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TURKISH WOMEN BREAST SELF-EXAMINATION KNOWLEDGE AND PRACTICES: A SYSTEMATIC REVIEW

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ABSTRACT

Breast self-exam is not accepted as an early detection method for breast cancer. However, it is still an important health behavior for women to recognize their own breasts, especially in societies with serious differences in accessing health services due to socioeconomic factors.

This paper aims to report on a systematic review of the gather scientific evidence regarding the breast self-examination knowledge and practices among Turkish women.

In this study, combination of the terms "breast cancer, breast cancer screening, early diagnosis, BSE, health knowledge, practices, attitudes, health education and Turkey were searched in the eight databases between January 2010 to 2017. Papers were selected by pre-defined inclusion criteria and subsequently critically appraised. Key themes were extracted and synthesized.

The initial search identified 286 articles and a total of 36 studies met the inclusion criteria in the review. The majority (n = 9) of the studies were published in 2015. Sixteen studies were published in Turkish and the others in English. It was observed that the state of knowing breast self-examination was min: 13.5% and max: 99.9%. Performing of the BSE was a rate of min: 0.0% and max: 78.5%.

This systematic review demonstrated a lot of heterogeneity in population and design of researches about BSE knowledge and practices in Turkey. In the systematic review, BSE will add originality to the studies to be planned for knowledge and practice in raising breast cancer awareness. Researchers will provide the opportunity to plan studies that will contribute to the literature with different methods instead of repetitive results.

Keywords: Breast cancer, awareness, breast self-examination, early diagnosis, systematic review.

THE STEROID USE IN PATIENTS WITH RHEUMATIC DISEASE AND COVID19 INFECTION

ÖZET

Meme kanseri erken tanı yöntemleri arasında kendi kendine meme muayenesi kabul edilmemektedir. Ancak özellikle sosyoekonomik faktörler nedeniyle sağlık hizmetlerine erişimde ciddi farklılıkların olduğu toplumlarda kadınların kendi memelerini tanımaları hala önemli bir sağlık davranışıdır.

Bu makale, Türk kadınlarının kendi kendine meme muayenesi bilgi ve uygulamalarına ilişkin toplanan bilimsel kanıtların sistematik olarak gözden geçirilmesini amaçlamaktadır.

Bu çalışmada, Ocak 2010-2017 yılları arasında sekiz veri tabanında "meme kanseri, meme kanseri taraması, erken tanı, KKMM, sağlık bilgisi, uygulamaları, tutumları, sağlık eğitimi ve Türkiye" terimlerinin kombinasyonu tarandı. Dahil etme kriterleri tanımlandı ve ardından eleştirel olarak değerlendirildi. Anahtar temalar çıkarıldı ve sentezlendi.

İlk arama 286 makale belirledi ve toplam 36 çalışma incelemeye dahil edilme kriterlerini karşıladı. Çalışmaların çoğunluğu (n=9) 2015 yılında yayınlanmıştır. On altı çalışma Türkçe, diğerleri İngilizce olarak yayınlanmıştır. Kendi kendine meme muayenesini bilme durumunun min: %13,5 ve max: %99,9 olduğu görüldü. KKMM'nin gerçekleştirilmesi, minimum: %0.0 ve maksimum: %78,5 oranındaydı.

Bu sistematik derleme, Türkiye'deki KKMM bilgi ve uygulamalarına ilişkin araştırmaların popülasyonunda ve tasarımında çok fazla heterojenlik olduğunu göstermiştir. Sistematik derlemede KKMM, meme kanseri farkındalığını artırmada bilgi ve uygulama için planlanacak çalışmalara özgünlük katacaktır. Araştırmacılar, tekrar eden sonuçlar yerine farklı yöntemlerle literatüre katkı sağlayacak çalışmaların planlanmasına olanak sağlayacaktır.

Anahtar Kelimeler: Meme kanseri, farkındalık, kendi kendine meme muayenesi, erken tanı, sistematik analiz.

INTRODUCTION

Breast cancer is the most common type of cancer among female cancers in the world and is the second cause of cancer-related death (1). According to the data of the World Health Organization, breast cancer constitutes 23% of cancers in women and 1.1 million new breast cancer is diagnosed every year (2). In our country, the incidence of breast cancer is 45.6 per hundred thousand (3).

Despite its high incidence, breast cancer is one of the cancer types with a high chance of life when diagnosed early. While the incidence of the disease is higher in developed countries than in developing countries, the mortality rate from breast cancer (324,000 deaths) in developing countries is higher than in developed countries (198,000 deaths) (4). The reason for this situation; It is thought that women living in developing countries have difficulties in accessing breast cancer diagnosis, screening and treatment services (5, 6).

Early diagnosis methods; It is vital for the prolongation of life expectancy, increase in quality of life, and decrease in mortality and morbidity (7). The importance of early diagnosis becomes clear when the risk of breast cancer, especially in terms of women's health / life, is considered, with the early stage, effective treatment and good prognosis.

Early diagnosis in breast cancer; It increases the average survival time in patients and decreases the mortality rate due to breast cancer. Early diagnosis contributes to the national economy as it increases the life expectancy of patients with breast cancer and reduces the cost of treatment as well as individual gain (8). Early detection methods in breast cancer are mammography and clinical breast examination. Until a while ago, self-breast examination (BSE) were among these methods. However, today there are studies showing that BSE should not be included among the early diagnosis methods of breast cancer (5, 9, 10).

In developing countries, there are differences in women's access to early diagnosis services due to reasons such as low socioeconomic status and health services such as insufficient individual and early diagnosis services. Under these conditions, BSE provides opportunities for women to get to know their own bodies and is also effective in the development of breast health awareness. In addition, regular BSE allows to increase the application to early diagnosis methods, to recognize the changes in the woman's own body early and to request services from the health institution earlier (11-13). There are many studies on BSE in Turkey. However, these studies are studying whose characteristics such as the study group, type of study, and sample size are very variable. In this regard, there is a need for scientific knowledge with a high level of evidence on this subject, where many studies have been conducted. The objectives of this systematic review are to synthesize the current knowledge related to BSE knowledge and practices in Turkey and to provide directions for future research about breast health awareness among women.

METHODS

Search Protocol and Data Sources

All articles published English and Turkish from January 2010 to December 2017 were included. To achieve the most comprehensive medical electronic databases, keywords were extracted from the medical subject headings (MeSH) of PubMed. Studies were searched in English and Turkish databases. English electronic databases of Web of Science, PubMed, Cochrane, Ovid MEDLINE, Science Direct, Scopus, and Turkey Database ULAKBİM and Google-Academic were used. The English search formula was “breast cancer”, “breast cancer screening”, “early diagnosis”, “BSE”, “health knowledge”, “practices”, “attitudes”, “health education” and “Turkey”. Turkish databases consisted of Google-academic and Turkey Database ULAKBİM, the most comprehensive national electronic databases, with the most coverage of Turkey medical journals. It was not possible to use a combined formula in a Turkish search; so, keywords were searched separately (Meme kanseri, meme kanseri tarama,

erken tanı, KKMM, sağlık bilgisi, uygulama, davranış). In total, 287 English or Turkish abstracts were included.

Selection Criteria

Inclusion criteria for this review were as follows: (1) research article, (2) measuring knowledge and practices BSE, (3) published in English or Turkish, (4) more than 100 participants. Articles that were excluded were the following: (1) dissertations, (2) meeting abstracts, (3) Participants who are health care professional or could be student in school heath care services. Completion and subdivision of primary screening was carried out by two breast cancer nurses experienced in the field of BC. In this step, 287 articles selected after the referees' evaluation of the agreement were included in the research. The results of 37 articles about BSE knowledge and practices for early detection and screening were evaluated in the current review.

Data Extraction

The first writer (AA) downloaded the full texts of the abstracts. On some occasions, which the full texts were not available, a letter was sent to the author to take the necessary information. Two reviewers (AA, SK) critically evaluated the selected articles by a checklist. If there were any disagreements, they discussed and decided about the eligibility of the studies. Because of the wide variation in the methodology and results of the included studies, an Excel sheet was designed for data extraction. The first part of the datasheet was general information about the title, the place of study, article year, journal name, and publication year. The second part included methodological information consisting of study design, sample size, studied population, intervention modality, and measurement tools. Finally, the third part is composed of BSE knowledge and practices rate. All of the articles were extracted by two writers, and the research team manager organized the two extracted forms into one sheet. We extracted the following data: title, aims/objectives, study design, country of study, participants number, breast self-examination knowledge, and practice situations.

RESULTS

The initial search identified 287 articles and a total of 36 studies met the inclusion criteria in the review (Figure 1). The reasons for exclusion are detailed in Figure 1.

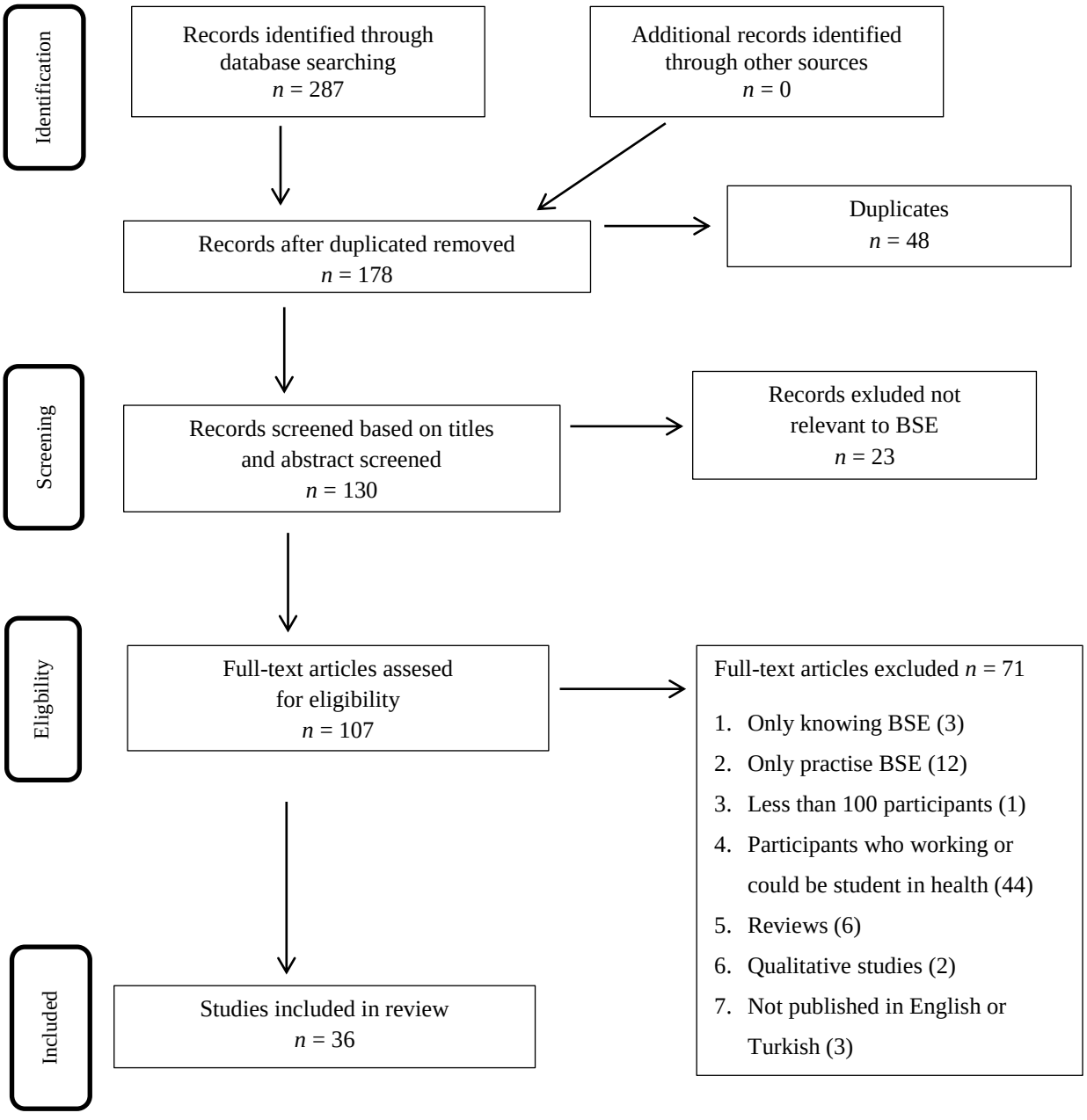

Fig. 1 Flow diagram for study selection according to PRISMA

Recording data included writers' names, research sample size, participants' characteristics, research design, and research findings shown in the Table 1. The majority (n = 9) of the studies were published in 2015. Sixteen studies were published in Turkish and the others in English. The included studies were conducted in seven different geographical parts of Turkey (Eastern Anatolian, Central Anatolia, Black sea, Mediterranean, Aegean, Marmara, and Southeastern Anatolia). Southeastern Anatolia included studies were conducted in eleven studies the most common. 21,289 participants were reached as a result of the inclusion of 36 independent research articles. We identified sixteen cross-sectional, fifteen descriptive studies, four controlled before-after studies, and two intervention studies. The study population of participants in the studies ranged from 120 (24) to 4.282 women (45).

The mean age of the women in the studies was min: 18.7 (36) and max: 54.2 (40). Most of the participants in the studies were housewives (n=18), married (n=30), and primary school graduates (n=20). Most of the participants in the studies do not have a professional job. It was observed that those who knew about breast self-examination were min: 13.5% (48) and max: 99.9% (27). Performing of the BSE was a rate of min: 0.0% (44) and max: 78.5% (37).

Studies showed that BSE is related to age. Younger women were related to lower levels of BSE knowing in women (13, 34, 37, 40). Some studies, older 40 years women reported lower BSE knowing and practicing than 20-39 years (14, 20, 26, 40). According to Büyükkayacı 2015, BSE practicing is doing more older women than younger. Women with second school graduates, compared to those who did not have any education, had higher BSE (14, 20, 40). While, women without any education reported lower BSE in the review (20, 26). Büyükkayacı et al. found that women who graduated primary school showed high BSE knowing and practicing. Socioeconomic was one of the variables that had been investigated. Koçyiğit et al. were observed that the BSE knowledge level of women who had high socioeconomic level was higher than the others. They showed that occupation was an effective factor on BSE, while income level was a significant factor in level BSE.

Family, as a component system and social support, is a source of BSE. Marital status of has a significant relation with BSE (13, 20, 38, 42). Gürsoy et al. and Demirkıran et al. found that women who married have a high level of BSE knowledge and practice (13, 20). However, according to Acıkgoz et al, women with married did not have a significant relation with BSE (42). Moreover, women who have a child have a high level of BSE knowledge (38).

Some of the studies in this review have examined the effects of BSE knowledge and practice. BSE knowledge levels significantly affect the practice situation (18, 24, 26, 40). Furthermore, it was found that women were receiving BSE information from health personnel and media (15, 32). It was also stated that the knowledge obtained from health personnel is higher. BSE knowledge level of women with high breast cancer risk level was not high (14, 20, 38, 42). However, women with high breast cancer risk levels were found to have higher BSE practice levels (13, 31, 45). Another study reported that women with breast cancer risk had higher BSE knowledge, while BSE practices were found to be lower. Women with menarche before the age of 12 and having a baby older than 30 years were found to have a higher BSE practice (22).

Studies showed that BSE knowing and practicing correlate with breast cancer training. The group receiving training in breast cancer has been found to have conducted regular BSE (27, 28, 34). Another study reported that after the breast cancer education from health personnel, there was a high increase in the level of BSE knowledge of women (44, 47). One study reported that, making monthly reminders lead to an increase in BSE practice (44). Yılmaz et al. reported that the rate of doing BSE per month increases significantly after the training (25).

DISCUSSION

In this systematic review about Turkish women's knowledge and practices of BSE; We see that the studies are carried out in very different sample sizes and groups. In the articles included in the scope of the review, 21,289 women in total were evaluated on the knowledge and application of BSE. BSE is thought to have a limited effect in reducing breast cancer mortality and is not defined as an early diagnosis method. Despite this, BSE is important for women to recognize their own breast tissues and develop protective health behavior. Most of the studies done are descriptive.

It is seen that most of the studies conducted are studies examining the descriptive characteristics that affect women's BSE knowledge and practice. Studies have shown that women's knowledge min: 13.5% (21)- max: 99.9% (27) and practice of BSE min: 0.0% (44)- max: 78.5% (37) appear to be variable. In the meta-analysis conducted by Yeshitila et al. (2021), it was found that the rate of self-examination of women in Ethiopia was 36.72% (49). In a study conducted in Nigeria, it was found that most of the women (70.8%) do not know BSE practices. In a study

conducted in Saudi Arabia, it was determined that 91.2% of the women within the scope of the study knew BSE practices (50). In a study conducted in India, it was found that 84.5% of women knew at least one symptom, but 34.5% only applied BSE (51).

In the studies examined, it is seen that married women know and practice BSE higher than single women (13, 20, 38, 42, 52). This situation can be associated with married women living with their spouse / children and their responsibilities towards their spouse / children. When BSE knowing and practicing statuses are examined by age, it is seen that although the results of the study differ, women over the age of 40 have lower BSE knowledge but higher practice status (14, 20, 26, 29, 37, 40). With the high level of BSE knowledge of young women, easier access to information; However, the low application status may make us think that they did not do it because the risk of breast cancer increases with age.

Education level is a factor that increases individuals' awareness and self-confidence of their health and themselves (53). Therefore, the increase in the education level plays an active role in increasing the awareness of breast cancer, knowing and practicing BSE. In addition, it is a known fact that individuals with a high level of education have higher income and qualified jobs, better social opportunities, access to social and health-related opportunities and adequate nutrition (49). In addition, it can be said that this situation may be a factor for women with high socioeconomic status to have higher knowledge and practice of BSE. Studies show that women with a high risk of breast cancer have higher knowledge and practice of BSE (20, 38, 42, 52). The higher breast awareness of women with a high risk of breast cancer and the anxiety of developing breast cancer may be associated with their higher BSE knowledge and application status.

Studies show that women who have received breast cancer training from healthcare professionals have a higher level of BSE knowledge and practice (39, 44, 47). This result shows that the information received from health personnel in the protection and improvement of public health creates more awareness in the society. In the studies examined, it shows that as the BSE knowledge level of women increases, their practice status also increases (25, 27, 28, 34). In the meta-analysis conducted by Engin et al., It was emphasized that nursing care models are effective in increasing their knowledge and practices about BSE and training programs can be beneficial for raising awareness.

CONCLUSION

The data we obtained provided a guide in terms of determining the current situation regarding the BSE knowledge and practice of Turkish women and determining the priorities of future researches. Although the results are not defined as an early diagnosis method, BSE is important for women to know their own breast tissues and to adopt protective health behavior. Encouraging individuals to apply BSE, using reminders and questioning practices for BSE during controls can contribute to the execution of effective practices. Considering this issue in future studies, the need for active conduct of BSE practices and the supervision of people who do / do not practice can provide new information to the field. It is thought that more experimental studies are needed to plan and implement efficient interventions.

Implication for Practice: Our study can be a guide in giving originality to the studies to be carried out for BSE, which is useful in increasing the awareness of breast cancer. It may also help researchers not to present repetitive results to the literature and further studies may contribute more to the literature.

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Table 1. Characteristics of researches about breast self-examination knowledge and practice

Authors and year of publication	Research design	Sample	Participant characteristics	Finding
Yavan et al. (2010)(14)	Cross-sectional	*n*= 188	Mean age 35 years. Education status of 44.7% in primary school graduates, 80.9% not working.	BSE was declared with a rate of 50.8% as "Do not know how to perform. 20.2% were fully acknowledged about BSE.
Alpteker and Avcı (2010)(15)	Cross-sectional	*n*= 150	Mean age 45 years. 72.7% married, 65.3% primary school graduates, and 88.7% housewives	71.3% of the women didn't know the BSE and 72.0 % didn't practice. We found that only 47.6 % of the women do BSE by themselves.
Kabataş et al. (2010)(16)	Descriptive study	*n*= 176	Mean age 36 years, 84.7% married.	62,5 % have known in the breast self-examination (BSE), 55.7% of those who know say "have not made the BSE"
Gümüş and Mamak (2010)(17)	Descriptive and cross-sectional study	*n*= 382	Mean age 51.3 years. 81.6% married, and 42.7% primary school graduates.	40.6 % of women performed BSE. Variation in scores on susceptibility, seriousness, benefits, barriers, health motivation, and confidence were observed regarding women who performed BSE.
Nur (2010)(18)	Descriptive and cross-sectional study	*n*= 525	Mean age 34.2 years. 70.9% married.	Among the teachers, 43.9% had performed breast self-examination; yet only 10.5% of them performed it monthly.
Eroğlu and Kılıç (2011)(19)	Descriptive study	*n*= 1018	Mean age 49.5. 96.7% married, 53.3% primary school graduates, 93.7% housewives.	Have known information about BSE (87.6%), conducting breast self-examination (61.8%). Their perception of BSE limitations and mammography limitations were low.
Gürsoy et al. (2011)(13)	Descriptive correlational study	*n*= 1342	Mean age 34.2 years. 79.7% married, 50.0% primary school graduates.	10.1% of the women practiced BSE once a month. Participants who had higher levels of confidence for BSE and lower perceptions of barriers to BSE were more likely to perform BSE.
Demirkıran et al. (2011)(20)	Cross-sectional	*n*= 201	Mean age 31 years. 76.6% married, 55.2% primary school graduates, 71.1% not working.	Significantly impact on BSE performance, which should still be considered as an important tool for early diagnosis (22.4%).
Koçyiğit et al. (2011)(21)	Descriptive study	*n*= 511	Mean age 37.9 years. 79.5% married, 71% housewives, 50.1% primary school graduates.	Women with high mean points of knowledge were performing BSE. 40% did not know breast examination.
Günay and Beşer (2011)(22)	Descriptive study	*n*= 167	Mean age 26.6 years. 66.4% married, 59.8% primary school graduates.	23% of the women participating in the study had performed BSE within the past year; The difference between having heard of BSE and practice behavior was statistically significant
Erbil and Bölükbaş (2012)(23)	Cross-sectional	*n*= 656	Mean age 35 years. 76.4% married, 35.7% primary school graduates, 64% housewives.	67.7% of women knew about and 55.8% performed BSE, however, 60.6% of those who indicated they practiced BSE reported they did so at irregular intervals.
Şen and Başar (2012)(24)	Descriptive study	*n*= 120	Mean age 25.6 years. 72.5% married, 35.8% primary school graduates, and 56.6% housewives.	42.5 % of women knew that BSE may be used for early detection. It was determined that 56.7% of them were performing BSE regularly, and 43.33% had never performed BSE before.
Yılmaz and Aksüyek (2012)(25)	Descriptive study	*n*= 2897	Mean age 42.6 years. 73.6% married, 27.9% second school graduates.	The rate of self-breast checking is a high proportion (36.8%), it has been observed that the frequency of consulting a doctor with the aim of early diagnosis of breast cancer takes place at a low rate (0.3%).
Sönmez et al. (2012)(26)	Cross-sectional	*n*= 311	Mean age 46.3 years. 60.5% primary school graduates, 75.4% married, 88.0% housewives.	BSE rate was significantly higher among those who were supposed to have knowledge about breast cancer in multivariate analysis ($p<0.05$).
Gürdal et al. (2012)(27)	Cross-sectional	*n*= 413	Mean age 42.0 years. 77.9% married.	While the rate of those who do BSE at least once is 68%, the rate of those who do it regularly is 26.9%. BSE needs to be taught to all women, regardless of their education level.
Dönmez et al. (2012)(28)	Cross-sectional	*n*= 266	Mean age 35.6 years. 97.0% married, 70.3% primary school graduates.	61.3% had no knowledge about BSE in a year and half of the 50.8% never practiced BSE, 29.0% had BSE regularly every month.
Duman et al. (2013)(29)	Descriptive study	*n*= 200	Mean age 36.0 years. 47.5% married, and 35.0% graduate degree.	Acquired knowledge about breast cancer and whose academic specialty was on health presented higher mean scores (80%) in BSE but their mean scores of "barriers to BSE.
Arslan and Şahin (2013) (30)	Intervention study	*n*= 200	Mean age 39.9 years. 77.5% married, 65.5% high school graduates, and 50.5% housewives	Six-point five percent of self-breast examiners were certainly sure about their practice, but 62.6% were not. It was determined meaningful differences between two average scores of knowledge level before and after training.
Bebiş et al. (2013) (31)	Descriptive study	*n*= 140	Mean age 35.2 years. 49.2% married, 54.2% not working, 84.2% second school graduates.	60.7% of the participants had conducted BSE, Perceived self- efficacy of the women who performed BSE were significantly higher compared with women who did not practice BSE.

Gücük and Uyetürk (2013) (32)	Case-control study	*n*= 256	Mean age 34.9 years. 84.3% married, and 70.3% primary school graduates.	In all, 39.5% of the participants were previously provided information on BSE while 25.8% did not know BSE before enrollment.
Aydın Avcı et al. (2014) (33)	Cross-sectional	*n*= 141	Mean age 33.9 years. 53.8% single.	78.6% knew about BSE, 68.3% was performing BSE, 16.2% were performing BSE monthly.
Gür ve ark. (2014) (34)	Descriptive study	*n*= 169	Mean age 43.1 years. 59.8% primary school graduates, 87% married.	32.1% of the participants regularly performed BSE. Out of those who do not use regular BSE, 15.4% thought BSE was unnecessary, 44% were afraid to examine themselves, and 40.7% did not know how to apply BSE.
Demir Yıldırım and Özaydın (2014) (35)	Cross-sectional	*n*= 1271	Mean age 54.0 years. 62.0% married, and 35.4% high school graduates.	56.2% knew about BSE, 78.0% was performing BSE, 15.2% were performing BSE monthly.
Karadağ et al. (2014) (36)	Cross-sectional	*n*= 240	Mean age 18.7 years. 34.6% of women were high-school graduates, and 81.3% married.	Most of the women had insufficient knowledge of breast cancer, knowledge and practices increased with the education level.
Aker et al. (2015) (37)	Cross-sectional	*n*= 800	Mean age 44.1 years. 81.3% married, 43.5% primary school graduates, and 77.6% housewives	80.5% of women knew BSE. 12.6% of the women who were aware of BSE stated that they regularly performed BSE. Factors associated with women's performance of BSE were age, having received education about breast health, perception of severity, barriers for BSE, and self-efficacy
Aydın Avcı et al. (2015) (38)	Descriptive study	*n*= 373	Mean age 33.2 years. 69,6% married, and 65,9% graduates of license programs	The women had moderate knowledge about breast cancer screening and participation in screening is low.
Altay et al. (2015) (39)	Descriptive study	*n*= 301	Mean age 22.0 years. 89.4% single, and 30.6% third-graduates	65.4% knew breast self-examination and 52.2 % of them had performed BSE, based on the study results, knowledge can be raised through training emphasizing the importance and prevention of breast cancer.
Erkal Aksoy et al. (2015) (40)	Descriptive study	*n*= 254	Mean age 54.2% years. 79,1% were married, 56.7% literate, and 89,8% were housewives	The status of performing regular BSE was significantly higher in women who knew BSE, (p=0.000). Barriers against the implementation of breast cancer screening methods in women were related to the level of education and lack of adequate information about breast cancer screening, and symptoms of breast cancer.
Büyükkayacı Duman et al. (2015) (41)	Descriptive study	*n*= 224	Mean age 48.0 years. 79.0% married, and 49.6% primary school graduates.	It was found that 51.8% of the women have known and made the BSE. There wasn't any significant difference between the age groups and education levels of women according to BSE (p<0.05).
Açıkgöz ve ark. (2015) (42)	Cross-sectional	*n*= 161	Mean age 35.2 years. 75.8% married, and 53.4% high school graduates	Most of the women did not perform any of these methods. The average knowledge level of women was significantly increased after completion of the planned training as compared to pre-training levels (p <0.001)
Akgün Şahin and Kardaş Özdemir (2015) (43)	Cross-sectional	*n*= 2069	Mean age 42.7 years. 56.9% married, 34.0% primary school graduates, and 52.4% not working.	77.4% were not acquainted with BSE, 81.3% did not have BSE, 73.8% did not receive information about BSE. 53.2% of women had BSE whenever they remembered it, 83.3% were not trained about BSE, 89.9% wished to be trained about BSE and 42.9% did not have BSE as they were ashamed of it.
Kolutek and Aydın Avcı (2015) (44)	Intervention study	*n*= 153	Mean age 49.3 years. 57.5% primary school graduates, and 94.8% not working.	Women increased their score from the information form after planned monitoring at home, and the difference between the first and last measurement points was statistically significant (p<0.001).
Bayçelebi et al. (2015) (45)	Descriptive study	*n*= 4282	Mean age 41.0 years. 31.2 % primary school graduates, and 65.2% housewife.	When we examined the knowledge and application about breast cancer's early diagnosis of a woman included in the study, we found out that 48.1% know BSE and 23.6% made BSE. Most of the people had less and missing knowledge about cancer early diagnosis.
Yılmaz et al. (2017) (46)	A semi- empirical study	*n*= 244	Mean age 39.4 years. 76.6% married, 51.7% elementary Education, and 92.6% housewife.	The mean total knowledge score increased significantly (p<.001) from 9.05 in the pre-test to 16.53 in the post-test. 53.7% of women knowing BSE, performing of 59.7% women.
Özerdoğan et al. (2017) (47)	A pretest-posttest one group	*n*= 405	Mean age 40 years. 66.4% married, %75 university graduates, and 74.1% working.	The women were most commonly aware of the BSE (68.1%). 38.9% not performing BSE.