THE EFFECT OF HEALTH LITERACY LEVEL ON THE USE OF PRIMARY HEALTH SERVICES AMONG ADULT PATIENTS

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ABSTRACT

Aim: In this study, we aimed to determine and evaluate the relationship between health attitudes, use of health services and health literacy levels of adult patients registered in the "Hürriyet Educational Family Health Center" where we provide primary health care services in our family medicine clinic.

Methods: In our study, 242 patients admitted to the Hürriyet Education Family Health Center, aged between 18-80 years, underwent a two-stage questionnaire face-to-face. In the first part, the patients were asked questions on sociodemographic data as well as the use of primary health care services and their attitudes. In the second part, HL levels were determined using the TSOY-32 (Turkish Health Literacy Questionnaire-32) scale, which measures the HL levels of participants.

Results: The total sample size was 242. Of the participants, 51.2% (n=124) were female and 48.8% (n=118) were male. The HL scores of the participants on the TSOY-32 were determined. The average score was calculated as 29.77±5.36. Inadaquate, problematic, sufficient and excellent health literacy levels were distributed as 13%, 64%, 22% and 1%, respectively. Health literacy scores of participants who applied to health institutions in acute or urgent situations were higher than those who applied only for prescription medicine. It was found that the mean scores of the group without any disease were higher than the group with one disease or the group with more than one disease. Evaluating primary health care service usage, it was determined that patients who were over 50 years old and gave a stool sample had a greater representation in the high HL group than those who did not. Likewise, women over 40 years who had mammography screening had a greater representation in the high HL group than those who did not. Looking at the aspect of cervical cancer screening tests, more women had a papsmear test in the high HL group than those who did not.

Conclusions: Health literacy has an increasingly important place due to the increasing elderly population and the increasing number of patients with chronic diseases. Health literacy affects patient health attitudes on healthcare, outpatient appointments, family physician visits, usage of primary care services and cancer screening programs. All these subjects are important factors for improving the health of society. Family physicians should take great steps to improve the health literacy of their registered patients, since primary prevention starts with patient knowledge about health literacy.

Keywords: Health literacy, Primary care, Use of health care

Introduction

In the contemporary world with developing technology, progress and developments in the field of medicine have gained great momentum. As a new concept, health literacy (HL) comes to the forefront rather than being literate so that individuals receive correct and adequate health service at the right time. The concept of health literacy was used for the first time by Scott Simonds (1974) in an article called "Health Education and Social Policy" (1). Health literacy is the ability to obtain basic health information and services in a way that protects one's health, improves health-related problems and deteriorated health, and how to access this information.

According to the definition developed by the HLS-EU (Health Literacy in Europe) Consortium, health literacy is associated directly with general literacy. It has a scope and framework that require people's knowledge, motivation and ability to access health knowledge, and understand, evaluate and apply health information so that people can make decisions and judgments about daily life activities, the use of health services, prevention of diseases and health promotion in order to maintain and improve the quality of life (2, 3).

Health literacy level is related to education, ethnicity and age. Many studies have shown that lower HL level is an independent risk factor for problems such as poor health outcomes, inappropriate drug use, and poor understanding of diseases and their treatments (4). The importance of HL is also seen in the management of chronic diseases. According to the World Health Organization, 60% of deaths in all age groups occur due to chronic diseases. It was determined that 30% of these deaths were caused by cardiovascular diseases. Diseases such as cancer, chronic respiratory diseases and diabetes are other important causes of death (5).

In a study conducted in the USA, it is estimated that the cost of limited or low HL levels to the country is approximately 73 billion dollars annually. In 2009, it was determined that in Canada there is a financial burden of 8 billion dollars, which corresponds to between 3% and 5% of the total health budget (6). Studies on the economic effects of limited health literacy reveal that people with low HL levels have higher rates of using emergency services, longer hospital stays, less use of preventive health services and higher health expenditures (7).

Health literacy is an important part of primary health care. The primary goal of health education within the scope of primary health care services is a tool for raising the health awareness of the society and increasing the level of HL in all age groups starting from early childhood (8). The most important role in the primary health care services in our country belongs to family physicians and family health personnel. It is important for family physicians to have both awareness and competence in HL in terms of developing appropriate health behaviors in the society, effective use of health services and providing information to individuals at every stage of health care. Family physicians contribute to the development of both individual and social health with effective interventions appropriate to the level of HL by determining the health literacy levels of individuals through comprehensive and repetitive visits (9). In this context, it is important for family physicians to determine and evaluate the health literacy levels of their patients.

The definition of health literacy with different starting points in different dimensions such as the individual's mental capacity, written literacy, verbal literacy and their ability to manage the health services offered clearly indicates that measurement tools will also make a difference in defining HL level. For this reason, many

questionnaires have been developed over time. The most frequently used measurement tools are "Rapid Estimate of Adult Literacy in Medicine (REALM)", "Test of Functional Health Literacy in Adults (TOFHLA)" and "Newest Vital Sign (NVS)". REALM-R and S-TOFHLA are short versions and are also frequently used (10). However, the HLS-EU Consortium scale of HL consists of questions that evaluate accessing health knowledge, and understanding, evaluating and using health information. The HLS-EU is used as the most comprehensive health literacy scale and the Turkish validation is available (11). The latter was improved by the Adnan Menderes University Faculty of Medicine, Department of Public Health, with the encouragement of the Ministry of Health and the TSOY-32 scale was developed. Especially for our country, it was decided to combine the subjects of "protection from diseases" and "health promotion" of the conceptual framework and evaluate them together. For this purpose, a 32-item Likert scale was developed using the items suggested (12).

We aimed to determine and evaluate the relationship between health attitudes, use of services and the health literacy levels of adult patients registered in the "Hürriyet Educational Family Health Center" affiliated with the Health Sciences University Prof. Dr. Cemil Taşçıoğlu City Hospital (formerly known as the Istanbul Okmeydanı Training and Research Hospital), where we provide primary health care services in our family medicine clinic.

Methods

In our cross-sectional study, 242 patients admitted to the Hürriyet Education Family Health Center, aged between 18-80 years, underwent a two-stage questionnaire face-to-face. In the first part, the patients were asked questions about sociodemographic data as well as the use of primary health care services and their attitudes. In the second part, HL levels were determined using the TSOY-32 (Turkish Health Literacy Questionnaire-32) scale, which measures the HL levels of participants. These data were grouped by comparing the sociodemographic characteristics of the participants and their use of health services. TSOY-32 is validated in Turkish and is an improved version of "The European Health Literacy Survey" especially for Turkey[12]. The questionnaire has 32 likert questions on health attitudes, health knowledge, appointments, behaviors in emergent health situations, healthy life style habits, diet and many other aspects of health literacy. Participants answering the questionnaire receive a total sum score that shows their health literacy level; 0-25 points: inadaquate; >25-33: problematic; >33-42: sufficient; >42-50: excellent HL level.

We used mean, standard deviation (SD) and standard error of the mean to summarize the participants' demographic characteristics. TSOY-32 scores were examined in histograms and the data did not show normal distribution. Average scores for two independent variables were statistically analyzed using Mann Whitney-U test, and for two or more independent variables Kruskal Wallis test was used. Distributions of TSOY-32 HL levels for variables to test the null hypotesis were analyzed in crosstabs using Fisher's exact test. Analyses were run in the computer program IBM SPSS Statistics 21.

Approval for conducting our study was obtained from the Okmeydani Training and Research Hospital Clinical Studies Ethical Board, December 4, 2018.

Results

Total sample size was 242. Of the participants 51.2% (n=124) were female and 48.8% (n=118) were male. The youngest participant was 18 years of age and the eldest was 80 years of age. The mean age of the

participants was 47.12 years with a standard deviation of 16.59 years. Educational backgrounds were elementary school for 20.2% (n=49), middle school for 24.4% (n=59), high school for 32.6% (n=79), junior college for 2.5% (n=6) and university and higher graduates for 20.2% (n=49) Socio-demographic data of the particicipants is shown in Table 1.

Table 1: Sociodemographic characteristics and distribution

Gender	n	%
Female	124	51.20%
Male	118	48.80%
Maritial status	n	%
Married	182	75.20%
Single	60	24.80%
Education	n	%
Elemantary school	49	20.20%
Secondary school	59	24,40%
High school	79	32.60%
Junior college	6	2.50%
University and higher	49	20.20%
Occupation	n	%
Unemployed	78	32.20%
Worker	55	22.70%
Retired	52	21.50%
Student	10	4.10%
Civil servant	27	11.20%
Self-employment	20	8.30%
Health insurance	n	%
None	5	2.10%
Social security	232	95.90%
Others	5	2.10%

It was asked of the participants what they do first when they feel ill. Those who said they would go to their family physician were in the majority with 162 people (66.9%). Those who said they would go to the hospital were 17.4% (n=42) and those who said they would go to the emergency department were 7% (n=17) For those who answered the question, "Which health institution do you usually go to?", the "family physicians" answer took the first place with 162 participants (66.9%). After this it was "the state hospitals" with 26.4% (n=64). When their most common reasons for applying to health institutions were questioned, acute or urgent conditions were in the first place with 113 people (46.7%). Presciption need for long-term medication was second with 91 people (37.6%) and chronic disease follow-up was 11.6% (n=28). It was determined that only 9.8% (n=11) of participants over 50 years of age had analysis of occult blood in the stool for colorectal carcinoma screening. In women over the age of 40 years, those who did not have a mammography for breast cancer screening were 80.2% (n=63), in the majority. Cervical cancer screening (papsmear) was tested in the last 3 years for 32.6% (n=33) of women aged betweed 21-65 years.The HL scores of the participants in TSOY-32 were determined as a minimum of 4 points and a maximum of 46 points, and the average score was calculated as 29.77±5.36. According to scores, the HL distribution is shown at Figure 1.
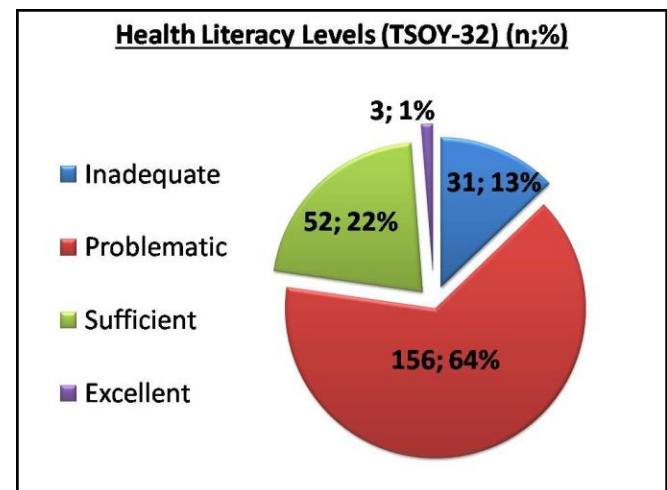

Figure1. Health Literacy Levels

Inadaquate HL level was 13% (n=31) of participants, problematic level was the majority with 64% (n=156), sufficient level was 22% (n=52) and excellent level was 1% (n=3) of the participants. HL levels were placed in two groups so that statistical analyses could be interpreted more consistently; inadaquate and problematic levels into the low HL group, sufficient and excellent levels into the high HL group. 77.3% (n=187) of participants were in the low HL group; 22.7% (n=55) of them were in the high HL group. 48% (n=24) of university graduates were in the high HL group, with a higher percentage than any other education group (p=0.001). The mean score of participants 18-40 years of age (32.72) was found to be higher than other age groups (41-65 years: 28.95; 65 years and older: 25.19). A statistically significant difference was determined between the eldest and youngest age groups (p=0.001). As shown in Table 2, with older age, the low HL distribution increased, which was statistically significant (p=0.001).

Table 2: Health Literacy Levels and Age Groups

	Low HL (insufficient and problematic)	*High HL* (sufficient and excellent)	Total	P
	n ; %	n ; %	n ; %	
18-40 years	48 ; **54.5%**	40 ; **45.5%**	88; **100%**	
41-65 years	104 ; **88.1%**	14 ; **11.9%**	11; **100%**	0,001
65 years and older	35 ; **97.2%**	1 ; **2.8%**	36 ; **100%**	
Total	187 ; **77.3%**	55 ; **22.7%**	242; **100%**	

The HL mean score of female participants (29.85) was higher than male participants (29.69), which was not statistically significant. The HL mean score of married participants (28.2) was lower than single participants (32.63) (p=0.001). HL scores of high school and higher graduates were higher than other education groups (p=0.001). The mean scores of unemployed people, workers and retired people were found to be lower than the other groups and this was statistically significant (p=0.001).

When we compared the presence of chronic disease of the participants with scores on the TSOY-32, it was found that the mean scores of the group without any disease were higher than the group with one disease or the group with more than one disease, which was statistically significant.

Evaluating primary health care service use, it was determined that patients who were over 50 years old and gave a stool sample had a greater representation in the high HL group than those who did not. Likewise,

women over 40 years who had mammography screening had a greater representation in the high HL group than those who did not. Looking at the aspect of cervical cancer screening tests, more women had a papsmear test in the high HL group than those who did not (p=0.584, p=0.662, p=0.806, respectively).

Evaluating the mean scores of answers to what was their the most common reason to apply to a health institution, it was determined that the "only for prescription" group score was 28.36, "chronic disease follow-up" was also 28.36, "preventive care" was 30.60, "acute/urgent health state" was 30.87 and replying "other purposes" was 37.60. The mean score of participants who applied to health instititions in acute or urgent situations was higher than those who applied only for a prescription for their medicine (p=0.001).

In Table 3 is shown the health attitudes of participants and the relationship with HL. Participants applying directly to the ER when they feel ill has greater

representation in the low HL group. Participants who usually apply to private hospitals had greater representation in the high HL levels, which was statistically significant. Participants with the most

common reason for applying to a health institution being only the need for presciptions for chronic use medicine were greater in the low HL group.

Table 3: Health Attitudes and Health Literacy

		Health Literacy Level				
		Low		High		P
		n	%	n	%	value
What do you do if you feel ill?	Visit family physician	125	77.2%	37	22.8%	0.745
	Go to the hospital	31	73.8%	11	26.2%	
	Go to the E.R.	15	88.2%	2	11.8%	
	Use present drugs	12	80.0%	3	20.0%	
	Ask friends/family	2	66.7%	1	33.3%	
	Consult a pharmacist	2	66.7%	1	33.3%	
Which health institution do you usually go to?	Family Physician	129	79.6%	33	20.4%	**0.003**
	State hospital	52	81.3%	12	18.8%	
	University hospital	3	50.0%	3	50.0%	
	Private hospital	3	33.3%	6	66.7%	
	Others	0	0.0%	1	100.0%	
What is your the most common reason for applying to a health institution?	Prescription for chronic medicine	78	85.7%	13	14.3%	**0.033**
	Chronic disease follow-up	21	75.0%	7	25.0%	
	Preventive care services	3	60.0%	2	40.0%	
	Acute/urgent health issue	83	73.5%	30	26.5%	
	Others	2	40.0%	3	60.0%	

Discussion

We evaluated the HL levels of patients coming to our family health center. We tried to determine the relationship between their health attitudes and their use of primary care services with HL. We conducted this study with the TSOY-32 questionnaire, however in this section we also discuss other TSOY-32 studies and other questionnaires and scales. Because the TSOY-32

was brought to the literature in 2016, new studies are limited.

Using TSOY-32, Okyay et al. found a mean score of 29.5 with distribution of levels from inadequate to excellent as 27.2%, 42.2%, 24.8%, 5.8%, respectively[12]. We found that the scores and HL level distribution in low and high HL levels were very similar to our study. Similar to our study, Berberoglu et al.

studied family health center populations, finding HL mean scores of 25.0 ±9.3 for females and 24.8±9.5 for males. Their proportion of insufficient HL level was more than in our study (13). The mean score of patients attending university hospital outpatient clinics was 25.5. Similarly, 75.7% of them were at insufficient or problematic levels (14). In a city center in Turkey, TSOY-32 was used and a mean score of 28.8 was found (15). As can be seen, although the average index scores in studies using TSOY-32 generally consist of similar results, differences in the distribution of HL levels were detected, which may be due to age, educational status and cognitive level differences of the patients who applied to the outpatient clinics.

Durusu et al. used a translated verison of the HLS-EU Consortium questionnaire and found 64.6% of participants to have insufficient or problematic HL levels (10). In a suburban town center, with different questionnaires, 58.7% of results were at the sufficient HL level (16). Another study conducted in a community health center showed higher HL levels compared to our results (17).

Sorensen et al. concluded a survey on European Health Literacy with a mean score of 33.8±8.0. They found 52.5% of participants as sufficient or excellent while 47.6% were problematic or insufficient in HL. Country based results showed Bulgaria with the highest distribution of insufficient levels of HL with 62.1%. The Netherlands was found to be the country with the highest HL and the lowest distribution of insufficient levels, 37.9% (18). Duong et al. found a mean score for the HLS-EU of 34.4±6.6 (19). A Japanese study resulted in only 14.6% of participants at sufficient levels (20). The latter may be a subject of discussion for developed countries that may not correlate with high HL. However, many other developed country surveys showed higher levels, for example in the USA, Australia and the European

studies mentioned above (18, 21, 22). The authors attributed the reason for such high levels of HL to the high distribution of educated people.

Similar to our study, in some research studies in Turkey, HL levels were lower in the elderly population and lesser educated groups (10,12 16). Likewise in the UK, it is stated that the problematic HL level rate is related to low educational status, low income and increase in age (23).

Health attitudes were also examined in a study conducted in a community health center. Answers to reasons for going to a health institution showed that the highest HL scores were in the group selecting primary care or protective care (17). Baker et al. found that more emergency service use comes with lower HL (24). Our study also showed rational health behaviours are related to higher HL levels.

Increase in number of visits to a family physician within one year was related to lower HL scores in the study of Sen Ugur, as in our study (17). This could be the result of mostly an elderly population and patients with chronic diseases coming to family health centers.

As in our study, Sen Ugur also stated that high HL levels were seen more in participants who gave occult blood samples for colorectal screening (17). Terry et al. found that most of the participants who were in a lower HL group didn't know about stool analysis for colorectal screening (25). Women who did not have mammography screening had low HL levels (26). In a study conducted in Louisiana, it was determined that most of the women with low literacy skills lacked knowledge of mammography (27). In a review by Marcus et al it was determined that elderly women with low health literacy levels did not benefit from the screening program and had a higher risk of cervical cancer compared to other women (28).

Chronic diseases were found to be related to lower HL levels in many studies. Especially Diabetes Mellitus, hypertension and Chronical Obstructive Pulmonary Disease were mentioned and it was stated that precautions should be taken regarding this problem (29, 30).

In conclusion, health literacy has an increasingly important place due to the increasing elderly population and the increasing number of patients with chronic diseases. Health literacy affects patient health attitudes on healthcare, outpatient appointments, family physician visits, use of primary care services and cancer screening programs. All these subjects are important factors for improving the health of the society.

We family physicians, who have shouldered the responsibility of treatment, chronic disease follow-up and preventive medicine in our society, have an important task to increase the level of health literacy with each outpatient visit. In particular, by allocating time that cannot be spared in other healthcare settings due to the density and busyness, we can contribute to better disease management and protection by giving basic information to patients about their diseases, providing general healthcare knowledge and explaining a rational approach in the use of health facilities.

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