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## Nursing students' attitudes towards cancer and affecting factors in Turkey: A descriptive study

Sevinç Kutlutürkan<sup>1</sup>

Kamile Kırca<sup>2</sup>

Elif Sözeri Öztürk<sup>3</sup>

### Abstract


**Aim:** The aim of this study was to investigate the attitudes of nursing students towards cancer as well as affecting factors.


**Method:** This descriptive study was conducted with 949 nursing students at two state universities in Turkey. The population of this study included 1st, 2nd, 3rd, and 4th year students in the nursing programs in two universities in the academic year. In collecting data, "Demographic Information Form" and "Questionnaire for Measuring Attitudes Toward Cancer - Community Version" scales were used. The data were analyzed by number, percentage, mean, standard deviation, Mann-Whitney U test, Kruskal-Wallis H test and linear regression analysis. Mann Whitney U test with Bonferroni correction was used as post-hoc test.


**Findings:** While 63.3% of the students were at the range of 17-20 years, 87.8 % of them were female and 36.8% of them were first year students. It was determined that 51.4% of the students participated in the care and treatment practices of a patient diagnosed with cancer during clinical practices. The mean score of the Questionnaire for Measuring Attitudes Toward Cancer was  $3.23 \pm 0.47$ . In this study, a statistically significant relationship was found between the students' year in the program and the subscale of impossibility of recovery, between gender and the scale, having an individual diagnosed with cancer among family members and his/her immediate environment with disclosure, and the dissemination of cancer diagnosis ( $p < 0.05$ ). According to the stepwise method completed in the linear regression analysis, gender and informing a patient about his/her cancer diagnosis had a significant effect on the scale ( $p < 0.05$ ).

**Conclusions:** In this study, the students were found to have negative attitudes toward cancer. In this regard, healthcare professionals should organize training programs in order to change negative thoughts and attitudes of the students during educational processes.

**Keywords:** Nursing student; education; cancer; attitude; descriptive study.

<sup>1</sup> Assoc. Prof. Dr., Ankara University, Faculty of Nursing, [skutluturkan@ankara.edu.tr](mailto:skutluturkan@ankara.edu.tr),  Orcid ID: <https://orcid.org/0000-0002-3230-0775>

<sup>2</sup> Assist. Prof. Dr., Kırıkkale University, Faculty of Health Sciences, Department of Nursing, [kamilekirca@kku.edu.tr](mailto:kamilekirca@kku.edu.tr),  Orcid ID: <https://orcid.org/0000-0001-7019-6107>

<sup>3</sup> Assist. Prof. Dr., Gazi University, Faculty of Nursing, [esozeri@gazi.edu.tr](mailto:esozeri@gazi.edu.tr),  Orcid ID: <https://orcid.org/0000-0001-7505-2794>



## 1. Introduction

Today, there are still negative attitudes towards cancer in society regardless of an increase in survival rates in cancer. The reason for this is the fact that the cancer is perceived as a circumstance with pain and painful symptoms that can't be managed completely, reminding of death and causing anxiety rather than a chronic disease (Chapple et al., 2004; Yılmaz et al., 2017).

The diagnosis of cancer affects many aspects of life and perceptions of others, and thus, the diagnosis becomes an important part of an individual's identity. The identity of a "cancer patient" is associated with disability and death. Therefore, a cancer patient is devalued by other people, and the behaviors towards people with cancer diagnosis are likely to be affected. This situation, called cancer stigma, is seen when the society labels any individual as defective, disabled, or someone desired less (Knapp et al., 2014; Stergiou-Kita et al., 2016; Yılmaz et al., 2017). The stigma may lead to an individual's discontinuation of treatment, depression, restricted living space, social isolation, a decrease in emotional well-being, delay in help-seeking behavior, and a decrease in life quality. In addition, difficulty in finding a job, ostracization, poor self-esteem and loss of social status are ranked among the negative attitudes adopted by society against patients (Stergiou-Kita et al., 2016; Yılmaz et al., 2017). The stigma may also threaten personal identity and result in self-accusation (Chapple et al., 2004).

Stigma is one of the obstacles before cancer patients related to efficient health services. Being associated with various clinical results and social results, cancer stigma is an important psychosocial problem experienced by patients (Kaur, 2015; Wood et al., 2017; Yılmaz et al., 2017). Health professionals should be careful about the cancer stigma and should evaluate its possible effects on the life quality of cancer patients. In order to provide a qualified and high-quality care to a patient and its family with a holistic view, nurses, providing care service by spending a long time with a patient and his/her family and playing a key role in health team. Therefore, they should communicate effectively and be aware of their perceptions, attitudes and beliefs. In this regard, knowledge, skills and approaches of nursing students, who will be the future healthcare professionals, about cancer must be at a professional level. There are limited studies determining the attitudes of nursing students towards cancer. Studies have shown that nurses and nursing students have pessimistic attitudes towards cancer and cancer-related pain and death (Sanford et al., 2011; King-Okoye and Arber, 2014; Uysal et al., 2019; Köktürk Dalcalı and Taş, 2021). Determining the attitudes towards cancer and improving those attitudes using appropriate interventions will not only increase the quality of care, but also contribute to the holistic care provided to the patient and the determination of patients' spiritual needs.

## 2. Methods

### 2.1. Aim

This study was carried out to determine the attitudes of nursing students related to cancer.

### 2.2. Study Design and Participants

Descriptive research methods were used in the study which was conducted in Turkey. The population of this study included 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> year students in the nursing programs **in two universities 2018-2019 in the academic year**. The aim was to recruit all students without using any sampling methods. The number of students who accepted to participate in the study from two universities was 949. The participants were included if they met the following inclusion criteria: (1) being enrolled in a nursing program, (2) participating voluntarily, (3) being over the age of 18 and (4) understanding the context of the questionnaire correctly and being literate.

### 2.3. Data Collection Forms

“Demographic Information Form” and the “Questionnaire for Measuring Attitudes Toward Cancer - Community Version” were utilized as the data collection tools.

The demographic information form consisted of 13 questions such as age, gender, cancer history in the family, receiving education on cancer, and being informed about cancer diagnosis.

The Questionnaire for Measuring Attitudes Toward Cancer - Community Version was developed by Cho et al. (2013) to measure the attitudes of cancer patient relatives and individuals in society towards cancer. This questionnaire provides information on the positive/negative attitudes of people in society related to cancer. Validity and reliability of the Turkish questionnaire was performed by Yilmaz et al. (2017). While the original questionnaire consisted of four sub-scales and 15 items, the Turkish version included three sub-scales and 12 items. The sub-scales and related items are as follows: impossibility of recovery (items between 1-5), discrimination (items between 6-8) and disclosure, dissemination of cancer diagnosis (items between 9-12). The items in the survey are rated as (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. There is no reverse coded item in the questionnaire. The mean scores of the items are used in the assessment of questionnaire, and the median scores of  $\geq 2.5$  show negative attitudes towards cancer. The Cronbach's alpha value of the scale was 0.79 (Yilmaz et al. 2017). In our study, the Cronbach's alpha value was calculated as 0.81.

### 2.4. Ethical considerations

This study maintains the anonymity of all the participants, who had the right to withdraw from the study. Written informed consent was obtained from the participants who agreed to participate in the study. We further guaranteed that the identity of the participants will not be disclosed and that their answers will be confidential. Necessary permission has been granted to use the scale in the study. To conduct this study, an approval was obtained from the Gazi University Ethics Committee (Number:91610558-604.01.02-) was obtained.

### 2.5. Data collection

The planning of the administration of the data collection forms was completed collaboratively with the instructors by taking the course schedules of students into consideration. The data collection forms were administered in classrooms during class hours. Students were informed about the study and how to fill out the data collection tools before administration. The forms were filled out by students. The administration of data collection tools lasted nearly 15-20 minutes. Students completed the questionnaires independently, and questionnaires were returned on the spot after completion.

### 2.6. Statistical analysis

The data obtained were analyzed using a statistical analysis software, SPSS version 22.0. Number, percentage, mean, standard deviation, Mann Whitney U test, Kruskal Wallis H test and linear regression analysis were utilized in analyzing the data. In Mann Whitney U-tests conducted to specify which binary groups have significant differences obtained by Kruskal Wallis H-test, Bonferroni correction was made in order to prevent Type I error which is likely to affect the statistical process.

## 3. Results

### 3.1. Participants

While 63.3% of the students were in the age range of 17-20, 87.8 % of them were female and 36.8% of them were first year students. It was observed that 43.7% of the students had an individual diagnosed with cancer in their family or friend group, and 20.8% reacted to such a situation as

"shock". It was determined that 50.8% of the students received information about cancer, and 43.2% received this information during their education at the university. It was determined that 51.4% of the students encountered cancer patients during clinical practice. While 86.5% of the students thought that the diagnosis of cancer should be reported to the patient, 56.6% stated this as "the patient's right to know the truth" (Table 1).

**Table 1.** Participant Demographic Characteristics (n=949)

Characteristics	n (%)
<i>Age</i>	
17-20	601 (63.3)
21-25	334 (35.2)
25 and above	14 (1.5)
<i>Gender</i>	
Female	833 (87.8)
Male	116 (12.2)
<i>Year in the program</i>	
1 <sup>st</sup> year	349 (36.8)
2 <sup>nd</sup> year	236 (24.9)
3 <sup>rd</sup> year	136 (14.3)
4 <sup>th</sup> year	228 (24)
<i>Longest place of residence</i>	
Province	576 (60.7)
District	256 (27)
Village	117 (12.3)
<i>Having a family member or an individual diagnosed with cancer in the immediate environment</i>	
Yes	415 (43.7)
No	534 (56.3)
<i>Reaction towards a relative diagnosed with cancer</i>	
Shocked	197(20.8)
Cannot believe	150 (15.8)
Becoming Introverted	26 (2.7)
Denial	23 (2.4)
<i>Receiving information on cancer</i>	
Yes	482 (50.8)
No	467(49.2)
<i>Information sources related to cancer</i>	
Undergraduate education	410 (43.2)
Friends	107 (11.3)
Conference	43 (4.5)
Media	14 (1.5)
Family	5 (0.5)
<i>Encountering a patient diagnosed with cancer at the clinic</i>	
Yes	488 (51.4)
No	461 (48.6)
<i>View on informing a patient about his/ her being diagnosed with cancer</i>	
Should be informed	821 (86.5)
Should not be informed	128 (13.5)

*Reason for reporting cancer diagnosis*

Patient's right to know the truth	537 (56.6)
Patient's directing his/her life	180 (19.0)
Patient's facing problems in his/her life	31 (3.3)
Patient's right to know his/her death	9 (1.0)

**3.2. Attitudes on cancer**

When examining the responses given by students for the questionnaire, the items rated the most by students are as follows: "I feel discomfort when I am together with cancer patients" (65.9%) for strongly disagree, "Cancer is impossible to treat no matter how advanced the cancer treatment is" (60.4%) for disagree, "If I am diagnosed with cancer, I will not disclose this to my neighbors (28.5%) for agree and "If I am diagnosed with cancer, I will not disclose this to my neighbors (8%) for strongly agree (Table 2).

**Table 2.** The distribution of responses given by nursing students to the items of cancer attitude measurement questionnaire (n=949)

Scale Items	Strongly agree n(%)	Agree n(%)	Disagree n(%)	Strongly Disagree n(%)
11. Cancer is impossible to treat no matter how advanced cancer treatment is	27(2.8)	82 (8.6)	573 (60.4)	265 (28.0)
12. Cancer patients would not be socially active once diagnosed with cancer	13 (1.4)	43 (4.5)	436 (45.9)	457 (48.2)
13. Job performance of cancer patients may decrease at the workplace even after successful cancer treatment	21 (2.2)	261 (27.5)	470 (49.5)	197 (20.8)
14. It is very difficult to be healthy again once a person is diagnosed with cancer	19 (2.0)	117 (12.3)	560 (59.0)	252 (26.5)
15. Cancer patients would not be able to make contributions to society	8 (0.8)	27 (2.8)	368 (38.8)	546 (57.5)
16. I feel discomfort when I am together with cancer patients	10 (1.1)	36 (3.8)	278 (29.3)	625 (65.9)
17. I tend to avoid interacting with the neighbours diagnosed with cancer	10 (1.1)	22 (2.3)	297 (31.3)	620 (65.3)
18. I avoid working with people having cancer	12 (1.3)	25 (2.6)	314 (33.1)	598 (63.0)
19. If I am diagnosed with cancer, I will not disclose this to my family	46 (4.8)	103 (10.9)	426 (44.9)	374 (39.4)
110. If I am diagnosed with cancer, I will not disclose this to my friends	49 (5.2)	177 (18.7)	452 (47.6)	271 (28.6)
111. If I am diagnosed with cancer, I will not disclose this to my neighbors	76 (8.0)	270 (28.5)	375 (39.5)	228 (24.0)
112. If I am diagnosed with cancer, I will not disclose this to my workmates/colleagues	65 (6.8)	216 (22.8)	429 (45.2)	239 (25.2)

In this study, the total median score for the questionnaire was 3.25, for the sub-scale of the impossibility of recovery 3.20, for the sub-scale of discrimination 4.00, and for the sub-scale of disclosure and dissemination of cancer diagnosis was 3.00 (Table 3).

**Table 3.** Total and sub-scale mean scores of nursing students for the questionnaire for measuring attitudes toward cancer

The Questionnaire for Measuring Attitudes Toward Cancer - Community Version Sub-scales	$\bar{X} \pm SD$	Median Percentage (25-75)	Min- Max
Impossibility of recovery	3.22±0.63	3.20 (3.00-3.60)	1-4
Discrimination	3.59±0.55	4.00 (3.00-4.00)	1-4

Disclosure and dissemination of cancer diagnosis	2.97±0.77	3.00 (2.50-3.50)	1-4
Total score	3.23±0.47	3.25 (3.00-3.58)	1-4

SD: Standard deviation

Min–Max: Minimum–Maximum

### 3.3. Factors affecting attitudes related to cancer

**Table 4.** The distribution of mean scores and mean ranks of the sub-scales of the questionnaire by students' demographic information (n=949)

Demographic information	Impossibility of recovery		Discrimination		Disclosure, dissemination of cancer diagnosis		Questionnaire for Measuring Attitudes Toward Cancer - Community Version	
	$\bar{X} \pm SD$	Mean Rank	$\bar{X} \pm SD$	Mean Rank	$\bar{X} \pm SD$	Mean Rank	$\bar{X} \pm SD$	Mean Rank
<b>Grade</b>								
1 <sup>st</sup> Year	3.26±0.44	498.96	3.65±0.47	496.51	2.99±0.72	482.71	3.27±0.39	496.20
2 <sup>nd</sup> Year	3.13±0.56	460.98	3.53±0.65	462.80	2.95±0.79	473.34	3.12±0.51	463.97
3 <sup>rd</sup> Year	3.10±0.49	408.39	3.56±0.54	452.51	2.99±0.68	481.30	3.13±0.39	440.35
4 <sup>th</sup> Year	3.30±0.92	490.18	3.58±0.53	466.96	2.97±0.87	461.13	3.26±0.56	473.17
Statistical Assessment	KW=11.568 p=0.009		KW=4.606 p=0.203		KW=9.979 p=0.806		KW= 4.611 p=0.203	
<b>Post hoc<sup>a</sup></b>								
1-3	U=18580.00 Z=-3.320 p=0.001		U=20895.50 Z=-1.785 p=0.074		U=22999.00 Z=-.0056 p=0.955		U=20274.00 Z=-2.053 p=0.040	
3-4	U=12224.00 Z=-2.784 p=0.005		U=14345.50 Z=-.556 p=0.578		U=14151.00 Z=-.731 p=0.465		U=13813.00 Z=-1.072 p=0.284	
<b>Gender</b>								
Female	3.25±0.62	482.33	3.61±0.52	480.73	2.99±0.77	482.09	3.25±0.45	484.55
Male	3.06±0.67	421.81	3.44±0.72	433.44	2.82±0.72	423.56	3.08±0.57	405.71
Statistical Assessment <sup>b</sup>	U=41838.50 Z=-2.140 p=0.025		U=43175.50 Z=-1.839 p=0.54		U=42039.00 Z=-2.110 p=0.029		U=39986.50 Z=-2.793 p=0.004	
<b>Having an individual diagnosed with cancer among family members or in immediate environment</b>								
Have	3.23±0.49	485.03	3.64±0.52	497.39	3.00±0.83	482.41	3.26±0.43	491.51
Do not have	3.22±0.71	466.19	3.55±0.57	456.45	2.95±0.71	468.26	3.21±0.50	461.08
Statistical Assessment <sup>c</sup>	U=106366.50 Z=-1.017 p=0.309		U=101201.50 Z=-1.951 p=0.051		U=107463.50 Z=-2.518 p=0.012		U=103659.00 Z=-1.654 p=0.098	
<b>Informing the patient about his/her cancer diagnosis</b>								
Should be informed	3.26±0.61	481.75	3.63±0.51	481.08	3.00±0.76	475.26	3.27±0.44	483.48
Should not be informed	3.00±0.65	378.78	3.35±0.71	383.53	2.82±0.74	424.72	3.03±0.56	366.53
Statistical Assessment <sup>c</sup>	U=37153.00 Z=-3.871 p=0.000		U=37703.00 Z=-4.048 p=0.000		U=42482.00 Z=-1.919 p=0.055		U=35731.00 Z=-4.366 p=0.000	

a=Kruskal Wallis H test, b= Mann Whitney U test with Bonferroni correction, c=Mann Whitney U test SD: Standard deviation

In this study, the scores of students on the sub-scale of impossibility of recovery differed in line with their year in the program ( $p=0.009$ ). Mann Whitney U tests were completed to find which group or groups caused this difference. The significance level for all effects was accepted as 0.008 by applying a Bonferroni correction. There was no significant difference found between the scores of 1<sup>st</sup> year students and 2<sup>nd</sup> year students, and 2<sup>nd</sup> year students and 3<sup>rd</sup> year students ( $p>0.008$ ). The scores of 1<sup>st</sup> year students and 3<sup>rd</sup> year students, and 3<sup>rd</sup> year students and 4<sup>th</sup> year students related to the sub-scale of impossibility of recovery were determined to be significantly different (respectively,  $U=18580$ ,  $r=-0.15$ ,  $p=0.001$ ;  $U=12224$ ,  $r=-0.14$ ,  $p=0.005$ ). The difference was determined to be caused by 3<sup>rd</sup> year students. The mean ranks of students, they were found to be 498.96 for the 1<sup>st</sup> year, 460.98 for the 2<sup>nd</sup> year, 408.39 for the 3<sup>rd</sup> year and 490.18 for the 4<sup>th</sup> year students. In this regard, while the scores of the 3<sup>rd</sup> year students were the lowest, the 1<sup>st</sup> year students had the highest score (Table 4).

There was a statistically significant difference between the scores of students for impossibility of recovery, discrimination, disclosure and dissemination of cancer diagnosis, and total questionnaire score according to gender ( $p<.05$ ). The mean ranks of female students were found to be higher than the male students (Table 4). A statistically significant difference was found between the scores of having an individual diagnosed with cancer among family members or in immediate environment and disclosure, dissemination of cancer diagnosis ( $p<.05$ ). The mean ranks of the students with an individual diagnosed with cancer among family members or in immediate environment were higher (Table 4).

There was a statistically significant difference among informing patient about his/her cancer diagnosis with the sub-scales of impossibility of recovery, disclosure and dissemination of cancer diagnosis, and the total questionnaire score ( $p<.05$ ). The mean ranks of the students considering that the patient should be informed about cancer diagnosis were higher (Table 4).

**Table 5.** The result of linear regression analysis of the factors affecting the attitude related to cancer

	Unstandardized Coefficients		Standardized Coefficients	t	p	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.918	0.051		56.903	0.000	2.817	3.019
Informing about diagnosis	0.210	0.043	0.159	4.915	0.000	0.126	0.294
Gender	0.150	0.043	0.113	3.494	0.000	0.066	0.234

F=20.897,  $p=0.000$  R<sup>2</sup>=0.207 R<sup>2</sup> Adjusted=0.041

The effect of gender, informing the patient about his/her cancer diagnosis, year in the program, having an individual diagnosed with cancer among family members or in the immediate environment on the questionnaire was examined by completing a linear regression analysis. According to the stepwise method used in linear regression analysis, gender and informing patient about his/her cancer diagnosis had a statistically significant effect on the scale. In this respect, the questionnaire mean in situations of informing the patient about his/her cancer diagnosis was 0.210 higher than the situations of not informing the patient about his/her cancer diagnosis. The questionnaire mean for the female students was 0.150 units higher than the male students (Table 5).

#### 4. Discussion

Cancer is a health problem frequently seen health problem today. For this reason, most hospitals provide care and treatment services for cancer patients in their departments. Nursing students, working in these departments and participating in clinical practices, frequently meet cancer patients. The attitudes developed by an individual towards cancer affect their struggle, care behaviors, and motivations (Kav et al., 2013).

In this study, the nursing students had negative attitudes related to cancer (Table 3). As is known, if an individual has positive or negative attitudes towards any situation or phenomenon, his/her behaviors are shaped in line with his/her attitudes. Negative attitudes towards cancer will negatively affect nurses' caregiving behaviors in the clinic unless they change during the clinical practice processes. Therefore, it is important to determine the level of attitude, the factors affecting it, and the interventions to improve the attitude. In a semi-structured study conducted by Kapucu and Bulut (2018) with 129 nursing students, 80.6% of the students defined working with a cancer patient as "difficult". The primary problems are as follows: patients rejecting nursing care, multiple problems experienced while providing care, communication problems, working with patients who are scared of death, the problems related to the family of patients. Charalambous and Kaile (2013) argued in their study conducted with nursing students that the students must be well prepared in clinical and theoretical respects before clinical application. Additionally, they should also be educated in issues such as death and crisis management. These results urge that care behaviors should be changed in positive respect by changing attitudes towards cancer. In this regard, the content of education provided in undergraduate education becomes more important. In a recent study examining the knowledge and attitudes of nursing students towards cancer, it was found that very few of the students were aware of the care planning for cancer survivors while all students agreed that this planning would be beneficial for the patient (Altre and Chou, 2021).

It was found out in this study that the score of the 3<sup>rd</sup> year nursing students on the impossibility of recovery was lower compared to the other students, and the difference between groups was caused by this group (Table 4). It is thought that a significant reason for this is the fact that students take a clinical application course, covering nursing professional courses, in the final year. In this respect, it is considered that students provide care for more cancer patients in the clinical applications and their attitudes are changed positively after meeting this group of patients more frequently. In a research carried out by Tavşanlı et al. (2016), the rate of students thinking that "it makes me sad to know that the patient will eventually die" was determined to be 77.4% (1<sup>st</sup> year) and 74.1% (4<sup>th</sup> year). On the other hand, Sharour et al. (2017) argued that the higher the number of years in the program, the more positive attitudes they showed towards cancer patients who are about to die. In another study performed with 1<sup>st</sup> year nursing students and discussing the experiences of students with the cancer patients in their first clinical applications, it was reported that they experienced anxiety, had difficulty in establishing communication with patients, and had negative practices related to patient care and treatment (Yildiz and Akansel, 2011). As the students' number of years in the program increases, their attitudes towards cancer and cancer patients may change as they encounter more cancer patients in different clinical settings. This change may seem to be based on many reasons such as their experience and content of their education. Despite the developments in the field of health, cancer is still perceived as death, pain or suffering by people (Badihian et al., 2017).

In this study, the female students had a high negative attitude towards cancer (Table 4, Table 5). This result is similar to the ones identified in the studies investigating awareness and attitudes of students towards cancer diseases special to female (AbdAllah et al., 2016; Dönmez et al., 2018). In a study carried out evaluating the beliefs, perceptions and views of women on cancer with a different population, the beliefs of Iranian women on breast cancer were examined, and it was concluded that



most of the women considered this disease as untreatable (Vahabi, 2010). It should be noted that women's attitudes towards cancer will affect many situations, the especially early diagnosis of cancer. In this study, it was found that those who have an individual diagnosed with cancer among family members or in immediate environment had a high level of negative attitudes on disclosure, and dissemination of cancer diagnosis (Table 4). It is shown that the situations internalized by students during their patient relative experiences have effects on the perspective towards disease. It is still a taboo in some cultures to talk about cancer, and it may be disturbing for many people. However, to talk clearly about cancer increases awareness, recovery, and contributes to a healthy well-being (Union for International Cancer Control, 2019). In the study examining the awareness of nursing students on the signs and symptoms of cancer, it was stated that students with an individual who has cancer in their families were more aware of some cancer symptoms. It is thought that the diagnosis of cancer in the family and relatives is an important factor affecting the attitudes of individuals towards cancer (Yakar et al., 2020).

It was determined in this study that the students thinking that the patient should be informed about cancer diagnosis had a high level of negative attitudes towards cancer (Table 4, Table 5). Moreover, it was concluded that those with an individual diagnosed with cancer among family members or in immediate environment had a high level of negative attitudes on disclosure, and dissemination of cancer diagnosis. Cancer reminds of death for many people. For this reason, psychosocial problems caused by expressing such a diagnosis and lived by the person diagnosed with cancer are indispensable. Cancer patients and their relatives usually do not disclose their diagnoses so as to avoid problems and discrimination to occur at home, workplace and in society in general. In addition, some studies argued that a significant part of people feel discomfort due to cancer and avoid interaction or they do not want to work with such people (Greene and Banerjee, 2006; Park et al., 2008; Badihian et al., 2017).

In our study, it was determined that nursing students had negative attitudes towards cancer. This result, which is similar to the findings of studies in the literature, supports the knowledge that nursing students have difficulties while giving care to cancer patients during clinical practice (Komprood, 2013; Sharour et al., 2017; Sürücü et al., 2021). Students should be provided with supportive approaches during clinical applications so that they can gain abilities such as providing proper information to a patient, listening to him/her, establishing empathy with him/her and identifying their needs. It is of importance that cancer patients should be encouraged to share their experiences with other people in society (Sürücü et al., 2021).

Nurses have important roles with the potential to affect and improve the quality of care at all levels in the disease and treatment process of cancer patients. In order for the nurse to provide qualified and high quality care to the patient and their families with a holistic perspective, and to be able to recognize the needs of others, they must first discover their own perceptions, attitudes and beliefs. The nurse's individual thought system, perspective on life, values, and perception of spirituality also affect the quality of care and attitude towards cancer (Çetinkaya, Altundağ, & Azak, 2007; Khairunnisa, 2014; Stergiou-Kita et al, 2016). Nurses should be aware of their own feelings, attitudes, preferences and prejudices, accept their right to have their own beliefs, but should not allow these values and beliefs to take precedence over those expressed by patients and their families (Sherman & Free, 2019). Given the uniqueness and individuality of each person, even people of the same culture and spirituality may have different backgrounds, experiences, needs, concerns, and interpretations of illness. In addition to the individuality of the person, the nature of the life-threatening illness may be different and the person may be at different points in adapting to the reality of the illness (Sherman & Free, 2019). For this reason, the sensitivity and personal perceptions of nurses, who are constantly together with the patient and aim to provide holistic-humanistic nursing care to each patient as a philosophy, can affect their attitudes towards cancer. While giving care to the individuals for whom

she takes responsibility, the nurse should not judge them, should respect the autonomy of the individual and should be in a relationship of trust with him (Baykara, 2014; Çelik et al., 2014). In addition, the knowledge, skills and approaches of the nurse who provides continuous care to the sick individual should be at a professional level (Stergiou-Kita et al, 2016).

Recent studies show that nurses and nursing students have pessimistic attitudes towards cancer and cancer-related pain and death (Sanford, Townsend-Rocchiccioli, Quiett, & Trimm, 2011; King-Okoye & Arber, 2014). Attitudes towards cancer are important in terms of influencing caring behaviors towards cancer patients. In a study conducted in Korea, it was determined that more than 50% of the participants stated that it is impossible to cure cancer or that it is very difficult for cancer patients to regain their health (Cho, Smith, & Choi, 2013). How it is perceived is very important. Talking about cancer is a frequently rejected topic for patients and nurses (Lanceley & Clark, 2013). On the other hand, negative fatalistic perspectives are problematic for cancer control because those with more fatalistic views are less likely to engage in cancer-protective behaviors such as participating in cancer screening (Miles et al, 2011; Niederdeppe and Levy, 2007). Cancer fatalism is defined as 'the belief that death is inevitable in the presence of cancer' (Powe, 1995). In this context, it is a remarkable finding in our study that the students have a negative attitude towards all sub-dimensions of the impossibility of recovery, discrimination and revealing the diagnosis of cancer and spreading.

## 5. Conclusion

It was observed that the students in the study group had negative attitudes related to cancer. Considering the high probability of encountering cancer cases, which is one of the health problems seen most frequently in their professional lives of nursing students to become future health professionals, this study is of importance in identifying the wrong attitudes and beliefs of the students so that they can approach properly to the cancer patients properly in the future, and in making improvements both in the curriculum and nursing students' personal behaviors during their education period. The content of oncologic nursing in undergraduate education should be enriched in qualitative and quantitative respects, and the students should be provided with supportive approaches during clinical applications so that they can gain abilities such as providing proper information to a patient, listening to him/her, establishing empathy with him/her and identifying needs. Increased knowledge about the nature, types, treatments and complications of cancer in the society will help reduce cancer-related stigma.

Determining the factors affecting the attitudes of nursing students towards cancer is of importance in terms of applications to be done. Considering the results obtained in this study, more qualitative studies are needed to reveal the relationship between gender and the attitude towards cancer, and the nursing students should be informed about protection from cancer, early diagnosis and screening. Additionally, students should be provided with the supportive approaches so that they can acquire abilities such as identifying the needs of a patient and his/her relatives, and empathetic approaches before and during clinical applications (Lavdaniti et al., 2015). The perceptions and attitudes of students towards cancer during their education and following their graduation can be evaluated. In addition, similar studies can be conducted with students from different cultures and countries.

## 6. Limitations

The limitation of this study is that it was carried out with students enrolled in two state universities. Therefore, the results of the study cannot be generalized to all nursing students.

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