



Research Article

Sub-Saharan Women: Breast Cancer Screening, What WE can do

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Abstract

Background: Identifying early symptoms of breast cancer is difficult for those lacking basic assessment skills. Self-assessment skills or mammograms have been proven effective in detecting early breast cancer. Breast cancer (BC) screening is the primary method for early detection. **Objective:** This qualitative study explores why breast screening among Sub-Saharan African female immigrants (SSAFI) appears low in most published journals. **Method:** A qualitative study used a phenomenological approach to determine the breast cancer screening behavior of Sub-Saharan African female immigrants. Twelve purposive samples, aged between 25 and 65, were recruited and interviewed individually. **Results:** The researcher interviewed the twelve purposive individual samples for at least sixty minutes per candidate. Four percent of the sample accessed physical screening or mammograms, whereas 96% were either unaware or had another reason for declining self-breast examination or mammogram screening to detect early breast cancer. **Conclusion:** The primary reason for the low attendance of BC screening is the lack of knowledge about the disease, fear of being diagnosed with breast cancer, and cultural consequences. Another reason is their inability to navigate the computer and the healthcare system.

Keywords: Breast Cancer Screening Education; Sociocultural factors;

Introduction

Literature Review

The World Health Organization [1] published and described the *health systems* as all organizations, people, and actions that aim to promote, restore, or maintain health [2]. WHO includes efforts to influence determinants of health as well as more direct preventive and curative activities. [2] Describe health systems as

comprising six interrelated building blocks:

Service delivery

Fielding a well-performing health

workforce

Maintaining a functioning health

Information system

Providing access to essential medical products, vaccines, and technologies

Provision of adequate financing

Leadership and governance

By considering these building blocks, health systems can be strengthened to provide comprehensive, equitable, and efficient healthcare services, thereby improving population health.

The Centers for Disease Control and Prevention (CDC) defines *breast cancer screening* as checking the breast for cancer before the signs and symptoms of the disease [3] develop. Breast cancer is the second most common cancer in women, following skin cancer [4]. In 2023, 353,510 women in the U.S. will be diagnosed with invasive and ductal carcinoma in situ (DCIS), and 43,700 lives will fall due to breast cancer [4].

Acknowledged the importance of sharing information and making decisions regarding the benefits and risk factors of breast cancer screening [6]. Some researchers, including the U.S. Preventive Services Task Force, recommend that women must get mammograms at age 50, while other major medical organizations recommend starting at a younger age [7].

Reported that if screening among Black women for breast cancer starts at age 42, it might minimize racial disparities in breast cancer deaths [8].

Breast cancer screening cannot treat breast cancer but can facilitate early detection treatment [9] and decrease mortality. Mammography and self-breast assessment detect early breast cancer symptoms and signs [10, 11]. American Cancer Society (ACS) (2023) and NCBF (2022) purported that the ratio of invasive breast cancer in the lifetime will be 8:1 and 39:1 will die from breast cancer in the U.S. The report also highlights that mortality for non-Hispanic Black women is higher than for non-Hispanic White women, particularly before age 40, and have a higher risk of dying from the disease at any age [12].

Around 2 million Sub-Saharan African immigrants are estimated to live in the USA [13, 14]. However, obtaining data specifically for SSAFI diagnosed with breast cancer in the U.S. can be challenging, as their demographic classifications are within the broader African-American data. Therefore, the researcher chose a qualitative approach for the study due to the lack of readily available quantitative data on breast cancer among sub-Saharan African female immigrants. Black women younger than 50 risk factor is twice as high as white counterparts to die from breast cancer [12, 14]. Known factors indicate that the presence of these communities in the country [13] contributes to the high incidence of breast cancer. According to some studies, these communities lack breast cancer awareness [15, 16]. Agyeman (2017) and other researchers have published that most Sub-Saharan African female immigrants arrive at hospitals at a late stage of breast cancer, and only a few survive [15-17].

Breast cancer is preventable for those who attend screenings or perform self-assessments at least once a month [18, 19]. Multiple studies have shown that self-exams or regular screenings can reduce breast cancer incidence [20, 21]. ACS (2023) estimated 1,958,310 new cancer cases with nearly 609,820 deaths. Breast cancer accounts for about 300,590 (15.35%) cancer cases [22]. U.S. white women are more likely to develop breast cancer in their lifetime but have a lower mortality rate than Black/African American women [23]. Modifiable risk factors may reduce or control the mortality gap between non-Hispanic whites (NHW) and non-Hispanic black women (NHBW). Cultural changes and knowledge of the disease could modify the risk factors for breast cancer in the study communities [8] - the results attributed to advanced treatment related to earlier detection through screening [24]. Early detection and intervention measures initiated earlier decrease the morbidity and mortality of breast cancer [25].

Early detection strategies and intervention measures can significantly reduce the rate of morbidity and mortality of breast cancer [25]. Addressing disparities, improving access to healthcare, raising awareness, and promoting early screening can enhance outcomes and reduce the burden of breast cancer, particularly among Black women.

Knowledge of these factors is essential for developing interventions and strategies that address barriers to screening and improve participation rates among immigrant populations. Providing culturally sensitive healthcare services, language assistance, and promoting awareness about the importance of screening can reduce disparities and increase access to breast and cervical cancer screening for African migrants and other immigrant communities [26].

Disparities in breast cancer mortality rates do exist, with non-Hispanic Black (NHB) women experiencing higher death rates compared to non-Hispanic White (NHW) women [27]. On the other hand, NHW women tend to have a higher morbidity rate, which refers to the prevalence or incidence of a disease within a population [27].

It is important to note that the age groups at higher risk of breast cancer infection differ between NHW women and Sub-Saharan African females (SSAFI). In NHW women, the age group with higher risk is typically between 65 and 84 [16, 28]. However, SSAFI women have a higher risk of breast cancer at younger ages, below 40 years [16]. Various factors, including genetics, lifestyle factors, and healthcare access, may influence these differences.

Understanding and addressing these disparities is crucial for implementing targeted interventions and strategies to improve breast cancer outcomes across different populations. Promoting

awareness, access to screening, early detection, and equitable healthcare can reduce the burden of breast cancer and improve outcomes for all women, regardless of their racial or ethnic background.

Recognizing and addressing these barriers to breast cancer screening is essential for developing effective interventions and education programs. Education on the benefits and risks of breast as well as cervical cancer screening and addressing cultural beliefs and misconceptions can significantly increase awareness and participation in screening programs among African immigrant women [29, 30].

Studies have shown that monthly mammogram breast screening minimizes breast cancer morbidity and mortality and is an essential tool for detecting early breast cancer [31, 32]. The higher mortality rate among African females than other races emphasize the need to improve access to and utilization of breast cancer screening services within these communities [3, 33].

The article's aim to examine why few Sub-Saharan African female immigrants attend breast cancer screening is crucial in understanding the underlying factors and developing strategies to prevent and control breast cancer within this population. By conducting qualitative research and deriving insights from the study results, it is possible to create community-based education programs that address African immigrant women's unique challenges and promote the importance of breast cancer screening [24].

Conceptual Model

The researcher used the Health Belief Model (HBM) as the framework to understand and explain health-related behaviors, including decision-making regarding screening exercises. The model suggests that individuals' responses to preventive actions and health behaviors change may be the perceptions of the threat of illness and the benefits and barriers associated with specific health actions [34-36].

According to the HBM, several vital factors influence individuals' decisions to engage in health behaviors:

Perceived susceptibility: Is an individual's beliefs about their risk of developing an illness or condition. In the context of breast cancer screening, individuals may consider their perceived risk of developing breast cancer and how it applies to them personally.

Perceived severity: It relates to individuals' perceptions of the seriousness and potential consequences of the illness or condition. In the case of breast cancer screening, individuals may consider the potential impact and severity of breast cancer and the family if left undetected or untreated.

Perceived benefits: This refers to individuals' beliefs about the effectiveness and advantages of the recommended health action. For breast cancer screening, individuals may assess the benefits of early detection and timely treatment, leading to a better outcomes and increased chances of survival.

Perceived barriers: These are the perceived obstacles or barriers that may hinder individuals from engaging in the recommended health behavior. Barriers to breast cancer screening may include cost, fear or anxiety about the procedure, lack of knowledge or awareness, or cultural beliefs and norms.

Cues to action: These are external events or triggers that prompt individuals to take action. Cues to action for breast cancer screening may include recommendations from healthcare providers, media campaigns, personal experiences of others with breast cancer, or reminders from family or friends.

Self-efficacy refers to individuals' confidence in performing the recommended health behavior successfully. In the case of breast cancer screening, self-efficacy may involve individuals' confidence in performing self-breast examinations, making mammogram appointments, or navigating the healthcare system.

By considering these factors within the framework of the Health Belief Model, researchers, and healthcare providers can gain insights into the decision-making process regarding breast cancer screening and develop targeted interventions and educational programs to promote screening uptake.

While the HBM provides a valuable framework, it is essential to note that cultural, social, economic, and environmental factors influence individual beliefs and behaviors. Therefore, a comprehensive approach that addresses these multifaceted influences is needed to promote breast cancer screening and improve outcomes effectively.

Methodology

The purposive sample of 12 sub-Saharan female immigrants with breast cancer within the Washington, DC/Virginia/Baltimore area provides valuable insights into the experiences of this specific population. The age range of the participants, between 25 and 65 years, allows for a diverse perspective across different stages of life. Conducting the interviews in participants' homes or private places can create a comfortable and confidential environment for open and honest responses.

The participants' educational background, with a mix of postgraduate degrees, undergraduate nursing education, associate degrees, and varying levels of formal education, adds depth to the study by incorporating diverse perspectives and experiences.

Focusing on participants from Nigeria, Ghana, Cameroon, and Sierra Leone ensures representation from different countries within the West African region, capturing variations in cultural backgrounds, healthcare systems, and migration experiences.

The central question related to screening in the questionnaire explicitly explores participants' reflections on signs and symptoms they may have ignored during their diagnosis and discernment of the valuable insights into the barriers and challenges faced by sub-Saharan female immigrants regarding breast cancer detection and diagnosis.

The interviews' approximately 60 minutes allows for an in-depth exploration of participants' experiences, ensuring comprehensive data collection. Using written and recorded responses helps ensure accurate capturing and documentation of the participants' perspectives.

Overall, this study design provides a rich dataset that can contribute to a better understanding of the experiences, challenges, and perspectives of SSAFI with breast cancer in the study area. The findings can help and assist the development of targeted interventions and support programs to improve this population's breast cancer awareness, screening, and diagnosis.

Aim: The purpose of the article is to generate ideas about SSAFI and breast cancer screening and to use the study's outcome to develop a strategic formula to reach the population of this community. A qualitative study to interview the study population to determine the root cause of their refusal to self-screen, to go for breast cancer screening, mammography, or primary care physician's (PCP) office in time to avoid breast cancer complications.

Research Question: RQ1: Were there some occasions when the participant discussed breast cancer screening with a PCP/Dr. /N.P./ Nurse, or heard/read about breast cancer screening on the Radio/ T.V./published paper, in the church, or in the community where the participant declined to participate?

This research question explores participants' experiences where they may have had opportunities to learn about breast cancer screening through healthcare professionals or sources such as media, church, or community. However, despite these encounters, they declined to participate. The study is to understand the underlying reasons for their decision and to gain insights into the barriers or factors that influenced their choice regarding breast cancer screening.

The study can identify potential gaps or misconceptions in the information provided to Sub-Saharan female immigrants regarding breast cancer screening by investigating these specific instances. The researcher will use the findings to develop strategies to address the barriers and create tailored interventions that effectively engage and educate this community about the

importance of breast cancer screening.

The Recruitment Process

The recruitment process for the study population involved placing flyers at selected African shopping centers, recreational facilities, and churches to attract volunteers. The selection criteria included being an African female immigrant who either had breast cancer or was a breast cancer survivor and had lived in the study area between January 1, 2016, and December 2017, within the age range of 25 to 65 years.

A purposive sample of 12 individuals was selected from the pool of potential participants to represent the study population. Individual participants received consent forms, interview dates, and follow-up text messages or phone calls to confirm the receipt of the letters. On the interview day, each participant signs and submits the consent form. It was clear to the participants that they had the right to terminate the interview discussion at any time.

The participants were informed about the benefits of completing the study, emphasizing that their participation could benefit the Sub-Saharan female immigrant community. The team leader provided additional online support for psychological or emotional needs.

Regarding educational background, the sample population ranged from individuals with a high school education to those with a master's degree. The distribution of candidates included three professional nurses, two auxiliary health workers, one unemployed individual, six postgraduates, and three businesswomen and teachers. Furthermore, the participants represented different countries, with one from Sierra Leone, one from Cameroon, five from Nigeria, and six from Ghana.

Data collection

The data collected for the study was by one-on-one interviews. The interviews ranged from 45 to 60 minutes, allowing for a comprehensive discussion. The participants were allowed to choose the interview location, ensuring their comfort and convenience.

Before the interviews, the participants received information about using audio recordings during the sessions. They were provided with the necessary consent forms and informed of the purpose and importance of recording the interviews for data analysis.

The questionnaires used in the interviews were modified versions of existing questionnaires developed by [37-39]. These questionnaires were selected based on their relevance to the research objectives and the specific focus on breast cancer screening and related factors.

The participants were asked main and probing questions

during the interviews to gather detailed and in-depth information about their experiences and perspectives. After each interview, the recorded material was played back to the participant for clarification, questioning, and correction, ensuring accuracy and validation of the collected data. The study recognized the significance of the participants' social and cultural backgrounds and considered these factors in interpreting and analyzing the interview responses. This approach allowed for a holistic understanding of the participants' experiences and provided valuable insights into the reasons behind their attitudes and behaviors related to breast cancer screening.

A summary created a color-coding system to analyze the data, indicating the themes and categories that emerged from the interviews. This color-coding system helped in identifying patterns and connections within the data. The articles and descriptive quotations were assigned to each interview question, comprehensively understanding the participants' perspectives and experiences.

The concepts and themes identified in the data were organized into groups and examined thoroughly. They were labeled and compared with relevant literature findings to gain further insights and validate the results-the collection and categorization of the data allowed for systematic analysis and interpretation of the participant's responses.

By employing this coding process, the data were condensed into more minor themes, making it easier to identify critical patterns, commonalities, and significant findings. This approach aligns with the methodology proposed by [40], which emphasizes reducing data into meaningful themes and categories.

Instrument

The authors of the original versions of the questionnaires, [37-39] granted permission to adapt the questionnaires for this study. The three versions of the questionnaires were modified to suit the needs of the participants in exploring why Sub-Saharan female immigrants abstain from breast cancer screening. Given these modifications, the construct was appropriate for this study - a summary of the transcribed interviews.

The critical points of the summary of the transcribed interviews are the following:

G1: The participant mentioned that if she had known the lump in her breast was cancerous, she would have cared for her health before focusing on others.

G2: The participant did not recognize the symptoms of breast cancer and treated the pain as ordinary, using pain relief medication.

G3: A registered nurse voluntarily reported herself for early-stage breast cancer diagnosis.

G4: The participant experienced breast pain for three years before being diagnosed with stage 3 breast cancer. She mentioned not having insurance and being sponsored by a group.

G5: The participant ignored her breast pain and did not perform a self-assessment or seek medical attention due to lack of insurance.

G6: Another registered nurse mentioned consistently examining her breasts and immediately reporting the lump to her primary care practitioner.

G7: The participant experienced breast swelling but used home remedies instead of seeking medical help due to a lack of knowledge of the disease, the healthcare system, and insurance.

G8: The participant observed a lump in her breast and volunteered to be screened during a health screening event at her church, leading to the diagnosis of early-stage breast cancer.

G9: The participant received breast cancer education from a group she belongs to and reported the lump in her breast to her private Physician.

G10: The participant had not performed breast self-examination until she experienced bleeding from her nipple, leading her to seek medical evaluation and be diagnosed with stage 0-1 breast cancer.

G11: The participant had never examined her breasts or attended breast screening but discussed her symptoms with a team of nurses during an educational session at her church, leading to a breast cancer diagnosis.

C12: The participant, a college student, discovered a lump in her breast during a shower and promptly sought diagnosis, resulting in the detection of stages 0-1 breast cancer.

These individual interview summaries provide insights into the experiences and perspectives of the participants regarding breast cancer screening, including factors such as lack of knowledge, insurance barriers, symptom recognition, and the role of education and community screenings in early detection.

Data Variation

Using the same interviewer and questionnaire helps maintain consistency in data collection across participants. However, it is essential to note that response variation can still occur due to individual differences, personal experiences, and cultural factors. Though the researcher used a data collection process, participants' unique perspectives and backgrounds may still contribute to variations in their responses. Considering these variations when

analyzing the data and interpreting the findings is valuable.

Trustworthiness and ethical procedures

It is commendable that the research process incorporated several strategies to enhance trustworthiness and ethical procedures. Here are some critical points based on the information provided:

External Validity: By including participants from four different countries and ensuring distribution among them, the study further provided meaning to the external validity of the research findings, making them more applicable to a broader population.

Credibility

Transferability, Dependability, and Confirmability: The researcher based the criteria for evaluation on [41] framework, which includes credibility (ensuring the accuracy and authenticity of the data), transferability (application findings to other contexts), dependability (ensuring consistency and stability of the data), Moreover, confirmability (ensuring objectivity and neutrality of the findings).

Evaluation and Verification:

The data collection process involved various methods such as prolonged engagement (developing a deep sense of understanding the participants and their experiences), persistent observation (careful and continuous observation of the research context), triangulation (using multiple sources of data to validate findings), and member checking (seeking participants' feedback on the accuracy and interpretation of the data) to enhance the evaluation and verification of the data.

Audit Trail: The author used an audit trail to address the dependability issue. The process involves maintaining a detailed record of the research process, including data collection, analysis, and interpretation, to ensure transparency and traceability of the research steps.

Privacy and Informed Consent: Participants were informed about the study's procedures, and consent forms were signed to ensure their voluntary participation. Using serial numbers instead of names further protected their privacy and confidentiality.

By incorporating these strategies, the research aimed to uphold ethical standards, maintain rigor in data collection and analysis, and ensure the trustworthiness of the study findings.

Results

Table 1 shows the age distribution of the participants in the study. The table displays participants' frequency and relative frequency in each age group. The ages range from 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65+ years. Among the participants, there

was one individual in the 25-34 age group, four individuals in the 35-44 age group, six individuals in the 45-54 age group, one in the 55-64 age group, and no participants in the 65+ age group.

Age Group	Frequency	Relative Frequency
25-34	1	8.3
35-44	4	33.3
45-54	6	50.0
55-64	1	8.3
65+	0	0

Table 1: Age distribution of participants [15]

Table 2 [15] presents the distribution of years of education among the participants. The table indicates participants' frequency and relative frequency in each educational category. The categories range from 0-5 years of education, 6-8 years of teaching, 9-12 years of education, 13-16 years of education, and 17-18 years of schooling. None of the participants had 0-5 years of teaching, one had 6-8 years of education, one had 9-12 years of schooling, four had 13-16 years of education, and six had 17-18 years of education.

Years of Education	Frequency	Relative Frequency
0-5	0	0
6-8	1	8.3
9-12	1	8.3
13-16	4	33.3
17-18	6	50

Table 2: Participants' Years by Education [15].

These tables provide a summary of the demographic characteristics of the participants in terms of age and education. The data analysis reveals that most participants in the study fell within the age group of 35-54. Furthermore, the education level of the participants was predominantly graduate or postgraduate. Notably, none of the professional participants had taken the initiative to visit their healthcare providers for breast cancer screening.

The identified themes shed light on the thought processes and factors influencing the participants' actions. It is evident that apart from the four professionals who knew normal and abnormal breasts, the remaining eight participants lacked awareness about breast health and did not seek screening from their primary care physicians or gynecologists. The outcome may suggest a lack of knowledge and understanding about breast cancer and the importance of screening.

Anxiety related to the disease seemed to play a role in the participants' behaviors. The professionals who identified a lump during self-screening shared their concerns with their partners

and took further steps to confirm the abnormality of their breasts through screening. On the other hand, some participants could not differentiate between breast cancer-related pain and general pain, and others feared the potential religious and cultural consequences of acknowledging their symptoms. These factors contributed to their hesitancy in seeking medical attention [42].

Overall, the findings highlight the need for increased education and awareness about breast cancer and screening among sub-Saharan female immigrants. Addressing misconceptions, providing accurate information, and promoting a supportive environment that encourages open discussion about breast health could potentially improve screening rates and early detection of breast cancer within this population.

Themes	Descriptions	Codes
Ignorant,	I could feel the lump; I knew not that the lump was cancerous	who could help? I did not know what it was or where to go.
Observed lump	She kept to herself / declined to let somebody know.	I knew how breast cancer was but did not want to tell family or did not know who in the health care setup to report.
Pain	Physical suffering or discomfort caused by illness or injury (Oxford's definition)	I sometimes ignored my pain, or I applied massage on my swollen breast;
Discernment	Cannot differentiate the pain related to breast cancer and other pain	I took the pain as ordinary; I did not tell my Physician but bought pain medication.
Informed of the disease	Knowledgeable of / told the patient about disease/made aware of.	I voluntarily reported to the hospital and received education on admission.
Self-examination	Performing self-assessment	I found the lump by myself.
Coincidentally diagnosed	Impromptu/extempore/unpreparedness.	The Physician discovered it/with no knowledge of the disease.

Figure 1: Themes by description and codes [15].

The evidence from the interviews aligns with the findings of [43, 44] in their studies on breast cancer in Omani women. Like the participants in this study, the Omani women in those studies were also diagnosed with breast cancer by chance rather than through proactive screening. The suggestion is that if vulnerable groups, such as Sub-Saharan female immigrants, are not educated about breast cancer and the importance of self-assessment, they may not actively seek screening opportunities in their communities. It emphasizes the need for awareness campaigns, education programs, and accessible healthcare services to ensure that individuals are informed and empowered to take necessary actions for early detection and prevention of breast cancer.

Discussion

The analysis of the themes provides valuable insights into how the female community in question perceives themselves concerning diseases and their vulnerability. The articles highlight the need for increased knowledge and awareness about breast cancer and the healthcare system in this community. The ignorant participants about the disease needed help understanding where to seek help or how to navigate the healthcare system. The suggestion again is the importance of providing education and support to help individuals access appropriate healthcare services, particularly those new to the system.

The notification of a lump in the breast generates fear and reluctance to share the information due to social consequences and stigma concerns. Such cultural and societal factors may prevent individuals from seeking timely medical attention and support.

Although a common symptom, the pain was often disregarded or treated with over-the-counter medication instead of being recognized as a potential indicator of a more serious underlying condition. It emphasizes the need for increased awareness about the significance of pain and other symptoms and the importance of seeking medical evaluation.

Participants who had received information and education about breast cancer were more likely to engage in self-examination and seek medical screening. Underscores the importance of providing comprehensive and accessible education programs to empower individuals to take proactive measures for early detection and treatment.

Coincidental diagnosis indicates that some participants were only diagnosed with breast cancer when they sought medical attention for unrelated reasons. It suggests a missed opportunity for early detection and reinforces the need for routine screening and proactive healthcare-seeking behaviors.

It is important to note that the findings of this study are limited to the specific population and may not represent the entire population. Therefore, the result has some limitations to generalization. The purposive sampling and small sample size also introduce the potential for interview bias, which may impact the study's results. Further research with a more extensive and more diverse sample is necessary to validate and expand upon these findings.

Conclusion

The interviews conducted in this study revealed an apparent lack of knowledge and self-assessment skills among the participants regarding detecting the signs and symptoms of breast cancer. This lack of awareness and understanding of the disease contributes to a delay in seeking medical attention and lower participation rates in breast cancer screening. The themes identified in the study support previous research findings that highlight barriers such as the complexity of the healthcare system, lack of understanding of insurance, and sociocultural factors as significant factors influencing the low rates of breast cancer screening among Sub-Saharan African female immigrants [45].

The participants who demonstrated knowledge about breast cancer and engaged in self-assessment or screening were more likely to detect the disease at an early stage. This early detection led to less expensive treatment options and better outcomes [46]. On the other hand, participants who had limited or no knowledge about the disease has the risk of being diagnosed at an advanced stage, which often required more extensive and costly treatment.

The findings of the study align with previous research that emphasize on the importance of educating the communities about breast cancer and promoting breast cancer screening. Sociocultural

barriers, such as dependency on spouses or fear of abandonment, must be addressed to empower women to prioritize their health and seek timely medical care.

Lastly, screening education may significantly modify the risk factors associated with breast cancer. It is essential to recommend and implement targeted education programs for the studied community to increase awareness, knowledge, as well as participation in breast cancer screening. By addressing the barriers' issues and providing appropriate education, women will attend breast screening, which might decrease the incidence of breast cancer in this population, leading to improved outcomes and better overall health for these individuals.

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