ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 09, Issue, 09, pp. 29694-29698, September, 2019

RESEARCH ARTICLE OPEN ACCESS

PROMOTION OF EARLY DIAGNOSIS OF BREAST CANCER IN BRAZILIAN WOMEN

***[1]Fabrícia Castelo Branco de Andrade Brito, [2]Pedro Vitor Lopes da Costa, [3]Maria Nauside Pessoa da Silva, [4]Adrielly Caroline Oliveira, [5]Diego Brito Martins, [6]Paula Cynara de Lima Ramos Guedes, [7]Thallita Castelo Branco de Andrade, [8]Zagma Coutinho Lima Amorim, [9]Suziane Carvalho de Oliveira, [10]Conceição de Maria Aguiar Carvalho, [11]Michely Laiany Vieira Moura and [12]Tammya Tercia Oliveira Ribeiro da Silva[12]**

[1]Nurse, Master in Women's Health, Universidade Federal do Piauí-UFPI
[2]Pedro Vitor Lopes da Costa – Doctor, Phdin Health Biotechnology. Universidade Federal do Piauí-UFPI
[3]Maria Nauside Pessoa da Silva – Nurse, Master– Faculdade Uninassau Aliança
[4]Adrielly Caroline Oliveira – Nurse, Master in Nursing, Universidade Federal do Piauí (UFPI)
[5]Diego Brito Martins - Physiotherapist. Faculdade Facid Wyden
[6]Paula Cynara de Lima Ramos Guedes-Nurse, Oncology Specialist. Centro Universitário Uninovafapi
[7]Thallita Castelo Branco de Andrade – Biomédica, Master in Pharmaceutical Sciences. Universidade Federal do Piauí-UFPI
[8]Zagma Coutinho Lima Amorim – Nurse, Master in Women's Health. Universidade Federal do Piauí-UFPI
[9]Suziane Carvalho de Oliveira – Nurse, Master in Intensive Care. Faculdade Uninassau Aliança
[10]Conceição de Maria Aguiar Carvalho –Nutritionist, Faculdade Uninassau Aliança
[11]MichelyLaiany Vieira Moura, Biomedical, Faculdade Uninassau Aliança
[12]Tammya Tercia Oliveira Ribeiro da Silva, Psychologist, Faculdade Uninassau Aliança

ARTICLE INFO

Article History:
Received 09th June, 2019
Received in revised form
17th July, 2019
Accepted 08th August, 2019
Published online 28th September, 2019

Key Words:
Breast neoplasia, early diagnosis, Mammography.

ABSTRACT

Background: Breast Cancer (BC) is the type of cancer that most affects women, being the second most common type in the world. In Brazil, in 2016, an estimated 57,960 new cases in women, representing 28.1% of new breast cancer cases across the country. Mammography remains the method of choice for population screening for breast cancer in asymptomatic women and is the first imaging technique indicated to evaluate most clinical breast changes. **Objective:** To evaluate the promotion of early diagnosis of breast cancer by performing screening mammography in women aged 50 to 69 years in the city of Teresina-PI. **Method:** Descriptive, prospective study with 297 women aged 50 to 69 years. For inferential analyzes, the Kolmogorov-Smirnov test, Pearson correlation and Student's t test were used. **Results:** The average age of the participating women was 58.4 years and 68.4% called themselves brown. The average sample estimates of developing breast cancer by the Gail model at 5 years and up to 90 years of age were 1.3% and 6.7%, respectively. Still, using the same model, 8.8% of women had an estimated risk of developing breast cancer ≥1.67% in 5 years. In the study population, there was an increase of 15.9% in the performance of screening mammographic examinations after the intervention. **Conclusion:** Lectures and workshops to raise awareness about breast cancer in women had positive impacts on the screening program. The sample studied had low risk estimates for developing breast cancer, according to the factors considered in the Gail model. As well, the number of screening mammograms performed during the study period was increasing compared to the previous year.

Citation: Fabrícia Castelo Branco de Andrade Brito, Pedro Vitor Lopes da Costa, Maria Nauside Pessoa da Silva, *et al.* 2019. "Promotion of early diagnosis of breast cancer in brazilian women", *International Journal of Development Research*, 09, (09), 29694-29698.

INTRODUCTION

Breast Cancer (BC) is the type of cancer that most affects women, being the second most common type in the world. It is estimated that in Brazil, in 2016, will be diagnosed 57.960 new cases in women, representing 28.1% of new cases of breast cancer across the country.

In the same year, in the municipality of Teresina, it is estimated that breast cancer will account for 50.03% of new cases of cancer, surpassing cervical cancer, which in the past was the most prevalent female cancer (INCA, 2015). In developed countries, the incidence of breast cancer is increasing, accompanied by a decline in mortality rates, which is associated with the use of efficient early detection methods

and adequate treatment. However, in Brazil the cancer-related mortality rate is 15%, and its rates are increasing and high, probably because the disease is diagnosed in advanced stages (Medeiros, 2015). Breast ductal carcinoma in situ (BDCIS) is an early form of noninvasive neoplasia as malignant cells do not invade breast tissue through the ducts. In 1980, BDCIS accounted for less than 1% of breast cancer cases, however, with the introduction of screening through mammograms, in situ carcinoma accounted for 15% to 25% of newly diagnosed breast cancer cases (Van Cleef, 2014). Considered a tumor with good prognosis when early diagnosed and treated at an early stage, breast cancer is still being diagnosed in advanced stages (Anderson, 2006), reaching 60 and 90% mortality in the first five years in stages III and IV. Data obtained from Hospital Cancer Registries revealed that about half of the cases diagnosed in Brazil are locally advanced or disseminated, a fact that justifies the high mortality rate for breast cancer in our country (Passman, 2011). Currently, the method that best allows early detection of breast cancer is mammography (HUMPHREY, 2002).

Mammography remains the most important breast imaging technique. It is the method of choice for breast cancer population screening in asymptomatic women and is the first imaging technique indicated to evaluate most clinical breast alterations (FLETCHER, 2003). Mammography also allows biopsies of suspected lesions to be performed before they manifest clinically. There is broad agreement that mammographic screening reduces breast cancer mortality by 30 to 40% among regularly screened asymptomatic women (KADAOUI, 2012). Other benefits of early detection include the possibility of more conservative breast-preserving surgeries, increased overall survival and disease-free time (FITZGERALD, 2012). The National Cancer Institute (INCA, in portuguese) recommends that women between 50 and 69 years old have a mammogram every two years. This is also the routine adopted in most countries that implemented breast cancer screening and had an impact on reducing mortality from breast cancer. The benefits of screening mammography include the possibility of finding cancer at an early stage and having a more conservative and therefore less aggressive treatment, as well as a lower chance of death due to the disease due to timely treatment (INCA, 2016). Breast cancer screening programs have significantly reduced mortality due to early diagnosis in a large number of cases; however, it has been observed that screening mammograms have been followed up with a large number of cases. number of unnecessary biopsies. In Brazil, in the quest for standardization of mammographic reports, the Breast Imaging Reporting and Data System (BI-RADS™) model adopted by the American College of Radiology was adopted as a consensus. It comprises not only a classification of results, but also a set of results. actions that, when applied, allow greater efficiency of early breast cancer detection programs (ROVEDA JUNIOR, 2017). Therefore, this study aims to evaluate the promotion of early diagnosis of breast cancer by performing screening mammography in women aged 50 to 69 years.

MATERIALS AND METHODS

This is a descriptive-prospective study with a quantitative approach. Twenty-eight (28) Basic Health Units (BHUs) enrolled in the urban area of the East / Southeast Regional Health Directorate (RHD), in the municipality of Teresina-PI, participated in the survey, considering that this is the only regional health that works by monitoring health indicators, which are summary measures that contain relevant information on certain attributes and dimensions of health status, as well as health system performance. In the east / southeast RHD there are 16.309 women aged 50 to 69 registered in the urban area, these were targets of our performance regarding educational lectures and screening mammography requests. The sample size of the study was 288 participants, and their selection was by random sampling and in two steps: first a health unit was drawn and, for this, the proportional number of women in relation to the minimum required. After developing the study with these, the second unit was drawn, followed by the proportional calculation, and so on, until reaching all the women who made up the minimum sample required for the study. The sample included women aged 50 to 69 years assisted by the family health teams of the Basic Health Units participating in the study, who had never had a mammogram exam or who had not had the exam for more than 2 years. Exclusion criteria were: having performed the mammographic exam less than 2 years and presenting any symptoms related to the breasts, such as palpable nodules, thickening, shrinkage of the skin, breast pain or any mammographic alteration suspected in previous exams, according to the criteria currently adopted by the Ministry of Health.

The capture of women aged 50 to 69 years, information collection, clinical breast examination and referral for mammography occurred through the presentation of educational activities, through lectures, comprising 2 (two) for each unit. basic. To operationalize the study, the professionals were sensitized and the lectures were disseminated, with predefined dates, and objectives of the work during 2 (two) weeks. We used as resources: flyers, invitations during consultations at the UBS and visits by community health agents. The survey data were entered in a double spreadsheet in Microsoft Excel and were validated to identify possible errors. They were then transported to IBM® SPSS® software, version 21.0. Descriptive statistics were calculated as mean, standard deviation, minimum and maximum for the quantitative variables; and frequencies, for the qualitative ones. For inferential analyzes, the normality of data distribution was verified by the Kolmogorov-Smirnov test. Student's t-test was used for dichotomized variables. To carry out the study, the participants signed a two-way informed consent form, one for the responsible researcher and one for the participant, which contemplated the research objectives and all ethical and legal aspects related to this study. The use of the consent form guarantees the individual respect, as well as their rights of autonomy, privacy and information about the study and research.

RESULTS

The average age of women was 58.4 (± 5.4) years, with a minimum of 50.1 and a maximum of 69.8 years. Most were married 142 (47.8%), had not completed elementary school 135 (45.5%), worked at home 146 (49.2%) and mixed race / brown 203 (68.4%). The average individual income was 1.0 (± 0.3) minimum wages, ranging from 0.1 to 3.0 wages. Those who lived with relatives predominated 273 (91.9%), highlighting companion 156 (57.1%), children 174 (63.7%) and other relatives 68 (24.9%). Among those with 275 children (92.6%), the average number of children was 4.1 (± 2.6), ranging from 1 to 16 children (Table 1).

Table 1. Socioeconomic characteristics of the women participating in the study (n = 297). Teresina, PI, Brazil, 2017

Variable	M	SD	n	%
Age	58.4	5.4		
Marital status				
Single			61	20.5
Married			142	47.8
Stableunion			17	5.7
Separated / Divorced			34	11.4
Widow			43	14.5
Schooling				
Notliterate			60	20.2
Elementaryschoolincomplete			135	45.5
Complete primaryeducation			52	17.5
Complete high school			44	14.8
HigherEducation			6	2.0
Occupation				
Workat home			146	49.2
Workawayfrom home			48	16.2
Retired			79	26.6
Does notwork			24	8.1
Color / race				
White			53	17.8
Parda			203	68.4
Black			39	13.1
Yellow			2	0.7
Individual Income (BRL)	1.0	0.3		
Lessthan 880.00			27	9.1
880 or more			270	90.9
Who do you live with				
Alone			24	8.1
With Family			273	91.9
Children				
Yes			275	92.6
Not			22	7.4
Total			297	100.0

Legenda: M: Medium; SD: Standard deviation

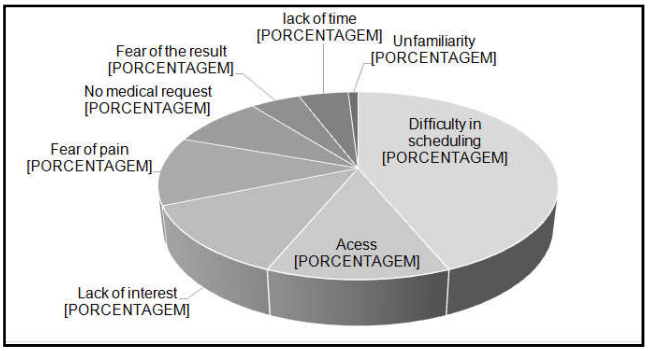
Table 2 describes the clinical characteristics of the women participating in the study.

Table 2. Clinical characteristics of the women participating in the study (n = 297). Teresina, PI, Brazil, 2017

Variable	M	SD	n	%
Age atfirstpregnancy *	20.9	5.1		
Under 18 years			100	33.7
18 yearsand over			197	66.3
Age offirstmenstruation	13.8	1.8		
Under 13 years			87	29.3
13 yearsorolder			210	70.7
Menopausestarted				
Yes			280	94.3
Not			17	5.7
Age at onset of menopause **	46.0	5.6		
Under 47 years			134	45.1
47 yearsorolder			163	54.9
Family HistoryofCancer				
Yes			15	5.1
Not			282	94.9
Performedmammographyexam				
Yes			241	81.1
Not			56	18.9
Total			297	100.0

Legend: M: medium; SD: standard deviation; *: n = 275; **: n = 280

There were 234 (78.8%) women who reported some difficulty to perform the mammography exam, as shown in graph 1. Of the mammograms performed and evaluated during the survey, the results with BI-RADS 2 163 categorization (54.9%) were the most prevalent. Only 1 (0.3%) woman and 46 (15.5%) complementary exams were referred to the referral service (Table 3).



Graph 1. Frequency distribution of difficulties encountered by women (n = 234) to perform mammography. Teresina, PI, Brazil, 2017

Table 3. Results of mammographic examinations of participating women who return for evaluation in health facilities (n = 297). Teresina, PI, Brazil, 2017

Variable	n	%
BIRADS Result		
BIRADS 0	44	14.8
BIRADS 1	67	22.6
BIRADS 2	163	54.9
BIRADS 3	9	3.0
BIRADS 4	1	0.3
Didnotperform	13	4.4
ReferralForwarding		
Yes	1	0.3
Not	296	99.7
Complementaryexams		
Requested	46	15.5
Notrequested	251	84.5
Total	297	100.0

Note: BIRADS: *Breast Imaging Reporting and Data System*

Health indicators for breast cancer are quantified by screening mammograms. Data from these indicators in 2015 were compared with data obtained after this intervention (Table 4).

Table 4. Frequency per year of mammographic examinations in the municipality of Teresina, PI, Brazil

Exam	2015	2016
Screeningmammogram	14.329	16.613
Mammography	1.246	6.002
Total	15.575	22.615

Source: SIA / Tabwin system, 2017

In the municipality of Teresina, in 2015, 14,329 screening mammograms were performed, an exam used as a quantitative marker of the breast cancer indicator in the capital and 1,246 diagnostic mammograms. In 2016, the year of this intervention study, 16,613 screening mammograms were performed, thus increasing by 15.5% compared with the previous year, and 6,002 diagnostic mammograms, totaling approximately 43% (Table 4).

DISCUSSION

The age of the research patients ranged from 50 to 69 years, with a predominance of women aged 50 to 59 years. According to the recommendations of the World Health Organization (WHO), the benefits of screening mammography are better evaluated in this age group, since in younger women mammography has limitations to identify lesions due to breast density (INCA, 2015). In contrast, studies already show improvement in the quality and effectiveness of mammograms

performed in women under 50 years. They show the effectiveness of screening tests in these women with the advent of digital mammography, which has been shown to have higher resolution, faster data storage and transmission, and a significant improvement in the quality of films (PEREGRINO, 2012). Also, studies show that a 17% reduction in breast cancer mortality in women aged 39 to 49 years is associated with effective screening mammographic exams (MAGNUS, 2011). Regarding skin color, the majority of participants stated that they were brown (69%), followed by white with 18%. A study conducted in southern Brazil pointed to white women totaling 86.7% as those most submitted to mammographic screening (SCHNEIDER, 2014). It is noteworthy that some studies identify the black race as the worst prognosis for breast cancer, due to the higher number of late diagnoses, caused by the difficult access to health care, as well as delays in treatment (SILVA, 2014).

Family income and education are associated with screening mammograms. Authors have found that the proper practice of mammography in women over 40 years old is associated with more than five years of schooling and a per capita family income greater than one minimum wage (SCHNEIDER, 2014). In this study it was identified that 45% of the participating women had up to four years of schooling and 80% of them reported family income of up to one minimum wage, the majority coming from the family allowance benefit. The level of education directly influences the knowledge and identification of risk factors and practice of early detection of breast cancer, which may lead to late diagnosis of the disease. Likewise, women from lower social classes present significant delay in breast cancer care, due to the difficult access to early detection services, such as mammography, leading to shorter survival and worse prognosis of the disease (GONÇALVES, 2013). Studies in Africa show that poor knowledge about breast cancer has been a barrier to the screening and early detection of breast cancer in African American women. Fear, doubt, lack of trust in health services and lack of study are some of the barriers that hinder early diagnosis of breast cancer (AKUOKO, 2017).

The study allowed to evaluate the risk factors for breast cancer. Parity was one of the risk factors evaluated, with a first pregnancy interval of 11-43 years, 7% of women had their first pregnancy aged ≥ 30 years and 21 reported nuliparity. The age range in the first pregnancy was 12 to 43 years, while 57 patients gave birth aged ≥ 30 years and 95 women were nulliparous (SILVA, 2014). The risk of developing breast cancer (CM) in women who had their first child after age 30 or who never got pregnant is relatively higher than in women who had their first child at an early age. This fact is associated with the large number of undifferentiated epithelial cells present in mammary gland structures, which are subject to neoplastic mutations (MUNHOZ, 2009). Among the women interviewed, it was observed that 241 (81.1%) had already had mammograms in their lifetime. Studies show that the coverage of mammographic examination in women aged 50 to 69 years was 56.8% 19. Other studies show that screening test coverage values were 79.3%, thus showing higher values than those found in the previous survey (SCHNEIDER, 2014). Several international scientific consensus universally recommend mammography as a screening test for breast cancer. This is a highly sensitive diagnostic test that detects 80 to 90% of breast cancer cases in asymptomatic women. Thus, mammography allows early detection of the disease, as well as contributing to more conservative treatments and thus reducing mortality[20]. In this study some barriers were found that make mammograms difficult to perform. Among these are the difficulty in marking the exam by the Health Unit System (HUS) Manager, followed by difficult access to services, lack of interest, fear of pain, fear of the result and lack of medical request (SCHNEIDER, 2014 and MARINHO, 2008). Some studies show that lack of medical solicitation was the main reason reported for not performing screening mammograms. According to the literature, the reasons for not performing mammography range from lack of financial resources, shortage of quality public equipment, large distance between the place of residence and health services, difficulty in scheduling the exam through HUS until lack of knowledge and simple forgetfulness. These are some of the barriers that make the breast cancer screening program unfeasible, but they can be broken by the implementation of strategies with government participation with mammography screening and quality control programs and social mobilization to disseminate information about the problem in order to alleviate fears and emphasize the importance of the exam (RENCK, 2014).

The classification of mammogram results is based on the BI-RADS ™ categorization, which is an American breast image reporting and data system that predicts the likelihood of a breast lesion being malignant, thus enabling greater efficiency of early breast detection programs. breast cancer. In the present study, the BI-RADS 2 category (benign exam) was the most prevalent (54.9%). On the other hand, the studies identified a prevalence of 43.8% for category BI-RADS 0 (inconclusive examination). Category 4 (suspected malignant examination) of the BI-RADS ™ classification was the least prevalent in this study, with only 0.1% of the cases, whose punctate and amorphous calcifications were present (Fig. 1). Similar results were found in a study conducted in the state of Pernambuco, Brazil, in which only 2 (0.2%) registered women had mammographic examination with suspected malignant lesions (SILVA2014). As a result of early screening, 14.8% of mammograms showed inconclusive results (BI-RADS 0). This BI-RADS categorization is inconclusive due to breast density, which impairs the quality of the exam, leading to the possible masking of breast cancer cases (HOLLAND, 2017). The authors mentioned above also discuss CM masking, associating it with decreased sensitivity of mammography in cases of dense breasts. They emphasize the need for complementary diagnostic methods, such as ultrasound and magnetic resonance imaging. These methods serve to distinguish false negative mammograms from true screening mammograms.

Of the 297 women who underwent mammography in this study, 15.5% (46) were referred for further examination, ultrasound, to complete the diagnosis. Another complementary diagnostic method used was biopsy, which was performed on only one woman with BI-RADS 4 result, which was negative for neoplasia. Currently, the number of mammograms performed reflects on women's health indicators for breast cancer prevention. For the development of this research, a survey of this health indicator was carried out in the basic health units (BHU) of the Capital, it was observed low numbers of mammograms performed in 2015 in some BHUs, from then began the intervention proposed in this study. During six months of intervention, 284 mammograms were performed, all being scheduled through the Unified Health System and follow-up of cases that required follow-up with a

specialist after the exam. This amount reflected positively on the increase in health indicators of the municipality, which according to the Municipal Health Department of Teresina had a 43% increase in mammographic examinations when compared to the same period of 2015.

Conclusion

Based on the results presented in this study, the consensus was reaffirmed that breast screening is an effective method for detecting breast cancer at a very early stage, which contributes to reducing the mortality rate. It also highlights the need to plan and implement educational activities to make women aware of the pathology, as well as to increase government incentives to improve the quality of screening programs, so that the late diagnosis of breast cancer can be delayed. Breast is reduced.

REFERENCES

AKUOKO CP, ARMAH E, SARPONG T, QUANSAH DY, AMANKWAA I, BOATENG D. Barriers to early presentation and diagnosis of breast cancer among African women living in sub-Saharan Africa. Plosone, 2017

Anderson, BO, SHYYAN R, ENIU A, SMITH RA, YIP CH, BESE N.S.; et al. Breast cancer in limited-resource countries: an overview of the Breast Health Global Initiative 2005 guidelines. *Breast J*.12 Suppl, 2006; 1:S3-15

BARRETO ASB, MENDES MFM, THULER LCS. Avaliação de uma estratégia para ampliar a adesão ao rastreamento do câncer de mama no Nordeste brasileiro. *RevBrasGinecol Obstet*., 2012; 34(2):86-91

FITZGERALD SP. Breast-cancer screening. *N Engl J Med*, 2012; 366(2):191

FLETCHER SW; ELMORE JG. Mammographic screening for breast cancer. N Engl J Med, 2003; 348:1672–1680

GONÇALVES LLC. Trajetória de mulheres com câncer de mama: dos sinais e sintomas ao tratamento. 2013. 148f. Tese (Doutorado em Enfermagem) – Universidade de São Paulo. São Paulo, 2013

HOLLAND K, VAN GILS CH, MANN RM, KARSSEMEIJER N. Quantification of masking risk in screening mammography with volumetric breast density maps. Breast Cancer Res Treat, 2017

HUMPHREY LL, HELFAND M, CHAN BK, WOOLF SH. Breast cancer screening: a summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med,* 2002; 137:347–360

INSTITUTO NACIONAL DO CANCER – INCA, Ministério da Saúde. Estimativa da incidência e mortalidade por câncer no Brasil, 2015 [online]. Disponível em: http://www.inca.gov.br. Acesso em outubro de 2016

INSTITUTO NACIONAL DO CANCER – INCA, Ministério da Saúde. Controle do câncer de mama: Documento de consenso, 2004 [online]. Disponível em: http://www. inca.gov.br. Acesso em setembro de 2016

KADAOUI N, GUAY M, BARON G, ST-CERNY J, LEMAIRE J. Breast cancer screening practices for women aged 35 to 49 and 70 and older. *Can Fam Physician*, 2012; 58(1):e47-53

MAGNUS MC, PING M, SHEN MM, BOURGEOIS J, MAGNUS JH. Effectiveness of mammography screening in reducing breast cancer mortality in women aged 39-49 years: a meta-analysis. J Womens Health (Larchmt) 2011

MARINHO LAB, CECATTIL JG, OSIS MJD, GURGEL MSC. Knowledge, attitude and practice of mammography among women users of public health services. *Rev. Saúde Pública, São Paulo,* Feb 29, 2008; vol.42, no.2

Medeiros GC, BERGMANN A, AGUIAR SS, THULER LCS. Análise dos determinantes que influenciam o tempo para o início do tratamento de mulheres com câncer de mama no Brasil. *Cad. Saúde Pública, Rio de Janeiro*, jun, 2015; 31 (6):1269-1282

MUNHOZ CAS. Câncer de mama e organização dos serviços: do atendimento básico à referência na Casa de Saúde Santa Marcelina Itaquera no munícipio de São Paulo. 2009. 93f. Dissertação (Mestrado em Saúde Pública) – Faculdade de Saúde Pública. Universidade de São Paulo. São Paulo, 2009.

Passman LJ, FARIAS AM, TOMAZELLI JG, et al. SISMAMA--implementation of an information system for breast cancer early detection programs in Brazil. Breast. 20 Suppl, 2011; 2:S35-9

PEREGRINO AAF, VIANA CMM, ALMEIDA CEV, et al. Análise de Custo-efetividade do rastreamento do câncer de mama com mamografia convencional, digital e ressonância. Ciência & Saúde Coletiva, 2012; 17(1):215-222

RENCK DV, BARROS F, DOMINGUES MR, et al. Equidade no acesso ao rastreamento mamográfico do câncer de mama com intervenção de mamógrafo móvel no sul do Rio Grande do Sul, Brasil. Cad. Saúde Pública, Rio de Janeiro, jan, 2014; 30(1):88-96

RONCHI S, COSTA LD, PERONDI ALR, BORTOLOTI DS, WIETZIKOSKIE EC. Prevalência de alterações mamárias em mulheres atendidas em um município do estado do Paraná. Rev GaúchaEnferm; jun 2014, 35(2):113-20

ROVEDA JUNIOR D, PIATO S, OLIVEIRA VM, RINALDI JF, FERREIRA CAP, FLEURY ECF. Valores preditivos das categorias 3, 4 e 5 do sistema BI-RADS em lesões mamárias nodulares não-palpáveis avaliadas por mamografia, ultra-sonografia e ressonância magnética. RadiolBras; 2007; 40(2):93–98

SANTOS GD, CHUBACI RYS. O conhecimento sobre o câncer de mama e a mamografia das mulheres idosas frequentadoras de centros de convivência em São Paulo (SP, Brasil). Ciência & Saúde Coletiva, 2011; 16(5):2533-2540

SCHNEIDER IJC, GIEHL MWC, BOING AF, D'ORSI E. Rastreamento mamográfico do câncer de mama no Sul do Brasil e fatores associados: estudo de base populacional. Cad. Saúde Pública, Rio de Janeiro, set 2014; 30(9):1987-1997

SILVA FX, KATZ L, SOUZA ASR, AMORIM MAR. Mammography in asymptomatic women aged 40-49 years. Rev Saúde Pública, 2014; 48(6):931-939

Van Cleef A, ALTINTAS S, HUIZING M, PAPADIMITRIOU K, VAN DAM P, TJALMA W. Current viewonductal carcinoma in situ and importance of the marg in thresholds: A review. Facts Views Vis Obgyn, 2014; 6 (4): 210-218

****