Health & Research Journal

Vol 10, No 1 (2024)

Volume 10 Issue 1 January - March 2024

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Müjgan Solak

doi: 10.12681/healthresj.34636

To cite this article:

Solak, M. (2024). The Health Literacy Among Turkish University Students. *Health & Research Journal*, *10*(1), 40–50. https://doi.org/10.12681/healthresj.34636

HEALTH AND RESEARCH JOURNAL
E-ISSN:2459-3192

(2024), Volume 10, Issue 1

RESEARCH ARTICLE

THE HEALTH LITERACY AMONG TURKISH UNIVERSITY STUDENTS

Müjgan Solak
PhD, RN, Ege University Nursing Faculty, Department of Surgical Nursing, Izmir, TURKEY

Abstract

Background: Health literacy is a very important indicator in determining the health level of individuals and society.

Materials and Method: This descriptive and cross-sectional study aimed to determine the health literacy level of the university students. A total of 1171 students, who agreed to participate in the study, were included in the sample of the study. Data were collected using the Personal Information Form and the Turkish Health Literacy Scale-32. Number, percentage, t-test, chi-square, one-way variance, and Post Hoc tests were used for the evaluation of the data.

Results: It was found out that of the students, 8.7% of them had inadequate levels of health literacy, 33.8% had problematic, 37.2% had sufficient and 20.3% had excellent. Of the students participating in the study, 9.8% of the female students had inadequate levels of health literacy, while 36.4% had problematic levels of health literacy.

Conclusion: It was found that university students do not have the expected level of health literacy. It may be recommended to increase the health literacy levels of university students through training.

Keywords: Health, health literacy, literacy, health promotion, university student.

Corresponding Author: Müjgan Solak**,** Ege University Nursing Faculty, Department of Surgical Nursing, Izmir, Turkey. Email: mujgansolak@hotmail.com, mujgansolak35@gmail.com, mujgan.solak@ege.edu.tr

Cite as: Solak., M. (2024). The health literacy among Turkish university students. Health and Research Journal,10(1),40-50. https://ejournals.epublishing.ekt.gr/index.php/HealthResJ

INTRODUCTION

The term health literacy, which began to be used in the 1970s, increased in importance in recent years and be explained in the simplest terms as an individual's understanding, interpreting, and acting accordingly, when it is given medical information.[1]

According to the World Health Organization, "health literacy" is the capacity of people to reach and understand health-related information and the messages they receive from health personnel correctly in order to decide on issues related to health services, to protect, and improve their current health and quality of life.[2] Health literacy is a broad field that requires the individual to define his/her health, to know his/her illness, to be able to make appropriate decisions about his/her health and to know how and how to use the Health System.[1] Health literacy is a very important indicator in determining the health level of individuals and society. As the level of health literacy increases, it ensures that people are protected from diseases and that the quality of life of individuals with chronic diseases increases.

In a comprehensive study involving eight European countries (Germany, Austria, Bulgaria, the Netherlands, Ireland, Spain, Poland, and Greece), countries were divided into four groups based on their health literacy score: inadequate, problematic, sufficient, and excellent. When evaluated in general, it was found that 12% of the participants in this study had inadequate levels of health literacy, and 35% of them were below the average. It was found that the level of health literacy was lower in groups with low levels of general education and income, minority groups, those who had recently emigrated, those with poor general health, those with long-term health problems, and the elderly.[3]

In a study conducted in Turkey, in which 400 individuals over the age of 15 participated, 27.2% of the health literacy levels were found to be insufficient, 42.2% were problematic.[4]

For individuals to continue their lives healthily, they should have a sufficient level of health literacy.[5] Individuals with low literacy levels had difficulty in reading health findings, educational materials, and drug prospectuses. Health information and equipment are not always suitable for individuals' reading and writing skills. Therefore, the higher the basic literacy level of individuals, the higher the health literacy level is expected to be.[6] Individuals need to have an adequate level of health literacy to make the right decisions related to health. Inadequate health literacy, the inability of the individual to express himself correctly, inability to perceive health information correctly cause less use of preventive health services, failure to comply with recommended treatments, lack of self-care, delay in health-seeking behavior in the symptomatic period, and increase in healthcare costs and mortality [5,7,8].

According to a study conducted in Germany (n=2.000,15 years or older), it was concluded that people with low health literacy visit health institutions more.[9] It is stated that with the increase in the level of health literacy, the health knowledge of individuals increases, they use health services effectively, their problem-solving skills increase, the cost of health care is lower, and their health is better.[10,11] The first field study conducted on using The European Health Literacy Survey (HLS-EU) and Health Literacy Survey - European Union (SOYA-EU) a broad scales (n=4924) in the field of health literacy in Turkey, found that only one-third of the society had sufficient or excellent levels of health literacy. Also, this study showed that as age increases and education levels decrease, health literacy also decreases linearly.[12]

In a study conducted with 1205 students in China, the level of health literacy was found to be low in the first-year students and high in the last year students, studying in the faculties of medicine and health sciences. In the same study, the health literacy levels of engineering faculty students were found to be higher than the students studying in the faculties of medicine and health sciences.[13] A study conducted among 1.003 university students in Turkey found that 62.8% of the students had adequate health literacy.[10] In another study conducted with university students, it was found that 81.2% of the students did not know hypotension, but the health literacy level of those who were in year four and had the disease they received treatment for was found to be significantly higher.[14] A different study conducted on e-health literacy with 556 students in Taiwan found that the students had good levels of health literacy. It was found that the level of health literacy of students studying in health-related departments was higher than that of students studying in other departments.[15]

As university students greatly affect the development level of the country, it is an important indicator in determining the

health literacy level of the country. Knowing the health literacy of university students, who have a significant share in the level of development of the country, it very important in improving the health level of society. In this context, this study aims to determine the health literacy level of the intented university students.

Research Questions

What are the health literacy levels of university students?

Do university students know the concept of health literacy?

What are the factors affecting health literacy in university students?

MATERIALS AND METHOD

Participants and Sample Selection

This descriptive and cross-sectional study aimed to determine the health literacy level of university students in Turkey.

A total of 30.082 students studying at the undergraduate level in the 2018-2019 academic year at a Public University in Izmir province formed the population of the study. The sample size was calculated with the formula for determining the sample size with a known population. The sample size was determined as 380 as a result of the calculation. To increase the reliability level of the study, the data collected were three times the number of samples were. A stratified sampling method was used in sample selection. When using the stratified sampling method, the number of students in each faculty was determined, and the number of students to represent these numbers was calculated. This calculated number was divided by the number of departments in the faculty and the number of students to be taken from each department was determined. The numbers to be taken from each department were divided by the number of classes in that department in order to get equal students from each class. Students were selected using the random sample selection method from all faculties of the university. After considering a 10% probability of data loss, a total of 1171 students were included in the sample of the study (Table 1). The data was collected from 15 faculties on the university campus between January 15, 2019 and May 30, 2019. It was collected from an equal number of volunteers from each class.

Instruments

Personal Information Form: It consists of 18 questions about the socio-demographic characteristics of the students, their general education information, and their health status.

Turkish Health Literacy Scale-32 (TSOY-32): It is a scale developed with the result of adaptation studies of the European Health Literacy Scale (HLS-EU) into Turkish. The validity and reliability of the scale were carried out by Okyay and Abacıgil in 2016 in Turkey. The overall internal consistency (Cronbach Alpha) coefficient of the scale is 0.927. The TSOY-32 scale was gathered under two basic dimensions (treatment/health care, and disease prevention/health promotion) and four factors on health-related information (accessing, understanding, appraising, and using/applying). In the scale, each item is coded as 1-very easy, 2-easy, 3-difficult, 4-very difficult, 5- no idea. In the evaluation of the scale, indexes are standardized to be between 0 and 50. The following formula was used to manage this. Index = (mean-1) x (50/3) in this formula, the index refers to the original calculated index for the person, and the mean refers to the average of each item that a person answers. After this calculation, 0 indicates the lowest health literacy and 50 indicates the highest health literacy. The resulting index is classified into four categories. Health literacy according to the following rating,

1. (0-25) score: inadequate health literacy
2. (>25-33) score: problematic/limited health literacy
3. (>33-42) score: sufficient health literacy
4. (>42-50) score: defined as excellent health literacy.[4]

Data Collection

Data were collected using the Personal Information Form and the Turkish Health Literacy Scale-32(TSOY-32). Data were collected through face-to-face interviews at the university.

Ethical Considerations

Ethical research approval was obtained from the Medical Research Ethics Committee on 09/01/2019 with the decision numbered 99166796-050.06.04. In this process, written permissions were obtained from all relevant faculty deans to conduct the study. Verbal and written informed consent was obtained from the participant students in the study. Students who did not want to participate in the study were excluded from the study.

Data Analysis

The Statistical Package for the Social Sciences 18.0 (SPSS 18.0) program was used for the data analysis of the study. T-test, chi-square, one-way variation, Post Hoc, and frequency tests were used in the evaluation of the data. The results were evaluated at a 95% confidence interval and p <0.05 significance level.

RESULTS

The mean age of the students participating in the study was X=21.78±2.44. Of the participants, 51% of them were female, 51.2% were in the 21-23 age range, 98.7% were single, 29% were in 4th year, 45.9% have the longest residence in big cities, 90.9% without any chronic disease, 54.2% consider their general health status as good, 31.8% visited a public hospital for the first health institution visit, 35.7% have access to their health information through a doctor, 42.6% visited the emergency room in the last year 1- 2 times, 52.3% visited the hospital for emergency reasons, 74.9% had never heard of the concept of health literacy before (Table 2).

The overall mean score of the students from the TSOY-32 scale was determined as X = 34.41 ± 7.49. The overall mean score of the treatment/health care sub-dimension (35.22 ± 7.7) was higher than the overall mean score of the scale (34.41 ± 7.49). The overall mean score (33.22 ± 8.37) of the disease prevention/health promotion sub-dimension was found to be lower than the overall mean score of the scale (34.41 ± 7.49). The average score of the process of using/applying the information on the sub-dimension of disease prevention/health promotion was X = 28.84 ± 10.67. A statistically significant difference was found between the mean score of the process of using/applying information (F=1.69, P=0.03, p<0.05). (Table 3).

It was determined that of the participants, 8.7% of them had an inadequate level of health literacy, 33.8% had problematic, 37.2% had sufficient and 20.3% had excellent. A total of 42.5% of the students were determined to be in inadequate and problematic health literacy levels (Table 4).

The general mean scores of the TSOY-32 scale was X = 34.82 ± 7.82 for female and X = 33.92 ± 7.07 for male. There was no statistically significant difference found between the general mean score by gender (T=1.67, P = 0.09, p>0.05). No significant difference was found between the mean scores of the students on the TSOY-32 scale by the classes in which they studied (x2=9.422, P = 0.39, p>0.05).A statistically significant difference was found between the scores obtained from the TSOY-32 scale by the age groups of the students (x2=13.162, P=0.04, p<0.05).(Table 5).

DISCUSSION

A total of 74.9% of the university students participating in the study stated that they had never heard of the concept of health literacy before. In our developing society, it is thought of fact that university students have never heard of the concept of health literacy, which will make their lives easier and increase their quality of life is very important.

It was found out that more than half of the students had adequate and excellent health literacy levels. In a study conducted on university students (n=870), that 10% of the students had inadequate, 27.2% problematic, 38.9% sufficient, 23.9% excellent health literacy.[10] In another study, the health literacy levels of university students (n=451) were found to be inadequate.[16] Similar results have been found in other studies. [16,17,18,19,20,21]

When the TSOY-32 scale score distributions of the students were examined by gender, 9.8% of the female students in the study had inadequate levels of health literacy, 36.4% had problematic levels of health literacy, 33.2% had sufficient levels of health literacy, and 20.6% had excellent health literacy level. Of the male students participating in the study, 12.9% of them had inadequate levels of health literacy, 39.9% problematic levels of health literacy, 33.1% sufficient levels of health literacy, and 14.1% excellent levels of health literacy. In the study conducted on the Faculty of Health Sciences students, it was determined that 59.4% of females generally had "sufficient or excellent levels of health literacy", while 35.0% of males had sufficient or excellent levels of health literacy.[22] Also in the same study, according to the total score of the TSOY-32 scale, 55.6% of the students had "sufficient or excellent levels of health literacy" while 44.4% had "inadequate and problematic levels of health literacy. In another study conducted with university students, while health literacy levels showed differences by gender and faculty, no difference was found by marital status. It was found that the health literacy

score of female students was higher compared to male students.[23] In their study conducted with students receiving health education, Sukys et al. (2017) found that the levels of health literacy of male students were lower than that of female students and that their health literacy level was generally inadequate.[24] In a study, the scores of females were higher.[17] In another study, the mean score of male students was found to be higher than females.[13]

In our study, when the distribution of the scores of the students from the TSOY-32 scale was examined according to the years they studied, almost half of them had insufficient or problematic health literacy levels. In our study, there was no statistically significant difference between the years they were in their education ($p>0.05$). However, in a study conducted using the adult health literacy scale at a private university, a significant difference was found between students studying in year one and year four. Year four students were found to have higher health literacy levels.[14] The study of Akcilek (2017) was conducted on year one students.[16] In their study, Biçer and Malatya (2018) did not make any distinction in the year of education of the students[10]. In their study with university students studying in departments other than health sciences aged 18-24, Vozikis et al. (2014) found that the level of health literacy is affected by factors such as family income and gender. The health literacy score of male students was found to be lower than female students.[25]

When examining the age group variables according to the sub-dimensions of the TSOY-32 scale of the students participating in the study, significant differences were found in the general appraising of the information, information using/applying processes, and appraising sub-dimension of disease prevention/health promotion. In the study of Biçer and Malatyalı (2018), no significant differences were found between age groups.[10] Another study conducted with university students found a positive weak relationship between age and health literacy. It was determined that accessing health information has the highest ratio and the dimension of appraising health-related information has the lowest.[23]

Lımıtatıons Of The Study

Trying to reach the number of students determined according to the stratified sampling method. The fact that some students do not want to answer the questionnaires because they are bored with answering the questionnaires are the limitations of the study. Results do not generalize to all college students in the country. Constructing a single university is a limitation of the study

Conclusion

As a result, it was found that university students do not have the expected level of health literacy. It is recommended to increase the health literacy levels of university students, who have an important place for the health literacy level of the society with education and to carry out studies in different groups related to the health literacy levels.

Acknowledgments

We wish to thank this study all the students who participated.

Conflict of Interest

No conflict of interest has been declared by the authors.

Funding

The authors received no financial support for this study.

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ANNEX

TABLE 1. According to the faculties, the number of students considered for sampling, and number of students included

1. Faculties	Number of Students	Number of Students to Sample	Number of Students Included in Sampling
-Faculty of Education	2259	0.012*2259≈27	135
-Engineering Faculty	5036	0.012*5036≈60	233
-Faculty Of Literature	5388	0.012*5388≈64	156
-Faculty Of Science	4524	0.012*4524≈54	151
-Faculty Of Agriculture	2420	0.012*2420≈28	116
-Faculty Of Sports Science	762	0.012*762≈9	29
-Faculty Of Pharmacy	700	0012*700≈7	17
-Faculty of Economics and Administrative Sciences	3115	0.012*3115≈37	106
-Faculty of Communication	2171	0.012*2171≈26	94
-Faculty of Health Sciences	649	0.012*649≈6	16
-Faculty of Nursing	1524	0.012*1524≈17	36
-Faculty of Medicine	2543	0.012*2543≈30	35
-Faculty of Dentistry	947	0.012*947≈10	31
-Faculty of Fisheries	464	0.012*464≈5	16
Total Number from all the Faculties	**30082**	**380**	**1171**

TABLE 2. Distribution of students according to their socio-demographic characteristics

Socio-demographic Characteristics.	N	%
Gender		
Female	597	51
Male	574	49
Age group		
Between 18-20 years of age	366	31.3
Between 21-23 years of age	599	51.2
24-year and above	206	17.5
Faculty		
Faculty of Education	135	11.5
Engineering faculty	233	19.9
Faculty Of Literature	156	13.3
Faculty Of Science	151	12.9
Faculty Of Agriculture	116	9.9
Faculty Of Sports Science	29	2.5
Faculty Of Pharmacy	17	1.5
Faculty of Economics and Administrative Sciences	106	9.1
Faculty of Communication	94	8.0
Faculty of Health Sciences	16	1.4
Faculty of Nursing	36	3.0
Faculty of Medicine	35	3.0
Faculty of Dentistry	31	2.6
Faculty of Fisheries	16	1.4
Marital Status		
Married	15	1.3
Single	1156	98.7
Grade		
Year 1	292	24.9
Year 2	281	24.1
Year 3	258	22.0
Year 4	340	29.0
Education Level of the Mother		
Primary School	414	35.4
Secondary School	171	14.6
High School	326	27.8
University	260	22.2
Education Level of the Father		
Primary School	247	21.1
Secondary School	194	16.6
High School	364	31.1
University	366	31.2
The Longest Living Place		
Village / neighborhood	108	9.2
District	295	25.2
Province	230	19.6
Big city	538	46.0
Medical Insurance		
Yes	968	82.7
No	203	17.3

Chronic Disease Status		
Yes	107	9.1
No	1064	90.9
Income Status		
Income Less than Expense	355	30.3
Income Equivalent to Expense	617	52.7
Income More Than Expense	199	17.0
Level of Assessing Health Status		
Bad	67	5.7
Medium	469	40.1
Good	635	54.2
First Visited Healthcare Institute		
Emergency	302	25.8
Family Health Center	276	23.6
Public Hospital	372	31.8
University Hospital	136	11.6
Other (Private hospital, medico, medical center, etc.)	85	7.2
Means of First Access to Health Information		
Television	12	1.0
Newspaper, magazine	6	0.5
Internet	644	55.0
Doctor	418	35.7
Nurse	34	3.0
Pharmacist	19	1.6
Other (health officer, textbook, family, etc.)	38	3.2
Number of Visits to the Emergency Department		
None	485	41.5
1-2	499	42.6
3-4	113	9.6
5 or more	74	6.3
Most Common Reason for Visits		
To Have Medication Prescribed	348	29.7
Chronic Disease Follow-up	84	7.2
Preventative Health Services	127	10.8
Emergency Situations	612	52.3
Status of Hearing the Concept of Health Literacy		
Yes	294	25.1
No	877	74.9
Total	**1171**	**100.0**

TABLE 3. Distribution of students' Turkish Health Literacy Scale (TSOY-32) and its sub-dimensions scores

TSOY-32	X±SD	F	P
Scale Overall Score	34.41±7.49	1.33	0.17 p>0.05
Treatment and Health Care			
Accessing To Information	36.81±9.33	0.98	0.46 p>0.05
Understanding Information	35.27±9.39	0.98	0.47 p>0.05
Appraising Information	30.71±9.71	1.10	0.34 p>0.05
Using/Applying information	36.32±9.04	1.29	0.18 p>0.05
Treatment and Health Care Overall Score	35.22±7.70	1.05	0.39 p>0.05
Disease Prevention and Health Promotion			
Accessing To Information			
Understanding Information	35.03±9.52	0.69	0.80 p>0.05
Appraising Information	35.27±9.44	0.97	0.48 p>0.05
Using/Applying information	31.94±9.97	0.96	0.50 p>0.05
The overall score for Disease Prevention and	28.84±10.67	1.69	0.03 * p<0.05
Health Promotion	33.22±8.37	0.91	0.55 p>0.05

TABLE 4. Distribution of Students' Health Literacy Scores according to TSOY-32 Scale

	Health Literacy Level							
	Inadequate (0-25 points)		**Problematic** (>25-33 points)		**Sufficient** (>33-42 points)		**Excellent** (>42-50 points)	
	N	%	N	%	N	%	N	%
General Scale	60	8.7	233	33.8	257	37.2	140	20.3

TABLE 5: The Distribution of TSOY-32 Scale Scores of the students according to their demographic characteristics

	Inadequate (0-25 p)	**Problematic** (>25-33 p)	**Sufficient** (>33-42 p)	**Excellent** (>42-50 p)	**Total**	**Test**
Gender						
Female	37	138	126	78	379	
N	9.8	36.4	33.2	20.6	100.0	T=6.00
%						P = 0.11
Male						p>0.05
N	40	124	103	44	311	
%	12.9	39.9	33.1	14.1	100.0	
Year						
One	17	66	61	24	168	
N	10.1	39.3	36.3	14.3	100.0	
%						x^2=1.67
Two						P=0.09
N	15	65	59	22	161	p>0.05
%	9.3	40.4	36.6	13.7	100.0	
Three						
N	16	54	46	30	146	
%	11.0	37.0	31.5	20.5	100.0	
Four						
N	29	77	63	46	215	
%	13.5	35.8	29.3	21.4	100.0	
Age group						
Between 18-20 years of age	13	88	67	39	207	
N	6.3	42.5	32.4	18.8	100.0	
%						
Between 21-23 years of age	45	127	127	69	368	x^2=13.16 P=0.04 p<0.05*
N	12.2	34.5	34.5	18.8	100.0	
%						
24-year and above						
N	19	47	35	14	115	
%	16.5	40.9	30.4	12.2	100.0	
Total						
N	77	262	229	122	690	
%	11.2	38.0	33.2	17.7	100.0	

the percentage of the line is taken.