The realtionship between health litercy and Covid 19 fear during Pandemia: a cross sectional study from Turkey

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ABSTRACT

Bacground and Objectives: Health literacy is an important concept in the Covid-19 pandemic and has positive effects on fear. This purpose has been realized to determine the impact of concept of health literacy, which improves awareness in relation to health services on the Covid fear.

Materials and Methods: This study is a cross-sectional study that was conducted on 1060 people in Turkey who filled out the study instruments in January 2021. Online tools were used to collect data due to social distance restrictions. The research data were collected using "Personal information form" created as based on literature and observations, "Turkish Health Literacy Scale -32 (HLS-TR), and COVID-19 Fear Scale (FCV-19S). To analyzes of data, average, t test, ANOVA, regression test were used.

Results: Average total score of Turkish Health literacy was 30.36±8.88. According to regression analysis, health literacy has significantly affect Covid fear and higher health literacy was associated with lower FCoV-19S scores (r=-0.760, p<0.001).

Conclusion: Adequate level of health literacy can reduce the negative effects of fear of COVID-19 during the pandemic in Turkey.

Paper Type: Research Article

Keywords: Health litercy, Covid 19, Fear, Health Education

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Introduction

COVID-19 pandemic is a serious public health problem in world (1). Due to COVID-19, 456.797.217 cases and 6.043.094 death incidents are seen throughout the world (2). In Turkey these figures were such that there were 14.550.774 cases and 96.487 death incidents (3). Fast transformation of COVID-19 disease into a global pandemic lead to force people to be informed about this new virus, and to change their attitudes in a rapid way (4). During this period while pandemic was experienced, on the other side infodemia was developed. At different platforms at global scale information about COVID-19 have rapidly increased (4). Among this information there are also false information causing big damages in public health and triggering public fear and worries (4). However, high health literacy levels of people enable them to cope better with this situation (5).

Definition of health literacy has been made by World Health Organization as "Skills of an individual to reach, understand and use health information in order for health to be protected and maintained" (6). Health literacy training that can start in early periods of life and which can be continued in long term, is considered as a very effective tool in avoiding non-infectious diseases (7). Furthermore, it has been recognized with COVID-19 pandemic that health literacy is quite important in both preventing non-infectious diseases and being protected from infectious diseases (4).

In a recent study conducted on medicine students about COVID-19 fear, it was shown that high levels of health literacy could reduce level of fear (4). In another study, it was revealed that higher levels of health literacy had protective impact against depression related with COVID-19 (8). Rapid development of disease throughout the world causes feelings such as denial, anger and fear being experienced with symptoms such as stress, anxiety, depression, and sleep disorder in patients (1,9-12). Health literacy can facilitate making discrimination between reliable information about COVID-19 and false information relating with the subject. It also helps reaching to health information and health service sources and provides enhancement in applying healthy and protective behaviors with respect to people's taking conscious health decisions (8). COVID-19 fear causes delays in reaching to health services and it can even cause suicide (13,14).

In order to mitigate and limit spreading of COVID-19 and negative mental health outcomes, it is important to determine negative psychological problems (for example fear) and to apply appropriate interventions at an early stage (15,16).

The study aims to determine the impact of health literacy on improving individual's awareness in relation to the COVID-19 fear.

Materials and Methods
Study Design

A cross-sectional study was conducted using online-based questionnaires in January 2021. A priori power analysis was performed to determine the sample size of the study. In the power analysis, 980 people with 95% power were determined at a significance level of 0.05, by taking Cohen's standard effect sizes as reference. In case of data loss, 20% backup sample was included in this number and the total study was completed with 1060 participants.

Participants

This study is a cross-sectional study that was conducted on 1060 people in Turkey who filled out the study instruments in January 2021. Online tools were used to collect data due to social

distance restrictions. Online data collection link was provided through Google forms for participants who over 18 years old, knowing how to use the Internet via e-mail, and instant messaging applications. 55% of participants have ages in interval of 18-25, 51.5% of them are women, and 75.3% of them have university and higher education levels. 60.6% of participants are single, 67.2% of them do not smoke, and 84.9% are not diagnosed with coronavirus yet. 69.2% of them had training on Corona virus, 77.9% regularly monitor news about Coronavirus, 67% has adequate information about corona virus, 50.2% has stated that during pandemic period there were no changes relating with their nutrition and 69.6% has stated that there were no changes regarding their exercise attitudes.

Measurment

The research data were collected using "Personal information form" created as based on literature and observations, "Turkish Health Literacy Scale -32 (HLS-TR), and COVID-19 Fear Scale (FCV-19S).

Turkish Health Literacy Scale-32 (HLS-TR)

Scale based on conceptual frame was developed by European Health Literacy Research Consortium by Okyay et al to evaluate health literacy in people with ages above 15 and being literate (17). Cronbach alpha value was determined as 0.93 for general scale. In this study, general internal consistency coefficient was defined as 0.93. According to the score, health literacy level is evaluated as insufficient health literacy (0-25 points), problematic - limited health literacy (>25- 33 points), sufficient health literacy (>33- 42 points), and excellent health literacy (>42-50 points).

COVID-19 Fear Scale (FCV-19S)

Ahorsu et al and Turkish validity developed scale and reliability study was conducted by Satıcı et al (18,19). This tool includes a single dimensional scale with seven items. Scale has evaluated based on 5 score Likert type from 1 (I absolutely do not agree) to 5 (I absolutely agree). There is no reverse item in the scale. The total score obtained from all items reflects the level of fear toward coronavirus (Covid-19), which was ranged from 7 to 35. High scores show high levels of coronavirus fear. The internal consistency coefficient based the Cronbach's alpha was 0.82.

Procedure and evaluation of data

In this study, online data collection platforms were used to data collection and additional explanations regarding volunteering and confidentiality of data were added to online data collection link. Online data collection process was completed within a week. The data were evaluated by the SPSS package program.

Ethical Considerations

The study follows the Declaration of Helsinki' principles. All caregivers voluntarily accepted to participate to the study by signing an informed consent. Permit was obtained from Faculty of Nursing Ethical Committee to carry out the research and permits required for the research started were obtained (Date: 11.12.2020, No: 2020-6/12).

Results

Participates demographic charecteristices and their association with level of health litracy and Covid fear are shown in Table 1. Our finding showed that level of health literacy scores is significantly higher in women participants with ages of 18-25, higher education and income level compered with other groups. Likewise, we found that particpantes education level significantly assoicated with fear scale as with increasing education level, participant's fear decreased.

Table 2 shows participants per characteristics related to coronavirus HLS-TR, and the average score of Covid fear scale are also summerized.

Table 1. Demographic variable association with the fear of COVID-19 and HLS-TR

Variables	Frequency (%)	HLS-TR Total	Test and p	FCoV-19S	Test and p
Age					
18-25	588 (55.5)	31.00±8.89		16.79±5.20	
26-3	134 (12.6)	30.88±8.29	F=2.858 p=0.036	16.65±5.77	F=0.513 p=0.674
36-45	212 (20.0)	29.26±9.79		16.79±6.44	
46 or more	126 (11.9)	29.09±9.64		17.42±6.30	
Gender					
Women	546 (51.5)	30.87±8.59	t=1.962 p=0.050	17.53±5.46	t=4.045 p=0.000
Men	514 (48.5)	29.80±9.15		16.12±5.81	
Education					
Primary School	34 (3.2)	18.25±11.8	F=36.63	19.88±7.78	F=5.648
High school	228 (21.5)	29.81±7.99	p=0.00	17.11±5.90	p=0.004
College/university or above	798 (75.3)	31.03±8.60		16.64±5.46	
Income					
Low	378 (35.7)	29.86±9.12	F=7.459	16.97±6.22	F=1.266
Equal	542 (51.1)	30.02±8.22	p=0.01	16.94±4.97	p=0.282
High	140 (13.2)	33.04±10.17		16.14±6.59	
Marital status					
Married	418 (39.4)	29.56±9.09	t=2.362 p=0.018	17.20±6.10	t=1.635 p=0.102
Single	642 (60.6)	30.88±8.70		16.62±5.37	
Employement status					
Housewife	18 (1.7)	27.66±7.26		20.44±7.03	
Civil servent	188 (17.7)	29.87±9.02	F=1.968	16.73±6.01	F=2.007
Worker	176 (16.6)	29.48±8.60	p=0.081	16.94±5.66	p=0.075
Self-employment	120 (11.3)	31.05±10.8		16.13±6.19	
Student	528 (49.8)	30.92±8.45		16.85±5.28	
Other	30 (2.8)	27.63±8.32		17.73±6.59	
Smoking					
Yes	348 (32.8)	29.05±9.01	t=3.370 p=0.001	16.77±5.91	t=0.309 p=0.758
No	712 (67.2)	31.00±8.54		16.89±5.55	

Based on our results, individuals who have not yet been diagnosed with Covid-19 follow the news and reliable sources about coronavirus, have sufficient information about coronavirus, and had low levels fear toward Covid. Furthermore, it was found that individuals with healthy nutrition and suffition exercises process had high levels of HLS-TR score and their Covid fear score were significantly reduced (p<0.001). According to findings obtained from the study, the average of total health litracy based on Turkish sacle was 30.36±8.88. We found that 26.6% of participant had the inadequate level of health literacy, 34.5% of the participant had the problematic-limited health literacy, 28.7% had sufficient level of health literacy, and 10.2% of participantes had excellent level of health literacy.

Tablo 2. Knowledge and health information about Covit 19 and association with the fear of COVID-19 and HLS-TR

Variables	Frequency (%)	HLS-TR Total	Test and p	FCoV-19S	Test and p
Being test positive for COVID-19					
Yes	160 (15.1)	28.67±8.53	t=2.624	17.55±6.70	t=1.688
No	900 (84.9)	30.66±8.91	p=.009	16.72±5.46	p=.092
Getting information about Coronovirus					
Yes	326 (30.8)	30.48±8.74	t=0.305	16.38±5.74	t=1.785
No	734 (69.2)	30.30±8.94	p=.760	17.05±5.63	p=.075
Follow-up news about coronavirus regularly					
Yes	826 (77.9)	31.15±8.24	t=5.549	16.93±5.75	t=0.908
No	234 (22.1)	27.55±10.37	p=.000	16.55±5.38	p=.364
Following reliable sources about coronavirus					
Evet	928 (87.5)	30.92±8.46	t=5.506	16.91±5.58	t=0.894
Hayır	132 (12.5)	26.43±10.62	p=.000	16.43±6.30	p=.371
Having enough knowledge about coronavirus					
Yes	710 (67.0)	31.68±8.36	t=7.047	16.38±5.57	t=3.886
No	350 (33.0)	27.68±9.29	p=.000	17.81±5.76	p=.000
Eating behavior					
Eat less healthy	76 (7.2)	26.13±8.83	F=19.837	18.42±6.19	F=6.355
Unchanged	532 (50.2)	29.53±9.06	p=.000	17.22±6.10	p=.002
Eat healthier	452 (42.6)	32.05±8.28		16.31±5.14	
Physical activity					
Exercise less	86 (8.1)	28.14±8.54	F=3.947	18.81±5.74	F=6.588
Unchanged	738 (69.6)	30.33±9.03	p=.020	17.11±5.75	p=0.001
Exercise more	236 (22.3)	31.27±8.39		16.53±5.59	
SOY İndex (X±SS)	30.36±8.88				
Covid Fear (X±SS)	16.85±5.67				

Figure 1 shows relationship between HLS-TR scale score and Covid fear scale between participantes. It was found out that with increasing the average of HLS-TR score, Covid fear will be reduced, and there is a significant negative relationship (r=-0.760, p=0.000) between HLS-TR scale score and Covid fear.

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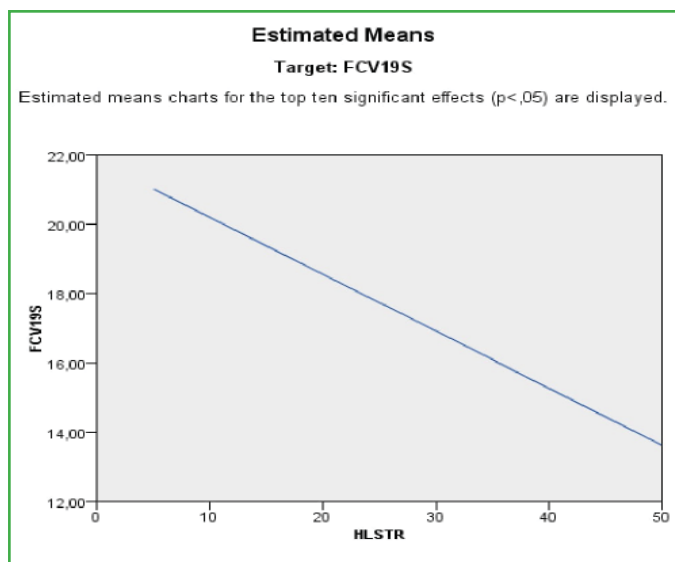The realtionship between health literacy and Covid 19 fear during ...

Figure 1: Association between fears of COVID-19 ad HLS-TR analyzed via Pearson

In Table 3, a regression model has been showen between HLS-TR scales that could be predictor of Covid fear scale. According to results of regression analysis effect of health literacy on Covid fear was significant outcome (F=76.249; p=0.000). This result means that it is statistically possible to estimate its effect on health literacy. Therefore, health literacy and fear of covid were considered as an independent variable and dependent variable, respectively. Our results showed that effect of health literacy on Covid fear with a rate of 6.7% (R2= 0.067) (Figure 2). According to regression analysis, it can be stated that health literacy has significant impact on Covid fear (p=0.000).

Table 3. Association between fear of COVID-19 and HLS-TR analyzed via linear regression models

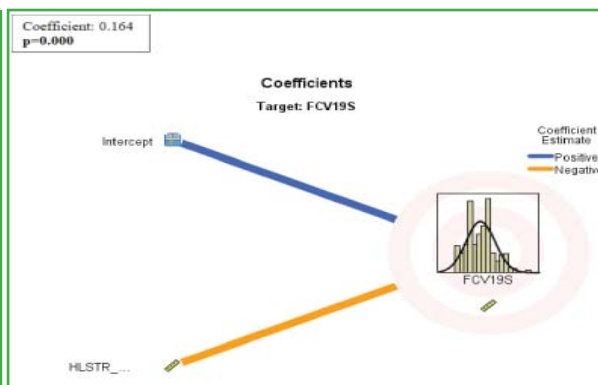| FCV-19S	Unstandardized Coefficients		Standardized Coefficients	t	p
	β	Std. Error	β		
Constant	2.884	0.600		36.456	.000
HLS-TR	-0.166	0.019	-0.760	-8.732	.000
R:0.259	R2=0.067		F=76.249	p=.000	

Figure 2: Health litracy effectiveness on Covid fear

Discussıon

It is known that health literacy could be importance skills during Covid-19 pandemic and it was generally insufficient. According to findings obtained from our study the average of total score of Turkish Health literacy was 30.36±8.88. There are studies in literature, which generally support this finding (20-26). Furthermore Durusu et al (2014) have found out that 64.6% of Turkish population has a "problematic or insufficient" health literacy level (27). Carvolha has found out that 37.4% of participants had problematic health literacy and 10.6% of Turkish population had perfect health literacy (28). Sorensen et al (2015) have determined that 47.6% of participants had inadequate and problematic health literacy (29). Therefore, health literacy level is insufficient or problematic-limited throughout the community because there is no systematic training program regarding this subject.

It was determined that average score of HLS-TR scale of female participants was higher compered with men and the difference was statistically significant. Similar results were obtained from the studys (17, 30). It can be stated that women have more tendency towards training programs and to improve themselves. It has been determined that women experienced Covid fear more than men. This finding is conssitent with recent researches conducted in relation to

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similar subjects (31-34). Bakioğlu, Korkmaz, and Ercan (2020) found that fear of COVID-19 were significantly higher in women in their study with 960 adult individuals (35). Women are thought to be more sensitive than men toward fear response. This can be explained that during a pandemic, women are often more burdened than men, including housework, and caregiver role or domestic violence. Furthermore, women can be exposed to more stressful life events than men in general. With the pandemic, it is considered that women need to be supported more during this period.

Regarding Covid fear, it has been determined that as education level increased health literacy got improved and fear situations decreased. In the similar studies conducted in relation to Covid-19 it was seen that results in conformity were obtained (36-38). The fact that the level of health literacy is affected by the education variable can be associated with the fact. Therefore, education is a main factor that facilitates the processes of accessing, understanding and evaluating health-related issues and increasing compliance with health-related practices.

During pandemic period in, it is recommended to follow healthy and balanced nutrition and adequate physically activity (2). Findings of this study show that as participants increased their health literacy levels and reduced fear levels, there were positive changes in relation to their eating habits and physicl activity behaviors. This study seems to be in conformity with other researches observing changes in nutrition habits (39-41) and exercise attitudes (42). Participants' starting to have healthier nutrition can be correlated with factors such as having restrictions during pandemic period, and preferring home made food to ready food.

In our study it was determined that health literacy has protective impact on fear. Health literacy is recognized as a critical skill in assessing health information online, especially in our digital world characterized by a variety of information and resources. In addition, higher health literacy is associated with a better health status, reduced health inequalities, and improved health and well-being. Besides in a previous study it was shown that health literacy can be helpful to protect spiritual health of people and to imprve their life quality during COVID-19 pandemic period (8). For this reason developing public health literacy skills can be accepted as a strategical approach in reducing fear and improving their health and welfare. During COVID-19 period it is important for people to have adequate means to have access to health information, to make analysis and to apply. Due to this reason health literacy is seen as a fundamental aspect of social responsibility and health. Furthermore, in order to reduce pandemic and its potential and to control it at the same time, it is seen as a fundamental tool for both receiving parties and information providers. Improving health literacy requires an interdisciplinary approach and this is more important in the pandemic period.

Conclusıon: It has been determined that during COVID-19 pandemic that is a global problem, people frequently experienced emotions such as fear and anxiety and that they had low level of health literacy. Furthermore, relationship of higher health literacy level with a low possibility of fear has been determined. It is required for studies which will be realized later on in this context to be studies that aim to improve health literacy level in different age groups. Efforts of individuals and governments to improve health literacy can significantly contribute to prevent and control COVID-19.

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Authors Contribution: NT, EK, EA contributed to project conception and did the data acquisition and analysis; NT did the statistical analysis; EK did the literature review; NT, EK, EA wrote the manuscript and NT critically revised the successive drafts. All authors read and approved the fnal manuscript.

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