The effects of university students' fear levels of breast cancer on healthy lifestyle behaviours

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Abstract

This study was conducted as a descriptive and correlational study to find out the effects of university students' fear levels of breast cancer on their healthy lifestyle behaviours. The study was conducted between 05.06.2021 and 20.06.2021 with the participation of 386 students who were studying in a university and who agreed to participate in the study. The data were collected by using an information form prepared in line with the literature by the researcher which included 26 questions to find out the sociodemographic characteristics and thoughts of students towards breast cancer and the Champion Breast Cancer Fear Scale and Healthy Lifestyle Behaviours Scale II. Normality distribution of the data was evaluated with Shapiro–Wilk and Kolmogorov–Smirnov tests. Kruskal–Wallis test, Mann–Whitney *U* test, one-way analysis of variance and independent samples *t*-test were used in data analysis. It was found that 98.2% of the students in the study were single, 73.3% had a nuclear family, 35.5% had a democratic family structure, 85.2% had social security, 86.8% did not have any health problems, 52.1% referred to doctor when they had health problems, 70.7% had knowledge about breast cancer, 76.4% were afraid of breast cancer and the mean age of the students was 20.7 ± 2.3. Champion Breast Cancer Fear Scale median score of the students was 25 (8–40) and Healthy Lifestyle Behaviours Scale II mean score was found as 141.5 ± 24.2. When the Breast Cancer Fear Scale scores were evaluated in this study, it was found that university students had high levels of breast cancer fear. No statistically significant association was found between Breast Cancer Fear Scale and Healthy Lifestyle Behaviours Scale II. In line with the results found, it is recommended to increase students' knowledge and awareness in order to decrease their cancer fear levels.

Keywords: Behaviour, breast cancer, fear, health student, life.

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1. Introduction

Cancer is a disease in which cells multiply and change uncontrollably [1]. In GLOBOCAN 2020 data, it was reported that 19.3 million people had been diagnosed with cancer and 10 million cancer-related deaths occurred. Breast cancer is the most frequently diagnosed cancer type, followed by lung, colorectal, prostate and stomach cancer. According to GLOBOCAN 2020 data, it was reported that 2.3 million women were diagnosed with breast cancer and 685,000 breast cancer-related deaths occurred [2].

While a high incidence rate in breast cancer shows the importance of early diagnosis, delay in diagnosis and treatment increases mortality and morbidity [3]. For this reason, screening methods for early diagnosis of breast cancer are very important in detecting breast cancer at an early stage, decreasing breast cancer-related deaths, prolonging life expectancy and increasing treatment success [4]. However, when the literature is reviewed, it can be seen that there are many factors that prevent women's early diagnosis behaviours of breast cancer. These factors include forgetfulness, low level of education, lack of knowledge, barriers to accessing health services, low income level, not having social security, belief in fatalism, being diagnosed with breast cancer and the fear of losing the breast [5].

Fear of breast cancer is defined as the physiological and emotional reactions shown by the individual towards the perceived threat to breast cancer and it is associated with factors such as being diagnosed with breast cancer, the thought of losing the breast, fear of death, pain and suffering [1]. Therefore, individuals who experience fear of breast cancer avoid early diagnosis and treatment behaviours to cope with the fear they experience [6]. Life expectancy increases with early diagnosis and this in turn shows the importance of healthy lifestyle behaviours [7].

Healthy lifestyle behaviours are defined as individuals' control over their health by developing behaviours to protect and improve their well-being [8], [9]. Healthy lifestyle behaviours can be listed as balanced diet, adequate and regular exercise, not smoking, health responsibility, taking hygienic measures, establishing positive interpersonal relationships and stress management. When the literature is examined, it can be seen that individuals with a high fear of breast cancer are expected to show protective behaviours towards breast cancer [7]. Women's awareness levels should be increased against a type of cancer with an increasing incidence such as breast cancer; they should be informed about breast cancer screening; and they should gain health-promoting behaviours [9]. In line with the results obtained in the study, it will be possible to determine university students' level of fear of breast cancer and their healthy lifestyle behaviours and with the data obtained appropriate strategies will be developed to decrease students' fear of cancer levels and to increase knowledge and awareness on this topic.

1.1. Objective of the study

Answers were sought to the following questions in this study which was conducted to find out the effects of breast cancer fear levels of university students on healthy lifestyle behaviours:

• What are the sociodemographic characteristics of university students?
• What are the breast cancer fear levels of university students?
• What are the healthy lifestyle behaviour characteristics of university students?
• Is there a relationship between breast cancer fear levels and healthy lifestyle behaviours of university students?

2. Material and methods

2.1. Place and time of the research

This descriptive and correlational study was carried out with the participation of 386 students who were studying at the Health Services Vocational School of a university and who volunteered to participate between 05.06.2021 and 20.06.2021.

2.2. Populatiohen and sample of the research

In determining the number of sample in the study, the following formula, which is used to find out the number of individuals to be included in the sample in cases when the population is known, was used [10]. The number of sample was calculated as 306 with a 95% confidence interval and 5% error out of 1,500 female students studying at the Health Services Vocational School of the university where the study was conducted. Data collection process was completed when 386 students were reached, considering that there might be data loss. Female students who volunteered to participate were included in the study.

2.3. Tools for data collection

In this study, the data were collected by using the 'Student Information Form', 'Breast Cancer Fear Scale' and 'Healthy Lifestyle Behaviour Scale II' (HLSBS II). The Student Information Form consists of 26 questions to identify students' sociodemographic characteristics, their beliefs and practices about breast cancer and their healthy lifestyle behaviours. The Information Form was tested in a group of 10 students and the students who participated in the study were not included in the sample. Ethics committee approval was taken from Human Researches Ethics Committee prior to the study. The students who participated in the study were informed about the study and the data were collected by the researchers after their informed consents were taken.

2.3.1. Breast Cancer Fear Scale
The Breast Cancer Fear Scale is an 8-item 5-point Likert-type scale developed by Champion et al. [11] and adapted into Turkish by Secginli [12] to find out the emotional reactions of women towards breast cancer. The scale items are scored as '1 = strongly disagree', '2 = disagree', '3 = neutral', '4 = partly agree' and '5 = strongly agree'. Total score of the scale ranges between 8 and 40. A score between 8 and 15 shows 'a low level of fear', a score between 16 and 23 shows 'a moderate level of fear' and a score between 24 and 40 shows 'a high level of fear'. In the study by Secginli [12], Cronbach's alpha reliability coefficient of the scale was found as 0.90. In this study, Cronbach's alpha reliability coefficient of the Breast Cancer Fear Scale was found as 0.90. Permission was taken from Secginli [12] to use the Breast Cancer Fear Scale.

2.3.2. Healthy Lifestyle Behaviour Scale II
HLSBS is a 52-item 4-point Likert-type scale developed by Walker et al. and adapted into Turkish by Bahar et al. [13]. The scale items are scored as '1 = Never', '2 = sometimes', '3 = often' and '4 = regularly'. The Healthy Lifestyle Behaviour Scale II has six subscales as 'health responsibility', 'physical activity', 'nutrition', 'mental development', 'interpersonal relationships' and 'stress management'. The total score from the scale ranged between 52 and 208. High scores from the scale show that the individual applies the specified health behaviours at a high level. In the study conducted Bahar et al. [13], Cronbach's alpha reliability coefficient of the scale was found as 0.94. Cronbach's alpha coefficients of the subscales vary between 0.79 and 0.87. In this study, the HLSBS II Cronbach's alpha reliability coefficient was found as 0.94. Cronbach's alpha coefficients of the subscales vary between 0.74 and 0.87. Permission was taken from Bahar et al. [13] to use the HLSBS II.

2.4. Data collection

The students were explained that they would make the decision to participate in the study and the data collected from this study would be used only within the scope of the study. Ethics committee approval from the institution and informed consent from the students were taken to collect the data. Data collection process lasted for about 15–20 minutes.

2.5. Data analysis

The data obtained from this study were analysed by using IBM Statistical Package for the Social Sciences 21 package programme. Normality test of quantitative data was examined with Shapiro–Wilk and Kolmogorov–Smirnov tests. Kruskal–Wallis test, Mann–Whitney U test, one-way analysis of variance (ANOVA) and independent samples t-test were used in data analysis. Reliability of the scales used was analysed with Cronbach's alpha. Quantitative data were presented as median (minimum–maximum), while qualitative data were presented as frequency. Significance level was considered as $p < 0.05$.

3. Results

It was found that 57.8% of the university students in the study were in their first year, 42.2% were in their second year, 98.2% were single, 73.3% had a nuclear family, 35.5% had a democratic family, 85.2% had social security, 67.6% had income equal to expenses, 50.3% were living in a city, 86.8% did not have any health problems, 52.1% first consulted a doctor when they had a health problem, 18.9% had regular health check-ups, 54.1% evaluated their health status as moderate in general, 70.7% had knowledge about breast cancer, 11.7% had relatives diagnosed with breast cancer, maternal aunts and paternal aunts of 35.7% were diagnosed with breast cancer, 76.4% were afraid of breast cancer, 78.8% did not smoke and 89.4% did not use alcohol and the mean age of the students was found as 20.7 ± 2.3 (Table 1).

Table 1. Distribution of university students' sociodemographic characteristics and their thoughts about breast cancer (*N* = 386)

Characteristics		*n*	%
Age groups	≤20 years of age	221	57.3
20.7 ± 2.3	≥21 years of age	165	42.7
Year of study	First year	223	57.8
	Second year	163	42.2
Marital status	Married	7	1.8
	Single	379	98.2
Family type	Extended	103	26.7
	Nuclear	283	73.3
Family structure	Democratic	137	35.5
	Oppressive and authoritarian	57	14.8
	Overprotective	78	20.2
	Over-tolerant	55	14.2
	Perfectionist	11	2.8
	Indifferent	19	4.9
	Unstable	29	7.5
The state of having social security	Yes	329	85.2
	No	57	14.8
Income status	Income < expense	85	22.0
	Income = expense	261	67.6
	Income > expense	40	10.4

Place of residence	City	194	50.3
	Town	108	28.0
	Village	84	21.8
The state of having any health problems	Yes	51	13.2
	No	335	86.8
What is the first thing done when faced with any health problem	Wait for it to go away	51	13.2
	Try to make it go away with my own methods	108	28.0
	Use the medication I know	26	6.7
	Consult a doctor	201	52.1
The state of having regular health check-up	Yes	73	18.9
	No	313	81.1
General evaluation of health	Good	169	43.8
	Moderate	209	54.1
	Bad	8	2.1
The state of having knowledge about breast cancer	Yes	273	70.7
	No	113	29.3
The state of having relatives diagnosed with breast cancer	Yes	45	11.7
	No	341	88.3
The degree of relationship if the answer is 'yes'	Mother	10	23.8
	Sister	2	4.8
	Maternal aunt	15	35.7
	Paternal aunt	15	35.7
The state of fearing breast cancer	Yes	295	76.4
	No	91	23.6
The state of smoking	Yes	82	21.2
	No	304	78.8
The state of using alcohol	Yes	41	10.6
	No	345	89.4

In this study, the Breast Cancer Fear Scale total score of university students was found as 24.9 ± 7.9. While Healthy Lifestyle Behaviour Scale II total score was found as 141.5 ± 24.2, health responsibility, physical activity, nutrition, mental development, interpersonal relationships and stress management subscales mean scores were found as 23.7 ± 5.6, 18.5 ± 5.8, 22.2 ± 4.7, 28.3 ± 4.9, 28.0 ± 4.8 and 20.9 ± 4.6, respectively (Table 2).

Table 2. Mean and median values of the Breast Cancer Fear Scale and HLSB II total score and subscale scores

Scale	Mean ± SD	Median (Min–Max)
Breast Cancer Fear Scale		
Total	24.9 ± 7.9	25 (8–40)
HLSB II		
Health responsibility	23.7 ± 5.6	23 (9–36)
Physical activity	18.5 ± 5.8	18 (8–32)
Nutrition	22.2 ± 4.7	22 (10–34)
Mental development	28.3 ± 4.9	29 (9–36)
Interpersonal relationships	28.0 ± 4.8	28 (11–36)
Stress management	20.9 ± 4.6	21 (9–32)
Total	141.5 ± 24.2	141 (71–206)

Min: Minimum; Max: Maximum; SD: Standard deviation; HLSB: Healthy Lifestyle Behaviours.

In this study, it was found that university students' Breast Cancer Fear Scale total score differed in terms of students' having knowledge about breast cancer (p = 0.001), having relatives diagnosed with breast cancer (p = 0.029) and the state of fearing breast cancer (p < 0.001); it was found that students who did not have knowledge about breast cancer, those whose mothers had been diagnosed with breast cancer and those who feared being diagnosed with breast cancer had higher scores (Table 3).

Table 3. Comparison of university students' sociodemographic characteristics and their thoughts about breast cancer with Breast Cancer Fear Scale scores

Characteristics		Breast Cancer Fear Scale Median (Min–Max) Mean ± SD	Test value p
Age groups	≤20 years of age	25 (8–40)	U = 18074
	≥21 years of age	25 (8–40)	p = 0.883
Year of study	1st year	25.0 ± 7.8	t = 0.134
	2nd year	24.8 ± 8.2	p = 0.893
Marital status	Married	34 (12–37)	U = 952
	Single	25 (8–40)	p = 0.200
Family type	Extended	25 (8–40)	U = 14010.5
	Nuclear	25 (8–40)	p = 0.560
The state of having social security	Yes	25 (8–40)	U = 9279
	No	26 (8–40)	p = 0.900
Income status	Income < expense	26 (8–40)	χ^2 = 3.776
	Income = expense	25 (8–40)	p = 0.151
	Income > expense	26 (9–36)	
Place of residence	City	25 (8–40)	χ^2 = 1.334
	Town	25 (9–40)	p = 0.513
	Village	26 (8–40)	
The state of having any health problems	Yes	26 (8–40)	U = 7669.5
	No	25 (8–40)	p = 0.239
The state of having regular health check-up	Yes	25 (8–38)	U = 10765
	No	25 (8–40)	p = 0.442
General evaluation of health	Good	24 (8–40)	χ^2 = 3.887
	Moderate	26 (8–40)	p = 0.143
	Bad	31.5 (17–38)	
The state of having knowledge about breast cancer	Yes	24 (8–40)	U = 12130.5
	No	27 (8–40)	**p = 0.001**
The state of having relatives diagnosed with breast cancer	Yes	24 (8–40)	U = 6972.0
	No	25 (8–40)	p = 0.319
The degree of relationship if the answer is 'yes'	Mother	20.0 ± 8.6 [a]	F = 3.889
	Maternal aunt	23.9 ± 7.6 [ab]	**p = 0.029**
	Paternal aunt	27.8 ± 5.5 [b]	
The state of fearing breast cancer	Yes	27 (8–40)	U = 3908
	No	17 (8–35)	**p < 0.001**
The state of smoking	Yes	25 (8–40)	U = 12383.5
	No	25 (8–40)	p = 0.928
The state of using alcohol	Yes	26 (8–40)	U = 6897

	No	25 (8–40)	$p = 0.795$
The state of doing exercise regularly	Yes	24 (8–40)	$U = 12611.5$
	No	26 (8–40)	$p = 0.064$

χ^2 = Kruskal–Wallis test statistic; U = Mann–Whitney U test statistic; F = one-way ANOVA; t = Independent sample t-test.
[a, b] There are no differences between groups with the same letters.

In this study, it was found that university students' HLSBS II total score differed in terms of students' income status ($p = 0.009$), the state of having regular health check-ups ($p < 0.001$), general evaluation of health ($p < 0.001$), the state of having knowledge about breast cancer ($p = 0.009$) and the state of doing exercise regularly ($p < 0.001$); it was also found that the students who had income higher than expenses, those who had regular health check-ups, those who evaluated their general health condition as good, those who had knowledge about breast cancer and those who exercised regularly had higher scores (Table 4).

Table 4. Comparison of university students' sociodemographic characteristics and their thoughts about breast cancer with HLSBS II total scores

Characteristics		HLSBS Median (Min–Max) Mean ± SD	Test value p
Age groups	≤20 years of age	142.6 ± 21.5	$t = 0.986$
	≥21 years of age	140.1 ± 27.4	$p = 0.325$
Year of study	First year	142.1 ± 21.8	$t = 0.52$
	Second year	140.8 ± 27.2	$p = 0.604$
Marital status	Married	131.7 ± 36.2	$t = -1.082$
	Single	141.7 ± 24.0	$p = 0.280$
Family type	Extended	142.4 ± 24.2	$t = 0.418$
	Nuclear	141.2 ± 24.3	$p = 0.676$
The state of having social security	Yes	141.9 ± 24.3	$t = 0.723$
	No	139.4 ± 24.0	$p = 0,470$
Income status	Income < expense	137.7 ± 26.9 [a]	$F = 4.725$
	Income = expense	141.2 ± 23.3 [a]	$p = 0.009$
	Income > expense	151.8 ± 22.0 [b]	
Place of residence	City	142.7 ± 24.2	$F = 0.829$
	Town	141.6 ± 25.0	$p = 0.437$
	Village	138.7 ± 23.3	
The state of having any health problems	Yes	138.2 ± 27.9	$t = -1.048$
	No	142.0 ± 23.6	$p = 0.295$
The state of having regular health check-up	Yes	150.7 ± 24.2	$t = 3.651$
	No	139.4 ± 23.8	$p < 0.001$
General evaluation of health	Good	147.4 ± 21.6 [a]	$F = 10.056$
	Moderate	137.3 ± 25.2 [b]	$p < 0.001$
	Bad	127.4 ± 25.9 [ab]	
The state of having knowledge about breast cancer	Yes	143.6 ± 23.9	$t = 2.622$
	No	136.5 ± 24.3	$p = 0.009$
The state of having relatives diagnosed with breast cancer	Yes	137.8 ± 23.7	$t = -1.105$
	No	142.0 ± 24.3	$p = 0.270$
The degree of relationship if the answer is 'yes'	Mother	131.8 ± 11.8	$F = 0.724$
	Maternal aunt	135.2 ± 23.5	$p = 0.491$
	Paternal aunt	142.3 ± 29.4	

The state of fearing breast cancer	Yes	141.2 ± 24.1	$t = -0.546$
	No	142.7 ± 24.9	$p = 0.585$
The state of smoking	Yes	141.6 ± 27.0	$t = 0.021$
	No	141.5 ± 23.5	$p = 0.983$
The state of using alcohol	Yes	147.3 ± 27.6	$t = 1.613$
	No	140.8 ± 23.8	$p = 0.108$
The state of doing exercise regularly	Yes	155.4 ± 20.6	$t = 7.13$
	No	136.6 ± 23.5	$p < 0.001$

χ^2 = Kruskal–Wallis test statistic; U = Mann–Whitney U test statistic; F = one-way ANOVA; t = Independent samples t-test.
[a, b, c] There are no differences between groups with the same letters. HLSBS: Healthy Lifestyle Behaviour Scale.

No statistically significant correlation was found between students' Breast Cancer Fear Scale and HLSBS II total, health responsibility, physical activity, nutrition, mental development, interpersonal relationships and stress management subscales (Table 5).

Table 5. Correlation between the Breast Cancer Fear Scale and the Healthy Lifestyle Behaviour Scale II

Scale		Breast Cancer Fear Scale
HLSBS II	Health responsibility	$r = 0.057$
		$p = 0.267$
	Physical activity	$r = 0.028$
		$p = 0.585$
	Nutrition	$r = 0.038$
		$p = 0.451$
	Mental development	$r = 0.023$
		$p = 0.647$
	Interpersonal relationships	$r = 0.072$
		$p = 0.155$
	Stress management	$r = 0.081$
		$p = 0.112$
	Total	$r = 0.068$
		$p = 0.184$

r = Spearman's correlation analysis; HLSBS = Healthy Lifestyle Behaviour Scale.

4. Discussion

The results obtained from this study, which was conducted to find out the relationship between breast cancer fear levels and healthy lifestyle behaviours of students studying at a university in the Western Black Sea region, are discussed in line with the related literature.

In this study, the Breast Cancer Fear Scale total score of university students was found as 24.9 ± 7.9. When the Breast Cancer Fear Scale score was evaluated, it was found that university students had high breast cancer fear levels. When the literature was reviewed, in parallel with the results of the present study, it was reported in studies which examined breast cancer fear levels that women had high breast cancer fear levels [4], [6], [14]–[16]. Unlike the results of the study, in studies conducted to find out breast cancer anxiety levels of women, Gozuyesil et al. [17] and Bernat et al. [18] found that women had low breast cancer anxiety levels. It is thought that the differences between studies may be due to the differences in individuals' perceiving risk factors and the feeling of fear for breast cancer since fear is a subjective concept.

In this study, it was found that university students' Breast Cancer Fear Scale total score differed in terms of them having knowledge about breast cancer, having relatives diagnosed with breast cancer and the state of fearing breast cancer; it was also found that students who did not have knowledge about breast cancer, those whose mothers had been diagnosed with breast cancer and those who feared of being diagnosed with breast cancer had higher scores. In parallel with the results of the study, it was found in a study conducted by Miles et al. [19] that women who had high breast cancer fear levels did not want to have knowledge about breast cancer.

When the literature was reviewed, in a study conducted by Zhang et al. [20] with women who had relatives diagnosed with breast cancer in the family, it was found that 18% of the women had a high level of breast cancer fear, while 48% had a moderate level and 34% had a low level of breast cancer fear; and it was reported that women who had high and low levels performed breast self-examination (BSE) and mammography less frequently. In a study conducted by Bakir and Demir [4], it was reported that women who performed BSE experienced 3.025 times more breast cancer anxiety than women who did not perform BSE. In Nacar's [21] study, it was reported that women who had high breast cancer anxiety had more clinical breast examination. Breast cancer fear is considered the basis of health-related behaviours and affects individuals' use of protective healthcare services by having positive and negative effects on their breast cancer-related early diagnosis and treatment behaviours. Getting a breast cancer diagnosis, the fear of losing the breast, fear of pain, suffering and death can be listed as factors that cause breast cancer fear [22]. In addition to studies which show that breast cancer fear has a negative effect on early diagnosis behaviours, there are also studies which show that it does not affect early diagnosis behaviours or that it has positive effects. In a study conducted by Koc and Saglam [23], it was reported that women performed BSE because they feared getting breast cancer diagnosis.

The Healthy Lifestyle Behaviour Scale II total score of the students was found as 141.5 ± 24.2 and it was found that university students had high healthy lifestyle behaviours. Studies conducted to find out the healthy lifestyle behaviours of university students show that students have different levels of healthy lifestyle behaviours; in some of these studies it was reported that students had high levels of healthy lifestyle behaviours [24], [25], while others reported that students had moderate levels of healthy lifestyle behaviours [26]–[29]. A high score from HLSBS II shows that the individual has more positive health behaviours [30].

When students' HLSBS II mean subscale scores were examined, it was found that the students got the highest score in mental development subscale, while they got the lowest score in physical activity subscale. In studies conducted by Bulbul et al. [31] and Vural and Bakir [32], when university students' HLSBS II subscale scores were examined, it was reported that they got the highest score in mental development subscale, while they got the lowest score in physical activity subscale, while in Tuygar and Aslan's [29] study it was reported that they got the highest score in self-realisation subscale and they got the lowest score in physical activity subscale. Acquiring health-promoting behaviours is very important in the prevention of diseases, early diagnosis, treatment and maintaining health. For this reason, healthy lifestyle behaviours evaluated as mental development, health responsibility, exercise, nutrition, interpersonal relationships and stress management have an important place in individuals developing their health and increasing their control on their health [13].

In line with the results obtained in the study, it was found that university students' HLSBS II total score differed in terms of students' income status, the first thing done when faced with any health problems, the state of having regular health check-ups, general evaluation of health, the state of having knowledge about breast cancer and the state of doing exercise regularly; it was also found that the students who had income higher than expenses, those who consulted a doctor when faced with any health problem, those who had regular health check-ups, those who evaluated their general health condition as good, those who had knowledge about breast cancer and those who exercised regularly had higher scores. In parallel with the results of our study, it was found in other studies that students who had income higher than expenses [26], [33], those who evaluated their income as

sufficient [34], those who had very good health status [35]–[37] and good health status [36], those who had knowledge about breast cancer [30] and those who exercised regularly [31], [32] had higher HLSBS II total scores. Unlike the results of the study, it was found in some studies that there were no associations between level of income [28] and the state of doing exercise [36] and HLSBS II total scores.

No statistically significant correlation was found between students' Breast Cancer Fear Scale and HLSBS II total, health responsibility, physical activity, nutrition, mental development, interpersonal relationships and stress management subscales. While no studies were found in the literature in which the relationship between university students' breast cancer fear levels and healthy lifestyle behaviours were examined, in a study conducted by Yilmaz [6] to find out the effects of breast cancer fear on healthy lifestyle behaviours of midwives and nurses, no significant association was found between Breast Cancer Fear Scale and HLSBS II total, physical activity, nutrition, mental development, interpersonal relationships and stress management subscales, while a positive weak association was found between Breast Cancer Fear Scale and health responsibility subscale and it was reported that as breast cancer fear level increased, HLSBS II health responsibility score also increased. Health responsibility is defined as individuals' feeling responsibility to increase their own well-being, taking care of their own health, increasing their level of knowledge about their health and seeking for professional help when necessary [13].

As a result, breast cancer is an important disease which is most frequently diagnosed and which creates fear in women. Factors that cause the emergence of breast cancer, which is a progressive disease, can be listed as increased age, genetic, smoking, alcohol consumption, lack of physical activity and poor nutrition [38]. In this respect, healthy lifestyle behaviours are very important in protecting from breast cancer.

5. Conclusion

In this study, university students were found to have high breast cancer fear levels. However, no statistically significant correlation was found between students' Breast Cancer Fear Scale and HLSBS II total, health responsibility, physical activity, nutrition, mental development, interpersonal relationships and stress management subscales. In line with the results obtained in the study, it is recommended to prevent university students' fears about breast cancer by increasing their knowledge and awareness levels about breast cancer protective behaviours and to support and strengthen healthy lifestyle behaviours.

Conflicts of interests

The authors have no conflicts of interests to disclose.

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