

Examining the Relationship between Health Literacy and Distrust in Health Care Systems

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ABSTRACT

Aim: The study aimed to examine the relationship between individuals' distrust of the health care system and their health literacy levels and how demographic characteristics affect their level of distrust.

Materials and Methods: The research was conducted with 450 people over 18 living in the Selçuklu, Meram, and Karatay districts of the central districts of Konya province. A 32-question survey consisting of demographic questions, the Health Literacy Scale (HLS), and the Health Care System Distrust Scale (HCSD) was applied to the participants.

Results: According to the Pearson's correlation test conducted in the research, a negatively weak significant relationship was found between health literacy and distrust of health care systems, which associated increased health literacy with lower distrust. According to the regression analysis, there was a statistically significant relationship between health literacy and distrust of health care systems. Accordingly, 4.4% of the variance in distrust of health care systems was explained by health literacy ($R^2=0,044$).

Result: The educational and income status positively affect individuals' level of health literacy. As health literacy level increases, trust in health care systems also increases. For trust to be established between health service providers and consumers, actions should be taken to improve their level of health literacy.

Keywords: Health care systems, Health literacy, Trust

Sağlık Okuryazarlığı Ve Sağlık Sistemlerine Güvensizlik Arasındaki İlişkinin İncelenmesi

ÖZET

Amaç: Kişilerin sağlık okuryazarlığı düzeyleri ve sağlık sistemlerine güvensizlikleri arasındaki ilişkiyi incelemek ve demografik özelliklerin, kişilerin sağlık okuryazarlığını ve sağlık sistemlerine güvensizliklerini nasıl etkilediğini araştırmaktır.

Gereç ve Yöntem: Araştırma Konya ili merkez ilçelerinden Selçuklu, Meram ve Karatay ilçelerinde yaşayan 18 yaş üstü 450 kişiyle yapılmıştır. Katılımcılara demografik bilgi soruları, Sağlık Okuryazarlığı Ölçeği ve Sağlık Sistemlerine Güvensizlik Ölçeğinden oluşan 32 soruluk bir anket uygulanmıştır.

Bulgular: Araştırmada yapılan Pearson Korelasyon testine göre sağlık okuryazarlığı ile sağlık sistemlerine güvensizlik arasında negatif yönde zayıf düzeyde anlamlı bir ilişki tespit edilmiştir, Sağlık okuryazarlığı arttıkça, güvensizlik azalmaktadır. Yapılan regresyon analizine göre sağlık okuryazarlığı ve sağlık sistemlerine güvensizlik arasında istatistiksel olarak anlamlı bir ilişki vardır. Analize göre Sağlık Sistemlerine Güvensizlikte gerçekleşen değişimin %4,4'ü Sağlık Okuryazarlığı tarafından açıklanmaktadır ($R^2=0,044$).

Sonuç: Öğrenim düzeyi ve gelir durumu kişilerin sağlık okuryazarlığını olumlu yönde etkilemektedir. Sağlık okuryazarlığı arttıkça, sağlık sistemlerine duyulan güven de artmaktadır. Sağlık hizmeti sunucuları ve kullanıcıları arasında güven oluşabilmesi için sağlık okuryazarlığını arttırmaya yönelik çalışmalar yapılmalıdır.

Anahtar Kelimeler: Sağlık Sistemleri, Sağlık Okuryazarlığı, Güven

The concept was first introduced in 1974 by Scott K. Simonds in the study titled “Health Education as Social Policy” as the “health education that meets the minimum standards at every level of education” (1). Another critical definition of health literacy was suggested in the report published by the American Medical Association (AMA) Council for Health Literacy in 1999. The report defines the concept as a set of skills necessary for individuals to function within the health care system (1,2).

Nutbeam examined health literacy under three categories as functional, interactive, and critical health literacy. Basic (functional) literacy includes the ability of an individual to effectively use basic skills in reading and writing health-related topics in everyday life. It usually is sufficient to take care of one’s health. Although it has individual-level benefits, it also indirectly impacts society. Interactive literacy includes the more advanced skills to actively participate in daily activities, extract and understand information from health messages transmitted through various communication forms, and adapt existing health information to changing conditions. In addition to the added social skills, critical literacy also refers to an advanced level of cognitive skills to question the health information that they are provided with, as well as analyzing the data and using it to increase their level of life management. People with critical health literacy are expected to confirm, question, evaluate and share the accuracy of the information they receive from health service providers, the media, or their circle (3,4).

Like basic literacy, health literacy is not static and continues to develop throughout a person’s life. It is also influenced by demographic, sociopolitical, psychosocial, and cultural factors (5).

Hosmer defines the concept of trust as “individuals having optimistic feelings about the other party when making a decision at the moment of exposure to danger or crediting for something” (6). Individuals trust in health care systems plays a role in explaining one’s access to medical care, use of medical care, compliance with medications and treatments, continuity of care, and self-reported health status (7).

When patients do not trust health professionals, they do not tend to cooperate with them and thus do not follow their recommendations and conditions. They may reject the diagnosis, interfere with the treatment process, want to consult another physician, or leave the hospital (8).

On the other hand, patients who trust physicians take their medications more regularly do not disrupt their follow-up appointments and fulfill what they are told throughout the treatment process. These behaviors discourage them from contacting another physician to be satisfied with their health. Therefore, unnecessary requests for examinations, tests, and analyses can be prevented. This situation contains the health budget and the resources allocated to health services from being wasted (9).

In particular, the uncertainty of the thoughts of those with a long history of illness or more complex diseases causes the decimation of trust between the health professional and the patient (10). Individuals begin to question the events around them as their educational level increases, and their reasoning and comparison abilities improve comparatively. Therefore, they may become more selective and insecure in health services (11).

Materials and Methods

Research Universe

The research universe consists of 949,630 people over 18 living in Selcuklu, Meram, and Karatay districts in Konya province (TURKSTAT, 2021) (34). A sample of 384 people was found to be sufficient for the universe (12), and 450 people were reached within the scope of the study.

Data Collection Tools

In the study, a 32-question survey was applied to the participants. The first consists of 8 questions about demographic data, the second consists of the Health Literacy Scale (13), and the third consists of the Health Care System Distrust Scale (14). The Health Literacy Scale was developed by Suka et al. in 2010 (15). Turkish validity and reliability were performed by Türkoğlu and Kılıç (2021). As a result of the reliability analysis, the Cronbach Alpha value of the scale was found to be 0,85. It consists of functional, interactive, and critical sub-dimensions. The Health Care System Distrust Scale was developed by Rose et al. Its Turkish validity and reliability were performed by Yeşildal et al. in 2019. As a result of the reliability analysis, the Cronbach Alpha value of the scale was found to be 0,789.

Ethical Considerations

Before conducting the research, ethical approval was received from the Non-Interventional Clinical Research Ethics Committee of the Dean of the Faculty of Health Sciences of Selcuk University on December 29th, 2021, with decision no. 1918. Afterward, the researcher collected the data on March 1st and May 15th, 2022, using online

(Google Forms) and face-to-face survey methods. The participants were explained and informed about the research before filling out the survey, and the informed consent form was received from those who agreed to participate.

Data Analysis

After the collection process, the data were transferred to the computer environment. The SPSS 25.0 (Statistical Program for Social Sciences) package was used to evaluate the data. The findings evaluated percentage distributions, averages, standard deviations, and minimum maximum values. To determine whether the data conform to the normal distribution (Skewness-Kurtosis), the normality distribution test was used, and the scales were found to conform to normal distribution. As a result, parametric tests were used during data analysis, and Independent Samples t-test, One-way ANOVA, and Pearson's Correlation tests were performed.

Results

In this chapter, sociodemographic data of the participants and analysis and explanations of their responses to the Health Literacy Scale and the Health Care System Distrust Scale were included.

Table 1. Findings Related to the Socio-Demographic Characteristics of the Participants		
Gender	(n)	(%)
Male	198	44.0
Female	252	56.0
Age	(n)	(%)
18-22	153	34.0
23-29	139	30.9
30 and older	158	35.1
Marital Status	(n)	(%)
Single	295	65.6
Married	155	34.4
Educational Status	(n)	(%)
High school degree and lower	110	24.4
Associate degree	62	13.8
Bachelor's degree	226	50.2
Postgraduate degree	52	11.6
Income Status (TL)	(n)	(%)
0-4999	136	30.2
5000-7999	162	36.0
8000 and above	152	33.8

Do you have a chronic disease? (Diabetes, blood pressure, asthma, etc.)	(n)	(%)
Yes	58	12.9
No	392	87.1
Does anyone in your family have a chronic disease?	(n)	(%)
Yes	219	48.7
No	231	51.3
Place of Residence	(n)	(%)
Selcuklu	219	48.7
Meram	117	26.0
Karatay	114	25.3

As seen in Table 1, 56% (252 people) of the participants are female, 35.1% (158 people) are aged 30 or older, 65.6% (295 people) are single, 50.2% (226 people) hold bachelor's degree, and 36.0% (162 people) have an income of ₺5000 to ₺7999. 87.1% (392 people) have no chronic diseases. 51.3% (231 people) have no family history of chronic disease. Lastly, 48.7% (219 people) live in the Selcuklu district.

As seen in Table 2, according to the results of the t-test performed between the Health Literacy Scale and its subscales, there was a statistically significant relationship between health literacy and gender ($p < 0,05$). Women's ($\bar{x}=3,92$) level of health literacy was higher than those of men ($\bar{x}=3,66$).

According to the results of the t-test performed between the Health Literacy Scale and marital status, it was found that there was a statistically significant relationship between the Functional subscale and marital status ($p < 0,05$). Single ($\bar{x}=3,49$) individuals were found to have a higher level of functional health literacy than married ($\bar{x}=3,27$) individuals.

According to the results of the t-test conducted between the Health Care System Distrust Scale and gender, marital status, chronic illness, and the family history of chronic disease, no significant relationship was found ($p > 0,05$).

Table 2. The T-Test Analysis of the Health Literacy Scale and its Subscales and the Health Care System Distrust Scale

		HLS	HLS Subscales			HCSD-S
			Functional	Interactive	Critical	
Gender	Male	3,66±0,65	3,29±0,98	3,81±0,79	3,93±0,87	2,96±0,64
	Female	3,92±0,60	3,51±0,97	4,04±0,73	4,27±0,79	2,87±0,65
Test and p-value		t=-4,330 p<0,001	t=-2,389 p=0,017	t=-3,191 p=0,002	t=-4,256 p<0,001	t=1,520 p=0,127
Marital Status	Single	3,84±0,61	3,49±0,93	3,93±0,74	4,16±0,81	2,92±0,61
	Married	3,74±0,68	3,27±1,06	3,95±0,82	4,05±0,90	2,88±0,70
Test and p-value		t=1,598 p=0,111	t=2,231 p=0,026	t=-0,216 p=0,829	t=1,239 p=0,216	t=0,706 p=0,480
Chronic Disease	Yes	3,71±0,65	3,34±1,03	3,92±0,74	3,92±0,93	3,04±0,73
	No	3,82±0,63	3,43±0,98	3,94±0,77	4,15±0,82	2,89±0,63
Test and p-value		t=-1,185 p=0,236	t=0,698 p=0,507	t=-0,225 p=0,822	t=-1,916 p=0,056	t=1,660 p=0,097
Family History of Chronic Disease	Yes	3,81±0,65	3,38±1,03	3,96±0,76	4,16±0,86	2,97±0,68
	No	3,80±0,62	3,45±0,93	3,93±0,77	4,08±0,82	2,85±0,60
Test and p-value		t=0,137 p=0,891	t=-0,684 p=0,494	t=0,413 p=0,680	t=0,893 p=0,372	t=1,840 p=0,066

Table 3. ANOVA Test Analysis for the Health Literacy Scale and its Subscales and the Health Care System Distrust Scale

		HLS	HLS Subscales			HCSD-S
			Functional	Interactive	Critical	
Age	18-22 ¹	3,91±0,58	3,69±0,88	3,93±0,69	4,17±0,78	2,90 ± 0,61
	23-29 ²	3,86±0,65	3,48±0,95	3,97±0,83	4,19±0,85	2,94 ± 0,62
	30+ ³	3,66±0,65	3,10±1,03	3,92±0,78	4,01±0,88	2,89 ± 0,70
Test and p-value		F=7,027 p=0,001	F=14,691 p<0,001	F=0,175 p=0,839	F=1,920 p=0,146	F=0,273 p=0,761
Post-Hoc		1,2 > 3 ^a	1,2 > 3 ^a			
Educational Status	High school degree and lower ¹	3,60±0,68	3,21±1,03	3,80±0,78	3,83±0,92	2,85 ± 0,62
	Associate Degree ²	3,95±0,56	3,56±0,88	4,06±0,73	4,29±0,78	2,85 ± 0,58
	Bachelor's degree ³	3,84±0,59	3,49±0,97	3,93±0,73	4,17±0,80	2,93 ± 0,68
	Postgraduate degree ⁴	3,91±0,71	3,38±0,98	4,11±0,87	4,32±0,77	3,01 ± 0,61
Test and p-value		F=5,718 p=0,001	F=2,493 p=0,060	F=2,620 p=0,050	F=6,540 p<0,001	F=1,014 p=0,386
Post-Hoc		2,3,4 > 1 ^a			2,3,4 > 1 ^a	
Income (TL)	0-4999	3,80±0,59	3,45±0,93	3,85±0,73	4,18±0,77	2,81 ± 0,57
	5000-7999	3,77±0,64	3,36±0,98	3,95±0,79	4,06±0,88	2,98 ± 0,63
	8000 and above	3,85±0,67	3,45±1,03	4,01±0,76	4,13±0,85	2,92 ± 0,71
Test and p-value		F=0,562 p=0,571	F=0,467 p=0,627	F=1,499 p=0,224	F=0,745 p=0,475	F=2,424 p=0,090
Post-Hoc						
Place of Residence	Selcuklu ¹	3,90±0,59	3,56±0,99	4,00±0,71	4,19±0,81	2,92 ± 0,63
	Meram ²	3,78±0,65	3,35±0,97	3,92±0,78	4,14±0,79	2,86 ± 0,67
	Karatay ³	3,65±0,68	3,22±0,95	3,85±0,84	3,95±0,93	2,94 ± 0,65
Test and p-value		F=5,572 p=0,004	F=4,944 p=0,008	F=1,340 p=0,261	F=3,106 p=0,046	F=0,477 p=0,621
Post-Hoc		1 > 3 ^a	1 > 3 ^a		1 > 3 ^b	

Post-Hoc tests a=Scheffe b=LSD

As seen in Table 3, a statistically significant difference was found in the health literacy scores and functional subscale scores of the participants according to their age, as a result of the ANOVA test ($p < 0,05$). Participants aged between 18 and 22 ($\bar{x}=3,91$) and between 23 and 29 ($\bar{x}=3,86$) were found to have a higher level of high literacy than those aged 30 and older ($\bar{x}=3,66$). According to the post-hoc (Scheffe) test conducted in the Functional subscale, the functional health literacy levels of people aged 18 to 22 and 23 to 29 were higher than those aged 30.

According to the ANOVA test conducted between educational status and the Health Literacy Scale and its subscales, there was a significant difference between the overall Health Literacy Scale score and Critical subscale and academic status ($p < 0,05$). According to the post-hoc (Scheffe) test, the health literacy levels of individuals with high school and lower ($\bar{x}=3,60$) degree levels were lower than those with associate degree ($\bar{x}=3,95$), bachelor's degree ($\bar{x}=3,84$), and postgraduate ($\bar{x}=3,91$) degrees. According to the Post-Hoc (Scheffe) test conducted in the Critical subscale, the critical health literacy levels of high school and lower students were lower than those with an associate, bachelor's, and postgraduate degrees.

According to the ANOVA test conducted between the place of residence and the Health Literacy Scale and its subscales, a significant difference was found between the overall Health Literacy Scale score and the Functional and Critical subscales ($p < 0,05$). According to the overall Health Literacy Scale score and the post-hoc (Scheffe) test conducted in the Functional subscale, participants living in Selcuklu were found to have higher levels of health literacy and functional health literacy than those residing in Karatay. According to the post-hoc (LSD) test conducted in the Critical subscale, it was found that the critical health literacy levels of those living in Selcuklu were higher than those living in Karatay.

No significant relationship was found with the results of the ANOVA test conducted between the Health Care System Distrust Scale and age, educational status, income, and place of residence.

Table 4. Correlation Analysis between the Health Literacy Scale and the Health Care System Distrust Scale

	The Healthy Literacy	Subscales		
		Functional	Interactive	Critical
The Health Care System Distrust Scale	$r=-0,209^{**}$	$r=-0,275^{**}$	$r=-0,040$	$r=-0,104^*$
	$p < 0,001$	$p < 0,001$	$p=0,196$	$p=0,013$
**Correlation is significant at 0.01.				
*Correlation is significant at 0.05.				

According to the Pearson's correlation analysis conducted between the Health Literacy Scale and its subscales and the Health Care System Distrust Scale, there was a weak negative relationship between the Health Care System Distrust Scale and the Health Literacy Scale ($r=-0,209$) and the Functional subscale ($r=-0,275$) and the Critical subscale ($r=-0,104$). According to this result, it may be concluded that as participants' health literacy levels increase, their trust in health systems also increases.

Table 5. Regression Analysis

Dependent Variable	Independent Variable	B	se	t	F	p	R ²
The Health Care System Distrust	Constant	3.722	0.182	20.499	20.436	0.000	0.044
	The Healthy Literacy	-0.212	0.047	-4.521			

In light of the data in Table 5, the regression analysis conducted between the Health Care System Distrust Scale and the Health Literacy Scale was found significant ($p < 0.05$). According to the table, 4.4% of the variance in distrust of health care systems is explained by health literacy ($R^2=0,044$). The Health Literacy Scale score increase reflects individuals' distrust of the health care systems ($B=-0.212$). The increase in health literacy significantly negatively affects the suspicion of health care systems.

Discussion

The current study found that factors such as gender, age, marital status, and educational status affect individuals' health literacy levels. Health literacy levels of women were found to be significantly higher than those of men. When the literature is examined, various research has been reached to support the current conclusion (16,17,18,19,20). According to the study conducted by Kamberi et al. in 2013 and the dissertation born by Beyoğlu in 2019, the health literacy level of male participants was higher (21,22).

In the current research, participants' age significantly affected their health literacy levels. The level of those over 30 was lower than that of younger participants. The previous studies also agree with this conclusion (16,21-23,24,25).

According to the findings, only the functional health literacy of single participants was higher than that of married participants, and there was no significance in other subscales. The literature review showed that the health literacy levels of married participants were higher than those of single participants (14,22,26,27).

A significant positive relationship was found between the participants' educational status and health literacy levels. When the literature was examined, it was seen that participants with a higher academic standing also had higher health literacy levels (14,17,23,24,28).

Although studies have concluded that as individuals' financial and social status increases, their health literacy rates also increase (21,25,28,29), no such relationship has been found in the current study.

When the data was examined, it was seen that whether individuals had chronic diseases did not affect their health literacy levels, while some studies suggested the opposite (22,27-29,30).

No significant relationship was found between individuals' distrust of health care systems and their demographic characteristics. In previous studies, no association was found between distrust of health care systems and gender (31,32), and educational status and income level did not affect distrust (32). However, there are studies indicating that the trust levels of participants increase as their age increases (31-33).

Conclusion

High educational status and higher socioeconomic conditions are among the determinants of high health literacy. As health literacy level increases, trust in health care systems also increases. Individuals with high health literacy have an active say in their health, and as their trust level increases, their treatment progresses, becomes more accurate, and their recovery time shortens. To build trust between the health service providers and consumers, actions should also be taken to improve their level of health literacy.

DECLARATIONS

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Competing Interests

No potential conflict of interest was reported by the authors.

Ethics Approval

Ethics committee approval was obtained for the study from Selcuk University Faculty of Health Sciences Non-Invasive Clinical Research Ethics Committee with the decision numbered 1918 on 29.12.2021.

Availability of Data and Material

All data has been presented.

Authors Contributions Section

Beyzanur Üstünbaş collected the data, performed the analysis, and wrote the paper. Yunus Emre ÖZTÜRK conceived and designed the analysis and contributed data or analysis tools.

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