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THE IMPACT OF HEALTH LITERACY AND HEALTH BELIEFS ON THE ATTITUDES TOWARDS CANCER SCREENING: A CROSS-SECTIONAL STUDY

Sağlık Okuryazarlığı ve Sağlık İnançlarının Kanser Taramalarına Yönelik Tutumlar Üzerindeki Etkisi: Kesitsel Bir Çalışma

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ABSTRACT

Early detection of any cancer is crucial for effective treatment. Cancer screening programs are extensively implemented in numerous countries for this purpose. The acceptance of screening programs by young populations is important because their attendance at these programs can reduce the burden of cancer in the health system in the future. Therefore, investigating young people's attitudes towards cancer screening can be useful to enhance the effectiveness of screening programs. This study aims to examine this phenomenon by analyzing the effects of health literacy level and health beliefs on cancer. The study has been designed in a cross-sectional type. 419 people between the ages of 18 and 30 have been included in the study. The results showed significant relations between health literacy, health beliefs, and attitudes towards cancer screening. Health literacy, perceived severity, perceived benefits, and perceived barriers explained 38% of the variance in attitudes toward cancer screening. This study contributes to the existing body of knowledge by providing information about the perceptions of the young population about cancer screening programs and their predictors.

Keywords: Cancer, Cancer screening, Health belief model, Health literacy.

ÖZ

Herhangi bir kanser türünün erken teşhisi, etkili bir tedavi için çok önemlidir. Bu amaçla birçok ülkede erken teşhis için kanser tarama programları yaygın olarak uygulanmaktadır. Tarama programlarının genç nüfus tarafından kabul edilmesi, bu programlara katılımlarının gelecekte sağlık sistemindeki kanserin yükünü azaltabileceği için önemlidir. Bu nedenle, genç popülasyonda kanser taramasına yönelik tutumların incelenmesi, tarama programlarının etkinliğini artırmak için yararlı olabilir. Bu çalışma, sağlık okuryazarlığı düzeyi ve sağlık inançlarının kanser taramalarına ilişkin tutumları üzerindeki etkilerini inceleyerek bu olguyu açıklamayı amaçlamaktadır. Çalışma kesitsel tipte tasarlanmıştır. Çalışmaya 18-30 yaş arası 419 kişi dahil edilmiştir. Sonuçlar, sağlık okuryazarlığı, sağlık inançları ve kanser taramasına yönelik tutumlar arasında anlamlı ilişkiler olduğunu göstermektedir. Sağlık okuryazarlığı, algılanan ciddiyet, algılanan faydalar ve algılanan engeller, kanser taramasına yönelik tutumlardaki varyansın %38'ini açıklamaktadır. Bu çalışma, genç nüfusun kanser tarama programları ve bu programları etkileyen faktörler hakkındaki algılarına yönelik bilgi sağlayarak mevcut bilgi birikimine katkıda bulunmaktadır.

Anahtar kelimeler: Kanser, Kanser taraması, Sağlık inanç modeli, Sağlık okuryazarlığı.

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INTRODUCTION

Cancer ranks as an important public health challenge globally and in Türkiye (Doğan N., Kaçan & Doğan I., 2020; Siegel, Miller, Fuchs & Jemal, 2022). It is defined as a diverse group of diseases that can occur when; abnormal cells grow uncontrollably in almost every organ or tissue of the body, exceed their normal limits, invade adjacent parts of the body and/or spread to other organs (World Health Organization [WHO], 2022). The global increase in cancer cases is attributed to population growth, aging population, and risky lifestyle choices (Torre, Siegel, Ward & Jemal, 2016). Cancer was the second leading cause of death globally, with approximately 9.6 million deaths in 2018. The continuous rise in cancer cases puts substantial physical, emotional and financial strains on individuals, families, communities and health systems (WHO, 2022). Therefore, cancer prevention is among the most critical public health priority today (World Cancer Research Fund International [WCRF], 2022). In Türkiye, 233,834 new cancer cases were detected in 2020. The number of prevalent cases (5-years) was 581,636 (International Agency for Research on Cancer [IARC], 2020). The rate of deaths from cancer in Türkiye reported as 1 in 5 in total deaths, exceeds the rates worldwide (Keser Şahin, Aslan & Şahin, 2020).

Cancer-related deaths can be reduced by early diagnosis in symptomatic cases and by screening programs in asymptomatic cases (WHO, 2022). Given cancer's profound individual and societal effects, the significance of preventive measures, early diagnosis and treatment becomes evident. Türkiye also efforts to increase cancer screening programs to enable early diagnosis and treatment. Screening refers to the use of simple tests in a healthy population to identify asymptomatic individuals and undiagnosed diseases. WHO provides guides to the process of cancer screening (WHO, 2010). Türkiye carries out breast cancer, cervical cancer, and colorectal cancer screenings aligns with WHO recommendations (T.C. Sağlık Bakanlığı, 2017).

Health beliefs and health literacy are important in terms of ensuring the participation of individuals in and achieving the goals of the cancer screening programs. The health belief model (HBM) developed in the 1950s predicts individuals' health-related attitudes and actions and has been adapted for different health issues over the years (Rosenstock, 1974). HBM is still used as a tool to measure why individuals participate in health protection and disease prevention programs. HBM focuses on two aspects: threat perception and behavioral assessment. Threat perception is formed within the framework of two basic beliefs: the perceived susceptibility to the disease/problem and the severity of the expected consequences of the disease. The

behavioral evaluation also consists of two different beliefs. These are beliefs about the benefits or effectiveness of proposed health behaviors and beliefs about the costs or barriers to performing the behavior. In addition, cues to action have been suggested to trigger health behaviors when appropriate beliefs are held (Abraham & Sheeran, 2015). Despite HBM's many conceptual modifications, it suggests that individuals will take action for the proposed health behavior when they feel susceptible to a health condition/disease and this health condition is characterized by a high severity, and when the benefits of adopting the behavior outweigh the costs (J. D. Fisher & W. A. Fisher, 2000). In general, HBM suggests that perceived susceptibility and severity to a particular health threat, perceived benefits of and barriers to a particular health-promoting or curative action, and clues of action are key factors influencing health behaviors (O'Connor, 1995).

Numerous studies have explored the relationship between the health belief model and cancer screening. A study found statistically significant differences were found between those who do breast self-examination and those who do not, in terms of the sub-dimensions of the health belief model. While the perceived susceptibility, perceived severity, and perceived benefits were higher, perceived barriers were found to be lower in those who performed breast self-examination (Pak & Eliş Yıldız, 2020). Similarly, in another study, it was determined that those who want to have prostate cancer screening had higher perceptions of susceptibility and severity, health motivation and perceived benefit, and the mean of perceived barriers were lower. (Demirbaş & Onmaz, 2021). Aiken et al. (1994) reported that theory-based programs, including HBM, increased the intention toward mammography screening. A systematic literature review evaluating health beliefs related to cervical cancer reported that perceptions regarding HBM sub-dimensions have a significant relationship with cervical cancer screening (Johnson, Mues, Mayne & Kiblawi, 2008). Similarly, in a cross-sectional study on participation in cervical cancer screening, statistically significant relationships were found between HBM sub-dimensions and interest in participation in cervical cancer screening (Ampofo, Adumatta, Owusu & Awuviry-Newton, 2020). There are also many studies evaluating HBM in terms of colorectal cancer screening. In a systematic literature review, significant relationships were found between HBM sub-dimensions and colorectal cancer screening intention (Lau, Lim, Wong & Tan, 2020).

Health literacy, which has recently been recognized as an important factor for individual health behaviors and health outcomes (Goto, Ishikawa, Okuhar & Kiuchi, 2019), is defined as "cognitive and social skills that determine the motivation and ability of individuals to access, understand and use information in a way that will improve and maintain health" (Nutbeam and

Kickbusch, 1998). Studies have reported associations between low health literacy and reduced cancer screening. In a study, it was determined that low health literacy among Chinese and Americans was negatively associated with breast cancer and colorectal cancer screenings (Sentell, Tsoh, T. Davis, J. Davis & Braun, 2015). Another study emphasized the importance of improving health literacy to increase cancer screening (Li, Matthews & Dong, 2018). According to Berkman et al. (2011), individuals with low levels of health literacy have difficulty accessing health services such as cancer prevention, cancer screening, diagnosis, and treatment. Kim and Han (2014) also stated that there is a relationship between health literacy and cancer screening. Health literacy has a significant impact on health outcomes both individually and socially. Considering the role of health literacy in attitudes towards cancer screening, the importance of health literacy in areas such as cancer screening, post-screening diagnosis, and treatment processes comes to the fore.

Based on the existing literature, this study aims to reveal the effect of health beliefs and health literacy on the general attitude toward cancer screening. As discussed above, HBM provides a comprehensive framework to comprehend how individuals perceive the threat of cancer and the possible benefits of screening. Considering the HBM includes “cues to action” which refers to a trigger to change a behavior, the first hypothesis of the study is as;

H0a: There is not a significant and positive correlation between the health belief model and attitudes towards cancer screenings.

H1a: There is a significant and positive correlation between the health belief model and attitudes towards cancer screenings.

On the other hand, the fact that health literacy refers to the ability to access and comprehend health information, it is expected to enable individuals to better comprehend cancer screening in terms of its possible benefits. Health literacy may also influence the risk perception of individuals, empower them to overcome barriers and hereby increase the propensity to have cancer screening. Therefore, the second hypothesis has been formulated as follows;

H0b: There is not a significant and positive correlation between health literacy and attitudes towards cancer screenings.

H1b: There is a significant and positive correlation between health literacy and attitudes towards cancer screenings.

Consequently, this study assumes that health belief model and health literacy may be the prominent determinants of the attitudes towards cancer screening based on the existing discussion. These two concepts are significant in shaping attitudes towards health-related

issues. Together health literacy and health belief model possibly shape individuals' attitudes towards cancer screening by determining their ability to understand, evaluate health information and comprehend the importance of cancer screening. Therefore, the third hypothesis of the study has been formulated as follows;

H0c: Health belief model and health literacy do not significantly affect the attitudes towards cancer screening.

H1c: Health belief model and health literacy significantly affect the attitudes towards cancer screening.

MATERIAL AND METHOD

Design and Data Collection

The study is quantitative and cross-sectional. An online questionnaire was used as the data collection tool in the study. The questionnaire form consisted of four parts. In the first part, general information about the participant's age, gender, education level, having a relative diagnosed with cancer and chronic disease conditions were included. In the second part of the questionnaire, the "Health Belief Model" scale, developed by Barnes (2000) and adapted in Turkish by Pınar et al., 2011, was revised and used for general cancer screenings in line with the purpose of the research. The revised version of the scale is a 5-point Likert-type scale with 21 items and five sub-dimensions including perceived sensitivity (4 items), perceived seriousness (7 items), perceived benefits (2 items), perceived barriers (4 items), and self-efficacy (4 items). There is not any reverse item in this scale. Increasing scores indicate a higher perception and sensitivity for the related sub-dimension. Confirmatory factor analysis (CFA) was performed due to the revision of the scale. Maximum likelihood was used as the estimation method. Before conducting the CFA five independent expert opinions were granted. All of the experts are working at different universities. Two of them have a PhD in public health, two in health management and one in behavioral sciences. The experts stated that the revised items were appropriate and required no changes. Multivariate assessment of the normality showed that the data subjected to CFA distributed normally (C.R. < 10) and as a result of the CFA, it was determined that the five sub-dimensions and the 21-item scale had good fit index values. Some fit index values were as follows; CMIN/DF: 2.821, RMR: 0.072, GFI: 0.895, AGFI: 0.862, NFI: 0.886, CFI: 0.923, RMSEA: 0.066 with acceptable values. (Harrington, 2008; Gürbüz and Şahin, 2014). The Cronbach's alpha internal consistency coefficient of the scale was 0.812. In the third part of the questionnaire, a one-dimensional and 12-item "Health Literacy Scale-Short Form" developed by Duong et al., (2019) and adapted into Turkish by

Karahan Yılmaz and Eskici (2021), was used. The scale is in 4-point Likert type and there is not any reverse item in this scale. The Cronbach's alpha internal consistency coefficient of the scale was 0.860. An increase in scale scores indicates an increase in the level of health literacy. In the last part of the questionnaire, a one-dimensional and 15-item "Attitude Scale Towards Cancer Screening-Short Form" developed by Yıldırım Öztürk et al., (2020) was used. The scale is in 5-point Likert type and the last 5 items are reverse items. The Cronbach's alpha internal consistency coefficient of the scale was 0.664. Increasing scale scores indicate an increase in positive attitudes towards cancer screenings.

The population was reached by purposive and snowball sampling methods. The online questionnaire was distributed through the networks of the researchers. The criteria for inclusion in the study were to live in the southern provinces of Türkiye and to be between the ages of 18-30 at the time of the research. Southern provinces were preferred due to geographical proximity to the provinces where the researchers were working. The reason for the age criterion is that it is important to raise awareness and diagnose diseases such as cancer in the early period. Individuals who did not complete the questionnaire completely or who were over the age limit were excluded from the study. The total number of excluded questionnaires is 23.

Population and Sample

To determine the smallest sample size, the ready-made table in Gürbüz and Şahin (2014)'s study was used and the minimum sample size was determined as 384. The study included 419 people between the ages of 18 and 30. The study population of the research was young individuals living in the East Mediterranean Region of Turkiye. The sample of the study consisted of 419 people.

Data Analysis

In the study, descriptive statistics about the participants were calculated first. For all the variables, kurtosis and skewness values were between ±1.5. Therefore, the distribution of the variables was normal. Independent samples t-test, Pearson correlation and simple linear regression analyses were used. Before performing the simple linear regression analysis, the assumptions of the analysis were examined. There is a significant relationship between the independent variables, the sub-dimensions of the health belief model and health literacy, and the dependent variable, attitudes toward cancer screenings. There is no strong relationship between independent variables. The correlation coefficients between independent variables are less than 0.40. Therefore, there is no multicollinearity and autocorrelation problem.

Accordingly, the assumptions of the regression analysis were met and the results were given in results. The significance was accepted as $p<0.05$.

Ethical Consideration

The written ethical approval was obtained from Tarsus University Scientific Research and Publication Ethics Board (30/06/2022-2022/58).

RESULTS

The mean age of the participants was 21.53±3.13. 70.4% of the participants were female and 29.6% were male. While 11.5% of the participants were at high school or lower education level, 78.3% were at university level and 10.3% were at postgraduate level. 38.9% of the participants stated that they had cancer in their relatives and 17.4% stated that they had chronic diseases. The perceived sensitivity level of the participants was low, the perceived severity level was moderate, the perceived benefit level was moderate, the perceived barrier level was low, and the self-efficacy level was low. Their levels of health literacy and attitudes towards cancer screening were high (Table 1).

Tablo 1. Descriptive Statistics of the Scales.

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach's Alpha
Perceived sensitivity	419	4	20	10.25	3.243	0.206	0.133	0.879
Perceived seriousness	419	7	35	22.35	6.050	-0.326	-0.053	0.858
Perceived benefits	419	2	10	7.96	1.861	-1.115	1.296	0.691
Perceived barriers	419	4	20	9.57	3.282	0.337	-0.026	0.766
Self-efficacy	419	4	20	9.79	4.093	0.336	-0.535	0.892
Health literacy	419	12	48	35.31	6.115	-0.628	1.484	0.860
Attitude toward cancer screening	419	26	75	63.19	10.180	-0.981	0.450	0.664

Cancer screening attitudes of the participants differed significantly according to whether there was a cancer case in their relatives and whether they had chronic diseases ($p<0.05$). It was determined that those who have cancer in their relatives and those with chronic diseases had a more positive attitude towards cancer screenings (Table 2).

Table 2. Attitudes Towards Cancer Screening According to Cancer Cases Among Relatives and Having A Chronic Disease.

	Cancer cases among relatives	n	Mean	s.d.	t**	p
Attitude toward cancer screening	No	256	62.01	10.51	-3.069	0.002*
	Yes	163	65.04	9.37		
	Chronic Disease	**n**	**Mean**	**s.d.**	**t**	**p**
	No	346	62.62	10.58	-3.156	0.002*
	Yes	73	65.91	7.48		

*p<0.01, **Independent samples t test

The mean perceived sensitivity of the participants whose relatives had cancer was statistically higher ($p<0.01$). Among the participants with chronic disease, both the perceived sensitivity and the perceived severity average were statistically higher ($p<0.01$). The differences other than these were not statistically significant ($p>0.05$) (Table 3).

Table 3. Health Belief Model Sub-Dimensions and Health Literacy According to Cancer Cases Among Relatives

	Cancer cases among relatives	**Mean**	**s.d.**	**t**	**p**	**Chronic Disease**	**Mean**	**s.d.**	**t****	**p**
Perceived sensitivity	No	9.64	3.13	-4.952	0.000	No	9.81	3.08	-6.409	0.000*
	Yes	11.21	3.19			Yes	12.36	3.16		
Perceived seriousness	No	22.19	6.21	-0.653	0.514	No	21.95	6.01	-2.992	0.003*
	Yes	22.59	5.79			Yes	24.26	5.90		
Perceived benefits	No	7.96	1.84	0.063	0.950	No	7.92	1.92	-0.942	0.347
	Yes	7.95	1.89			Yes	8.15	1.52		
Perceived barriers	No	9.53	3.32	-0.306	0.760	No	9.49	3.27	-1.034	0.302
	Yes	9.63	3.22			Yes	9.93	3.33		
Self-efficacy	No	9.80	4.33	0.033	0.973	No	9.79	4.18	-0.83	0.934
	Yes	9.79	3.70			Yes	9.83	3.64		
Health literacy	No	35.16	6.24	-0.613	0.540	No	35.20	6.44	-0.968	0.334
	Yes	35.53	5.92			Yes	35.79	4.24		

*p<0.01, **Independent samples t test

There were statistically significant, positive and moderate relationships between health literacy and attitudes toward cancer screening ($p<0.01$, $r=0.346$), statistically significant, positive and weak relationship between perceived sensitivity and attitudes towards cancer screening ($p<0.05$, $r=0.107$), statistically significant, positive and weak relationship between perceived seriousness and attitudes towards cancer screening ($p<0.05$, $r=0.167$), statistically significant, positive and moderate relationship between perceived benefits and attitudes towards cancer screening ($p<0.01$, $r=0.417$) and statistically significant, negative and moderate relationship between perceived barriers and attitudes towards cancer screening ($p<0.01$, $r=-0.421$). There was no statistically significant relationship between self-efficacy and attitudes toward cancer screening ($p>0.05$) (Table 4).

Table 4. Relationships Among Health Literacy, Health Beliefs About Cancer Screening, and Attitudes Toward Cancer Screening[a,b]

	1	2	3	4	5	6	7	Tolerance	VIF
1.Health literacy	-							0.911	1.098
2.Percieved sensitivity	-0.006	-						0.918	1.089
3. Perceived seriousness	-0.103*	0.268**	-					0.733	1.363
4. Perceived benefits	0.205**	0.182**	0.338**	-				0.777	1.287
5. Perceived barriers	-0.199**	0.072	0.276**	-0.143**	-			0.848	1.179
6. Self-efficacy	0.207**	0.178**	-0.013	0.133**	-0.080	-		0.916	1.091
7. Attitude	0.346**	0.107*	0.167**	0.417**	-0.421**	0.067	-		

[a] Durbin-Watson = 1.870, [b]Pearson correlation analysis, *p<0.05, **p<0.01

Simple linear regression was used to examine the effects of health literacy, perceived severity, perceived benefits, perceived barriers, and perceived sensitivity on attitudes toward cancer screenings. For all variables, tolerance >0.20, VIF <10 and Durbin-Watson coefficient is between 1,5 and 2,5. Therefore, simple linear regression assumptions were provided (Karadas, Celik, Serpen & Toksoy, 2015; Shah, Ozel, Chesneau, Mohsin, Jamal & Bhatti, 2020). The enter method was used. The regression model was statistically significant ($p<0.05$). Perceived sensitivity did not contribute significantly to the model ($p>0.05$). Health literacy, perceived severity, perceived benefits, and perceived barriers explained 38% of the variance in attitudes toward cancer screening (Table 5).

Table 5. Factors Affecting Attitudes Towards Cancer Screening**

Variables*	**B**	**S.E.**	**β**	t	p
Health literacy	0,401	0,067	0,241	5,984	0,000
Perceived seriousness	0,375	0,074	0,223	5,063	0,000
Perceived benefits	1,283	0,237	0,235	5,403	0,000
Perceived barriers	-1,244	0,129	-0,401	-9,609	0,000
Perceived sensitivity	0,120	0,126	0,038	0,950	0,343
Constant	42,332	3,248	-	13,032	0,000
R^2=0,381, F=52,519, p<0.05					

*Dependent variable: Attitudes toward cancer screening
**Simple linear regression analysis

DISCUSSION

Most people are afraid of cancer because it has strong negative connotations (Subramanian, Klosterman, Amonkar. & Hunt, 2004). Some studies highlighted that people have negative feelings about the disease and the effect of cancer treatment programs (Kuralay et al., 2021, Cho et al., 2013, Vahabi et al., 2010). Understanding the factors that influence individuals' attitudes or perceptions towards any cancer related issue is still a challenge for scholars. However, considering its importance in early detection, understanding the factors that predict the attitudes towards cancer screening is crucial. People can be motivated to attend screening programs by targeting the right factors related to attitudes toward screening. Therefore, this study aimed to explore the role of two important concepts in attitudes toward cancer screening: health belief model and health literacy level. Although there are many similar studies, this study is important because it provides insights into the young population.

The study initially investigated the attitudes towards cancer screening among the young population, discovering a generally positive attitude towards screening. The study also found that attitudes significantly differed in favor of those who had a family history of cancer and had a chronic disease. These results contradict the previous studies in Türkiye. For instance, Uysal

and Toprak (2022), in their study, did not find that attitudes toward cancer screening among women differed according to family history and chronic disease status. However, this study showed that these factors are significantly related to attitudes towards screening and health beliefs. Having a family history poses a significant difference in perceived sensitivity while having a chronic disease is related to a significant difference in perceived sensitivity and seriousness level. This finding is in line with both the theory and the logical framework. Therefore, the sample characteristics used in the aforementioned study in the literature may have affected the findings of the study. It is recommended to conduct a new study with the same sample group.

The findings of the correlation analysis revealed that attitudes towards cancer screening had a significant relationship with the sub-dimensions of the health belief model except for self-efficacy. Considering the relationship with four of five dimensions, H1a is supported by the evidence. The findings showed also a significant, positive and moderate relationship between health literacy and attitudes toward cancer screening. Therefore, H1b is also supported by these findings.

Further, regression analysis identified the health belief model and health literacy as significant predictors of attitudes toward cancer screening. This finding supported H1c. Perceived seriousness and perceived benefits positively influenced attitudes toward cancer screening while perceived barriers had a negative impact. These findings align with several other studies. Luquis et al., (2019) indicated that perceived susceptibility and seriousness might influence the utilization of preventive services among young adults. Oliver et al., (2011) found that benefits and barriers were significantly associated with attitudes towards prostate cancer screening. Darvishpour et al., (2018) also reported significant impacts of perceived benefits and barriers on breast cancer screening behavior. However, some findings reported seemed to contradict the findings of the current study. They did not report any significant relationship between perceived seriousness while this current study reported a positive and moderate relationship between them. Another study on breast cancer screening behavioral intention found that perceived benefits and barriers had significant but low effects on screening behavior (Wang, Chen, Xie & Zhang, 2019). There are also many studies in Türkiye which justify the significance of the health belief model in explaining cancer screening behaviors or attitudes. Demirbas and Onmaz (2021) showed that those who considered participating in prostate cancer screening had significantly higher levels of perceived benefits, sensitivity and health motivation. Pınar et al., (2011) conducted a study on testicular cancer screening and found a relationship between perceived seriousness and screening status.

Health literacy was found to be with the highest effect followed by perceived seriousness on attitudes towards cancer screening. Some studies showed the importance of literacy level in attitudes towards cancer disease (Kaya et al., 2017; Kearney, Miller, Paul, Smith & Rice, 2003). Many studies also investigated the relationship between health literacy and cancer screening (Peterson, Dwyer, Mulvaney, Dietrich & Rothman, 2007; Han, Huh, M. T. Kim, J. Kim & Nguyen, 2014; Sentell et al., 2015) Davis et al., (2001) indicated the importance of health literacy skills in colorectal cancer screening. They highlighted that health literacy is an overlooked factor and that low literacy levels can be associated with a lack of knowledge on screening programs. Simmons et al., (2017) also indicated that health literacy and cancer screening are strongly linked and important in enhancing adults' ability to process cancer information.

CONCLUSION

As a consequence, this study reports that health literacy level and health beliefs related to cancer are significant predictors of attitudes toward cancer screening. Improving health literacy and implementing campaigns to influence the belief of the population about the disease and screening programs in the young population can contribute to the early detection of many types of cancers. Reducing perceived barriers and emphasizing the potential benefits of cancer screening can lead the young population to cancer screening programs. The findings of this study also highlight the importance of health literacy in any health behavior. Enhanced health literacy could modify health beliefs, reduce perceived barriers in screening, and increase access to professional medical advice, thus promoting screening benefits. Having these hints, the mediating role of health beliefs in the relationship between health literacy and attitudes toward cancer screening may be examined by further studies.

This research contributes to the existing knowledge in several ways. Unlike many studies focused on some specific cancer types and those who are at risk of that disease, this study focused on the young population's attitudes toward cancer screening which is an important type of preventive service. In addition, this study combines the effects of the health belief model and health literacy level. It has been revealed that attitudes towards cancer screening progress positively in societies where the level of health literacy increases. In this context, more studies are needed to increase the health literacy levels of the society. In addition, social interventions that help to increase the society's awareness of cancer, health literacy level and attitudes towards cancer screenings need to be increased. Such efforts will contribute to social well-being.

Additionally, it is necessary to increase training to boost the level of health literacy, starting from an early age.

Limitations

The research is limited to the data collection period and the scales used to collect data. It is geographically limited to the Eastern Mediterranean Region. The age range of the participants is limited to 18-30. The relevant literature review is limited to Turkish and English languages.

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