# Limiting barriers and facilitators for breast cancer screening

Barreiras limitantes e facilitadores para o rastreamento do câncer de mama barreras limitantes y facilitadores para lá detección del câncer de mama

#### RESUMO

Objetivo: Analisar na literatura as evidências científicas sobre as barreiras limitantes e facilitadoras para o rastreamento do Câncer de Mama. Método: Revisão integrativa da literatura realizada através da Biblioteca Virtual em Saúde e U. S. National Library of Medicine. Resultados: Foram selecionados 18 artigos para essa revisão. As evidenciam apontam que é necessário identificar a população-alvo para a definição das ferramentas de diagnóstico, o delineamento das abordagens programáticas e a elaboração do processo de implantação e ampliação do rastreamento do câncer mamário. Diante dos diversos fatores que dificultam a acessibilidade e realização do rastreio, é indispensável a elaboração de estratégias e fortalecimentos que superem essas barreiras. Conclusão: Diante das barreiras e facilitadores para o rastreamento do câncer de mama, espera-se que os achados possam auxiliar em questões críticas a serem investigadas com profundidade sobre as melhores estratégias para o rastreamento do CM, contribuindo para a elaboração de políticas de rastreamento.

DESCRITORES: Assistência integral à saúde; Programas de rastreamento; Neoplasias da mama; Saúde da mulher;

#### ABSTRACT

Objective: To analyze the scientific evidence in the literature on the limiting and facilitating barriers to breast cancer screening. Method: Integrative literature review conducted through the Virtual Health Library and the U.S. National Library of Medicine. Results: Eighteen articles were selected for this review. The evidence indicates that it is necessary to identify the target population for defining diagnostic tools, outlining programmatic approaches, and developing the process for implementing and expanding breast cancer screening. Given the various factors that hinder accessibility and performance of screening, it is essential to develop strategies and strengthen measures to overcome these barriers. Conclusion: Given the barriers and facilitators for breast cancer screening, it is expected that the findings may help in critical issues to be investigated in depth regarding the best strategies for BC screening, contributing to the development of screening policies. **DESCRIPTORS:** Comprehensive health care; Screening programs; Breast neoplasms; Women's health

#### RESUMEN

Objetivo: Analizar la evidencia científica existente en la literatura sobre las barreras limitantes y facilitadoras del cribado del cáncer de mama. Método: Revisión bibliográfica integradora realizada a través de la Virtual Health Library y la U.S. National Library of Medicine. Resultados: Se seleccionaron 18 artículos para esta revisión. La evidencia muestra que es necesario identificar la población diana para definir las herramientas diagnósticas, diseñar los enfoques programáticos y elaborar el proceso de implantación y expansión del cribado del cáncer de mama. En vista de los diversos factores que dificultan la accesibilidad y el cribado, es esencial diseñar estrategias para superar estas barreras. Conclusión: A la vista de las barreras y los facilitadores del cribado del cáncer de mama, se espera que los hallazgos puedan ayudar a plantear cuestiones críticas que deban investigarse en profundidad sobre las mejores estrategias para el cribado del cáncer de mama, contribuyendo al desarrollo de políticas de cribado.

PALABRAS CLAVE: Atención sanitaria integral; Programas de cribado; Neoplasias mamarias; Salud de la mujer;

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#### Layanne Cavalcante de Moura

Médica pela Faculdade Integral Diferencial (FACID) e Enfermeira pela Faculdade Santo Agostinho (FSA). Mestranda em Saúde da Mulher pela Universidade Federal do Piauí (UFPI). Docente na Faculdade de Tecnologia de Teresina (CET). ORCID: 0000-0003-2781-1076

#### Luiz Ayrton Santos Júnior

Médico. Doutor em Cirurgia pela Universidade Federal de Pernambuco (UFPE). Mestre em Medicina pela Universidade de São Paulo (USP). Mastologista pela Sociedade Brasileira de Mastologia (SBM). Docente da Universidade Federal do Piauí (UFPI) e da Universidade Estadual do Piauí (UESPI). ORCID: 0000-0002-6697-6167

#### INTRODUCTION

**B** reast Cancer (BC) is a disease caused by the disorderly multiplication of breast cells. This process generates abnormal cells that multiply, forming a tumor, and therefore the disease can evolve in different ways. Some types develop quickly, while others grow slowly. These different behaviors are due to the specific characteristics of each tumor, as there are several types of BC.

It is evident that BC represents a major public health problem, considered one of the most common neoplasms among women, showing high rates of morbidity and mortality in several countries, including Brazil. (2) It is estimated that 73,610 new cases will occur in the country in 2023, representing an adjusted incidence rate of 41.89 cases per 100,000 women, with a mortality rate of around 16.3%, according to data from the National Cancer Institute. (3)

The increase in the incidence of mortality from BC is directly proportional to changes in demographic patterns, such as population aging and economic development, in addition to late diagnosis and treatment, which is why screening and early detection are the main measures for controlling the disease. (4, 5) Among the most effective methods of early detection, mammography (MMG) and clinical breast examination (CBE) stand out, which constitute interventions at all levels of women's health care. (4)

Some risk factors predispose to the manifestation of the disease in addition

to age, such as: the woman's reproductive life, early menarche, late menopause, not having had children or pregnancy after 30 years, not having breastfed, use of oral contraceptives and post-menopausal hormone replacement therapy. (6) In addition, other phenomena that can contribute to the development of cancer include genetic alterations, family history of the disease and high breast density. Regarding environmental factors, the following are highlighted: overweight, sedentary lifestyle, smoking, excessive alcohol consumption and frequent exposure to radiation. (7)

Given its high magnitude, its control essentially depends on the adoption of strategies aimed at primary and secondary prevention to bring about changes in this scenario and increase the life expectancy of women affected by the pathology. (2)

In the context of the Family Health Strategy (FHS), actions to control BC are directed at promoting health and preventing the disease, in addition to early diagnosis and support for treatment established in secondary and tertiary care. Thus, detection through screening programs is an alternative that favors diagnosis in early stages, contributing to curative treatment and/ or higher survival rates (4), where asymptomatic women undergo screening tests to detect cancer (or pre-cancer lesions) and organize referrals for confirmation of diagnosis and treatment.

In this process, the implementation of a screening program is essential for the organization of the healthcare network, as is the availability of human and structural resources for diagnosis and treatment. (8)

The present study aims to analyze the

scientific evidence in the literature on the limiting and facilitating barriers to BC screening.

#### METHOD

This is an Integrative Literature Review (ILR) of the descriptive-exploratory type, with a qualitative approach (9), on the limiting and facilitating barriers to BC screening.

The study followed six stages for its development: 1) elaboration of the guiding question; 2) search or sampling in the literature; 3) data collection; 4) selective and critical analysis of the included studies; 5) discussion of the results; and 6) presentation of the integrative review. (9,10)

For this review, the following guiding question was developed: What evidence does the scientific literature provide regarding the limiting and facilitating barriers to breast cancer screening?

The searches were conducted between October and December 2023, through the Virtual Health Library (VHL), coordinated by BIREME and composed of databases such as LILACS, BDENF, SCOPUS, in addition to the Medline database and other types of sources; and PUBMED (U.S. National Library of Medicine). Terms in English and Portuguese were used in the databases. The descriptors were obtained from the Medical Subject Headings (MESH) and the Health Sciences Descriptors (DeCS), namely: Comprehensive Health Care, Mass Screening Programs, Breast Neoplasms and Women's Health, searched using the Boolean operator "AND". These descriptors are available in the DeCS data of the VHL, an agency associated with the Pan American Health Organization (PAHO). 12

The inclusion criteria for the articles were: primary studies in Portuguese, English and Spanish, covering the last 5 years (2018-2022), with a view to listing current and relevant publications. (09) Book chapters, abstracts, incomplete texts, technical reports, duplicate studies and other publications other than scientific articles are excluded.

The level of evidence was assessed using the Agency for Healthcare Research and Quality (AHRQ), which comprises the following levels: 1) Meta-analysis of multiple controlled studies; 2) Individual studies with experimental design; 3) Studies with quasi-experimental design such as studies without randomization with single group pre- and post-test, time series or case-control; 4) Studies with non-experimental design such as descriptive correlational and qualitative research or case studies; 5) Case reports or data obtained systematically, of verifiable quality or program evaluation data; and 6) Opinion of respected authorities based on clinical competence or opinions of expert committees. (13)

The selected articles were exported to Rayyan<sup>®</sup> Software, a free computational tool, for paired analysis of the references found and removal of duplicates. To minimize the risk of bias, the search was performed by two researchers on different computers independently. The results were interpreted by comparative reading of the articles, analyzing their similarities and proceeding to grouping.

#### RESULTS

In the listed databases, 2,024 publications were initially identified, 1,192 in BI-REME/BVS and 832 in PUBMED. After applying the filters, according to inclusion and exclusion criteria, 478 articles were obtained. Of these, 407 were excluded after reading the titles and abstracts, and 71 articles were selected for reading in full. Subsequently, 53 were excluded because they were not suitable for this study and 18 articles were selected for the final sample because they responded to the proposed objective. The flowchart of the selection process of the selected articles is shown in Figure 1, below.

### Figure 1 - Flowchart of the selection process of studies selected for integrative review. Teresina, PI, Brazil. 2023.



Fonte: Elaborado pelos autores

To enable data synthesis and analysis, the selected studies were grouped into a table, gathering information regarding: author(s)/year of publication, objectives, method, level of evidence and main results, as shown in Table 1.

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Table 1 - Distribution of included publications according to author(s)/year of publication, objective, method, level of evidence and main results. Teresina, PI, Brazil, 2023.

AUTHORS/ YEAR	OBJECTIVE	METHOD / LEVEL OF EVIDENCE	MAIN RESULTS
Assis; Santos e Migowski (2020)(15)	Analyze how information about early detection of BC is presen- ted in the Brazilian media during Pink October	Documentary study / IV	The lack of information and the presence of inadequate or incomplete recommendations regarding age range and frequency imply BC screening.
Dourado et al. (2022)(16)	Describe the profile of women affected by BC and evaluate aspects related to methods of detection and staging of the disease	Cross-sectional study / IV	Detection by self-examination is significant and is related to advanced stages of BC.
Bulanello et al. (2018)(17)	To characterize the socioecono- mic and epidemiological profile of women in Uberaba, according to the practice of screening exams for BC and the factors associated with the practice.	Cross-sectional study / IV	The factors associated with the practice of screening exams were age group, decreasing with advancing age, per capita income greater than a minimum wage, and source of payment for public MMG and health insurance.
Pascha et al. (2021) (18)	To conduct an economic evalua- tion of the implementation of a telemammography program to improve access to health care	Cost-effectiveness study / V	Telemedicine can also be beneficial in ensuring continuity of care.
Mahumud et al. (2020)(19)	To determine the distribution of predictors that significantly influence the use of health services among women	Cross-sectional study / IV	Socioeconomic conditions, poverty, and living in rural areas interfere with women's access to BC screening services.
Dias, Martins e Gradim (2018)(20)	To assess the five-year survival of women with BC	Documentary study / IV	The incidence of BC is higher in patients aged 50-69 years, which is in line with the coverage of screening programs.
Silva et al. (2019)(21)	To analyze the prevalence and factors associated with per- forming MMG in women aged 40 to 59 years, PHC users, in Vitória-ES	Cross-sectional study / IV	The screening method does not reach all women, requiring training of professionals and the development of educational actions for the practice of early detection of BC.
Migowski et al. (2018)(22)	Present the main challenges to the implementation of the new recommendations for early detection of BC in Brazil and reflect on the barriers and strategies to overcome them	Documentary study / IV	Changes related to the regulation of care, financing and the implementation of the shared decision-making process in PHC are essential to boost BC tracking.
Han, Jungsuwadee, Abraham e Ko (2018)(23)	To analyze the effect of shared decision-making on women's adherence to BC exams and estimate the prevalence and adherence to exams	Cross-sectional study / IV	Using a shared decision-making approach for healthcare professionals to communicate with patients may improve screening adherence.
Luceli e Kilic (2022)(24)	Analyze the factors that affect women's participation in BC screening	Cross-sectional study / IV	Women should be better informed about BC and screening services by health professionals.

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Sicsic; Pelletier-fleury e Moumjid (2018)(25)	To elucidate women's trade-o- ffs between the benefits and harms of BC screening and analyze the determinants of these trade-offs	Experimental study / II	It provides useful results for public health authorities and clinicians who want to improve their BC screening recommendations based on women's preferences.
Scheel et al. (2021)(26)	To analyze early detection of BC and its diagnostic capacity in Uganda	Situational study / IV	Educational programs should be provided for primary care providers in community health centers.
Magasi et al. (2019)(27)	To describe the trajectory of a long-term community-aca- demic partnership aimed at understanding and addressing disparities in BC screening among women with disabilities.	Focus group study / III	Partnerships between academics, disability, and clinical partners are needed to address the complex issues that perpetuate disparities in BC screening among women with disabilities.
Ginsburg et al., (2021)(28)	To address implementation for early detection of BC	Documentary study / IV	BC survival depends on women's access to timely, effective, and affordable care. Early detection is critical.
Kushalnagar; Engelman e Simons (2019)(29)	To assess disparities in adhe- rence to BC screening among deaf women compared to the general population	Cross-sectional study /IV	There is a need for accessible and targeted he- alth promotion interventions for deaf women of eligible age to increase uptake of BC screening.
Dibisa et al. (2019)(30)	To assess the practice of BC screening and its associated factors in women in Ethiopia	Cross-sectional study /IV	Age, knowledge, and information about BC scre- ening are important factors in screening.
Tsuruda et al. (2021)(31)	To investigate the conceptual knowledge about mammogra- phic screening among Norwe- gian women	Cross-sectional study /IV	Women perceive that screened users are less likely to die from BC than those who are not screened.
Azevedo et al. (2019)(32)	To analyze the knowledge of women between 35 and 69 years old registered in the ESF of Alfenas - MG about BC screening.	Cross-sectional study /IV	Knowledge about screening and its importance is related to the regularity with which women receive them.

Source: Prepared by the authors, 2023.

#### DISCUSSION

Early detection of BC aims to identify the disease in its initial phase, either through early diagnosis, a strategy aimed at women with suspicious signs and symptoms of the disease, or through mammographic screening, routine examinations in asymptomatic women in a defined age range and frequency. (15)

It is important to emphasize that CBE can be a good screening method for breast cancer, recommended in several countries, especially in women under 50 years of age, due to breast density, which limits the quality of images obtained by MMG. From this perspective, the use of CBE as an integral part of comprehensive care for women is seen as a simple, non-invasive method with high sensitivity. (16)

In Brazil, the Clinical Breast Examination (CBE) and MMG are the main screening strategies. MMG allows the detection of changes that are not yet palpable, facilitating more effective treatment. It is recommended that women aged 50 to 69 undergo CBE every two years and CBE annually. For women aged 40 to 49, annual CBE and, in the event of an abnormal result, diagnostic CBE are recommended. For risk groups, involving family history and previous diagnoses of cancer, annual CBE and CBE are recommended from the age of 35. (17)

Screening for BC is strongly recommended by most national and international guidelines, as it is highly curable if detected in its early stages. Therefore, it is important to emphasize the need to extrapolate this strategy to include age groups under 50 years, through health actions and strategies routinely carried out in the work process of Limiting barriers and facilitators for breast cancer screening

health teams. (17,18) A screening program for BC includes a set of actions and technologies to reduce morbidity and mortality and improve the quality of life and survival of the target population. (19,20)

Despite the recommendations of the Ministry of Health (MH), access to BC screening actions has been linked to some health inequities. Some factors positively and negatively influence the performance of screening exams. (17,21) Therefore, this work was divided into two thematic categories: 1) limiting barriers to BC tracking; and 2) facilitators for BC tracking.

Limiting barriers to BC screening

A study on the challenges to implementing guidelines for detecting BC in Brazil highlights the prevalence of screening practices that are not based on scientific evidence, which causes harm to the population. It also lists the central provisions for controlling the quality of screening, adherence to screening methods and guidelines, adequate and quality supply of mammograms, and promoting strategies for symptomatic patients who are still in difficult-to-resolve situations. (22)

The guidelines for BC screening are essentially relevant for detection, despite numerous guidelines with different age limits and recommendations that can confuse users. In this sense, this fact can cause confusion among professionals and patients, due to the incompatibility between BC screening guidelines in different sources, resulting in low adherence to screening. (23)

Another barrier is the difficulty in getting an appointment and obtaining results in a timely manner, which are considered factors that affect the participation of the target audience. Women have reported difficulty in participating in the screening due to the long and difficult scheduling process, in addition to the impediment due to the work involved in carrying out the screening. (24)

Linked to the lack of BC tracking, feelings of fear are present (18), women think directly about death when approached about BC, perceiving it as a feared disease (23), and also associating it with breast removal and hair loss. (24) In addition to these, feelings of pain and embarrassment, self-neglect, lack of support, language and geographical barriers (transportation) are reported. (23,24)

The perception of the team's clinical experiences also proves to be a barrier to test acceptance. (18) Furthermore, women are sensitive to attributes related to the absolute benefits and harms of screening (overdiagnosis and false-positive MMG). (25)

Although some women undergo screening regularly, they are afraid of breast cancer. This factor prevents them from acquiring essential information and encouraging them to undergo screening. Some studies indicate that fear of breast cancer is seen as a barrier, while others consider it a facilitator for adherence to screening. (24)

Another reason is the fear of negatively affecting the woman's relationship with her spouse. The fear of rejection by the husband and separation creates a feeling of insecurity, implying the screening of BC. (24) However, helping women deal with their feelings can contribute to decisions regarding screening, and support can be offered by healthcare professionals and the family itself. (23)

Data in the literature show differences in socioeconomic conditions for undergoing MMG, reinforcing the unfavorable pattern for women in worse socioeconomic situations. This information can be useful for health management, since it shows the profile of women with less access to MMG, offering an opportunity to plan targeted interventions. (17)

Socioeconomic status is an essential factor in women's adherence to preventive practices for breast cancer. The higher the socioeconomic status, the more likely they are to undergo and attend health services and have access to the exam, while women from lower economic classes have fewer opportunities and adherence to consultations, with fewer opportunities for professionals to request exams. This reinforces the centrality of defending the principles of equity and universality in access to services. (19) Combined with the lower socioeconomic level is the low level of education, which has a strong association and culturally implies less accessibility to preventive health services for the female population, affecting BC screening. (17) Thus, the higher the level of education, the greater the influence on the demand for health services. (19)

Low education and socioeconomic status are factors that prevent some women from obtaining a diagnosis, sometimes due to the distance and expenses associated with traveling to care services. (26) Therefore, it is necessary for teams responsible for tracking BC to carry out an active search. (21)

Not being able to participate in screening due to socioeconomic barriers is one of the reasons most mentioned in studies. (15,17,19,22,24,26)

Another barrier highlighted concerns aging. (17) Researchers have pointed out a non-linearity regarding this variable, that is, as age increases, there is a decrease in the probability of women undergoing MMG, thus, prevention via age tends to reduce over time.

Studies also address the need for a particular focus on older women, with a view to preventing BC. In view of this, it is essential to take into account the increased longevity and the increased demand for health services by this population, since aging is a considerable risk factor for the development of the disease with an increase in its incidence. (17, 28)

Another issue is the lack of accessible equipment or inadequate, even dangerous, accommodations, compromising the safety and dignity of women with disabilities. (27) Given this, women with disabilities are less likely to see providers regularly compared to women without disabilities. This fact is related to difficulties in communication and information acquisition. Thus, this population requires support and a positive doctor-patient relationship to adhere to screening, such as accessing health information and participating in discussions with health-literate peers, in addition to obtaining social support networks. (29) Given these complicating factors, there is a need to overcome the obstacles that directly interfere with BC screening. This point should involve the professional team, the family, the community and the patient herself, aiming to reduce the cases and consequences of cancer, establishing an incentive for screening.

#### Facilitators for BC tracking in Brazil

The implementation of public policies such as the National Oncological Care Policy (PNAO - Política Nacional de Atenção Oncológica), in 2005, and the Action Plan for the Control of Cervical and Breast Cancer, created between 2005 and 2007, boosted the occurrence of incentives for BC screening, providing greater accessibility for the target population to health units, different ways of early detection, in addition to expanding referral and counter-referral services.(17,20,22) In this context, the evolution of the National Policy Plan for Women (PAISM - Programa de Assistência Integral à Saúde da Mulher), established in 2013, contributed to the progress of policy actions, enabling access to services for the promotion and comprehensive care of women's health, with an emphasis on BC and gynecological screening. (20)

Despite the progress, several other behaviors are essential for growth, such as family and social support, continuous attendance at health services, knowledge about the importance of BC screening, among other situations.

Women realize the great importance of family and marital support in overcoming sociocultural and economic barriers to participation and completion of BC screening. This provides support when they are concerned about the result, and provides knowledge and confidence within health services. (24)

A study conducted in the city of Uberaba, Minas Gerais, highlighted that the performance of screening tests for BC funded by the public sector, such as MMG, is considered an advance in the actions. In the survey, more than half of the interviewees received public payment, constituting a facilitating aspect for BC screening. (17) Furthermore, the screening procedure should be simplified, particularly for older and working women. (24)

Screening is an integral part of Primary Health Care (PHC), and health professionals working at this level of care need to know the methods, frequency and target population. Poor knowledge of this process can contribute to failure in BC screening. (21) In view of this, the PHC team must be able to recognize signs and symptoms of BC, in order to determine the appropriate time to refer patients. (28,30)

It is also essential that women are aware of the importance of BC screening. A study carried out in Norway (31), analyzed that women perceive that knowledge about BC screening is essential, since screened women are less likely to die from BC than unscreened women. Knowledge about BC and early detection fosters their motivation for health, influencing the performance of exams. (32)

To improve women's knowledge, it is necessary to increase awareness about BC, which can lead asymptomatic women to approach health units earlier and increase the acceptance of tests. Awareness can lead screening programs to achieve good population coverage, establish referral links for diagnosis, and availability and accessibility of treatment facilities. (26-28)

Collaboration between different public sectors is essential to increase community awareness of BC and endorse its screening policy to reduce cancer-related morbidity and mortality among women. (30)

In addition to raising awareness, it is important to highlight the need for BC control programs to achieve greater coverage in performing MMG, according to the target population and the recommended period. Thus, an opportunistic strategy lies in the active search by professionals in care units, aiming to accommodate women who are absent from consultations or to approach those who do not seek health services. (21)

Another strong point in awareness is linked to the performance of BSE. Although it is not considered a strategy in the screening of BC, the technique contributes to the identification of breast changes early, making women informed about the aspects and structures of their breasts, expanding their potential to detect signs and symptoms indicative of breast neoplasia, identifying breast changes, leading them to seek health services and protect themselves against further damage. (32)

Furthermore, it is necessary for health system professionals to be trained to assist, guide and manage the necessary procedures in response to women seeking health services. (21)

There are reports in studies where women feel comforted when they are greeted with warmth by health professionals, especially by the professional who performs the MMG (24), in addition to being informed about the procedure throughout the entire consultation. This support allows women to express their concerns and doubts about the procedure, reducing fear and anxiety. In view of this, it is clear that the importance of positive communication and support as a potential motivator. (24,30)

The use of the media as an incentive for BC screening is also noteworthy, contributing to the dissemination of information and guidance. Despite perpetuating information that may be potentially harmful, such as mammographic screening in age groups and at non-recommended intervals, the use of this medium provides better knowledge when performed properly. (15) Technological media have allowed remote interpretation of medical images, dissemination of accurate information about BC and, also, carrying out consultations or care without the need for travel, when physical contact is not necessary. (26)

Evidence suggests that it is possible that the increase in the rate of adherence to cancer screening among deaf women is partially influenced by internet use and engagement on social networking sites, indicating a strong influence on the provision of care and, subsequently, the provision of breast cancer screening. (29)

Despite the strong influences of social media, a study (24) reported that mobile care services become a requirement for easy access to screening centers. These data indiLayanne C. de Moura, Luiz A. S. Júnior. Limiting barriers and facilitators for breast cancer screening

cate that when mobile screening units are more accessible, compared to fixed units, there is a higher proportion of women undergoing their first MMG. Despite this facilitator, mobile screening services are still limited, and there is a need for expansion. (15,26,29)

The basic components of early detection policies for BC include identifying the target population, defining diagnostic tools, outlining programmatic approaches, and developing the process for implementing and expanding screening. (28) Given the various factors that hinder the accessibility and implementation of BC screening, it is essential to develop strategies and strengthen measures that overcome these barriers, which are essential for increasing and expanding breast cancer screening.

#### CONCLUSIONS

Studies indicate that there are many barriers that interfere with BC screening, such as diversity of guidelines, socioeconomic conditions, difficulty in accessing tests, fear, lack of knowledge among patients and professionals, advancing age, and deficiencies in the organization and planning of strategies. Therefore, implementation actions should be better presented and expanded. Regarding the facilitating factors for BC screening, active search for the target population, awareness about the tests, training of professionals, social and professional support, and organization of public services are highlighted.

It is expected that these findings can help in critical issues to be investigated in depth regarding the best strategies for BC screening, contributing to the development of BC screening policies. Thus, it is expected to stimulate studies on the subject considering this approach to comprehensive and welcoming care, providing support for decision-making among developers and executors of policies aimed at breast cancer screening, administrators of public health services, health professionals, and the general population.

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