

REVIEW ARTICLE

Factors involved in the non-performance of breast cancer screening tests

Fatores envolvidos na não realização dos exames de rastreamento para o câncer de mama

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ABSTRACT

The objective of this study was to analyze the evidence available in the literature on the factors involved in the non-performance of breast cancer screening tests. Data collection was performed in the LILACS, MEDLINE and Scopus databases. The search strategy was: (tw:(“breast cancer screening”)) AND (tw:(“Health Knowledge, Attitudes, Practice”)) AND (tw:(mammography)) OR (tw:(ultrasonography)) OR (tw:(“clinical breast exam”)). The final sample consisted of 10 articles. The factors that demonstrated to be associated with the non-performance of breast cancer screening tests were internal: fears, beliefs/culture, attitudes of shame/embarrassment, knowledge about breast cancer; and external: health services, health professionals, sociopolitical factors, organizational factors. Thus, these factors demonstrate the need to use the service in an organized and universal way, with professionals prepared to welcome and guide women, coping with the factors that impede the performance of breast cancer screenings.

Descriptors: Breast Neoplasms; Mass Screening; Nursing.

RESUMO

O objetivo foi analisar as evidências disponíveis na literatura sobre os fatores envolvidos na não realização dos exames de rastreamento para o câncer de mama. A coleta de dados foi realizada nas bases de dados LILACS, MEDLINE e Scopus. A estratégia de busca foi: (tw:(“breast cancer screening”)) AND (tw:(“Health Knowledge, Attitudes, Practice”)) AND (tw:(mammography)) OR (tw:(ultrasonography)) OR (tw:(“clinical breast exam”)). A amostra final constituiu-se de 10 artigos. Os fatores que demonstraram serem associados a não realização dos exames de rastreamento do câncer de mama foram: internos - medos, crenças/cultura, atitudes de vergonha/pudor, conhecimento sobre o câncer de mama e externos - serviços, profissionais de saúde, fatores sociopolíticos, organizacionais. Assim, estes fatores demonstram a necessidade de utilização do serviço de forma organizada e universal, com profissionais preparados a acolher e orientar as mulheres, proporcionando o enfrentamento de fatores que inviabilizam a realização do rastreamento do câncer de mama.

Descritores: Neoplasias da Mama; Programas de Rastreamento; Enfermagem.

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INTRODUCTION

Breast cancer is the most common cancer in women worldwide and is one of the leading causes of death, accounting for 15% of female deaths from cancer⁽¹⁾.

Some strategies such as early diagnosis and screening are used for the early detection of breast cancer. The first is characterized by an approach to women with initial signs and/or symptoms of the disease, while the second refers to the application of a test or examination in an asymptomatic and apparently healthy population, to identify lesions suggestive of cancer and thus identify the disease in its preclinical phase^(2,3).

For breast cancer screening, mammography (MMG) and clinical breast exam (CBE) are fundamental strategies⁽³⁾ that favor early cancer detection, thus increasing the chances of treatment and cure^(2,3).

With regard to CBE, the Ministry of Health has not issued an opinion, whether favorable or unfavorable, because the balance between potential damages and benefits of the practice is still uncertain⁽⁴⁾. However, evidence shows that screening through regular CBE could be an alternative to MMG screening, or a complement, due to the possibility of increasing the detection of breast cancer cases⁽⁵⁾. Some studies point to an increase between 5 and 7%⁽⁶⁾.

Thus, guidelines and recommendations from various organizations and governments advocate annual CBE for women aged 40 to 49 years, as MMG has low sensitivity in women of this age group due to dense breasts⁽⁵⁾.

On the other hand, biennial MMG is recommended for women between 50 and 69 years. This recommendation is based on scientific evidence of the benefit of this strategy in reducing mortality in this group, and in the favorable balance between risks and benefits, a balance that is unfavorable in other age groups and periodicities^(5,7). In addition, this examination has contributed to the initial detection of breast cancer worldwide, being considered the gold standard for screening the target population⁽⁸⁾. In Brazil, MMG is the only method strongly recommended for the screening of breast cancer⁽⁴⁾.

The screening strategy can be organized or opportunistic^(5,7). In developed countries, screening is organized and occurs through active recruitment of the target population⁽⁹⁾. This enables reduced mortality from breast cancer and increased patient survival rates⁽¹⁰⁾. On the other hand, in developing countries the opportunistic strategy of breast cancer screening delegates the responsibility of seeking the health service to women. In these countries, where access to primary and specialized care is limited, challenges are imposed by the system itself, associated with social vulnerabilities still evident in these places, configuring barriers that prevent early detection and treatment^(11,12).

In developing countries, health needs and low socioeconomic status are associated with poor knowledge of breast cancer. In addition, cultural and religious beliefs

contribute negatively, hindering the seeking of health services by the woman⁽¹³⁾.

This unfavorable reality has contributed to the potential of several negative impacts on the diagnosis of breast cancer. Thus, there are several factors that relate to the failure to perform the screening tests for breast cancer.

In the current literature⁽¹⁴⁻¹⁶⁾, many studies address breast cancer screening. Most of them focus on women's personal perspectives that prevent proper cancer screening, such as: beliefs, habits and inaccurate knowledge of the subject. This evidences the need for in-depth search and analysis of scientific literature for studying the specificities of the various factors, in their different scopes, which are identified as real obstacles for the performance of the recommended screening tests. These obstacles are multifactorial⁽¹⁷⁾ and do not involve only the woman, especially when studying places where screening is opportunistic. Therefore, it should be considered that there are inequalities in the supply and use of procedures in some places, the access to diagnosis being critical⁽¹⁸⁾.

There is a study that pointed to three spheres as factors that are obstacles to screening: the health system, education/knowledge, and women's beliefs and attitudes⁽¹⁷⁾. However, this study only evaluated clinical trials and does not demonstrate the factors statistically associated with the non-performance of the tests, which represents a gap in the literature of the current reality involving the obstacles to screening, besides evidencing the need to include other types of studies.

In view of all these arguments, it is fundamental to know the national and international reality related to the lack of diligence in the performing of these tests, since public policies could be developed, and interventions could be created to reduce the impact generated by the non-performance of the tests.

Thus, the objective of the study was to analyze the evidence, available in the literature, on the factors associated with the non-performance of breast cancer screening tests.

METHODS

This is an integrative review of the literature on the factors involved in the non-performance of breast cancer screening tests, developed through the analysis of national and international databases. Considering the gaps in the literature, we focused the review on studies that demonstrated statistically significant values for not performing tests. The research was carried out in five stages: construction of the guiding question, search of the primary studies in the databases, categorization of the studies, analysis and presentation of the data⁽¹⁹⁾.

To guide this integrative review, the research strategy used was the PVO technique, which allows to organize the structural elements grouped as follows: P refers to the problem situation, participant or context; V is related to the study variables; and O refers to the outcome or expected

result. In view of this, the guiding question was formulated considering: P — women of screening age; V — associated factors; and O — failure to perform screening. This resulted in the following question: “What is the scientific evidence on the factors associated with the non-performance of screening tests in women of screening age?”.

Data collection was carried out in the Latin American and Caribbean Health Sciences Literature (LILACS), Medical Literature Analysis and Retrieval System (MEDLINE) and Scopus databases.

Standardized descriptors (Health Knowledge, Attitudes, Practice, mammography and ultrasonography) and non-standardized (“breast cancer screening” and “clinical breast exam”) descriptors were selected to locate the articles.

The search strategy was: (tw: (“breast cancer screening”)) AND (tw: (“Health Knowledge, Attitudes, Practice”)) AND (tw:(mammography)) OR (tw:(ultrasonography)) OR (tw: (“clinical breast exam”)). Search was carried out in December 2017 and January 2018. In this stage, EndNote Web was used to identify duplicate studies.

The inclusion criteria of the studies were: approaches the subject, published within the last 10 years, Portuguese, English or Spanish language. Exclusion criteria were: qualitative studies, editorial letters, reflection articles, narrative or integrative revisions. We selected the last decade because we verified that the study of the theme intensified in this period,

assuming new and significant perspectives in the context of public policies of Women’s Health.

The studies found were subjected to careful reading of titles and abstracts, with those that met the eligibility criteria being selected for reading in full.

The analysis of the studies was done independently by two researchers, and a third researcher was activated in cases of divergence.

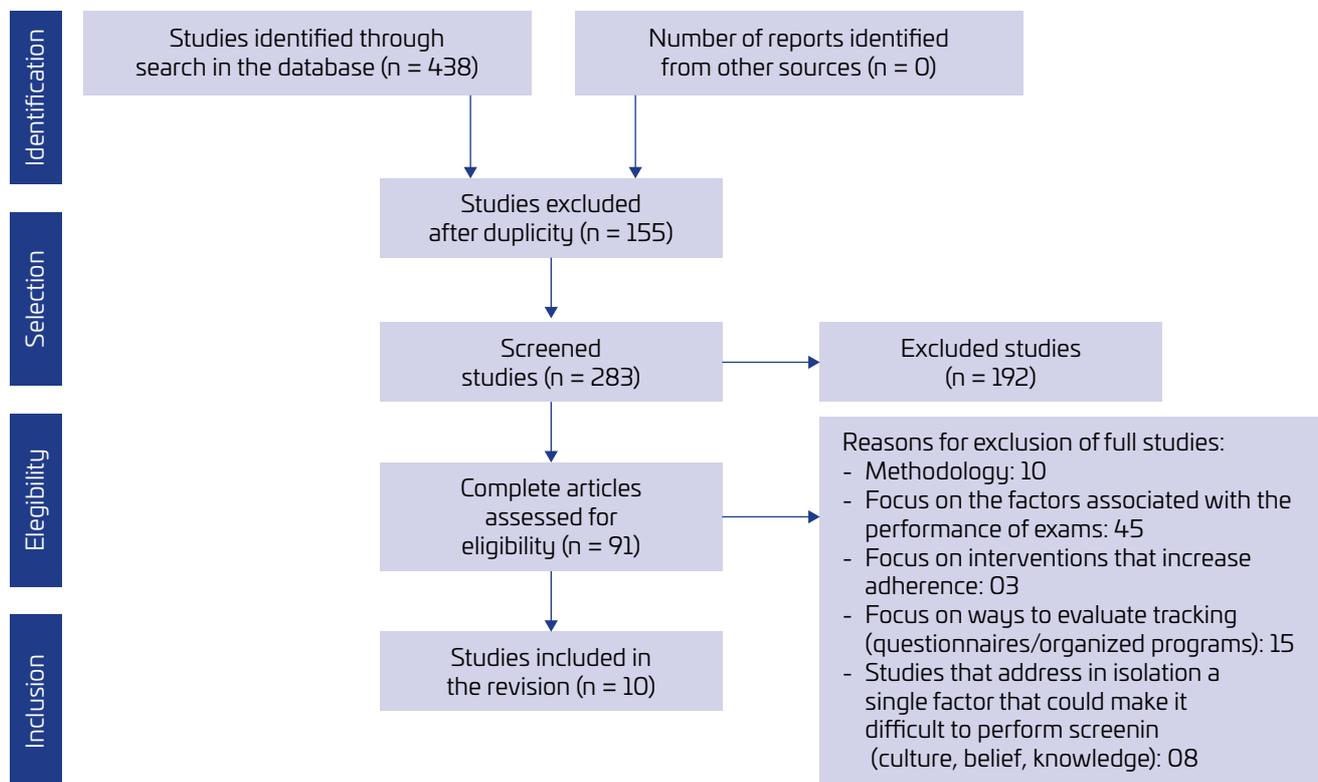
To facilitate the identification of the selected studies, an alphanumeric sequence code (E1, E2, E3...) was used. The selection process is summarized in Figure 1, according to the PRISMA flowchart⁽²⁰⁾.

For the presentation of the results, a synoptic table was elaborated, to facilitate the categorization of the data of the selected studies. The table included the following aspects: author/title/year/country/level of evidence, methodology and results/conclusion, maintaining the authenticity of the ideas, concepts and definitions of the authors of the articles.

The analysis of the level of evidence was based on the 2011 Oxford’s five levels and its four grades of recommendation⁽²¹⁾, being classified in:

- Systematic review of controlled and randomized clinical trials;
- Randomized clinical trial or observational study;
- Cohort study with non-randomized control group/ follow-up study;

Figure 1. Selection of articles included in the integrative review, 2018.



- Case series, case-control studies or historically controlled studies;
- Mechanisms based on reasoning (opinion lacking explicit critical evaluation or based on basic principles — physiological studies or animal studies).

RESULTS

The final sample consisted of 10 articles. Through the systematization of the information and critical analysis of the most relevant elements, we listed the selected quantitative studies that presented significant *p* values, in order to verify the factors associated with the non-performance of breast cancer screening tests. Chart 1 presents the characteristics of the articles selected in this review.

A summary of the main factors involved in the non-performance of screening tests according to the results of each article is shown in Chart 2.

DISCUSSION

Several factors were identified to be linked to the non-performance of breast cancer screening tests. Of these factors, those inherent to women were considered as internal, that is, their fears, beliefs/culture, attitudes of embarrassment/shame and knowledge about breast cancer and screening tests, among others. External factors, on the other hand, where those involving services, health professionals, socio-political factors and organizational factors, among others. It is important to emphasize that the female populations included in each study exhibit different realities. Therefore, this study sought for the patterns that were the most addressed in the literature as being factors that influence the non-performance of the screening.

Although the largest number of articles address internal factors, i.e., related to women, it is worth noting that external factors cause various social repercussions, especially in developing countries. These factors are directly related

Chart 1. Characteristics of the articles selected in the literature review. Goiania, 2018.

Author/Title/Year/ Country/Level of Evidence (LE)	Objective	Method	Main findings
E1. Marmarà D, Marmarà V, Hubbard G / Health beliefs, illness perceptions and determinants of breast screening uptake in Malta: a cross-sectional survey / 2017/ Malta / Level 3 ⁽²²⁾ .	1. Describe the knowledge, health beliefs and illness perceptions about breast cancer and screening;	Cross-sectional survey with 404 Maltese women with no personal history of breast cancer, aged 50 to 60 years at the time of the first screening invitation. The women were invited through the National Breast Screening Program using the stratified random sampling method. Participants answered a 121-item questionnaire by phone between June-September 2015.	Reasons for never having performed the screening:
	2. Identify the main reasons related to non-attendance at the screening program;		- Fear (41.0%) (p<0.05): fear of result (20.5%) (p=0.017); fear of an unknown procedure (6.2%) (p<0.001); fear of radiation (3.7%) (p=0.001);
	3. Determine if health beliefs, illness perceptions, knowledge, socio-demographic factors and health status are associated with uptake to first invitation at the screening program;		- Embarrassment (8.1%) (p=0.009).
	4. Determine the significant predictors for the first breast screening uptake.		

Continue...

Chart 1. Continuation.

Author/Title/Year/ Country/Level of Evidence (LE)	Objective	Method	Main findings
E2. Abu-Helalah MA et al. / Knowledge, barriers and attitudes towards breast cancer mammography screening in Jordan. / 2015/ Jordan / Level 3 ⁽²³⁾ .	To evaluate MMG screening, women's knowledge and attitudes towards breast cancer and screening, to identify barriers to this preventive service.	Cross-sectional survey of 507 women aged 40–69 in six cities in Jordan.	Factors involved in the non-performance of screening tests included: - Low Personal Risk of Breast Cancer (p<0.001). - The belief that screening should be performed only in the presence of signs and symptoms (p<0.001).
E3. Munyaradzi D, January J, Maradzika J/ Breast cancer screening among women of child-bearing age / 2014/ Zimbabwe/ Level 3 ⁽²⁴⁾ .	To evaluate the determinants of behaviors that hinder or promote breast cancer screening and explore the predisposing, enabling, and reinforcing factors associated with breast cancer screening.	Cross-sectional survey of 120 women of childbearing age, attended to by an outpatient service of a large hospital.	Factors for the non-screening of breast cancer leading to delay or early presentation of the condition: - Lack of awareness about breast cancer screening (p=0.004) - Lack of knowledge of someone who had breast cancer (p=0.004).
E4. Elobaid YE et al. / Breast cancer screening awareness, knowledge, and practice among Arab women in the United Arab Emirates: A Cross-Sectional Survey / 2014 / United Arab Emirates / Level 3 ⁽²⁵⁾ .	To assess breast cancer screening knowledge, attitudes, and practices among women at screening age (≥40 years).	Cross-sectional survey of 247 women using the Breast Cancer Awareness Measure. Random selection of four of the 12 community cultural and religious centers in the city of Al Ain.	Factors associated with non-screening: Lack of medical recommendation (p=0.001); Lack of awareness (p=0.001).
E5. Donnelly TT et al. / Beliefs and attitudes about breast cancer and screening practices among Arab women living in Qatar: a cross-sectional study. / 2013 / Qatar / Level 3 ⁽²⁶⁾ .	Verify the screening practice, knowledge, beliefs and cultural values in relation to breast cancer and its screening.	Multicenter cross-sectional survey conducted in 2011 with 1,063 Qatari citizens aged 35 and over.	Factors for non-performance of CBE: - Belief that the procedure may be painful or uncomfortable (p=0.001) - Fear of knowing they might have cancer (p=0.004); - Embarrassment in relation to the exam (p<0.001). Factors for non-performance of MMG: - Belief that the procedure may be painful or uncomfortable (p=0.033) - Fear of knowing they might have cancer (p=0.001); Fear of gossip (p=0.029). - Embarrassment in relation to the exam (p<0.001)

Continue...

Chart 1. Continuation.

Author/Title/Year/ Country/Level of Evidence (LE)	Objective	Method	Main findings
E6. Khaliq W et al. / Breast cancer screening preferences among hospitalized women / 2013 / USA / Level 3 ⁽²⁷⁾ .	To explore the receptivity of hospitalized women to perform outpatient MMG.	Cross-sectional survey of 210 hospitalized women, aged 50 to 75, admitted to John Hopkins Bayview Medical Center in early 2012.	Barriers to non-adherence to screening guidelines:
			Difficulties remembering to schedule the exam (p=0.050)
			Lack of transport (p=0.040).
E7. Allahverdi-pour H et al. / Breast cancer risk perception, benefits of and barriers to mammography adherence among a group of Iranian Women / 2011 / USA / Level 3 ⁽²⁸⁾ .	To evaluate associations between Health Belief Model variables, stages of change, and participation in MMG screening among Iranian women.	Cross-sectional survey of 414 women, aged 40–73, recruited by random sampling in 2007, using a questionnaire designed to measure the five constructs of the Health Science model and the stages of adoption of MMG screening.	Barriers to performing MMG perceived by women (in the logistic regression analysis):
			- Difficulty remembering to schedule an MMG (p=0.003); - Lack of time to perform an MMG (p=0.001).
E8. Shaheen R et al. / Barriers and opportunities for early detection of breast cancer in Gaza women / 2011/ USA / Level 3 ⁽²⁹⁾ .	1) identify barriers to early detection of breast cancer;	Cross-sectional study involving two groups, with group 1 (G1) (n=100) made up of women living in the Gaza Strip and group 2 (G2) (n=55) made up of Palestinian women from Gaza but living outside the Gaza Strip for at least a year.	Factors associated with the non-performing of an MMG (“determining significant difference in responses of women living in Gaza compared to those living outside Gaza”):
	2) identify the attitude towards breast care;		- Shame/embarrassment to perform an MMG (p<0.001);
	3) identify if there is a difference in women’s barriers and attitudes based on where they live.		-Screening is not a priority (p=0.002);
			-Dissatisfaction with medical facilities (equipment) (p<0.001); -MMG pain (p<0,001); -Difficulty finding medical facilities (p<0,001).
E9. Lopez ED et al. / A Cross-Sectional Study to Compare characteristics of women aged 40 and older from the deep South who are current, overdue, and never screeners / 2009 / USA / Level 3 ⁽³⁰⁾ .	Identify barriers and facilitators for participation in breast cancer screening.	Cross-sectional survey of 987 women 40 years of age and older from Mississippi in 2003.	Factors associated with the delaying and/or non-performance of screening associated with poor access to health care:
			- The thought that MMG radiation can cause breast cancer (p=0.003)
		Associated with the Model of Health Services Utilization and MMG tracking status (current, late and never performed).	- Finding it hard to perform an MMG (p<0.001)
			- Rather not know if they have cancer (p<0.001)
			- Believe that nothing can be done to prevent cancer (p<0.001)
			- Competing Needs / Having more important issues to worry about (p<0.001)
			-Lack of health insurance (p<0.001)
			-Lack of social support for screening (p<0.001)
-Lack of health information (p<0.001)			
-Lack of annual checkups (p<0.001)			

Continue...

Chart 1. Continuation.

Author/Title/Year/ Country/Level of Evidence (LE)	Objective	Method	Main findings
E10. Amorim VMSL et al. / Fatores associados a não realização da mamografia e do exame clínico das mamas: um estudo de base populacional em Campinas, São Paulo, Brasil. / 2008 / Brazil / Level 3 ⁽³¹⁾ .	To analyze the prevalence of the non-performance of a clinical breast exam and mammography according to socioeconomic, demographic and health-related behavior variables.	Cross-sectional survey of 290 women aged 40 years and over, living in the city of Campinas, São Paulo, Brazil.	Factors associated with not performing MMG:
			- Women aged 70 or older (p=0.001);
			- Self-reported black/mixed skin color (p=0.004);
			- Household income per capita ≤5 minimum salaries (p=0.049).
			Factors associated with not performing CBE:
			- Self-reported black/mixed skin color (p=0.006);
			- No one to accompany them (p=0.017);
			- Household income per capita ≤5 minimum salaries (p<0.001).
- Does not practice physical activity (p=0.022).			

MMG: mammography; CBE: clinical breast exam.

to low population coverage, precluding early diagnosis and treatment, and the poor quality of MMG, coupled with the limited number of machines in operation. Thus, it is understood that these factors have a major impact on women, especially those most vulnerable to not performing breast cancer screening, represented by a low-income, less educated and non-white profile^(31,32).

Internal factors

Fear

Fear was identified in the selected studies as the main factor that hinders the performance of screening tests^(22,23,26,30) and is present at various times in forms such as: fear of results, of pain, fear of an unknown procedure and fear of radiation. Thus, verbal or written guidance, as well as the support and welcoming of women during the examination, can be simple and easily achievable interventions that can help with pain relief during MMG⁽³³⁾.

The belief that MMG is a painful procedure and the fear of radiation exposure configure important barriers that increase the possibility of non-adherence to MMG, being a personal barrier in one in four women⁽³⁴⁾. Added to this is the idea of fatalism, in which women report fear of cancer detection because they believe the disease is linked to a death sentence, especially if a friend or family member is under treatment or has died as a result of the disease⁽³⁵⁾.

Chart 2. Main factors involved in the non-performance screening tests.

Factors	References
Internal	
Fear (results, pain, unknown procedure or radiation)	E2; E5; E9; E1
Belief – Low Personal Risk	E8, E9
Embarrassment, shame, uncomfortable with male professionals	E5; E8; E1
Religious belief – “cannot be done”	E2; E9
Lack of knowledge (never heard of or unaware of how and where tests can be performed)	E3; E4
Forgetfulness	E6; E7
External	
Lack of environment / family support	E2; E9; E10
Test Cost / Financial Issues / Missing Health Insurance	E2; E9; E10
Lack of medical facilities or inappropriate facilities	E8; E9
Lack of medical recommendation	E4

The extreme concern of women in regard to breast cancer is the idea that mastectomy or death follow the diagnosis. These perspectives may hinder the effectiveness of breast cancer control, as they make early detection and adherence to cancer interventions unfeasible⁽³⁶⁾. On the other hand, there are studies that show that in some groups of women, such as African American women, risk perception and cultural beliefs, represented by fear of cancer detection, physicians and treatment, are sources of motivation that favored screening⁽³⁷⁾.

Given the above, the fundamental role of everyone involved in screening is noticeable. Women are concerned about the lack of guidance in regard to the context surrounding the performance of MMG and still complain about difficulties in establishing open communication with the technicians who perform the examinations. Thus, a situation is built in which the woman has her fears and concerns potentiated during the procedures and feels inclined not to adhere to them. In addition to the entire scenario presented, some women are also subjected to late delivery of test results, a fact that potentiates negative feelings, such as anxiety⁽³⁵⁾.

This reality requires the development of intervention strategies. Health education programs should include applications for developing appropriate health beliefs and reducing fear. Examining these results with experimental studies may be a useful strategy⁽¹⁶⁾.

Embarrassment/shame

Emphasis can also be given to shame or embarrassment^(22,26,29) in exposing the body while performing examinations, especially if the assessment is performed by a male individual. A study showed that women's delay in receiving timely follow-up examinations is due to their past experience and knowledge of the intimate nature and exposure of the procedures, these being not only painful and invasive, but also embarrassing. Worryingly, this representation of MMG as an exam that causes personal embarrassment is found among women of the different ages and whether or not they already have children. Although these women consider the exams an embarrassing experience, they acknowledge that communication regarding the benefits of the exams could help them overcome their fears and embarrassments⁽³⁵⁾. Moreover, women who perceive MMG as an embarrassing procedure are less likely to be screened, even in cases of organized screening in which they were invited to undergo the examination⁽³⁸⁾.

Contradicting these ideas, study showed that the sex of the professional is not as important as other issues involved in screening, such as the type of exam, the place of performance and commuting time to that place. Thus, having a female doctor would improve the experience, but it would not affect woman's willingness to participate⁽³⁹⁾.

Doubts and fears are common during breast cancer screening tests, especially regarding the need for the technician

to position and reposition the breasts during the procedure. Women report that the impersonal nature of the approach at the time of MMG makes the process uncomfortable, nullifying their individuality, especially when it is their first experience. Such experiences make the procedure less professional and make many women reluctant to return⁽³⁵⁾.

In general, the importance of considering women's culture and beliefs with regard to these issues is still inferred. Arab women tend to be more conservative and believe that touch on their body is unnecessary and embarrassing, in fact a taboo. Thus, the fear of embarrassment further discourages the asymptomatic women, who do not realize the need for screening to maintain their health. Minor practical adjustments, such as ensuring privacy during exams, having female professionals performing CBE and operating MMG equipment, could help in incorporating these women into screening⁽¹⁴⁾.

In addition, it is common for women to delay MMG due to pain and embarrassment, although they understand the need for the test. In regard to pain, women report that coping strategies, including talking to the MMG technician or healthcare professional about the exam, help overcome their concerns about the procedure. However, participants admitted that undressing for MMG was a source of personal embarrassment and that delaying the exam was a way to minimize the occurrence of these moments⁽³⁵⁾.

Knowledge

Despite globalization and the wide access to technology available today, the lack of knowledge about the subject is still evident. This was demonstrated in a study conducted in South Africa, in which 69% of participants had never heard of breast cancer and, consequently, most of the women in the study (94.7%) had never performed a screening test, leading to the occurrence of late diagnoses. In addition, initiatives out of the global health recommendations were reported, such as the 17.3% of women who reported preferring to resort to traditional and spiritual healers as a means of treating any change in their breasts⁽⁴⁰⁾. In contrast, a study from Malawi, in East Africa, showed that 96% of women were interested in learning more about breast cancer, and they would like this information to come from a doctor (64%) or a community health worker (40%)⁽³⁹⁾.

Lack of knowledge is a detrimental factor for screening, and causes a number of negative impacts, such as mistaken fears. Women with breast cancer demonstrated that the two most common reasons for delayed tests were fear of diagnosis or treatment and inability to recognize that breast symptoms were serious. Among these women, those with education lower than high school, with little knowledge of breast cancer, and those who took more than three months to seek a health service, even after recognition of the first symptom in the breasts, were the most likely to be diagnosed in advanced stages of the disease⁽⁴¹⁾.

Thus, it is evident that women with lower levels of education are less likely to have adequate information on mammographic screening⁽²⁴⁾. In addition, education level is the only predictor that increases awareness and adherence to breast cancer screening, with an odds ratio of 1.43 (95%CI 1.12–2.18)⁽⁴²⁾.

Poor knowledge about breast cancer unveils the need for future efforts driven through women-oriented health education programs. Thus, health education should be channeled by women-friendly agencies or organizations, such as prenatal and postnatal hospital clinics and religious organizations⁽⁴³⁾. There is a need for a multifaceted strategy to inform and educate women to bring about behavioral change. It may be beneficial to provide more information about breast cancer, its treatment and the importance of screening, through health education in primary care or by using alternative channels like the various media: magazines, TV and radio ads, online sites and brochures, among others⁽³³⁾. Importantly, the gold standard for breast cancer screening communication involves conveying information with decision-making support, that is, helping women understand the advantages and disadvantages of screening, allowing them to make individual decisions regarding their participation in screening⁽⁴⁴⁾.

Belief – low personal risk – religion

Reasons that demonstrate the belief of low personal risk^(22,29,30) in presenting breast cancer are commonly described, and also involve the belief that the absence of signs and symptoms of breast cancer makes screening unnecessary or a lower priority in a woman's life. The most common reason for the perceived high risk of the disease is the belief that all women are susceptible to the disease.

A study of Latino women living in the United States found that the most commonly held belief was that “faith in God can protect her from breast cancer.” Having three or more cultural beliefs was significantly associated with less acculturation (process of change through contact with another culture), lower socioeconomic status and less access to care. In addition, there was a greater likelihood of delayed examinations in women with higher cultural beliefs⁽⁴⁵⁾.

Therefore, it is suggested that any culture-based intervention should focus on providing insight into the possibility of breast cancer treatment and how it benefits from early detection, and dispelling information to eliminate misconceptions⁽²⁹⁾.

External factors

Organizational barriers

Regarding external factors, we identified three factors associated with non-screening: financial issues/cost of the test; lack of medical recommendation; and the lack of facilities or inappropriate facilities.

A cohort study showed that over 90% of women report that they did not undergo the CBE during routine visits to primary care centers and other clinics before presenting breast symptoms. In fact, clinical breast examination provided by trained doctors and nurses, despite being affordable services, are not a standard offering of the primary care system⁽⁴¹⁾.

It is worth noting the dependency of the practitioner in this regard, since many women might not perform screening because they do not have a recommendation from a health professional. In a study in which only 6% of women had undergone a CBE, it was found that 96% were interested in performing this exam where it was offered by the health professional (39). Another study concluded that 80 and 83% of women who reported having had a CBE and a MMG, respectively, indicated these exams were performed due to the recommendation of their physician⁽²⁵⁾.

Despite being a fundamental element in this process, the professional depends on the proper structure and facilities of the service that allow the positive attitude of the woman while carrying out the examination. Limitations are centered on long waiting times at clinics, disorganization at screening centers, dissatisfaction with facility staff, difficulties rescheduling appointments, and lack of concern about breast cancer⁽³³⁾.

In view of this perspective, it is important to mention that the examinations are associated with the multifactorial issues described above, and that organized breast cancer screening programs would reduce health inequalities. To that end, public investment would be necessary, in order to improve the quality of the service. The results indicate that there are social inequalities in the performance of preventive practices, mainly depending on race/color and level of education⁽³¹⁾, and it is necessary to identify possible risk groups to promote the implementation of specific actions⁽⁴⁶⁾. An organized breast cancer screening program would reflect in health services as early diagnosis reduces treatment costs and mortality rates⁽⁴⁷⁾.

Support

Both women with delayed examinations and those who have never had a screening test, face similar systemic barriers to performing MMG — essentially, lack of resources or lack of contact and encouragement from health professionals, which would facilitate access to exams⁽³⁰⁾. Women participate significantly more in screening when evaluated by their primary care physician and when they are aware of someone diagnosed with breast cancer, while they are not sensitized to participate in screening when the recommendation is made by relatives or friends⁽²²⁾.

Single women and, especially, widows, are more likely to delay or not participate in screening compared to married women^(26,33). Some women indicate that their husbands are positive, as they are a primary source of support and comfort for many women, as well as in the financial aspect.

In addition, health decisions are mostly made by the spouse or couple⁽¹⁵⁾. Thus, being married is possibly a protective factor against barriers, including embarrassment about the examination. Thus, single women require special attention to inform them about the importance of breast screening, which could be addressed through well-organized programs with breast cancer support groups and self-help organizations⁽³³⁾.

Another study showed that having little contact with friends and family for more than two to three years is associated with a higher probability of not participating in breast screening⁽⁴⁸⁾. In addition, having a known family history of breast cancer would provide women with higher perceptions of susceptibility⁽⁴⁹⁾, being a factor in the search for screening.

Thus, in general, it is emphasized that social support is a social variable accepted as associated with human health. Awareness of the implications of lack of adequate support will, possibly, gradually and negatively affect women's participation in breast cancer screening⁽¹⁷⁾.

Research is needed to explore socio-cultural and economic variations among women that may be specific to each population. Without a proper understanding of the influence of these socio-cultural and economic factors on the pursuit of health or health risk behaviors, the effectiveness and sustainability of intervention programs cannot be achieved⁽⁵⁰⁾.

CONCLUSION

Our study shows that factors related to non-adherence to screening practices are internal and external and are interconnected. Women's lack of knowledge leads to inappropriate beliefs and behaviors. Tardy health services and professionals who are ineffective in recommending and promoting health education, in turn, represent starting points for reflecting on changes in current screening models.

These factors demonstrate the need to use the service in an organized and universal manner, with professionals prepared to welcome and guide women, coping with the socioeconomic, cultural and religious factors that impede the performance of breast cancer screenings.

Most efforts by health authorities target unique and specific screening barriers. Understanding that barriers are multifactorial and beyond organizational issues helps implement strategies that reorient health services and health professionals from the perspective of comprehensive women's health care, with emphasis on those most vulnerable to low coverage of preventive practices.

Thus, it should be emphasized that breast cancer screening is performed in asymptomatic cases, requiring awareness among the population and health professionals so that women at age of risk, in contact with the health unit, do not lose the opportunity to have their MMG request put through.

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