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Determining The Health Literacy Level in Turkish Republic of Northern Cyprus (TRNC)

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Abstract: Health literacy is one of the areas most affected by advances in information technologies. The desperation of states around the world in the COVID-19 epidemic that emerged in early 2020 has increased the importance of the issue further. The problems faced by states in preventing the spread of the epidemic and directing their citizens make it necessary for people to increase their awareness of health issues. In this research, it is aimed to determine the health literacy levels of individuals living in the TRNC. In this context, 32-item health literacy scale (Turkey Health Literacy Scale-32) developed by Okyay, Abacıgil and Harlak (2013) was used. Data from 203 subjects in the study were collected and subjected to analysis. As a result of the analysis of the data, it was determined that the overall score increase for health literacy was 3.71 out of 5 (74 out of 100), the participants were in the "adequate" class in the assessment of health-related information and in the "excellent" class in other dimensions. While the level of health literacy did not differ depending on gender, marital status and the mode of action exhibited in the state of being ill, it was concluded that there was a statistically significant difference depending on the importance given to healthy nutrition and sports/exercise and satisfaction with health services.

Keywords: *Health, Health Literacy, Health Management.*

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Introduction

The concept of "health literacy" was first used in the article "Health Literacy as Social Policy" (Simonds, 1974). Health literacy is defined by the World Health Organization (WHO) as "the ability to access, understand and use health information within the scope of protecting and maintaining the health of the individual" (Okan, 2019). The WHO then linked the definition of health literacy to the general level of literacy, stating that "health literacy is related to general literacy and enables people to develop opinions and make decisions about healthcare-related issues throughout their lives, to protect, maintain and improve their health, to access health-related information resources to improve quality of life, to accurately perceive and understand health-related information and messages. their will and their capacity" (WHO, 2013).

Within the concept of health literacy, there are the ability to apply rules for staying healthy, understand medical education brochures, instructions on prescribed medications, appointment cards, doctors' explanations, forms organized in hospitals, and cope with complex health systems. Although this scope includes many topics, health literacy is not limited to this (Nutbeam, 2000). Health literacy is closely related to the ability to use this information that the person has reached by accessing real information on issues that concern himself and public health. In order to provide health services at the desired quality, it is important for individuals to be able to accurately describe their complaints and identify their symptoms (Sentell & Halpin, 2006). Asking meaningful questions about health problems and understanding the treatment methods recommended to them are also expected from patients (Kutner et al., 2006). In the literature, different classifications have been made for the level of health literacy. One of the most widely accepted of these is the classification, which divides health literacy into three levels: functional, interactive, and critical (Nutbeam, 2000). In this context, "functional health literacy" can be expressed as the ability to read and write about health-related topics. At this level, individuals can read and understand documents (such as prescriptions) related to the use of health services. In "interactive health literacy", which requires a higher level of cognitive and social skills, individuals participate in health activities, understand their health-related messages, and are able to use their knowledge when health conditions change. "Critical health literacy" is associated with the fact that individuals' cognitive and social skills in health-

related issues are at a highly advanced level. Individuals at this level can critically evaluate health-related information and manage their behaviors by taking into account both the social and economic dimensions of health. These individuals, who can assess their own health status, can also communicate effectively with health professionals (Demir et al., 2020; Nutbeam, 2000).

A lot of research has been done to measure and standardize the level of health literacy. When these studies are examined, it will be seen that the tests known as "Calculation of Adult Health Literacy" and "Functional Health Literacy Test in Adults" are widely accepted. The "Single Item Literacy Screening Scale" is also frequently used to describe individuals' health literacy abilities (Morris et al., 2006). It is clear that these measurement tools will vary according to the level of development of countries. It is important to conduct reliability and validity researches in order for these tests to give the desired results. In disease management, it is recommended to take into account the cultural differences of countries in addition to their level of development (Kickbusch, 2001). It was found that the level of health literacy was low when evaluated on a world scale. For example, a study conducted in the United States found that only 22% of adults had basic literacy skills, 16% were below basic, and the vast majority were unable to read drug labels, prospectuses, etc. (National Center For Education Statistics 2006). In a study conducted in Turkey in 2014 within the scope of the 'European Health Literacy Project', the health literacy score was calculated as 30.4. This score shows that about two-thirds of the population has 'inadequate' and problematic health literacy knowledge. Statistics on the comparison of health literacy levels are shown in Table 1. Accordingly, Turkey's level of health literacy is below the European average (Sarıyar & Kılıç, 2019).

Table 1. Comparison of Health Literacy Levels

Health Literacy Level	European (%)	Turkey (%)
Insufficient	12,40	24,50
Problematic	35,20	40,10
Sufficient	36,00	28,80
That's great	16,50	7,60

Source: Authors' own conception

Health literacy is important in terms of increasing healthy years and quality of life, facilitating the work of health professionals and enabling patients receiving health services to participate in the decision-making mechanism (Parker, 2009). It is possible to provide effective communication by better understanding each other between health service providers and service recipients with health literacy. It is important for individuals to correctly understand the messages given by health providers in order to make accurate decisions about their health. The importance of the subject has accelerated the studies carried out for health literacy on a world scale (Aslantekin & Yumrutaş, 2014). Determining the level of health literacy is also important in terms of directing the studies to be carried out. As of the age we are in, human beings are exposed to transformations in health as well as technology and communication. The world's population continues to grow rapidly, and there is a shortage of services provided by health care providers (Kripalani & Weiss, 2006). Especially in countries such as the USA, the fact that health services are paid and that the vast majority of the people cannot afford to meet health expenses has increased the importance of people to evaluate their health problems on their own. In countries such as the TRNC, which has adopted the social state approach, the quality of health services provided by the state is one of the most discussed issues. Therefore, both in countries where access to health services is completely paid, and in countries that have adopted the understanding of the social state, access to quality and adequate health services continues to be the biggest contradiction. In addition to all these, the fact that states are helpless in preventing the spread of the virus in the COVID-19 outbreak that emerged at the beginning of 2020 has increased the importance of the issue even more. The problems that states experience in taking precautions and directing their citizens make it necessary for people to increase their awareness of health issues (Mancuso, 2008).

Based on the importance of the subject in the information age we are in, this research aims to determine the health literacy levels of individuals living in the TRNC.

Material and method

The population of the study consists of individuals over the age of 18. Individuals under the age of 18 were excluded from the scope of the research. The research was approved by the Ethics Committee of Akdeniz

Karpaz University on 21.01.2021 and numbered AKUN-ETK-02/21. In this study, since it is possible to measure the health literacy levels of individuals, screening research method was selected from quantitative research methods (Gürbüz & Şahin, 2016).

The research was conducted in 2020. Therefore, it is cross-sectional research. In this study, the health literacy scale developed by Okyay, Abacıgil and Harlak (2013) based on the HLS-EU Study Conceptual Framework (HLS-EU CONSORTIUM, 2012) and consisting of 32 questions was used. The scale consists of a total of eight components to cover two sub-dimensions and four processes (Okyay et al., 2013). These components and the substances with which they are matched are shown in Table 2.

Table 2. Matrix Components and Item Numbers of TSOY-32

Health-Related Sub-Dimensions	Access to information	Understanding information	Information assessment	Information use and apply
Treatment and service	1, 4, 5, 7	2, 8, 11, 13	3, 9, 12, 15	6, 10, 14, 16
Disease prevention and health promotion	18, 20, 22, 27	19, 21, 23, 25	24, 26, 28, 32	17, 29, 30, 31

Source: Authors' own conception

The reliability of the scale was examined by calculating the internal consistency coefficient. The overall internal consistency coefficient of the scale was determined as (0.960). This coefficient is above the acceptable value of 0.80.

A total of 5 factor structure was identified. The eigenvalues of these factors are in the range of 1.07 to 14.65. The contribution of these factors to the total variance is 62.87%; the variances they explain are 45.78%, 5.10%, 4.65%, 3.98% and 3.35%, respectively. When the factor matrix is examined, it is seen that all of the items are in the range of 0.49-0.82 to the first factor. The load on other factors of substances 2, 3, 25 and 30 is higher than 0.40. But the loads of only one of these substances in other factors are greater than the loads in the first factor. As a result, the view that all of the items measure health literacy and are explained by a single factor is supported.

It was tested whether the overall dimension of the health literacy scale satisfies the normality assumption at the significance level of 0.05. In this context, the skewness coefficient value was checked. When the absolute value of skewness (0.21) is divided by its own standard error (0.17), a coefficient of 1.27 is obtained. Since this value is less than 1.96, it is assumed that the data distribution meets the normality requirement at the significance level of 0.05.

Results

Data on the demographic characteristics of the participants are shown in Table 3 below.

Table 3. Demographic Statistics of Participants

Groups	Frequency	Odds (%)	Cumulative Ratio (%)
Education Status			
License	110	55,0	55,0
High school	50	25,0	80,0
Graduate	31	15,5	95,5
Primary/Secondary School	9	4,5	100,0
Gender			
Male	149	74,1	74,1
Woman	52	25,9	100,0
Marital Status			
Single	101	50,5	50,5
Married	99	49,5	100,0
Age Groups			
26-35 years	92	47,7	47,7
25 years and under	46	23,8	71,5
36-45 years	36	18,7	90,2
46 and up	19	9,8	100,0

Source: Authors' own conception

When the table is examined, it will be seen that 55% of the participants are undergraduate graduates, 74% are men, about half are married and the other half are single. 48% are in the 26-35 age range.

Statistics on health are presented in Table 4 .

Table 4. Descriptive Statistics

Options	Frequency	Odds (%)	Cumulative Ratio (%)
The Manner of Action Exhibited in the Case of Being Sick;			
I go to the hospital	81	40,3	40,3
I Research with My Own Means	55	27,4	67,7
I Use Drugs at Home	44	21,9	89,6
I Consult My Pharmacy	12	6,0	95,5
I Consult with Those Around Me	9	4,5	100,0
The Need to Get a Second Opinion After Seeing a Doctor About the Disease;			
Sometimes I feel	88	43,8	43,8
I don't feel no	60	29,9	73,6
Yes I feel	53	26,4	100,0
Satisfaction with Health Services;			
Partially satisfied	89	44,3	44,3
I'm Not Satisfied at All	53	26,4	70,6
Glad	40	19,9	90,5
I'm Not Satisfied	19	9,5	100,0
Sports/Exercise Status;			
I Do It Irregularly	108	54,0	54,0
I do it regularly	68	34,0	88,0
Never Do It	24	12,0	100,0
The Importance Given to Healthy Nutrition;			
I Care	100	49,8	49,8
Sometimes I Care	73	36,3	86,1
I Don't Care	28	13,9	100,0

Source: Authors' own conception

Based on the data collected, the participants stated that the first course of action they did when they were sick was to "go to the hospital".

The percentage of the answer "I consult with those around me" is the lowest. The majority of those who say that they sometimes feel the need to get a second opinion after seeing a doctor about the disease. The rate of those who say no I don't feel is about 30%. Those who say that they are partially satisfied with the health services are in the majority. The rate of those who say they are not satisfied at all is about 27%. As a result, there is a general dissatisfaction with health services. Those who say that I do sports/exercise at all or do irregularly are in the majority, and those who do regular sports are in the minority. Those who say that healthy eating is important for me are in the majority. The rate of those who say that they do not attach importance to healthy eating is about 14%.

The average and standard deviation values of the general and two sub-factors of Health Literacy are shown in Table 5.

Table 5. Statistics on General and Two Sub-Factors of Health Literacy

Health Literacy Dimensions	**Average**	**Std. Deviation**
GENERAL	3,71	Up to 0.66 pm
Treatment and Service	3,71	Up to 0.67
Access to Information	3,77	Up to 0.80 pm
Understanding Information	3,75	0.73
Assessing Knowledge	3,49	0.73
Applying/Using Information	3,83	Up to 0.76 pm
Disease Prevention and Health Promotion	3,72	Up to 0.70 pm
Access to Information	3,84	Up to 0.77 pm
Understanding Information	3,84	Up to 0.76 pm
Assessing Knowledge	3,65	Up to 0.80 pm
Applying/Using Information	3,62	0.73
Accessing Health Information	3,80	0.73
Understanding Health Information	3,80	Up to 0.69

Assessing Health Information	3,57	Up to 0.70 pm
Applying/Using Health Information	3,72	Up to 0.68

Source: Authors' own conception

When Table 5 is examined, it will be seen that the overall score increase in health literacy is 3.71 out of 5 (74 out of 100). The average score of the "protection from diseases and health promotion" dimension is approximately 1 point higher than the "treatment and service" dimension. When the sub-dimensions of the "prevention from diseases and health promotion" factor are examined, the "access to information" and "understanding information" score averages are higher than the "evaluating information" and "application/use of information" score averages. In the "treatment and service" factor, the highest average score belongs to the sub-dimension of "application/use of knowledge", while "evaluating knowledge" has the lowest average score. While participants perceive themselves as sufficient in accessing and understanding health-related information, the perception of evaluating health-related information is in the last place.

When the averages of the general and two sub-factors of Health Literacy are evaluated according to the values they receive over 100 points, the results obtained are seen in Table 6. The range of 0-50 points is "insufficient"; The score range of 51-66 is "problematic"; The score range of 67-74 is rated "adequate" and the range of 75-100 points is rated "excellent".

Table 6. Statistics of Health Literacy

Health Literacy Dimensions	**Average**	**Assessment**
GENERAL	74.40	That's great
Treatment and Service	74.30	That's great
Access to Information	75.40	That's great
Understanding Information	75,20	That's great
Assessing Knowledge	69,90	Sufficient
Applying/Using Information	76,60	That's great
Disease Prevention and Health Promotion	74,50	That's great
Access to Information	76,90	That's great
Understanding Information	76,90	That's great

Assessing Knowledge	73,20	Sufficient
Applying/Using Information	72,60	Sufficient
Accessing Health Information	76,20	That's great
Understanding Health Information	76,10	That's great
Assessing Health Information	71,50	Sufficient
Applying/Using Health Information	74,60	That's great

Source: Authors' own conception

When Table 6 is examined, it will be seen that the participants are classified as "sufficient" in the evaluation of health-related information and as "excellent" in other dimensions.

In order to test whether health literacy differed in terms of gender groups, the data were analyzed by independent sample t-test. The statistics obtained for the groups and the independent sample t-test result are as shown in Table 7.

Table 7. Gender Change of Health Literacy *

Health Literacy Dimensions	**Gender**	**N**	**Average**	**p**
GENERAL Scale	Woman	52	3,73	0,86
	Male	149	3,71	
Scale of Access to Health Information	Woman	52	3,85	0,57
	Male	149	3,79	
Scale for Understanding Health Information	Woman	52	3,84	0,58
	Male	149	3,78	
Health Information Assessment Scale	Woman	52	3,55	0,76
	Male	149	3,58	
Scale of Application/Use of Health-Related Information	Woman	52	3,73	0,94
	Male	149	3,72	

* Independent Sample T-test
Source: Authors' own conception

When health literacy is evaluated in the context of gender, it is concluded that health literacy does not differ depending on gender. Although no statistically significant difference is calculated, women feel more adequate than men in the sub-dimensions of "accessing health-related

information", "understanding health-related information" and "applying/using health-related information", while men have a higher average score than women in the "evaluating health-related information" sub-dimension. In order to test whether health literacy differed in terms of marital status groups, the data were analyzed by independent sample t-test. The statistics obtained for the groups and the independent sample t-test result are as shown in Table 8.

Table 8. Change of Health Literacy Based on Marital Status *

Health Literacy Dimensions	Marital Status	N	Average	p
GENERAL Scale	Single	101	3,73	0,79
	Married	99	3,71	
Scale of Access to Health Information	Single	101	3,80	0,85
	Married	99	3,82	
Scale for Understanding Health Information	Single	101	3,80	0,93
	Married	99	3,81	
Health Information Assessment Scale	Single	101	3,60	0,62
	Married	99	3,55	
Scale of Application/Use of Health-Related Information	Single	101	3,76	0,52
	Married	99	3,70	

* Independent Sample T-test
Source: Authors' own conception

When Table 8 is examined, it will be seen that health literacy does not differ depending on marital status. Although no statistically significant difference is calculated, in the sub-dimensions of "accessing health-related information" and "understanding health-related information", married people feel more adequate than singles, while singles have a higher average score in the sub-dimensions of "evaluating health-related information" and "applying / using health-related information" than married people.

The data were analyzed with One-Way ANOVA to test whether health literacy differed in terms of the importance given to healthy eating. The One-Way ANOVA test result is as shown in Table 9.

Table 9. The Relationship Between Health Literacy and the Importance of Healthy Nutrition *

Health Literacy Dimensions	F	p
GENERAL Scale	8,17	0.00 mm
Scale of Access to Health Information	5,80	0.00 mm
Scale for Understanding Health Information	9,09	0.00 mm
Health Information Assessment Scale	6,89	0.00 mm
Scale of Application/Use of Health-Related Information	6,91	0.00 mm

* One Way ANOVA Testi

Since all of the obtained p-values were calculated as less than 0.05 significance value ($p<0.05$), it was found that all dimensions of health literacy differed statistically depending on the importance given to healthy nutrition.

The data were analyzed with One-Way ANOVA to test whether health literacy differed in terms of emphasis on sports/exercise. The One-Way ANOVA test result is as shown in Table 10.

Table 10. The Relationship Between Health Literacy and the Emphasis on Sports/Exercise *

Health Literacy Dimensions	F	p
GENERAL Scale	9,29	0.00 mm
Scale of Access to Health Information	8,68	0.00 mm
Scale for Understanding Health Information	7,77	0.00 mm
Health Information Assessment Scale	8,48	0.00 mm
Scale of Application/Use of Health-Related Information	9,33	0.00 mm

* One Way ANOVA Testi
Source: Authors' own conception

When Table 10 was examined, it was concluded that all dimensions of health literacy differed statistically depending on the importance given to sports/exercise, since all of the obtained p values were calculated as less than 0.05 significance values.

Argument

The global COVID-19 pandemic in 2020 has once again underlined the importance of health literacy. In this context, it is clear that increasing the level of health literacy will have many advantages in social and economic fields, especially reducing the burden on health institutions (Parker, 2009). In this study, it was aimed to determine the health literacy levels of individuals living in the TRNC.

In the measurement made for the level of health literacy in the TRNC, it was seen that the average score was 74 out of 100. The average score of the "disease prevention and health promotion" dimension is higher than the "treatment and service" dimension. When the sub-dimensions of the "prevention from diseases and health promotion" factor are examined, the "access to information" and "understanding information" score averages are higher than the "evaluating information" and "application/use of information" score averages. In the "treatment and service" factor, the highest average score belongs to the sub-dimension of "application/use of knowledge", while "evaluating knowledge" has the lowest average score. While participants perceive themselves as sufficient in accessing and understanding health-related information, the perception of evaluating health-related information is in the last place.

Participants were classified as "proficient" in the assessment of health-related information and "excellent" in other dimensions.

It was concluded that health literacy did not differ depending on gender. Although no statistically significant difference is calculated, women feel more adequate than men in the sub-dimensions of "accessing health-related information", "understanding health-related information" and "applying/using health-related information", while men have a higher average score than women in the "evaluating health-related information" sub-dimension.

It was concluded that health literacy does not differ depending on marital status. Although no statistically significant difference is calculated, in the sub-dimensions of "accessing health-related information" and "understanding health-related information", married people feel more adequate than singles, while singles have a higher average score in the sub-dimensions of "evaluating health-related information" and "applying / using health-related information" than married people.

It has been determined that the understanding of information about disease prevention and health promotion varies between age groups. There was no significant difference for other dimensions of health literacy.

It was determined that accessing, understanding and evaluating information about disease prevention and health promotion differed statistically according to education level. There was no significant difference for other dimensions of health literacy.

It was concluded that all dimensions of health literacy showed a statistically significant difference depending on the importance given to healthy nutrition, the importance given to sports/exercise and satisfaction with health services.

It was found that all dimensions of health literacy did not show a statistically significant difference depending on the course of action exhibited in the case of being sick.

Conclusions and recommendations

It is recommended that the findings of this study be used by the relevant units of private and state hospitals, especially the TRNC Ministry of Health.

There is no doubt that increasing the health literacy levels of individuals will contribute to reducing health-related costs. In this context, it is thought that it will be useful to organize training programs on the subject for individuals living in the TRNC and to support them with striking slogans and advertisements.

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