Assessment of Knowledge, Attitudes, and Behaviors of Turkish Women on Breast and Cervical Cancer in Karabük Province, Turkey

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Abstract
Breast and cervical cancer incidence and mortality among women have been increasing worldwide. This cross-sectional study aimed to evaluate women's knowledge, attitudes, and behaviors regarding breast and cervical cancers. The sample was composed of 507 women aged 18 years and older who were admitted to a primary health care center in Karabük, Turkey, from October to December 2019. The data was obtained using a questionnaire consisting of 34 questions regarding participants' socio-demographic characteristics, knowledge, attitudes, and behaviors toward breast and cervical cancers. The mean age of the participants was 41.3±12.0 years and 68.4% of them were married. Slightly more than seven in ten participants knew that the most common cancer in women was breast cancer. Almost six in ten knew that breast self-examination was the first method in the early diagnosis of breast cancer. Breast self-examination practice was found to be significant among university graduates. Periodic mammography and pap smear screenings among participants were 21.9% and 23.3%, respectively. Only 3.4% of participants had received the HPV vaccine and there was no significant difference between socio-demographic characteristics and HPV vaccination status (p-value > 0.05). Participants had moderate knowledge about breast and cervical cancer. Access to cancer screening programs should be facilitated and increased, considering these cancers' public health importance.

Keywords: breast, cancer screening, cervical, knowledge, Turkey

Introduction
Cancer is a group of diseases characterized by uncontrolled cell proliferation.¹ It is known that the lifestyles and habits of individuals with proven genetic and or environmental exposure influence the risk of cancer.² Prevention, early diagnosis, and treatment are of great importance, both individually and nationally. Disease burden decreases and quality of life and life expectancy increase, along with economic gains and psychosocial well-being. In Turkey, cancer constitutes one of the countries' most important health issues.

Globally, the World Health Organization (WHO) ranks cancer as the second most common cause of death. In 2018, it was responsible for 9.6 million, or one-in-six, deaths. In women, the most common type is breast cancer. There were 2.1 million new breast cancer cases worldwide in 2018, and an estimated 627,000 deaths, 15% of the total.³ The regions with the highest incidence, with over 90 cases per 100 thousand, are Australia, New Zealand, and Northern and Western Europe, with the ratio dropping to 43.6–56.7 per 100,000 in Turkey.⁴

There are many risk factors identified with breast cancer. While age, race, family history, genetic factors, age of first menarche and menopause are the most important fixed risk factors, inactive life, obesity, nutrition, cigarette and alcohol consumption, and environmental exposures are variable.⁵,⁶ Diagnosis of breast cancer before clinical presentation increases treatment success, life quality, and life expectancy. Among the screening methods used for early diagnosis—breast self-examination (BSE), clinical breast examination (CBE), and mammography—the most important is BSE, which is cheap and simple to perform. The Ministry of Health of Turkey recommends it as an easy and cost-free early diagnostic method that can be repeated every month after 20. The ministry further recommends CBE every two years up to age 40. Women aged 40 to 69 suggested performing BSE every month, CBE every year, and mammography every two years.⁷

The WHO reported 570,000 new cervical cancer cases in 2018; the fourth was the most common female cancer worldwide. Cervical cancer caused 311 thousand
deaths that year, 7.5% of all female cancer deaths.\(^8\) The biggest agent in the etiology of cervical cancer is the Human papillomavirus (HPV). Other factors include early sexual intercourse, polygamous lifestyle, smoking, acquired immunodeficiency, birth control medication, and presence of sexually transmitted diseases, Black and Hispanic races, and low socioeconomic status.\(^9,10\)

World Health Organization defines primary, secondary, and tertiary preventive methods for cervical cancer. Primary is HPV vaccination for girls aged nine to 15, secondary is cervical screening for women older than 30 years of age, and tertiary is, if medically necessary, chemotheraphy, radiotherapy, and surgery for women of all ages who have been diagnosed with cancer.\(^11\)

In Turkey, HPV-DNA and cervical smear tests are recommended every five years for women aged 30 to 65 in cervical cancer screening programs.\(^7\) Routine screening tests have shown early detection of breast and cervical cancer in women and a significant reduction in morbidity and mortality resulting, with 90% of breast cancers reported by women themselves.\(^12,13\) However, there are also studies in the literature that suggest that women need more cancer information.\(^14,15\) Although screening methods are easy and accessible and significantly reduce mortality and morbidity, it has been found that these methods are not sufficiently acknowledged by women.\(^16,17\)

There is an increasing number of studies on breast and cervical cancer in women within developed and less developing countries. These studies demonstrate a broad variation in women’s knowledge, attitudes, and behaviors about screening methods, which plays a key role in the early diagnosis of cancers worldwide.\(^3,18\) Breast, colorectal, and cervical cancer rates have been rising in Karabük Province of Turkey.\(^19\) No comprehensive studies have been conducted among women to date about knowledge, attitudes, and behaviors concerning breast and cervical cancers in Karabük. We consider that a valuable tool to raise awareness of the importance of early diagnosis and treatment to reduce these cancers’ morbidity and mortality significantly.

**Method**

This cross-sectional study was carried out 507 women aged 18 years and older, admitted to a primary healthcare center in Karabük, Turkey, from October to December 2019. The data were obtained using a questionnaire consisting of 34 questions regarding participants’ socio-demographic status, ages, marital status, educational status, occupations, economic status, family structure, knowledge, attitudes, and behaviors about breast and cervical cancers. The questionnaire was administered by a single researcher using a face-to-face interview method for approximately 15 minutes per participant. The participants were explicitly asked not to declare any identifying information. They were informed that the data would not be used outside of the study and that they could withdraw at any time.

The data obtained through the questionnaire were entered into the statistical package program. The controls and analysis of the data were performed in the same program. Frequency and percentage, mean value, standard deviation, highest and lowest values were used for descriptive statistics. Pearson chi-square test was used for statistical analysis of categorical data; the significance of the difference was accepted as p-value < 0.05. The study was ethically approved by the Karabük University Clinical Research Ethics Committee. All participants provided their written, informed consent, and participated voluntarily in the study.

**Results**

The mean age of the study participants was 41.3 ± 12.0 years. Of the participants, 290 (57.2%) were 40 years or older. While 37.1% of the participants had graduated primary and lower secondary schools, 23.7% had passed high school, and 39.3% were university graduates. Nearly two-thirds, 64.1%, lived in the city center; the rest (27.4%) lived in the district center. Slightly more, 68.4% were married, and 72.6% had at least one child. The detailed socio-demographic characteristics of the participants are displayed in Table 1.

Seventy-one percent, or 359 participants, knew that the most common cancer in women was breast cancer, 57.8% knew that BSE was the first method in its early diagnosis (Table 2), and 38.7% knew that pap smear tests should be done at age 30. Known breast cancer risk factors were family history, past breast cancer episodes, no history of breastfeeding, obesity, and never giving

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**Table 1. Participants’ Socio-demographic Characteristics**

| Demographic       | Category          | n = 507 | %   |
|-------------------|-------------------|---------|-----|
| Age               | Under ≤ 39        | 217     | 42.8|
|                   | Between 40–49     | 165     | 32.5|
|                   | Between 50–59     | 89      | 17.6|
|                   | Above ≥ 60 years  | 36      | 7.1 |
| Education         | Secondary school and below | 188 | 37.1|
|                   | High school       | 120     | 23.6|
|                   | University graduate | 199 | 39.3|
| Marital status    | Single            | 110     | 21.7|
|                   | Married           | 347     | 68.4|
|                   | Divorced /widowed | 50      | 9.9 |
| Economic status   | High income       | 197     | 38.9|
|                   | Middle income     | 279     | 55.0|
|                   | Low income        | 31      | 6.1 |
| Number of children| None              | 134     | 26.5|
|                   | Single child      | 80      | 15.8|
|                   | Two children      | 174     | 34.3|
| Working status    | Yes               | 279     | 55.6|
|                   | No                | 210     | 41.4|
| Breast cancer in the family | Yes | 49 | 9.7 |
|                   | No                | 458     | 90.3|

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birth (85.4%, 70.8%, 54.5%, 29.8%, and 28.2%, respectively). Participants knew that smoking, HPV infection, and multiple sexual partners were the most common risk factors for cervical cancer (69.0%, 52.9%, 51.1%, respectively). In this study, 60.6% of the participants performed BSE, 64.8% practiced it monthly, and 26.7% were practicing weekly. However, 200 participants (39.4%) were not practicing BSE.

Of those, 63.5% expressed that they had forgotten or neglected to practice it, 16.0% of those did not regard it as necessary, and 14.0% did not know how to perform it (Table 2). While there was no significant difference between participants’ BSE practice and their ages, marital status, places of residence, and family histories of cancer, BSE practice was found to be highest in university graduates.

Cancer histories appeared in 32.3% of participant families. Of those, 57.3% performed BSE. On the other hand, 62.1% of participants without cancer histories performed BSE. There was no significant difference between the groups ($\chi^2 = 1.062, p-value = 0.303$) (Table 3).

In this study, 111 participants (21.9%) had undergone periodic mammography screening. Additionally, 33.4% of those aged 40 and older and 25.1% of married participants had regularly undergone mammography screening. The difference between the groups was significant (p-value < 0.05). In the study, it was found that although low income was associated with a lower history of periodic mammography screening, there was no difference between other variables, such as educational status, place of residence, and familial history of cancer (p-value > 0.05). Of the participants aged 40 years or older, 193 (57.5%) did not feel the need to undergo mammography screening, 22.3% of those worried about negative outcomes, and 16.6% lacked knowledge on how to undergo the procedure (Table 3).

In the present study, the rate of participants who had regular pap smears was 23.3%. For women aged 40 and over, the rate was 27.6%; it was 29.1% for married women. In the study, although there was no significant relationship between having a pap smear, education and economic status, place of residence, family history of cancer, and profession, the rate was found to be lower in

Table 2. Knowledge and Practice of Participants about Breast and Cervical Cancer

| Characteristic                                      | Category     | n = 507 | %     |
|----------------------------------------------------|--------------|---------|-------|
| Knowledge about breast cancer                       | Aware        | 359     | 70.8  |
|                                                    | Unaware      | 148     | 29.2  |
| The knowledge that BSE was the first method in the  | Aware        | 293     | 57.8  |
| early diagnosis of breast cancer                    | Unaware      | 214     | 42.2  |
| Status of practicing BSE                            | Yes          | 307     | 60.6  |
|                                                    | No           | 200     | 39.4  |
| Frequency of practicing BSE                         | Once a month | 199     | 64.8  |
|                                                    | Once a week  | 82      | 39.4  |
| Reasons for not practicing BSE                      | Forgetfulness or negligence | 127     | 63.5  |
|                                                    | Did not regard as necessary | 32      | 16.0  |
|                                                    | Did not know how to perform | 28      | 14.0  |
| Knowledge that family history of breast cancer was  | Aware        | 433     | 85.4  |
| a risk factor                                      | Unaware      | 74      | 14.6  |
| Knowledge that having had breast cancer in the past | Aware        | 359     | 70.8  |
| was a risk factor                                  | Unaware      | 148     | 29.2  |
| Knowledge that never breastfeeding was a risk factor| Aware        | 175     | 34.5  |
|                                                    | Unaware      | 332     | 65.5  |
| Knowledge that obesity was a risk factor            | Aware        | 151     | 29.8  |
|                                                    | Unaware      | 356     | 70.2  |
| Knowledge that never giving birth was a risk factor | Aware        | 143     | 28.2  |
|                                                    | Unaware      | 364     | 71.8  |
| Status of undergoing periodic mammography screening| Yes          | 111     | 21.9  |
|                                                    | No           | 396     | 88.1  |
| Knowledge about pap test                            | Aware        | 196     | 38.7  |
|                                                    | Unaware      | 311     | 61.3  |
| Status of having pap smear screening                | Yes          | 118     | 23.5  |
|                                                    | No           | 389     | 76.7  |
| Knowledge that smoking was a risk factor for cervical cancer | Aware   | 350     | 69.0  |
|                                                    | Unaware      | 157     | 31.0  |
| Knowledge that HPV infection was a common risk factor for cervical cancer | Aware | 268 | 52.9 |
|                                                    | Unaware      | 239     | 47.1  |
| Knowledge that multiple sexual partners was a common risk factor for cervical cancer | Aware | 259 | 51.1 |
|                                                    | Unaware      | 247     | 48.7  |
| Status of having had the HPV vaccination            | Yes          | 17      | 3.4   |
|                                                    | No           | 490     | 96.6  |

Notes: BSE: Breast Self Exam, HPV: Human papillomavirus
workers, civil servants, and those living in the city center. Furthermore, 76.9% of participants aged 40 and older were married; 39.1% of those had undergone pap smear screening. Of the 246 participants who were married but did not have pap smears, 62.6% said they neglected or forgot it, 24.0% said they did not find it necessary, and 11.8% feared bad results.

In the present study, 3.4% of the participants had received HPV vaccinations, with no significant differences between the participants’ socio-demographic characteristics (p-value > 0.05). Of those who had not received the vaccine, 19.8% said they would consider receiving it. It is contrast to the 29.2% of participants with family histories of cervical cancer who said they would inherit it. There were no significant differences between patients with and without family histories of cervical cancer (p-value > 0.05).

Slightly more than 21% of the participants knew about cancer. They obtained their knowledge primarily from health workers, the internet, TV-radio, friends, relatives, and neighbors (45.2%, 38.7%, 37.5%, 32.1%, respectively). Another 80.3% of the sample wanted to obtain more information and education about cancer.

Discussion
Breast cancer is the world’s most common type of cancer and cause of cancer-related deaths in women.20 Two studies in Karachi and Islamabad, by Naqvi, et al.,21 and Rasool, et al.,22 concluded that 60%–65% of Pakistani women over the age of 18 knew breast cancer to be a common type of cancer in women and one of the leading causes of death.

Like the Pakistani papers, a study of health care workers in Kayseri, Turkey reported that 88.2% of the participants knew that the most common cancer in women was breast cancer, 37.0% named breast cancer as a common cause of cancer-related deaths.14 Consistent with previous studies, Kabacaoğlu, et al.,14 found that 70.8% of the participants knew that the most common female cancer was breast cancer, which 45.0% knew to be a significant cause of death.

Breast self-exam (BSE) is a simple, cost-free, non-invasive method for early detection of breast cancer. All women should start it after the age of 20.23,24 In a study conducted in 407 female students in Ethiopia, 56.2% of the participants knew about BSE, but only 21.4% that actually practiced it.25 This finding is similar to another study conducted by Ahmed, et al.,26 in Pakistan, where 68.4% of women knew that BSE was an early screening method, of whom 60.8% practiced it monthly. Consistent with previous study, the current results show that 57.8% of participants knew that BSE was the first method for early diagnosis of breast cancer, 60.6% of those practiced BSE, and 41.4% stated that this method should be started from the age of 20. These values also indicate that women are aware of BSE but not sufficiently. Some studies are investigating the reasons why women do not practice BSE in Turkey. One study conducted by Kabacaoğlu, et al.,14 with female healthcare professionals stated that the reasons why 86.5% of women do not

#### Table 3. Breast Self Exam, Mammography, and Pap Smear Test Status of Participants

| Characteristic         | Category                              | Practicing BSE | Mammography screening | Having Pap smear tests |
|------------------------|---------------------------------------|----------------|------------------------|------------------------|
|                        | Total n (%)                           | n %            | χ² p-value              | n %                    | χ² p-value |
| Age groups             | Under 40                              | 217            | 130 59.9 0.066 0.797   | 14 6.5 52.90 0.0011    | 38 17.3 7.053 0.0081 |
|                        | 40 years and older                    | 290            | 177 61.0 797           | 97 33.4 80 27.6       |
| Marital status         | Married                               | 347            | 216 62.2 1.323 0.250   | 87 25.1 6.496 0.0111   | 101 29.1 20.94 0.0011 |
|                        | Single                                | 160            | 91 56.9 24 15.0        | 17 10.6               |
| Education status       | Secondary school and below            | 188            | 95 50.5 9.516 0.0091   | 47 25.0 1.976 0.372   | 45 25.9 3.196 0.202 |
|                        | High school                           | 120            | 63 34.2 26 21.7        | 21 17.3               |
|                        | University                            | 199            | 137 68.8 38 19.1       | 52 26.1               |
| Occupation             | Housewife                             | 210            | 119 56.7 11.763 0.0081 | 51 24.3 9.812 0.0201  | 58 27.6 7.092 0.069 |
|                        | Officer                               | 124            | 83 66.9 18 14.5        | 25 20.2               |
|                        | Worker                                | 41             | 17 41.5 5 12.2         | 4 9.8                 |
|                        | Artisan                               | 152            | 88 66.7 37 28.0        | 31 25.5               |
| Economic status        | High                                  | 197            | 123 62.4 11.067 0.0041 | 40 20.3 5.927 0.0522  | 55 27.9 4.954 0.084 |
|                        | Moderate                              | 279            | 174 62.4 69 24.7       | 59 21.1               |
|                        | Low                                   | 51             | 10 32.3 2 6.5          | 4 12.9                |
| Residence              | Province                              | 325            | 189 58.2 5.237 0.198   | 62 19.1 5.246 0.073   | 67 20.6 4.233 0.120 |
|                        | District                              | 139            | 93 66.9 35 25.2        | 37 26.6               |
|                        | Village/ town                         | 43             | 25 58.1 14 32.6        | 14 32.6               |
| Family history of cancer | Yes                                  | 164            | 94 57.3 1.062 0.303    | 42 25.6 1.938 0.162   | 43 26.2 1.178 0.278 |
|                        | No                                    | 345            | 213 62.1 69 20.1       | 73 21.9               |
| Total                  |                                       | 507            | 307 60.6 111 21.9      | 118 25.3              |

Notes: BSE: Breast Self Exam, 1p-value < 0.05, 2Acceptable significance level, χ² = chi-square test
perform BSE were that they were “forgetting and neglecting”. In another study from Turkey, it was revealed that the lack of information and the fear of bad results were the most common reasons for not performing BSE. All these studies, including the present one, suggest that women are dismissing the importance of early diagnosis of breast cancer and that the fear of getting cancer appears to affect their continuing BSE performance.

In the study, while there was no difference between ages, marital status, place of residence, family cancer histories, and BSE practice status, the practice was more frequent with women who were university graduates and who regarded their economic status as “good” (p-value < 0.05). In the study conducted by Duman, et al., similar to the present study, BSE practices were higher in women with higher education levels. Likewise, Deger and Aker’s studies found that those with higher educational levels practiced BSE more regularly. These results suggest that healthy life expectancy rises significantly for people who are aware and have more knowledge to use health services and awareness increases with education.

According to the literature, breast cancer’s family history is one of the important factors increasing the risk of breast cancer. Of the women participating in the present study, 9.7% had family histories of breast cancer. Yet, the rate of BSE was found to be lower in this group. Similar to this study, Duman, et al., found that women with family histories of breast cancer had a low rate of regular BSE. Consistent with these studies, Özçam, et al., reported that family history of breast cancer was not typically associated with BSE. In addition, they determined that the main reasons for not practicing BSE were age, marital status, socio-cultural factors and inadequate education programs about breast health.

A recent study declared that regular mammography screening reduces the risk of breast cancer by 14%—29%. Likewise, Duffy, et al., reported that the mortality rate of breast cancer for women attended mammography screening within 10 years decreased by 41%. The rate of mammography for women in the present study over 40 was approximately 33%. In a study conducted among women in Turkey, the rate of screening mammography was 34.7%. In another study among African-American women aged 40 years, 43.0% of participants had undergone mammography screening. That study found that women who did not schedule regular mammography screening cited vision and cancer concerns, realistic or not, demonstrating that mammography is not taken seriously enough as a screening method and awareness is low.

Cervical cancer is the fourth most common cancer in women. It has been found that the risk of cervical cancer can be reduced by regular pap smear tests and the HPV vaccine. In a 2015–2016 study, of 300 women admitted to primary health care facilities in Bahrain, 122 (40.7%) had had pap smears, and only 11 (3.7%) had heard of the HPV vaccine. Another study by Heena, et al., found that 26.2% of health care workers had had at least one pap smear test, while 5.6% had received the HPV vaccine. In this study, it was found that 23.3% of the participants had undergone regular pap smears. This rate was lower than in the previously mentioned studies. However, the rates for HPV vaccination in the current study were similar to these studies.

Women cited many reasons for failure to have pap smears, the most common being “forget and neglect,” neglecting the test and regarding it as unnecessary. Consistent with these findings, some studies reported simple neglect as one of the main reasons for missing a pap smear. The present study found that married women over 40 years of age had higher mammography screenings and pap smears, but these findings were not related to their education levels. A possible reason for this finding may be that mammography screening should be more emphatically recommended after 40 by Health Directorate offices in Turkey.

There were some limitations to this study. The first was that the results were obtained only from women admitted to a single-center, leaving the findings not generalized to the general population. The second was that socio-demographic differences were not equally distributed. In addition, data on breast and cervical cancers were based on women’s statements, and thus the data might not be objective.

Conclusion
This study indicates that women’s levels of knowledge of breast and cervical cancers remain inadequate. Therefore, women should be educated—and educate themselves—about these cancers, be encouraged to practice BSE, and get regular pap smear tests. Women with family histories of cancer should seek out individual counseling and learn about regular mammography. Promoting cancer awareness through mass media campaigns can play a genuine role in improving women’s knowledge of these diseases, lower their risks, and show them how to respond effectively if signs and symptoms should appear.

**Abbreviations**
HPV: *Human papillomavirus*; BSE: Breast Self Examination; CBE: Clinical breast examination; WHO: World Health Organization; IARC: International Center for Cancer Research.

**Ethics Approval and Consent to Participate**
The study was approved by the Ethics Committee of Karabük University (Approval ID 2019/43.1).
Competing Interest
The author declares that there are no significant competing financial, professional, or personal interests that might have affected the performance or presentation of the work described in this manuscript.

Availability of Data and Materials
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Authors’ Contribution
Nergiz Sevinç: project administrator, study designer, data curator, analysis, and original draft; Belgin Oral: study designer, data curator and analysis, supervision, writing–original draft; Burcu Korkut: writing–review and editing. All authors have read and approved the final manuscript.

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References
1. Cooper GM. Elements of human cancer. 1st Edition. Canada: Jones and Bartlett Publishers. 1992; pp. 4.
2. Baykara O. Current modalities in treatment of cancer. Balkesr Health Sciences Journal. 2016; 5 (3): 154-65.
3. World Health Organization. Cancer: key facts; 2018 [Accessed on 10 December 2019].
4. International Agency for Research and World Health Organization on Cancer Today. Breast Source: Globocan 2018. 2019 [Accessed on 01 November 01, 2019].
5. Winchester Dj, Winchester DP, Hudis CA, Norton L. Breast Cancer. 2nd Edition. USA: Wasworth Publishing Company; 2006. pp. 47-51.
6. Fasching PA, Ekici AB, Adamietz BR, Wachter DL, Hein A, Bayer CM, et al. Breast cancer risk–genes, environment and clinics. Geburtshilfe und Frauenheilkunde. 2011; 71 (12): 1056-66.
7. Deniz S, Kurt B, Oğuzönçüel AF, Nazlıcan E, Akbaba M, Nayır T. Knowledge, attitudes and behaviours of women regarding breast and cervical cancer in Malatya, Turkey. PloS One. 2017; 12 (11): e0188571.
8. World Health Organization. Human papillomavirus (HPV) and cervical cancer: key facts; 2019 [Access on December 11, 2019].
9. Kanbur A, Çapık C. Cervical cancer prevention, early diagnosis–screening methods and midwives/nurses role, University of Health Sciences. Journal of Nursing. 2011; 2011: 61-72.
10. Aysödğuoğlu SGM, Özsoy Ü. Cervical cancer and HPV. Andrology Bulletin. 2018; 20: 25-9.
11. World Health Organization. Comprehensive cervical cancer prevention and control: a healthier future for girls and women. WHO Library Cataloguing-in-Publication 2013; 2013 [Accessed on November 05, 2019], pp. 3-9.
12. Greene H. Cancer prevention, screening, and early detection, advanced oncology nursing certification review and resource manual, oncology nursing society. 2nd Edition. 2016. Chapter 1: 1-35.
13. Korkut Y. Assessment of knowledge, attitudes, and behaviors regarding breast and cervical cancer among women in western Turkey. Journal of International Medical Research. 2019; 47 (4): 1660-66.
14. Kabacaöglo M, Oral B, Balci E, Gunay O. Breast and cervical cancer related practices of female doctors and nurses working at a University Hospital in Turkey. Asian Pacific Journal of Cancer Prevention (APJCP). 2015; 16 (14): 5869-73.
15. Kürtünçü, Arslan N, Alkan I, Bahadır O. Knowledge, attitude and behaviors of the mothers of 10-15 year old daughters regarding cervical cancer and HPV vaccine. Journal of Human Sciences. 2018; 15 (2): 1072-85.
16. Duman NB, Alger L, Pnar G. Health beliefs of the female academicians about breast cancer and screening tests and the affecting factors. International Journal of Hematology and Oncology. 2013; 23: 253-41.
17. Patil AD, Salvi NR, Shahina B, Pimple AS, Mishra AG, Chauhan LS, et al. Perspectives of primary healthcare providers on implementing cancer screening services in tribal block of Maharashtra, India. South Asian journal of cancer, 2019; 8 (3): 145-49.
18. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: Globocan estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: A Cancer Journal for Clinicians. 2018; 68 (6): 394-424.
19. Özdemir R, Çevik FT, Kes D, Karacah M, Özgünê S. Level and factors associated with participation in population based cancer screening in Safranbolu District of Karabük, Iran. Journal of Public Health. 2020; 49 (4): 665-72.
20. Silva OE, Zurrida S, Veronesi U. Breast cancer: a practical guide. 3rd Edition. Elsevier Saunders Ltd. 2005; pp. 21-3.
21. Naqvi AA, Zehra F, Ahmad R, Ahmad R, Ahmad N, Yazdani N, et al. Awareness, knowledge and attitude towards breast cancer, breast screening and early detection techniques among women in Pakistan. The Journal of the Pakistan Medical Association. 2018; 68 (4): 576-86.
22. Rasool S, Iqbal M, Siddiqui A, Ahsan R, Mukhtar S, Naqvi S. Knowledge, attitude, practice towards breast cancer and breast self-examination among female undergraduate students in Karachi, Pakistan. Journal of Advances in Medicine and Medical Research. 2019; 29 (9): 1-11.
23. Mavi ASG, Karapelit Z. To determine the knowledge and attitude of midwifery students about breast self examination. Andrology Bulletin. 2017; 19 (3): 78-85.
24. Parvani Z. Breast self-examination: breast awareness and practices of systematic review. Professional Medical Journal. 2011; 18 (2): 336-9.
25. Getu MA, Kassaw MW, Tlaye KG, Gebrekiristos AF. Assessment of breast selfexamination practice and its associated factors among female undergraduate students in Addis Ababa University, Addis Ababa, Ethiopia, 2016. Dove Media Press (Breast Cancer: Targets and Therapy). 2019; 11: 21-8.
26. Ahmed A, Zahid I, Ladiwala ZFR, Sheikh R, Memon AS. Breast selfexamination awareness and practices in young women in developing countries: a survey of female students in Karachi, Pakistan. Journal of Education and Health Promotion. 2018; 7: 90.
27. Deger VB, Ciftci S, Saka G, Ceylan A. Level of information of university students on breast self-examination. Journal of Continuing Medical
28. Aker S, Öz H, T EK. Practice of breast cancer early diagnosis methods among women living in Samsun, and factors associated with this practice. The Journal of Breast Health. 2015; 11: 115-22.

29. Brewer HR, Jones ME, Schoemaker MJ, Ashworth A, Swerdlow AJ. Family history and risk of breast cancer: an analysis accounting for family structure. Breast Cancer Research and Treatment. 2017; 165 (1): 193-200.

30. Tazzite A, Jouhadi H, Sais K, Benider A, Nadifi S. Relationship between family history of breast cancer and clinicopathological features in Moroccan Patients. Ethiopian Journal of Health Sciences. 2013; 23 (2): 150-7.

31. Özçam H, Çimen G, Uzunçakmak C, Aydın S, Özcan T, Boran B. Evaluation of the knowledge, attitude, and behavior of female health workers about breast cancer, cervical cancer, and routine screening tests. Istanbul Medical Journal. 2014; 15 (3): 154-60.

32. Duffy SW, Tabár L, Yen AMF, Dean PB, Smith RA, Jonsson H, et al. Mammography screening reduces rates of advanced and fatal breast cancers: results in 549,091 women. Cancer. 2020; 126 (13): 2971-9.

33. Silva OE, Zurrida S, Veronesi U. Breast cancer: a guide for fellows. 3rd Edition. Elsevier Saunders Ltd. 2005; pp. 21-3.

34. Adegoke O, Kulasingam S, Virnig B. Cervical cancer trends in the United States: a 35-year population-based analysis. Journal of Women’s Health. 2012; 21 (10): 1031-7.

35. Almehmadi MM, Salih MM, Al-Hazmi AS. Awareness of Human papillomavirus infection complications, cervical cancer, and vaccine among the Saudi population: a cross-sectional survey. Saudi Medical Journal. 2019; 40 (6): 555-9.

36. Jassim G, Obeid A, Al Nasheet HA. Knowledge, attitudes, and practices regarding cervical cancer and screening among women visiting primary health care Centres in Bahrain. BMC Public Health. 2018;18 (1): 128.

37. Heena H, Durrani S, AlFayyade I, Riaz M, Tabasim R, Parvez Get al. Knowledge, attitudes, and practices towards cervical cancer and screening amongst female healthcare professionals: a cross-sectional study. Journal of Oncology. 2019; article ID 5423130.