Attitude and Practice Regarding Breast Cancer Early Detection among Iranian Women: A Systematic Review

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Abstract

Objectives: To determining attitudes and practice regarding breast cancer early detection techniques (breast self-examination (BSE), clinical breast examination (CBE) and mammography) among Iranian women. Methods: International (PubMed, ISI, and Google Scholar) and national (SID and Magiran) databases were reviewed up to September 2017 to identify articles related to the attitudes and practices of Iranian women concerning breast cancer screening behavior with reference to BSE , CBE and mammography. The screening steps, analysis of quality of the studies and extraction of the papers were performed by two reviewers. Results: Of the 532 studies included initially, 21 performed on 10,521 people were considered eligible. Subjects with a positive attitude toward BSE in various studies were 13.5% to 94.0% with an average of 47.6%. Positive attitudes to CBE and mammography were found in 21.0% and 26.4%, respectively. Participant performance of BSE ranged from 2.6% to 84.7%, with an average of 21.9%. The respective figures for CBE and mammography were 15.8% and 16.7%. Conclusion: Considering the poor performance and low rates for positive attitudes, it is suggested that educational programs should be conducted across the country.

Keywords: Breast self-examination- early detection of cancer- attitude- Iran- systematic reviews

Introduction

Nowadays, breast cancer is a serious problem for women in all countries of the world. Almost 1.7 million new cases and 522,000 deaths occur each year due to breast cancer (Torre et al., 2015). Breast cancer contains 25% of all cancers, and is the second most common cancer (Ferlay et al., 2010) and have an increasing trend (Rafiemanesh et al., 2016). While, the majority of women who die as a result of breast cancer (324,000), are from the countries with low or medium income (World Health Organization, 2017). According to the statistics of World Health Organization (WHO), the highest rate will be in Eastern Mediterranean countries in the next 15 years (World Health Organization, 2017). The mortality rate from breast cancer is 70% in Eastern Mediterranean countries, which is higher than that of the developed countries (40-55%) (World Health Organization, 2017). In Iran, breast cancer accounts for 32% of women cancers (Rahimzadeh et al., 2016). The results show that breast cancer mortality, which reached 3742 in 2015, will pass 7,000 by 2,035 and the incidence of breast cancer will triple(Valipour et al., 2017). Being woman and growing old are two important and irreplaceable factors of breast cancer, therefore, controlling and preventing breast cancer is a serious women’s health problem (Badal et al., 2017). Given the nature of breast cancer, according to the WHO recommendations, early diagnosis of breast cancer is the most important measure to reduce mortality and complications (McGuire, 2016). So that the survival rate of breast cancer is 90% in those diagnosed at an early stage, while it falls to less than 15% in those diagnosed in the last stages (DeSantis et al., 2016). The survival rate is low in developing countries and is associated with increased incidence of breast cancer mortality rate. Breast cancer diagnostic methods include breast self-examination (BSE), clinical breast examination (CBE), and mammography (Humphrey et al., 2002). The most important steps to increase the rate of early diagnosis of breast cancer is high awareness and positive attitudes in people, especially in less developed countries, where people have a lower awareness of breast cancer (Robb et al., 2009; Sayed et al., 2017). Various studies have also shown that increased knowledge leads to positive attitude towards breast cancer in at-risk individuals (Bener et al., 2001; Akhighe and Omuemu, 2009). Attitudes about a disease are a major contributor towards accomplishment of a preventative behavior (Dandash and Al-Mohaimeed, 2017).

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2007). Regarding the increased incidence of breast cancer in Iran, the importance of awareness programs on breast cancer in the country and insufficient study on the general attitude of Iranian population about breast cancer, this study aimed to solve this epidemiological gap and determining the attitude and practice about breast cancer early detection techniques among Iranian woman (breast self-examination, clinical breast examination and mammography).

Materials and Methods

Eligibility criteria

The methods adopted for this systematic review have been developed in accordance with the guidelines detailed on the PRISMA (Moher et al., 2009). Observational studies were included in present study. Case series, case reports, clinical trials, and reviews (systematic review and narrative reviews) were excluded. The target populations were woman. The attitude and practice toward breast cancer early detection techniques (BSE,CBE, Mammography) were measured in this study. Minimum required sample size was ≥25 patients.

Search strategy and databases

Literature review was done using the medical subject headings (MeSH) and key words related to attitude towards breast cancer in Iran. We explored the electronic databases including international databases (MEDLINE (PubMed interface), Google scholar and ISI Web of science (web of science interface)) and national databases (scientific information database (SID) and MAGIRAN), National key journal (Iranian Journal of Breast Diseases) for relevant studies. No settings and language limits were imposed on the search. The specific search strategies were created by a Health Sciences Librarian with expertise in systematic review searching. PRESS standard used for creating the search strategy (McGowan et al., 2016). The MEDLINE search strategy was adopted to search in another databases. Moreover, PROSPERO searched for the ongoing or recently completed systematic reviews. Key words that used in search strategy were Attitude, Belief, Practice, Use, Breast Cancer, Breast Neoplasm ,Breast Cancer Early Detection, Population and Iran that were combined with Boolean operators included AND, OR, and NOT.

Study selection

The methods adopted for this systematic review have been developed in accordance with the guidelines detailed on the PRISMA (Moher et al., 2009). Observational studies were included in present study. Case series, case reports, clinical trials, and reviews (systematic review and narrative reviews) were excluded. The target populations were woman. The attitude and practice toward breast cancer early detection techniques (BSE,CBE, Mammography) were measured in this study. Minimum required sample size was ≥25 patients.

Extracted data items included general information

First Author, Year of publication and Province, study characteristics (study design, (Sampling method, Mean of data collection, Setting, Sample size, Brief title, Questioner characteristics and Psychometric characteristics), participant characteristics (demographics, sample size), and outcome measures (attitude and practice towards breast cancer early detection techniques). Hoy et al tool used for assessing the quality of studies (Hoy et al., 2012). These decisions were made independently by two review authors based on the criteria for judging the risk of bias, in case of any disagreement, using the consensus method to resolve any controversies. Studies were tabulated in chronological order in tables.

Results

Study selection

A total of 532 articles were retrieved from the initial search in different databases. Out of 487 non-duplicated studies in title and abstracts screening process 431 studies excluded due to unrelated titles. Of 56 studies, 21 studies met the eligibility criteria. In 35 excluded studies seven studies were review, two studies were qualitative, five studies were letter to editor, ten studies have not full text and 11 studies had not at least quality for including in study. The list of studies is available at http://uploadboy.me/f2sevlw95bc8/List of papers Attitude and practice about _ cancer.pdf.html (Figure 1).

Study characteristics

There studies were conducted on 10,521 participants, the mean age of participants was 33.5 years (age group range 15-79 years). Total studies designs were cross-sectional. Studies were conducted only in 13 out of 31 provinces in Iran. Of the 21 studies five studies were from Tehran (Haji-Mahmoodi et al., 2002; Jarvandi et al., 2002; Khaleghnezhad and Khaleghnezhad, 2008; Kadivar et al., 2012; Nafissi et al., 2012), three studies were from Chaharmahal and Bakhtiari (Danesh et al., 2002; Banaeian et al., 2006; shahbazi and Heidari, 2014), two studies were from Isfahan (Abedzadeh et al., 2003; Reisi et al., 2011), Mazandaran (Hajian Tilaki and Auladi, 2015; Iurigh et al., 2016), Ardabil (Dadkhah and Mohammadi, 2002; Eyyanbagha et al., 2016) and in other provinces were conducted one study in each province. Most studies were conducted at health centers (n=12), had a simple random sampling method (n=9), date were collected through interview (n=16), had low risk of bias (n=15) (Table 1).

Main results

Instruments

In general, all the instruments used in the study have been author-made and each one was prepared through a review of papers and consultation with experts of each
| Year | Province | Sampling method | Setting | Sample size | Age group | Risk of bias | Mean of data collection | Setting | Province |
|------|----------|-----------------|---------|-------------|-----------|-------------|------------------------|---------|----------|
| 2001 | Tehran   | Simple random    | Health center | 150 | 34.2 | Low | Simple random | Health center | 150 | Tehran   |
| 2002 | Chaharmahal and bakhtiari | Simple random | Health center | 1020 | 35-60 | Moderate | Simple random | Health center | 1020 | Chaharmahal and bakhtiari |
| 2003 | Yazd     | Census           | Health center | 2519 | 20-75 | Low | Census           | Health center | 2519 | Yazd     |
| 2004 | Semnan   | Simple random    | Health center | 1020 | 20-57 | Low | Simple random | Health center | 1020 | Semnan   |
| 2005 | Isfahan  | Multistage stratified | Health center | 400 | 20-45 | Low | Multistage stratified | Health center | 400 | Isfahan  |
| 2006 | Ardabil  | Systematic cluster | Health center | 150 | 34.2 | Low | Systematic cluster | Health center | 150 | Ardabil  |
| 2007 | Mazandaran | Simple random | Health center | 400 | 20-45 | Low | Simple random | Health center | 400 | Mazandaran |
| 2008 | Khorasan razavi | Simple random | Ministry of Education | 300 | 20-56 | Low | Simple random | Ministry of Education | 300 | Khorasan razavi |
| 2009 | Mazandaran | Census | Health center | 330 | 22-54 | Low | Census | Health center | 330 | Mazandaran |
| 2010 | Golestan | Simple random    | Health center | 300 | 20-57 | Low | Simple random | Health center | 300 | Golestan |
| 2011 | Tehran   | Simple random    | Health center | 400 | 20-45 | Low | Simple random | Health center | 400 | Tehran   |
| 2012 | Khuzestan | Simple random | Health center | 1020 | 15-79 | Low | Simple random | Health center | 1020 | Khuzestan |
| 2013 | Arak     | Simple random    | Health center | 2000 | 20-57 | Low | Simple random | Health center | 2000 | Arak     |
| 2014 | Tehran   | Simple random    | Health center | 300 | 20-57 | Low | Simple random | Health center | 300 | Tehran   |
| 2015 | Mazandaran | Simple random | Health center | 500 | 20-65 | Low | Simple random | Health center | 500 | Mazandaran |
| 2016 | Chaharmahal and bakhtiari | Simple random | Health center | 300 | 20-57 | Low | Simple random | Health center | 300 | Chaharmahal and bakhtiari |
| 2017 | Tehran   | Simple random    | Health center | 300 | 20-57 | Low | Simple random | Health center | 300 | Tehran   |
| 2018 | Chaharmahal and bakhtiari | Simple random | Health center | 300 | 20-57 | Low | Simple random | Health center | 300 | Chaharmahal and bakhtiari |

Table 1. Summary of Included Studies
Table 2. Attitude and Practice of Iranian Woman about Breast Cancer Early Detections Tests

| Author et al., 2003 | Knowledge, Attitude and Practice about BC Screening | Psychometric characteristics | Attitude characteristics | Practice characteristics |
|---------------------|---------------------------------------------------|-----------------------------|-------------------------|------------------------|
| Abedzadeh et al., 2003 | 36 items in four sections: Demographics (9 items), Knowledge (10 items), Attitude (10 items), Practice (7 items) | Reliability: NR | 1.378 (94.5%) | 1.193% |
| Alaie Nejad et al., 2007 | Knowledge, Attitude and skill about BSE | Reliability: NR | 1.19.71(78.7%) | 2.12.4% |
| Banaeian et al., 2006 | Knowledge, Attitude and Practice about BC Screening | Reliability: NR | 3.84(21%) | 3.NR |
| Dadkhah and Mohammad, 2002 | Knowledge, Attitude and Practice about BSE | Reliability: NR | 3.19.406(26.4%) | 4.12.5% |
| Danesh et al., 2002 | A Four-part questionnaire included: Demographics, Knowledge, Attitude and Practice. | Reliability: 0.85 | 2.17(10.7%) | 3.6.2% |
| Eyvanbagha et al., 2016 | Knowledge, Attitude, Practice about BSE | Reliability: NR | 2.15(4.4%) | 3.6.2% |
| Ghorbani and Abdulali, 2009 | Knowledge, Attitude, Practice about BSE | Reliability: NR | 2.14(22.4%) | 3.6.2% |
| Haghighi et al., 2012 | 67 items in four sections: Demographics (14 item), Practice (7 item), Knowledge (27 item), Attitude (19 item). | Reliability: 0.87 | 2.13(23.5%) | 3.6.2% |
| Hajian Tilaki and Auladi, 2015 | A Four-part questionnaire included: Demographics, Knowledge (22 items), Health Belief (6 items) and Practice (3 items). | Reliability: 0.80 | 2.12(25.8%) | 3.6.2% |
| Author                        | Brief title                                                                 | Questioner characteristics                                                                 | Psychometric characteristics | Attitude 1 over all | Practice 1 over all |
|------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------|---------------------|---------------------|
| Haji-Mahmoodi et al., 2002   | knowledge, Attitude, Practice about BCE                                       | A Four-part questionnaire included: Demographics, Knowledge, attitude and practice.         | Reliability: NR             | 1. NR              | 1. NR              |
|                              |                                                                               | Scoring: NR                                                                                |                             | 2.258(63%)         | 2.25(6%)           |
|                              |                                                                               |                                                                                             | Validity: NR                | 3. NR              | 3. NR              |
|                              |                                                                               |                                                                                             | 4.9 (NR)                    | 4. NR              | 4. NR              |
| Iurigh et al., 2014          | knowledge, Attitude, Practice about BC screening                              | A Four-part questionnaire included: Demographics, Knowledge, attitude and practice.         | Reliability: NR             | 1. NR              | 1. NR              |
|                              |                                                                               | Scoring: 0.68                                                                               |                             | 2.146(48%)         | 2.73(24%)          |
|                              |                                                                               |                                                                                             | Validity: By experts in field | 3. NR              | 3.73(24%)          |
| Jarvandi et al., 2016        | Beliefs and behaviors about BC screening and early detection                  | 15 items in a section: Attitude (6 items), knowledge (5 item), practice (3 item).           | Reliability: NR             | 1. NR              | 1. NR              |
|                              |                                                                               | Scoring: NR                                                                                |                             | 2.378(67%)         | 2. NR              |
|                              |                                                                               |                                                                                             | Validity: NR                | 3. NR              | 3. NR              |
|                              |                                                                               |                                                                                             | 4. NR                       | 4. NR              | 4. NR              |
| Kadivar et al., 2012         | knowledge, Attitude, Practice BC screening                                    | A Four-part questionnaire included: Demographics, knowledge, attitude and screening behaviors | Reliability: 0.75          | 1. NR              | 1. NR              |
|                              |                                                                               | Scoring: NR                                                                                |                             | 2.275(59%)         | 2.26(1%)           |
|                              |                                                                               |                                                                                             | Validity: By experts in field | 3. NR              | 3.27 (59%)         |
|                              |                                                                               |                                                                                             | 4. NR                       | 4.17(24%)          |                    |
| Khaleghnezhad and            | knowledge, Attitude, Practice BC screening                                    | A Four-part questionnaire included: Demographics, knowledge, attitude and screening behaviors | Reliability: NR             | 1. NR              | 1. NR              |
| Khaleghnezhad, 2008          |                                                                               | Scoring: NR                                                                                |                             | 2.10(14)           | 2.2(2.6%)          |
| Mahvari, 2003                | Knowledge and Practice BC screening                                           | A Four-part questionnaire included: Demographics (knowledge and practice)                   | Reliability: NR             | 1. NR              | 1. NR              |
| Marzouni et al., 2015        | Awareness, Attitude towards BSE                                             | A Five-part questionnaire included: demographic, knowledge, and BC risk factors.           | Reliability: 0.86           | 1. NR              | 1. NR              |
|                              |                                                                               | Scoring: NR                                                                                |                             | 2.21 (20.6%)       | 2.52 (51.5%)       |
| Nafissi et al., 2012         | Knowledge and attitude towards BC Screening                                   | 17 items in a section: demographic, Knowledge, Attitude.                                    | Reliability: NR             | 1. NR              | 1.499(76.8%)       |
|                              |                                                                               | Scoring : NR                                                                               |                             | 2. NR              | 2. NR              |
|                              |                                                                               |                                                                                             | Validity: NR                | 3. NR              | 3.385(5.8%)        |
|                              |                                                                               |                                                                                             | 4. NR                       | 4. NR              |                    |
| Naghibi, A                   | knowledge, Attitude, Practice towards BSE                                    | 43 items in four sections: demographics (10 items), Attitude (13 items), knowledge (10 items), practice (10 items). Scoring: Attitude: positive and negative, Practice: poor (≤12), average (12.1-16.9), good (≥17). | Reliability: 0.85           | 1. NR              | 1. NR              |
|                              |                                                                               | Scoring: NR                                                                                |                             | 2.68 (87%)         | 2.8 (90%)          |
|                              |                                                                               |                                                                                             | Validity: By experts in field | 3. NR              | 3. NR              |
|                              |                                                                               |                                                                                             | 4. NR                       | 4. NR              |                    |
| Reisi et al., 2011           | knowledge, Attitude, Practice towards BSE                                    | 42 items in a section: demographics (6 items), knowledge (20 items), Attitude (10 items), practice (6 items). Scoring: Attitude (positive, Negative), Practice (yes, no). | Reliability: 0.71           | 1. NR              | 1. NR              |
| shahbazi and Heidari, 2014   | Knowledge and Attitude towards BSE                                           | 35 items in four sections: demographics, knowledge, Attitude.                                | Reliability: 0.71           | 1. NR              | 1. NR              |
| Zadeh, 2016                  | Awareness and Attitude towards BSE                                           | 20 items in three sections: demographics, knowledge, Attitude.                               | Reliability: NR             | 1. NR              | 1. NR              |

NR, none reported
among participants, the percentage and number of BSE users were considered for the past month. The performance of the participants in the studies was reported as poor, moderate, and good. In the present study the value of good performance was assessed. The performance of the participants in the various studies was between 2.6% (Khaleghnezhad and Khaleghnezhad, 2008) and 84.7% (Eyvanbagha et al., 2016). On average, only 21.9% of participants had good performance in BSE. On screening methods, two studies reported the performance between 28.7% (Mahvari, 2003) and 76.8% (Nafissi et al., 2012). Participants' performance in CBE was studied in four studies, ranging from 2.6% (Khaleghnezhad and Khaleghnezhad, 2008) to 27.59% (Kadivar et al., 2012) with an average of 15.8%. Participants’ performance in mammography was studied in three studies, with the performance reported between 9.1% (Mahvari, 2003) and 24% (Iurigh et al., 2016) with an average of 16.7%.

Discussion

This systematic review was performed aiming at determining the attitude and practice about breast cancer early detection techniques among Iranian women (breast self-examination, clinical breast examination and mammography) by September 2017. Twenty-one studies on 10,521 people were included in the final study. The instruments used in all of the studies were made by the author based on expert opinions, paper-reviewing, and using tools developed by the researcher (Harris and Rees, 2000). Also in other studies that looked at CAM awareness, attitude and practice, research instruments were author-made. In the present study, the mean number of positive attitudes toward breast cancer was 47.63%. However, in studies from countries such as Cameroon the rate was (63.4%) (Nde et al., 2015) and Nigeria (61.7%) (Oladimeji et al., 2015), which indicates a better attitude in these countries.

Meanwhile, the difference seems to be due to the dominant cultures in these countries. Another study shows that it is only in India that the positive attitude toward breast self-examination is less than the present study (20.5%) (Doshi et al., 2012). The difference may be due to the high Indian population and less availability of proper educational programs to increase the positive attitude.

In the present study, 21.9% of the participants performed regular monthly breast self-examination, which is higher than studies performed in Cyprus (10.9%) (Sapountzi-Kreptia et al., 2017), and Asian countries (9.1%) (Pengpid and Peltzer, 2014). This may be due to higher attention paid to the issue in Iran in recent years and the establishment of relevant research centers. Although the studies in South Africa (33%) (Trupe et al., 2017) and the countries of the European Union (48%) (Andreeva and Pokhrel, 2013) show a better individual performance in these countries, the reason may be due to differences in sample size from a methodological point of view and also the availability of educational programs needed in these countries. In the case of CBE, the average participants’
performance was 16.7%, which is lower than South African (23.4%) (Trupe et al., 2017) and European (27%-54%) countries (Andreeva and Pohkrel, 2013). This difference could be due to the existence of various educational programs on breast cancer in the developed world and the existence of supportive services in these countries. The strengths of this study were: According to our investigations, this is the first systematic review in this area. The studies were made without any time limitations. And, all results of attitude and performance were considered in a comprehensive manner. The most important limitation of the use of researcher made instruments to determine the attitude and practice was that the investigation of validity and reliability of these instruments was lacking in most studies which made difficulties in the analysis of these studies. Due to the lack of complete information in most studies, contact was made with the authors to gain extra information. According to the results of this study, which indicate that the attitude and practice of Iranian women is inappropriate, and also the limitations in the study, it is recommended that a national study is conducted to determine the attitude and practice of women more precisely and that educational centers are established in the country to inform women of breast cancer screening methods.

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Attitude and Practice about Breast Cancer
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