	49.3
	Correct dose taking day	65	48.5	69	51.5
	Correct dose taking time on an empty stomach	83	61.9	51	38.1
Application to health care institutions and using the service	Consulted clinic during epigastric burning	76	56.7	58	43.3
	Consulted clinic during urinary burning	78	58.2	56	41.8
	Synonyms of the clinics	73	54.5	61	45.5
	Patient rights	52	38.8	82	61.2
	Difficulty in during the application to health institution	43	32.1	91	67.9
	Getting an appointment from the hospital	89	66.4	45	33.6
	Difficulty in explaining the health problem to doctor/nurse	23	17.2	111	82.8
	Ability to ask questions to doctor/nurse about health status	112	83.6	22	16.4
Health literacy	Following the health news	82	61.2	52	38.8
	Following the health newspaper/magazine	54	40.3	80	59.7
	Difficulty in reading and understanding health-related brochures	59	44.0	75	56.0

Significant values are shown in bold.
BMI: Body Mass Index, n: number.

questions about their health status. the results of this study were evaluated as positive. By 2030, noncommunicable diseases are projected to account for more than one-half of the disease burden in low-income countries and more than three-fourths in middle-income countries. Among the elderly population, noncommunicable diseases already account for more than 87% of the burden in low-, middle-, and high-income countries. Long-term-care systems enable older people, who experience significant declines in capacity, to receive the care and support of others consistent with their basic rights, fundamental freedoms and human dignity.²⁸ While using health services, if the elderly people make an appointment

with the right unit and good communication with health personnel will prevent disruptions in health services and save time and money. It also keeps their diseases under control and prevent complications.

The increase in the level of health literacy will primarily affect the health of the individual. However, its main effect is its impact on the development of community health related to HL. In Turkey Health Literacy Survey, it was stated that the primary sources of information on individuals about health-disease are television and internet.²⁵ Similarly, in this study, it was determined that more than half of the participants followed the health news in visual or

auditory media and did not read newspapers or magazines. The overall low literacy level of the study group supports this finding.

In this study, another important finding in this study was that 44.0% of the participants had difficulty in reading and understanding health/disease information brochures. Nutbeam²⁹ (1998) defined health literacy as basic/functional health literacy (sufficient general reading and writing skills), interactive health literacy (taking part in daily life with cognitive and social skills, gaining knowledge, making sense of different communication types), and critical health literacy (more advanced skills that can critically analyze health-related information and express its ability to make health decisions).²⁹ In order to make effective decisions about protecting, developing and maintaining health through all these complex processes, health professionals must evaluate the health literacy levels of the elderly as whole (accessing information, assessing information, analyzing risks and gains, calculating drug doses, understanding test results, etc.).

The 20th century, considered the longest century, has been one of the biggest factors affecting the internal migration movements and thus the social structure on the island of Cyprus. In this process, there are important time periods that can be considered breaking points. On the island; Between 1900 and 1950, population movements were observed, but mixed villages lived together. Between 1950 and 1963, the internal migration movement created by social conflict stands out. The internal dynamics of the social separation and the ghettoization process between 1963 and 1975 had serious effects. In 1975, the population exchange was held between the parties. In the following years, TRNC has received foreign migration and this has caused social, economic and political impacts on society. Migration is generally considered to impact public health and in particular on health literacy.^{30,31} However, further studies are needed to obtain precise results.

Limitations of the Study

Firstly, research data were obtained from the elderly people living in only one region of the TRNC (Dikmen Municipality boundaries), the results cannot be generalized to all elderly. Secondly, this study was a cross-sectional survey design. To assess the association between health literacy and in community dwelling elderly will need to further studies.

CONCLUSION

In this study, it was found that the health literacy of elderly individuals is not sufficient, there was only a statistically significant relationship between education and age variables and health literacy score mean ($p < 0.05$).

It was seen that the knowledge of elderly people about recognition of BMI, regular weighing, and participation in

screening programs was not sufficient in the context of health protection services; they did not know the abnormalities for the signs and findings of diseases in the scope of therapeutic health services; and they confused correct time and day to take drugs. they followed health-disease information more in audiovisual media and they could not read and understand the health news and brochures in newspapers and magazines at a sufficient level. However, it was determined that they knew where to apply when they had some health problems, they used hospital appointment systems, and they could easily explain their health status to the doctor/nurse and ask questions.

It is recommended that nurses working with elderly people should evaluate health literacy status of elderly people at first, nursing interventions and health education activities should be carried out together with programs that improve the level of HL and consider the level of HL. In addition to public health nurses should pay more attention to the impact of health literacy on elderly health. Moreover, to enhance the effects of health promotion interventions, they should aim at raising HL levels of their target population groups.

Interventions to improve health system access among persons with low health literacy are probably inexpensive compared with larger, structural changes to the health system, and thus ought to be considered part of an overall strategy to reduce disparities.

MAIN POINTS

- The level of health information and health literacy are low of the elderly.
- Health literacy of the elderly is associated with their education level.
- The level of health literacy should be taken into account when making nursing interventions.

ETHICS

Ethics Committee Approval: Ethics committee approval was received for this study from Near East University Ethics Committee (no: YDU/2018/56-548, date: 10.04.2018).

Informed Consent: Available.

Peer-review: Externally-peer reviewed.

Authorship Contributions

Concept: H.B., D.N., M.A., E.Ü.S., Design: H.B., D.N., M.A., E.Ü.S., Supervision: Ü.S. Data Collection and/or Processing: D.N., M.A., Analysis and/or Interpretation: H.B., Literature Review: H.B., D.N., M.A., E.Ü.S., Writing: H.B., D.N., M.A., E.Ü.S., Critical Review: H.B., D.N., M.A., E.Ü.S.

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REFERENCES

- World Health Organization (WHO). Health Literacy and Health Behavior. Available at: <http://www.who.int/healthpromotion/conferences/7gchp/track2/en/>
- Yılmazel G, Çetinkaya F. The Importance of Health Literacy for Community Health. *TAF Prev Med Bull.* 2016;15:69-74.
- Vogt D, Schaeffer D, Messer M, Berens EM, Hurrelmann K. Health literacy in old age: results of a German cross-sectional study. *Health Promot Int.* 2018;33:739-747.
- Rootman I, Gordon BD. A vision for a health literate Canada: report of the expert panel on health literacy: Canadian Public Health Association 2008; 1-10 Available at: https://www.cpha.ca/sites/default/files/uploads/resources/healthlit/execsum_e.pdf
- Kondilis BK, Akrivos PD, Sardi TA, Soteriades ES, Falagas ME. Readability levels of health pamphlets distributed in hospitals and health centres in Athens, Greece. *Public Health.* 2010;124:547-552.
- Sahm LJ, Wolf MS, Curtis LM, McCarthy S. Prevalence of Limited Health Literacy among Irish Adults. *J Health Comm.* 2012;17:100-108.
- Sorensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European Health Literacy Survey (HLS-EU). *Eur J Public Health.* 2015;25:1053-1058.
- Çopurlar CK, Kartal M. What is health literacy? how to measure It? why is it important?. *Turk J Fam Med Prim Care.* 2016;10:42-47.
- Beğer T, Yavuzer H. Old age and old age epidemiology. *Klinik Gelişim Dergisi.* 2012;25:1-3.
- Şimşek H, Uçku R. Health inequalities and old Age. In: Yaşlı Sağlığı: Sorunlar ve Çözümler. 2012;1:12-30.
- World Health Organization (WHO). Global health and aging. Available at: https://www.who.int/ageing/publications/global_health.pdf
- Turkish Statistical Institute (TurkStat). Vital statistics. Available at: <http://tuik.gov.tr/UstMenu.do?metod=temelist>
- TRNC State Planning Organization (SPO). 2011 Census. Available at: <http://www.devplan.org/frame-tr.html>
- Akgör M, Karataş B. Simple fall incidence of elderly people and definition of inside home environmental features for simple fall. Near East University, Health Science Institute Unpublished Master's Thesis, 2017.
- Clouston SAP, Manganello JA, Richards M. A Life Course approach to health literacy: the role of gender, educational attainment and life time cognitive capability. *Age Ageing.* 2017;46:493-499.
- Hazer O, Ateşoğlu L. Yaşlılarda Sağlık okuryazarlığının başarılı yaşlanma üzerine etkisi: Ankara ili örneği. *Türkiye Klinikleri J Intern Med Nurs-Special Topics.* 2019;5:48-56.
- Kobayashi LC, Wardle J, Wolf MS, von Wagner C. Cognitive function and health literacy decline in a cohort of aging english adults. *J of General Intern Med.* 2015;30: 958-964.
- Sezer A, Kadioğlu H. Development of adult health literacy scale. *J Anatol Nurs Health Sci.* 2014;17:165-170.
- Kim H, Xie B. Health Literacy in the e-health era: a systematic review of the literature. *Patient Educ Couns.* 2017;100:1073-1082.
- Jeong SH, Kim HK. Health literacy and barriers to health information seeking: a nationwide survey in South Korea. *Patient Educ Couns.* 2016;99:1880-1887.
- Shin KS, Lee EH. Relationships of health literacy to self-care behaviors in people with diabetes aged 60 and above: empowerment as a mediator. *J Adv Nurs.* 2018;74:2363-2372.
- Suka M, Odajima T, Okamoto M, et al. Relationship between health literacy, health information access, health behavior, and health status in Japanese people. *Patient Educ Couns.* 2015;98:660-668.
- Taggart J, Williams A, Dennis S, et al. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. *BMC Fam Pract.* 2012;13:13-49.
- World Health Organization (WHO). Health ageing profiles. Available at: http://www.euro.who.int/__data/assets/pdf_file/0011/98399/E91887.pdf
- Özaydın Ü, Can MF, Yılmaz S. Certain health literacy attitude and behaviors in individuals: an example for Hatay. *Smyrna Med J.* 2018;1:34-41.
- Bozkurt H, Demirci H. Determination of the status of health literacy in individuals 65 years and older without cognitive disorder. University of Health Sciences, Bursa Yüksek İhtisas Education and Research Hospital Family Practice Clinic, Unpublished Thesis, 2017.
- Demirbağ BC, Timur M. The knowledge, attitude and behavior related to using drugs reflected by the group of elderly. *Ankara J Health Serv.* 2012;11:1-8.
- Bailey SC, Fang G, Annis IE, O'Connor R, Paasche-Orlow WK, Wolf MS. Health literacy and 30-day hospital readmission after acute myocardial infarction. *BMJ Open.* 2015;1:5.
- Nutbeam D. Health promotion glossary. *Health Promot Int.* 1998;13:349-364.
- Tamçelik S. Internal migration in Cyprus and its impact in the case of a possibly emerging agreement. Ahmet Yesevi Üni Bilig. Güz. 63:227-252.
- Dolunay A, Keçeci G. Impact of immigrants on the urban texture: TRNC old city example. *J History Cultura Art Research.* 2017;18:524-559.