MJSS

Akdeniz Spor Bilimleri Dergisi

Mediterranean Journal of Sport Science

ISSN 2667-5463

Determining Students' Health Literacy Levels During The Covid-19 Pandemic

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DOI: https://doi.org/10.38021asbid.1212057

ORIJINAL ARTICLE

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Abstract

The Covid-19 Pandemic showed us that the nation-states being caught unprepared for the sudden outbreaks resulted in the management of the process with social restrictions. It has disrupted the health systems and socio-economic balance of societies during and after the pandemic and still has caused tribulations in returning to the old normals. For this reason, it has led to the need for individuals to attach importance to health literacy education, especially during their student years. Thus, this study aims to determine the health literacy levels of students during the Covid-19 Pandemic and prepare a method and a theoretical basis for raising awareness. As a result of the data analysis, the kurtosis and skewness values were calculated.In the study, the following items were used: The Turkish Health Literacy scale, which was developed by Okyay and Abacigil (2016) with the support of the Turkish Ministry of Health, the Independent T-test for intergroup and pairwise comparisons, the One Way ANOVA test for multiple comparisons, and the Tukey's Test for Post-Hoc Analysis. Accordingly, students can simply realize the stages of accessing, understanding, appraising, and applying information about health literacy. When we evaluate the health literacy levels of the students by their genders, female students have higher literacy than male students in terms of accessing, understanding, and appraising information in the health care and disease prevention and health promotion areas. Under the observations, there is a strong positive relationship between students' level of understanding and their level of appraising and applying the information in thedisease prevention and health promotion sub-dimension. According to the results obtained, the health literacy levels of the students strongly affect each other in terms of accessing, understanding, appraising, and applying the information in the sub-dimension of disease prevention and health promotion.

Keywords:Covid-19 Pandemic, Health Literacy, Students

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Covid 19 Pandemi Döneminde Öğrencilerin Sağlık Okuryazarlığı Düzeylerinin Belirlenmesi

Öz

Covid 19 Pandemi dönemi bize gösterdi ki ani gelişen salgınlara karşı ulus devletlerin hazırlıksız yakalanması, sürecin devletler açısından toplumsal kısıtlamalarla yönetilmesiyle sonuçlanmıştır. Toplumların Covid dönemi ve sonrası sağlık sistemleri ve sosyo-ekonomik dengesini bozmuş ve eski normallere dönme konusunda halen büyük sıkıntılar yaşanmasına neden olmuştur. Bu nedenle bireylerin özellikle öğrencilik dönemlerinde sağlık okuryazarlığı eğitimlerine önem verilmesi ihtiyacını doğurmuştur. Bu nedenle araştırmanın amacı Covid 19 Pandemi döneminde öğrencilerin sağlık okuryazarlığı düzeylerinin belirlenerek, bilinçlenmeye yönelik bir yöntem ve teorik bir temel hazırlamaktır. Araştırma verilerinin analizi sonucunda verilerin kurtosis ve skewness değerleri hesaplanmıştır. Türkiye Sağlık Bakanlığı desteğiyle Okyay ve Abacigil (2016) tarafından geliştirilen Türkiye Sağlık Okuryazarlığı ölçeği kullanılmış ve gruplar arası karşılaştırmalar ve ikili karşılaştırmalar için bağımsız T testi, çoklu karşılaştırmalar için Tek Yönlü Anova testi ve post hoc testi olarak Tukey testi uygulanmıştır. Öğrencilerin sağlık okuryazarlığı ile ilgili bilgiye ulaşma, anlama, değerlendirme ve uygulama aşamalarını kolay bir şekilde gerçekleştirdiğini söyleyebiliriz. Araştırmaya katılan öğrencilerin sağlık okuryazarlığı düzeylerini cinsiyetlerine göre değerlendirdiğimizde tedavi ve hizmet alt boyutunda bilgiye ulaşma konusunda kadın öğrencilerin erkek öğrencilere göre, bilgiyi anlama konusunda kadın öğrencilerin erkek öğrencilere göre, bilgiyi değerlendirme konusunda kadın öğrencilerin, erkek öğrencilere göre anlamlı bir fark ile daha yüksek okuryazarlığa sahip oldukları görülmüştür. Sağlık okuryazarlığı ile ilgili hastalıklardan korunma/sağlığın geliştirilmesi boyutunda öğrencilerin bilgiyi anlama düzeyleri ile bilgiyi değerlendirme ve bilgiyi kullanma düzeyleri arasında yüksek düzeyde pozitif bir ilişki bulunduğu görülmüştür. Elde edilen sonuçlarda hastalıklardan korunma/sağlığın geliştirilmesi alt boyutunda bilgiye ulaşma, bilgiyi anlama, bilgiyi değerlendirme ve bilgiyi kullanma konularında öğrencilerin sağlık okuryazarlığı düzeyleri birbirini yüksek düzeyde etkilemekte olduğu gözlenmiştir.

Anahtar kelimeler:Covid 19 Pandemi, Öğrenciler, Sağlık Okuryazarlığı

Received:
30.11.2022

Accepted:
01.03.2023

Online Publishing:
28.03.2023

Introduction

"*Covid-19 is a type of virus in the Beta-Coronavirus family, including Sars-CoV and Mers-CoV and emerged in 2019 and quickly affected the whole world in a short time"* resulting in the declaration of a global epidemic, that is, a "pandemic" (World Health Organization (2020). This epidemic, which has the effect of a rapidly spreading pandemic that emerged with the detection of Covid-19 in the eleventh month of 2019 in the city of Wuhan, China, makes the impact of a great crisis affecting health and social life as a global problem felt all over the world (Ciottiet al 2020; Lone and Ahmad, 2020).The attack rate of the epidemic has become a huge problem for all nation-states with growing unemployment and economic difficulties. Since the restrictions that affect social life due to the pandemic in some countries turn into mass demonstrations and riots, it is a health problem that needs to be solved immediately (Gozum P. 2021; Karaca et al 2020; Lu et al 2020).

Literacy is a concept that requires the ability to read and write and to adapt this skill effectively to life (Yilmaz, 1989; Demirli, 2018). In today's health system, individuals are expected to "*adopt health protection and development practices, be informed about the health services provided, be active in making decisions about their health, and know their responsibilities and rights*" (Coulter and Ellins, 2007; Pignone et al 2005; Rudd, 2007). However, factors such as the complexity of the diagnosis process, constantly developing and changing technology, cultural differences, limited literacy level, and age-related physical and cognitive changes can affect individuals' self-care, self-efficacy, use of the services provided, and communication with the healthcare team.In all these processes, the health literacy of individuals emerges as another important factor in searching and understanding health information and communicating with health information and service providers (Nutbeam, 2000; Yilmaz and Tiryaki, 2016 , Berkmann et al 2011). The World Health Organization "*defines health literacy as, an individual's ability to access, understand, and use health information to protect and maintain his/her health*" (World Health Organization, 1998). The concept "health literacy" was first used by Simond in 1974 in an article called "Health Education as Social Policy". In the article, which discusses health education as a policy issue affecting the health system, setting a minimum standard for health literacy at all school levels was mentioned (Baker, 2006).The importance of the relationship between health literacy levels and health outcomes was emphasized for the first time in the World Health Organization reports in 1990 (Aslantekin and Yumrutas, 2014).There are several approaches to the behavioural responses of society to the pandemic: "*The Protection Motivation Theory (PMT), Health Belief Model (HBM), Extended Parallel Process Model (EPPM), Precaution Adoption Process Model (PAPM)*", and Transteorik Model (TM).The basic idea underlying these approaches is that people

react to a threat by taking an action. Threat assessment is related to risk perception (Norman et al 2005; Champion and Skinner, 2008; Ozkan et al 2020).The cultural factors and the health system affect the level of health literacy in the education system and society in which individuals are involved. As a result of this situation, the cost of the health system is greatly affected (Nielsen-Bohlman et al 2004; Cati et al 2018). The Covid-19 Pandemic showed us that the nation-states being caught unprepared for the sudden outbreaks resulted in the management of the process with social restrictions. It has disrupted the health systems and socio-economic balance of societies during and after the pandemic and still has caused tribulations in returning to the old normals. For this reason, it has led to the need for individuals to attach importance to health literacy education, especially during their student years. Thus, this study aims to determine the health literacy levels of students during the Covid-19 Pandemic and prepare a method and a theoretical basis for raising awareness.

Methods

Participants

A total of 301 participants (220 male and 81 female) who educated at "*Mehmet Akif Ersoy University, Faculty of Sports Science"s* in the spring semester of the 2021-2022 academic year constituted the study population "106 participants from the Physical Education and Sports Teaching Department, 45 from the Sports Management Department, and 150 from the Coaching Education Department". It was formed using the convenience sampling method from students who were studying at the "Physical Education and Sports Teaching, Sports Management, and Coaching Education Departments" and accepted to fill out the questionnaire.

Materials

The Turkish Health Literacy Scale (THLS) was developed by Okyay and Abacigil (2016) with the support of the Turkish Ministry of Health (Okyay and Abacigil, 2016).The reliability and validity studies of the THLS, which was developed in line with the European Health Literacy Survey-HLS-EU and consisted of 32 questions in total, were carried out by the Ministry of Health and started to be implemented in Turkey. It is a 5-point Likert type scale, consists of 32 items, and has a form of 2x4.Thus, it consists of eight components in total, two sub-dimensions (Health care and Disease prevention and health promotion) and four information processing stages (accessing, understanding, evaluating, and applying health-related information).In the validity analysis we conducted for the Turkish Health Literacy Scale used in this study, which consists of 32 items, the Cronbach α internal consistency value was determined as 0.962.Accordingly, the obtained reliability values are very sufficient.

Statistical Analysis

"For the analysis of the data collected in the research, the SPSS 21.0 statistics software was used. In addition, while analysing the data, assets like arithmetic mean, frequency, standard deviation and percentage, which are descriptive statistics, were examined.The Independent Samples t-Test was used for pairwise comparisons, the One Way ANOVA test for multiple comparisons, and the Tukey's test" for post-hoc analysis.

Tablo 1

The Skewness and Kurtosis Values Obtained for the Research Scales

	Skewness	**Kurtosis**
"Health Care Accessing Health-Related Information	-1,274	3,230
Health Care Understanding Health-Related Information	-1,005	1,941
Health Care Appraising Health-Related Information	-0,832	1,071
Health Care Applying Health-Related Information	-1,085	1,987
Disease Prevention and Health Promotion - Accessing Health-Related Information	-1,073	1,919
Disease Prevention and Health Promotion- Understanding Health-Related Information	-1,104	1,867
Disease Prevention and Health Promotion- Appraising Health-Related Information	-0,916	0,865
Disease Prevention and Health Promotion- Applying Health-Related Information"	-0,930	1,194

As seen in Table 1, as a result of the normal distribution analysis, the skewness and kurtosis values obtained for the Turkish Health Literacy scale are between -2 and +2. Accordingly, in Turkey Health Literacy scale, which shows normal distribution, independent T test was used for pairwise comparisons, One Way Anova test for multiple comparisons, and Tukey test as post hoc test.

Results

"Information on the research results is given below"

Tablo 2

Demographic information of the sample group

		f	**%**
Age	"18-22 years old	82	27,2
	21-22 years old	142	47,2
	23-24 years old	55	18,3

		f	%
	25 years old and older	22	7,3
Gender	Male	220	73,1
	Female	81	26,9
Grade	1st Grade	53	17,6
	2nd Grade	53	17,6
	3rd Grade	120	39,9
	4th Grade	75	24,9
Department	Physical Education and Sports Teaching	106	35,2
	Sports Management	45	15,0
	Coaching Education	150	49,8
How do you spend your spare time?	I read a book	95	31,6
	I go to the cinema/theatre	64	21,3
	I visit historical places	26	8,6
	I go to entertainment venues	90	29,9
	I do shopping	26	8,6
How would you describe yourself in daily life?	Quiet and calm	92	30,6
	Social and extrovert	133	44,2
	Hyperactive	46	15,3
	Nervous and hot-tempered”	30	10,0

Of the students participating in the study, 47.2% are in the 21-22 age group, followed by the 18-20 age group with 27.2%, and the 23-24 age group with 18.3%. In addition, 73.1% of the participants are male and 26.9% are female.Considering the class distributions, 17.6% of the students are 1st and 2nd graders, 39.9% are 3rd graders, and 24.9% are 4th graders. About half of the students (49.8%) study in the coaching education department, 35.2% “in the physical education and sports teaching department”, and 15.0% in the sports management department. When we take a look at how students spend their free time, 31.6% prefer to read books, 29.9% prefer to go to entertainment venues, and 21.3% prefer to go to the cinema/theatre. A lower rate of 8.6% seems to visit historical places and goes shopping. When it comes to how students describe themselves, 44.2% define themselves as social and extroverted, 30.6% as quiet, 15.3% as hyperactive, and 10.0% as nervous-hot tempered (Table 1).

Tablo 3

The Mean and Standard Deviation Results Obtained for the İtems Of The Turkish Health Literacy Scale

	N	Mean	SD
“1. Investigating whether it is a sign of illness or not when you have a complaint about your health.	301	4,06	0,87

	N	Mean	SD
2. Reading and understanding any relevant article (such as brochures, booklets, and posters) when you have a complaint about yourhealth.	301	4,00	0,90
3. Evaluating whether the advice of your family or friends is reliable when you have a complaint about your health.	301	3,94	0,89
4. Doing research and finding out which doctor you should contact when you want to go to a health institution.	301	4,14	0,88
5. Searching and finding out how to make your application (such as making an appointment) when you want to go to a health institution.	301	4,17	0,88
6. Making an appointment via phone or the internet when you want to go to a health institution.	301	4,18	0,94
7. Searching and finding information about treatments for diseases that concern you.	301	4,09	0,82
8. Understanding your doctor's explanations about your illness.	301	3,89	0,96
9. Evaluating the advantages and disadvantages of the different treatment options your doctor recommends	301	3,84	0,99
10. Using your medicines as recommended by healthcare professionals (such as doctors, pharmacists)	301	4,03	0,97
11. Understanding the instructions for using the medicine in the pillbox.	301	3,96	1,04
12. Deciding if you need a second opinion from a different doctor.	301	3,83	1,05
13. Understanding information about test/pre-exam preparations (such as following a diet).	301	3,94	1,05
14. Searching and finding the location of the unit you want to reach in the hospital (such as laboratory, polyclinic).	301	3,92	1,04
15. Deciding what to do in an emergency (such as an accident, sudden health problem).	301	3,73	1,10
16. Calling an ambulance when necessary.	301	4,05	1,02
17. Having regular health follow-ups and controls as recommended by your doctor.	301	3,95	0,98
18. Searching and finding information about conditions that may be harmful to your health, such as being overweight, or hypertension.	301	4,04	0,95
19. Understanding health warnings about conditions that may be detrimental to your health, such as being overweight, or hypertension.	301	4,04	0,99
20. Searching and finding information on how to deal with unhealthy behaviors such as smoking, insufficient physical activity.	301	4,02	0,99
21. Understanding health warnings about how to deal with unhealthy behaviors such as smoking, insufficient physical activity.	301	4,02	1,03
22. Searching and finding information about health screenings (such as breast screenings for women and prostate-related diseases for men) related to your age, gender, and health status.	301	3,95	1,03
23. Understanding the recommendations taken from the internet, newspaper, television, and radio on being healthier.	301	3,98	0,98
24. Deciding whether the information suggested for being healthier in sources such as the internet, newspaper, television, or radio is reliable or not.	301	3,90	1,04
25. Understanding the information on food packaging that you think may affect your health.	301	3,89	1,04
26. Evaluating the positive and negative features of the environment you live in (such as home, street, neighbourhood) that affect health.	301	3,89	1,03
27. Finding information about what can be done to make the environment you live in (such as home, street, neighbourhood) healthier.	301	3,97	1,03

	N	Mean	SD
28. Evaluating which of your daily behaviors (such as exercising, eating healthy, not smoking) affect your health.	301	4,06	1,01
29. Changing your lifestyle (such as exercising, eating healthy, not smoking) for your health.	301	3,92	1,05
30. Being able to apply the diet list given by the dietitian.	301	3,84	1,07
31. Advising your family or friends to be healthier.	301	3,92	1,10
32. Interpreting health-related policy changes"	301	3,78	1,17

When the answers given by the students to the items related to the health care sub-dimension are examined;

Item 4 – "Researching and finding out which doctor you should consult when you want to go to a health institution" with an x=4.14 average, Item 5 – "Searching and finding out how to make your application (such as making an appointment) when you want to go to a health institution" with an x=4, 17 average, and 6th item – "Making an appointment via telephone or internet when you want to go to a health institution" with an x=4.18 average have the highest values. On the contrary, Item 12 – "Deciding whether you need a second opinion from a different doctor" with an x=3.83 average and Item 15 – "Deciding what to do in an emergency (accident, sudden health problem)" with an x=3.73 average have the lowest values. When the answers they gave to the items belonging to the sub-dimension of disease prevention and health promotion were examined; Item 18 – "Searching and finding information about conditions that may be harmful to your health, such as being overweight, or hypertension" with an x=4.04 average, Item 19 – "Understanding health warnings about conditions that may be harmful to your health, such as being overweight, or hypertension " with an x=4.04 average, Item 20 – "Searching and finding information on how to deal with unhealthy behaviours such as smoking, insufficient physical activity" with an x=4.02 average, Item 21 – "Understanding the health warnings about how to deal with unhealthy behaviours such as smoking, insufficient physical activity" x=4.02 average, and Item 28 – "Evaluating which of your daily behaviours (such as exercising, eating healthy, not smoking) affect your health" with an x=4.06 average have the highest values.In addition, Item 30 – "Being able to apply the diet list given by the dietitian" with an x=3.84 average and Item 32 – "Interpreting the policy changes related to health" with an x=3.78 average have the lowest values.In compliance with the results, the students are highly competent regarding how and which doctor to apply to in a health institution, and how to make an appointment. Apart from this, they are highly sufficient in making inquiries and understanding harmful issues such as overweight, hypertension, and smoking. Also, they are highly knowledgeable and conscious about behaviours that affect their health in daily life (Table 3).

Tablo 4

The Mean and Standard Deviation Results of the Sub-Dimensions of the Turkish Health Literacy Scale

	N	Mean	SD
"Health Care Accessing Health-Related Information	301	4,11	0,68
Health Care Understanding Health-Related Information	301	3,95	0,76
Health Care Appraising Health-Related Information	301	3,83	0,78
Health Care Applying Health-Related Information	301	4,04	0,77
Disease Prevention and Health Promotion - Accessing Health-Related Information	301	4,00	0,76
Disease Prevention and Health Promotion- Understanding Health-Related Information	301	3,99	0,83
Disease Prevention and Health Promotion- Appraising Health-Related Information	301	3,91	0,83
Disease Prevention and Health Promotion- Sağlıkla Applying Health-Related Information	301	3,91	0,82
Overall Average"	301	3,97	0,68

The overall average of the data of the students was determined as x=3.97±0.68. According to this result, they have high health literacy levels. In other words, they can smoothly realize the stages of accessing, understanding, appraising and applying information about health literacy. Considering the averages of the sub-dimensions, accessing health-related information in the health care dimension had the highest value with an average of x=4.11, and appraising health-related information in the health care dimension had the lowest value with an average of x=3.83.Although there is no huge difference between the averages, the students have the highest level of competence or literacy in accessing health-related information (Table 4).

Tablo 5

The T-Test Results Comparing Health Literacy Levels by the Gender Variable

	Cinsiyet	N	ORT	SS	t	P
"Health Care-Accessing Information	Male	220	4,04	0,71	-3,006	0,003**
	Female	81	4,31	0,58		
Health Care-Understanding Information	Male	220	3,88	0,76	-2,744	0,006**
	Female	81	4,15	0,72		
Health Care -Appraising Information	Male	220	3,77	0,80	-2,344	0,020**
	Female	81	4,01	0,69		
Health Care -Applying Information	Male	220	3,99	0,80	-1,948	0,052
	Female	81	4,19	0,68		
Disease Prevention and Health Promotion - Accessing Information	Male	220	3,96	0,79	-1,443	0,150
	Female	81	4,10	0,66		

Disease Prevention and Health Promotion - Understanding Information	Male	220	3,91	0,87	-2,658	0,008**
	Female	81	4,19	0,66		
Disease Prevention and Health Promotion - Appraising Information	Male	220	3,84	0,87	-2,286	0,023**
	Female	81	4,09	0,67		
Disease Prevention and Health Promotion - Applying Information"	Male	220	3,86	0,86	-1,753	0,081
	Female	81	4,05	0,71		

** Indicates a significant difference at the P<0.05 level.

Accordingly, the female students (x=4.31±0.58, x=4,15±0,72, x=4,01±0,69) have a significantly higher literacy rate than male students (x=4.04±0.71, x=38±0,76, x=3,77±0,80) "in terms of accessing, understanding and appraising information in the health care" sub-dimension, respectively (x<0,05).In addition, the female students (x=4,19±0,66, x=4,09±0,67) have a significantly higher literacy rate than male students (x=3,91±0,87, x=3,84±0,87) in "terms of understanding and appraising information in the disease prevention and health promotion sub-dimension, respectively (p<0,05) (Table 5).

Tablo 6

The Results of the Correlation Analysis Showing the Relationships Between the Sub-Dimensions of the Health Care Dimension

		"Health Care-Accessing Information	**Health Care-Understanding Information**	**Health Care-Appraising Information**	**Health Care-Applying Information"**
"Health Care-Accessing Information	PearsonCorrelation	1	,781**	,736**	,741**
	Sig. (2-tailed)		,000	,000	,000
	N	301	301	301	301
Health Care-Understanding Information	PearsonCorrelation	,781**	1	,798**	,759**
	Sig. (2-tailed)	,000		,000	,000
	N	301	301	301	301
Health Care-Appraising Information	PearsonCorrelation	,736**	,798**	1	,690**
	Sig. (2-tailed)	,000	,000		,000
	N	301	301	301	301
Health Care-Applying Information"	PearsonCorrelation	,741**	,759**	,690**	1
	Sig. (2-tailed)	,000	,000	,000	
	N	301	301	301	301

** The Correlation is significant at a 0.01 bidirectional level.

The "*Pearson correlation coefficient was examined in the correlation analysis of students conducted to determine the relationship between the factors of accessing, understanding*", appraising and applying information related to the health care sub-dimension; According to the results, there was a **strong positive correlation** between the level of students' accessing, understanding (r=0.781 p=0.000), appraising (r=0.736 p=0.000) and applying information (r=0.741 p=0.000).Likewise, regarding the health care sub-dimension, there was a **strong positive**

correlation between the level of students' understanding, appraising (r=0.798 p=0.000) and applying information (r=0.759 p=0.000). Additionally, in the health care sub-dimension, there was a **strong positive correlation** between students' level of appraising and applying information (r=0.690 p=0.000). Accordingly, the students' health literacy levels strongly affect each other in terms of accessing, understanding, appraising and applying information regarding the health care sub-dimension. In other words, the increase in the sub-factors of the health care sub-dimension has a bidirectional effect on the increase in other factors (Table 6).

Tablo 7

The Results of the Correlation Analysis Showing the Relationships Between the Sub-Dimensions of the Disease Prevention and Health Promotion Dimension

		"Disease Prevention and Health Promotion - Accessing Information	**Disease Prevention and Health Promotion- Understanding Information**	**Disease Prevention and Health Promotion- Appraising Information**	**Disease Prevention and Health Promotion- Applying Information"**
"Disease Prevention and Health Promotion- Accessing Information	PearsonCorrelation	1	,829**	,790**	,753**
	Sig. (2-tailed)		,000	,000	,000
	N	301	301	301	301
Disease Prevention and Health Promotion- Understanding Information	PearsonCorrelation	,829**	1	,785**	,705**
	Sig. (2-tailed)	,000		,000	,000
	N	301	301	301	301
Disease Prevention and Health Promotion- Appraising Information	PearsonCorrelation	,790**	,785**	1	,766**
	Sig. (2-tailed)	,000	,000		,000
	N	301	301	301	301
Disease Prevention and Health Promotion- Applying Information"	PearsonCorrelation	,753**	,705**	,766**	1
	Sig. (2-tailed)	,000	,000	,000	
	N	301	301	301	301

** The Correlation is significant at a 0.01 bidirectional level.

The "*Pearson correlation coefficient was examined in the correlation analysis of students conducted to determine the relationship between the factors of accessing, understanding*", apprasing and applying the information in the sub-dimension of disease prevention and health promotion related to health literacy; According to the results, there is a **very strong positive correlation** between students' level of accessing and understanding information (r=0.829 p=0.000) in the sub-dimension of disease prevention and health promotion. There is also a **strong positive correlation** between the students' level of accessing and their level of appraising information (r=0.790 p=0.000), and their level of applying information (r=0.753 p=0.000). On the other hand,

regarding the sub-dimension of disease prevention and health promotion, there was a **strong positive correlation** between students' levels of understanding and appraising information (r=0.785 p=0.000) and applying information (r=0.705 p=0.000).Additionally, there was a **strong positive correlation** between students' level of appraising and applying information (r=0.766 p=0.000).As to the results, students' health literacy levels strongly affect each other in terms of accessing, understanding, appraising and applying information in the sub-dimension of disease prevention and health promotion. In other words, the increase in the sub-factors of the sub-dimension of disease prevention and health promotion has a bidirectional effect on the increase of other factors (Table 7).

Tablo 8

The Results of the Correlation Analysis Showing the Relationships Between the Sub-Dimensions of the Health Care and Disease Prevention And Health Promotion Dimensions

		"Disease Prevention and Health Promotion - Accessing Information	**Disease Prevention and Health Promotion - Understanding Information**	**Disease Prevention and Health Promotion - Appraising Information**	**Disease Prevention and Health Promotion - Applying Information"**
"Health Care-Accessing Information	PearsonCorrelation	,713**	,635**	,688**	,680**
	Sig. (2-tailed)	,000	,000	,000	,000
	N	301	301	301	301
Health Care - Understanding Information	PearsonCorrelation	,708**	,685**	,736**	,724**
	Sig. (2-tailed)	,000	,000	,000	,000
	N	301	301	301	301
Health Care - Appraising Information	PearsonCorrelation	,699**	,655**	,732**	,699**
	Sig. (2-tailed)	,000	,000	,000	,000
	N	301	301	301	301
Health Care - Applying Information"	PearsonCorrelation	,741**	,692**	,727**	,718**
	Sig. (2-tailed)	,000	,000	,000	,000
	N	301	301	301	301

** The Correlation is significant at a 0.01 bidirectional level.

The "*Pearson correlation coefficient was examined in the correlation analysis of students conducted to determine the relationships between the health care and the disease prevention and health promotion sub-dimensions regarding health literacy*"; According to the results, the correlation coefficients between the students' health literacy levels in terms of accessing, understanding, appraising, and applying the information in the health care sub-dimension are in the range (0,60< r<0,80), and there is a **strong, positive bidirectional relationship** between all factors. In other words, there is a strong, positive bidirectional relationship between students' health literacy levels in the health care sub-dimension and the disease prevention and health promotion sub-dimension (Table 8).

Discussion

The answers given by the students to the question "Interpreting the policy changes related to health" had the lowest average values. Just as some other researchers have stated, people with low health literacy tend to benefit less from preventive health services (Ishikawa and Kiuchi, 2010; Peerson and Saunders, 2009). As per this statement, the students are more distant toward political issues. According to the general evaluations of the results, they are highly competent regarding how and which doctor to apply to in a health institution, and how to make an appointment. Apart from this, they are highly sufficient in obtaining information and understanding harmful issues such as being overweight, hypertension, and smoking. Other than that, they are highly knowledgeable and conscious about behaviours that affect their health in daily life. In another study conducted on nursing department students, their health literacy levels were found to be "problematic - limited health literacy"(Ergun, 2017). The female students had higher literacy than male students with a significant difference in terms of accessing, understanding and appraising information in the health care sub-dimension. In epidemics, people's behavioural responses have been shown to influence societal outcomes (Korea Centers for Disease Control and Prevention, 2016; Budd et al 2020; Palacios Cruz et al 2020; Heymann and Shind, 2020). The perception and implementation of interventions by society are closely related to individuals' health literacy levels (World Health Organization, 1998). The female students had higher literacy than male students with a significant difference in terms of understanding and appraising information in the disease prevention and health promotion sub-dimension. Regarding the health care sub-dimension, students' health literacy levels strongly affect each other in terms of accessing, understanding, appraising and applying information. In other words, the increase in the sub-factors of the health care sub-dimension has a bidirectional effect on the increase in other factors. In the sub-dimension of disease prevention and health promotion, students' health literacy levels strongly affect each other as to accessing, understanding, appraising and applying information. That is to say, the increase in the sub-factors of the disease prevention and health promotion sub-dimension has a bidirectional effect on the increase of other factors.

Conclusion

Accordingly, there is a strong, positive and bidirectional relationship between students' health literacy levels in the health care dimension and dimension of disease prevention and health promotion. Under the data obtained from university students, we can clearly say that their health literacy levels are high. In other words, the students participating in the study can efficiently realize the stages of accessing, understanding, appraising and applying information about health literacy.

Considering the averages obtained from the sub-dimensions, the highest value was reached in accessing health-related information in the health care dimension whereas the lowest value was in appraising health-related information in the same dimension. Although there is no huge difference between the averages, the students have the highest level of competence or literacy in accessing health-related information. As a result, health literacy is one of the issues that should be given priority in the health systems of states and the control of epidemics to raise awareness in society.

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