## RESEARCH COMMUNICATION

# **Cognition of Breast Cancer Among Gestational Age Turkish Women: A Cross-Sectional Study**

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## **Abstract**

The aim of the study is to describe the cognition of breast cancer with respect to knowledge, beliefs, attitudes and behavior in a group of gestational age Turkish women. A questionnaire survey was therefore performed on 201 randomly selected women registered to the health database in Aydin. In age, marital status, and occupation were found to significantly impact on breast self-examination (BSE) performance, which should still be considered as an important tool for early diagnosis, although it does not substitute clinical examination and education. As delayed diagnosis is the leading problem in the management of disease, well-structured education should be supported to increase awareness of breast cancer. Given to the remarkable role of nurses in the community on women's health, a more focused approach on education of young female populations by nurses in Turkey should be considered.

**Keywords:** Breast cancer - breast self examination - gestational age - cognition

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### Introduction

Breast cancer is the second most common cause of cancer-related deaths among women worldwide. The recent decrease in death rates for breast cancer largely reflects improvements in early detection and treatment (Anderson et al., 2006; Jemal et al., 2008). Breast cancer is also the most prevalent cancer in Turkey, accounting for 24.1-26.7% of all female cancers (Ministry of Health of Turkey, 2000; Fidaner et al., 2001).

The success in breast cancer management depends on early diagnosis and treatment. Early diagnosis correlates with increased awareness for the disease in the population as well as the economic status of the country and widespread use of medical technology for screening. Studies from our country showed that women with breast cancer do not apply health professionals in early stages of the disease compared to developed countries. It is reported that women with breast cancer had axillary metastasis by 65% and distant metastasis by 1.2% at presentation in Turkey (Ozgun et al., 2009).

The aim of the study was to determine the health cognition (knowledge, beliefs, attitudes and behaviors) of Turkish women on breast cancer. It is also aimed to determine the characteristics of socio-demographic factors effecting on these parameters and to contribute health policies directed to solve these problems.

### **Materials and Methods**

This descriptive cross-sectional study was performed in a district in the city of Aydin, in the Aegean region, Turkey. This particularly selected district is characteristic to include people from different social and economic levels. The local government authority and managerial office approved the study.

A questionnaire was applied to a randomly selected group of women between 15 and 49 years of age, e.g. in the gestational period. The randomization was done by choosing cards among the health records of midwives', working in the health center responsible from this district. Sampling was performed by selecting women with 25 number intervals from the lists including 5041 women. Participation in the study depended on the basis of volunteering. Participating women were allowed to resign whenever they wanted. For women who were not eager to participate in the study, following ones in the list were selected.

## Instrument

A questionnaire, composed of three sections, was used to collect the data. The first section contained questions about participants' age, marital status, education level, occupation, social security, family income, and existence

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Fatma Demirkiran et al of current health problems.

The second section questioned participants about their behavior, knowledge, and beliefs on health and breast cancer. Regarding health behaviors, women were questioned about the frequencies of their physician referrals, clinical breast examination (CBE) and gynecologic check-ups, and breast self examination (BSE) performance. Participants were asked questions to evaluate their knowledge on BSE and breast cancer. Specifically, they were asked whether they thought they had sufficient information on breast cancer in general and about causes and symptoms of breast cancer in particular. They were also asked whether breast cancer could be prevented and diagnosed early or not. Another question asked for the optimal frequency of CBE. Correct frequency for women under 40 years is accepted as once in three years and once a year after then, as stated by the American Cancer Society (American Cancer Society, 2009). They were asked whether women should be informed about breast cancer or not; if they answered yes, they were also asked about the source of this information preferred. They were also asked if they thought breast cancer is a fatal disease and is incurable. Another question was about their beliefs whether women talk about breast cancer among themselves or not. Response alternatives for questions in this section were "yes", "no" and "do not know".

Third section consisted of seven items about women's attitudes on sexual and social effects of breast cancer on woman's life. Respondents were asked to indicate their level of agreement and disagreement with the content of an item. The response alternatives were 1 (true), 0 (false) and 2 (do not know) (see Table 1). The "do not know" response alternative was treated as a missing value for the assessment.

## Data Analysis

Statistical analyses were done by using the Statistical Package for the Social Sciences (SPSS) for Windows 11.0. A finding was accepted as statistically significant when it reached a probability of 0.05. Counts and percentages of responses were computed. A principle component analysis with eigenvalues greater than 1 extracted 2 factors which accounted for 69.4% of total variance. Factor names and loadings are given in Table 1.

Factor scores were computed by summing responses to items and divided by the number of items under each factor. Thus the factor scores were between 0 and 1. The independent samples t-tests were used to compare groups on interval data. Pearson product moment correlation coefficients were computed to see the relationship between continuous variables.

## Results

The study sample was composed of 201 women. The mean age of women was  $31\pm9.9$  years (mean  $\pm$  SD). Most of the participants (76.6%) were married and (55.2%) were primary school graduates.

Of respondents, 19.9% had no social security and 71.1% were not working. Most women (60.7%) stated that their family income were under minimum wage. Thirty

Table 1. Attitudes of the Study Sample on Sexual and Social Effects of Breast Cancer on Woman's Life

| Items                                      | Factor I | Factor II |
|--|----------|-----------|
| Breast cancer disrupts a woman's           | 0.91     |           |
| relationship with her partner.             |          |           |
| Women with breast cancer lose their sexual | 0.84     |           |
| attraction.                                |          |           |
| Breast cancer annihilates feminine         | 0.77     |           |
| characteristics of a woman.                |          |           |
| Social reputation of women with breast     |          | 0.83      |
| cancer is damaged.                         |          |           |
| Social relationships of women with breast  |          | 0.79      |
| cancer are impaired.                       |          |           |
| Breast cancer affects a woman worse than   |          | 0.67      |
| other types of cancer.                     |          |           |
| Women with breast cancer lose their self   |          | 0.64      |
| confidence.                                |          |           |
| Eigenvalues                                | 3.84     | 1.01      |
| Explained (%)                              | 54.9     | 14.5      |

Table 2. Demographic Data in the Study Sample

| Demographic Data               | Number | Percentage |
|--------------------------------|--------|------------|
| Marital status                 |        |            |
| Married                        | 154    | 76.6       |
| Bachelor                       | 47     | 23.4       |
| Education level                |        |            |
| Primary school                 | 111    | 55.2       |
| High school or university      | 90     | 44.8       |
| Social security                |        |            |
| Any kind                       | 161    | 80.1       |
| No                             | 40     | 19.9       |
| Occupation                     |        |            |
| Working                        | 58     | 28.9       |
| No                             | 143    | 71.1       |
| Family income (monthly)        |        |            |
| Over minimum wage              | 74     | 36.8       |
| Under or equal to minimum wage | 122    | 60.7       |
| No answer                      | 5      | 2.5        |
| Current health problem         |        |            |
| Yes                            | 36     | 17.9       |
| No                             | 165    | 82.1       |

six women (17.9%) had current health problems (Table 2).

Most women (80.6%) said that they applied to a physician when they were seriously ill, while others went for check-up or any suspicion of illness. Only 13.4% of them went to gynecologist for control and 19.9% had CBE before. Questions directed to evaluate women's knowledge on breast cancer showed that only 16.4% thought they had enough information. Almost all (98%) believed that women should be informed about breast cancer. Most participants (98.4% of the responders) concluded that this information should be given by health professionals, while the rest suggested that TV and media should play greater roles.

Query on breast examination revealed that 22.4% of women accurately denoted correct time frequency for CBE intervals. Most respondents (77.6%) stated that they did not really know how to perform BSE, where it was only performed by 29.9%. Breast cancer is thought to be fatal and impossible to treat by 19.4%, while 34.8% said they had no idea. On the contrary, 57.7% told that breast cancer is a preventable disease and 74.1% said early diagnosis was possible.

Table 3. Familiarity to Health Services, Knowledge on and Attitudes Towards Breast Cancer and Breast **Self-examination in the Study Sample** 

| Consideration for personal health                     | Number | Percentage |
|---|--------|------------|
| When do you apply to a physician?                     |        |            |
| When ill  | 162    | 80.6       |
| Whenever feel bad or for check-up                     | 39     | 19.4       |
| Have you ever had any gynecological                   |        |            |
| controls?   | 07     | 10.4       |
| Yes   | 27     | 13.4       |
| No  | 174    | 86.6       |
| Have you ever had clinical breast examination before? |        |            |
| Yes   | 40     | 19.9       |
| No  | 161    | 80.1       |
| Knowledge on and attitude towards brea                |        | 60.1       |
| cancer  | S.     |            |
| Do you think you have enough                          |        |            |
| information on breast cancer?                         |        |            |
| Yes   | 33     | 16.4       |
| No  | 168    | 83.6       |
| Is breast cancer fatal and impossible to              | 100    | 00.0       |
| treat?  |        |            |
| Yes   | 39     | 19.4       |
| No  | 92     | 45.8       |
| No idea   | 70     | 34.8       |
| Should women be informed about breast                 | ·      |            |
| cancer?   |        |            |
| Yes   | 197    | 98.0       |
| No  | 1      | 0.5        |
| No idea   | 3      | 1.5        |
| Who should give this information?                     |        |            |
| Health professionals                                  | 183    | 91.0       |
| TV-media  | 3      | 1.5        |
| No answer   | 15     | 7.5        |
| Is breast cancer a preventable disease?               |        |            |
| Yes   | 116    | 57.7       |
| No  | 85     | 42.3       |
| Can breast cancer be diagnosed early?                 | 1.40   | <b>741</b> |
| Yes   | 149    | 74.1       |
| No  | 52     | 25.9       |
| Breast examination                                    |        |            |
| How frequent should breast examination                | l      |            |
| be performed by a physician? <6 months                | 23     | 11.4       |
| 6 months  | 69     | 34.3       |
| 12 months   | 45     | 22.4       |
| 24 months   | 3      | 1.5        |
| No answer   | 61     | 30.3       |
| Do you know how to perform BSE?                       | 01     | 30.3       |
| Yes   | 45     | 22.4       |
| No or incomplete                                      | 156    | 77.6       |
| Do you perform BSE?                                   | -20    |            |
| Yes   | 60     | 29.9       |
| No  | 141    | 70.1       |
| Do you think women talk about breast                  |        |            |
| cancer?   |        |            |
| Yes   | 130    | 64.7       |
| No  | 71     | 36.3       |

About two thirds of women (64.7%) thought that women talk about breast cancer with each other. All these data were listed in detail in Table 3.

Among demographic data, respondents' age, marital status, education level, occupation and family income were effective on women's perceptions and attitudes

Table 4. Influence of Demographic Data and Behavior, Knowledge, and Beliefs on Health and Breast Cancer in Women with Respect to Sexual and Social Aspects

|                                  | Sexual factors   | Social factors                        |
|----------------------------------|------------------|---------------------------------------|
| Demographic data                 |                  |                                       |
| Age                              | NS               | r <sub>(191)</sub> =0.18,<br>p=0.015* |
|                                  |                  | p=0.015*                              |
| Marital status                   | NS               | $t_{(189)} = 2.19,$<br>p=0.030*       |
|                                  |                  |                                       |
| Education level                  | NS               | t <sub>(189)</sub> =3.89,<br>p=0.000* |
|                                  |                  | p=0.000*                              |
| Occupation                       | NS               | $t_{(189)} = 3.24$                    |
|                                  |                  | p=0.001*                              |
| Social security                  | NS               | NS                                    |
| Family income                    | NS               | $t_{(185)} = 3.29$ ,                  |
|                                  |                  | p=0.001*                              |
| Current health problem           | NS               | NS                                    |
| Sehavior, knowledge, and belie   | fs on health and | breast cancer                         |
| Knowledge on BSE                 | NS               | NS                                    |
| BSE performance                  | NS               | NS                                    |
| Breast examination before        | NS               | NS                                    |
| Routine control visits to        | NS               | NS                                    |
| gynecologist                     |                  |                                       |
| Attend physician for general     | NS               | NS                                    |
| health                           |                  |                                       |
| Thinks she knows about           | NS               | $t_{(188)} = 2.25$ ,                  |
| breast cancer                    |                  | p=0.025*                              |
| Belief in inevitable fatality of |                  | $t_{(188)} = 3.00,$                   |
| breast cancer                    | p=0.046*         | p=0.003*                              |
| Belief in breast cancer          | NS               | NS                                    |
| curability                       |                  |                                       |
| Belief in early diagnosis        | NS               | NS                                    |
| Talk about breast cancer         | NS               | NS                                    |

\*shows statistically significant values (p<0.05)

that breast cancer may impair social status. Women who believed that breast cancer was inevitably fatal had significantly negative perceptions and attitudes about breast cancer for the sexual identity and social status of a woman. And also, those who said that they did not know about breast cancer thought a woman with breast cancer would be likely to have undesired effects on social factors (Table 4).

Marital status of women was the only factor differentiating respondents according to their knowledge on BSE and previous CBE. Married women said they knew BSE or had CBE in a significant frequency (t(197)=2.23,p=0.027 and t(199)=2.80, p=0.006, respectively).

Age, marital status, and occupation were effective for BSE performance (t(86)=2.38, p=0.019, t(86)=3.29,p=0.001, and t(86)=2.42, p=0.017, respectively). Age (t(198)=2.34, p=0.021), marital status (t(198)=2.12,p=0.035), education level (t(198)=2.79, p=0.006), and family income (t(193)=3.36, p=0.001) were effective factors on physician referral for general health.

Occupation and family income also differentiated women who believed breast cancer was inevitably fatal or not (t(198)=2.51, p=0.013 and t(193)=2.54, p=0.012,respectively), where marital status, education level, and social security were distinctive data whether women believed breast cancer was preventable or not (t(199)=3.32,p=0.001, t(199)=2.00, p=0.047, and t(199)=2.19, p=0.030, respectively) (Table 5).

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Table 5. Statistical Test Results of Women According to Knowledge and Beliefs on Health and Breast Cancer Compared with Demographic Data

|  | Age                             | Marital                               | Education                             | Occupation                            | Social                                | Family                                | Current |
|--|---------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------|
|  |                                 | status                                | level                                 |                                       | security                              | income                                | health  |
| Knowledge on BSE                               | NS                              | t <sub>(197)</sub> =2.23,<br>p=0.027* | NS                                    | NS                                    | NS                                    | NS                                    | NS      |
| BSE performance                                | $t_{(86)} = 2.38,$<br>p=0.019*  | $t_{(86)} = 3.29,$<br>p=0.001*        | NS                                    | $t_{(86)} = 2.42,$<br>p=0.017*        | NS                                    | NS                                    | NS      |
| Breast examination before                      | NS                              | t <sub>(199)</sub> =2.80,<br>p=0.006* | NS                                    | NS                                    | NS                                    | NS                                    | NS      |
| Gynecological control before                   | NS                              | NS                                    | NS                                    | NS                                    | NS                                    | NS                                    | NS      |
| Apply to physician for general health          | $t_{(198)} = 2.34,$<br>p=0.021* | t <sub>(198)</sub> =2.12,<br>p=0.035* | t <sub>(198)</sub> =2.79,<br>p=0.006* | NS                                    | NS                                    | t <sub>(193)</sub> =3.36,<br>p=0.001* | NS      |
| Thinks she knows about breast cancer           | NS                              | NS                                    | NS                                    | NS                                    | NS                                    | NS                                    | NS      |
| Belief in inevitable fatality of breast cancer | NS                              | NS                                    | NS                                    | t <sub>(198)</sub> =2.51,<br>p=0.013* | NS                                    | t <sub>(193)</sub> =2.54,<br>p=0.012* | NS      |
| Belief in breast cancer curability             | NS                              | t <sub>(199)</sub> =3.32,<br>p=0.001* | t <sub>(199)</sub> =2.00,<br>p=0.047* | NS                                    | t <sub>(199)</sub> =2.19,<br>p=0.030* | NS                                    | NS      |
| Belief in early diagnosis                      | NS                              | NS                                    | NS                                    | NS                                    | NS                                    | NS                                    | NS      |
| Talk about breast cancer                       | NS                              | NS                                    | NS                                    | NS                                    | NS                                    | NS                                    | NS      |

<sup>\*</sup>statistically significant

## Discussion

Breast cancer awareness in Turkish population is likely to increase with the influence of media. In many studies on Turkish women, it has also been reported that women mostly prefer to receive information and modify their health behavior through common media, although subjects in our study preferred health professionals (Aslan et al., 2002; Cetingoz et al., 2002; Dundar et al., 2006). It is a known fact that the education level of women living in the western region of Turkey is higher compared to the other regions throughout the country. It has also been demonstrated that attitudes of husbands and religion are not strong barriers for health practices in western Turkey (Hacettepe University, 2003).

On the other hand, the results of the present study reflect a relatively better socio-economic group throughout women in the country.

Participants in the study mostly (80.6%) applied to a physician only when they were seriously ill. Medical check-up or screening in health centers were preferred by only one fifth of the study population. Physician referral was frequently observed in women at older ages, married, high level of education, and better family income. Age factor may be explained by acquired chronic health problems and familiarity to health services. Married women may have frequently applied to physicians due to obstetrical or gynecological problems. Those with higher education and better income corresponds higher socio-economic level.

Sufficient evidence has added up to conclude that BSE performance does not improve survival rates in breast cancer. Accordingly, the American Cancer Society no longer recommends that all women perform monthly breast self-exams (BSE); however, women should be informed about the potential benefits and limitations associated with BSE12. Research has shown that structured BSE is less important than self awareness. Women who detect their own breast cancer usually find it

outside of a structured breast self-exam while bathing or getting dressed. A woman who wishes to perform periodic BSE should receive instruction from her health care provider and/or have her technique reviewed periodically (American Cancer Society, 2009). The value of heightened awareness, however it may be achieved, is commonly acknowledged based on the value of earlier treatment of both non-palpable and palpable breast cancers (Smith et al., 2003).

However, in developing countries where CBE and mammograms are difficult to access, BSE may be accepted as a reliable option for earlier detection of breast cancer (Demirkiran et al., 2007). Training for BSE may also help women to be aware of breast cancer risk. In this study, although 47.7% declared to know how to perform BSE, only 29.9% of participants reported that they performed BSE while 13.4% said to examine themselves regularly. Studies on Turkish women showed that only 27-39% had performed BSE10. Regular monthly BSE was reported by Secginli in 5.5% of women in Istanbul (Secginli and Nahcivan, 2004). BSE was known more commonly in married women, while BSE performance was found to be significantly more common in women who were older, married, or working. It may be explained by the fact that women at the end of gestational ages have increased risk for breast cancer due to a peak in incidence. Married women more frequently experience breast problems related with lactation; therefore, breast awareness may have relatively increased. Women in business life may also be socially influenced by their female peers.

Among participants, 19.9% had ever at least one CBE, although 22.4% knew the correct time frequency for CBE intervals. Zincir (2000) reported that 21.1% of women over 40 in eastern Turkey had every year CBE, which reflects no better results than our study, since our study population consisted of younger women who were expected to experience lesser breast problems. However, it is recommended by the American Cancer Society that women should have a CBE preferably on every 3 years

before 40 and every year after then (American Cancer Society, 2009). In the present study, CBE history had only significant relationship with marital status. This may be contributed to social and cultural effects of the population on women. Married women may be relatively older than unmarried, so they may need CBE more frequently.

As for the questions related with women's beliefs about breast cancer, cultural and economic problems and availability of health services easily seem to affect the results. Women married, with higher education and under social security believe in the curability of breast cancer, while those unemployed and low family income believed that breast cancer is an inevitably fatal disease. This may be attributed to a compensatory mechanism of women who cannot make use of health services sufficiently. Also it is easier for educated woman population to reach related information and health services. Social security opportunities affect the admission to healthcare centers.

Attitudes of women on breast cancer were questioned mainly on sexual and social aspects. Women younger, single, less educated, unoccupied, and with lower family income believed that breast cancer impaired social life of a woman. Traditional arranged marriages are more commonly observed in families less educated, unoccupied and with lower family income. Fear from a probability of health problems before marriage worries young women for their future. Single women may avoid from visiting the physician for breast examination, since they will be unable to marry in case of having such a health problem. Therefore, they express this feeling as the worries about social respect. Women married and with children have stronger family relations. Social support by their families may help them to struggle with cancer. Higher level of income has positive impact on coping with breast cancer. Professional identity and dignity of working women besides their self-esteem may help them to perceive the negative effect of breast cancer less than unoccupied women.

Also women who said that they did not have information about breast cancer and who believed inevitable fatality thought that breast cancer damages social status of a woman. Women who believed that it is impossible to recover from breast cancer and death is unavoidable thought that breast cancer had negative impact on sexual identity of a woman (Ganz, 2008; Helms et al., 2008). It has been reported that informing patients about cancer and its consequences on sexual life helped people to cope with the disease. This also attenuates psychosocial morbidity. It has also been shown that demand for information is closely related with educational level (Hughes, 2000; McKee and Schover, 2001).

BSE practice was found to be more common in women confident for BSE, under health insurance, informed about breast cancer (Nahcivan and Secginli, 2007). The vast majority of women have difficulty to make use of health services because of social, economic, and cultural barriers. The accurate guidance of media is of utmost importance for uneducated or insufficiently informed women. These kinds of health issues should be discussed on times when women mostly watch TV. These structured programs will provide women more accurately informed; abandon their hearsay

ideas, and have the opportunity to get early diagnosis and treatment. Also it would be beneficial that the Ministry of Health and universities arrange breast awareness programs and educational seminaries. Particularly on women health, faculties and schools on health sciences (medical faculties, nursing and midwifery schools, etc.) should include these issues in their curriculum. Nursing and midwifery students should be thoroughly prepared to educate and inform women (Budden, 1998; Memis et al., 2009). In high schools, lectures about general and sexual health will help competing with the taboos in the population. Educational programs should be developed based on a specific understanding of women's health beliefs (Smith et al., 2003). Unconscious fear from breast cancer and barriers to apply to a physician in women would be overcome by these precautions.

In conclusion, breast self-examination is still important in developing countries, as the frequency of physician application is low; basic knowledge on breast cancer is not sufficient; and breast cancer awareness is not common. Structured programs and educational seminaries should be compelled to increase awareness against breast cancer. In particular, media and educational institutions should fight against unnecessary fear of breast cancer to avoid delayed diagnosis of the disease.

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