RESEARCH ARTICLE

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Strategies for Strengthening the Role of Community Health Workers in Breast Cancer Prevention: A Qualitative Study

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Abstract

Background: Breast cancer continues to be a major cause of illness and mortality for women. Delayed detection remains a significant barrier to better health outcomes in many settings. This study explored the critical role of community health workers (CHW) in breast cancer prevention and identified practical strategies to enhance their effectiveness. **Methods:** This descriptive qualitative study, using an interpretivist paradigm, was conducted in the Kaliwates subdistrict, Jember, Indonesia, from May 2024 to January 2025. Purposive sampling was used, including 12 CHWs with ≥1 year of involvement in the cancer program and 5 Healthcare Professionals (HCPs) involved in community health worker programs. In-depth interviews, each lasting between 60 and 90 minutes within 2-3 sessions, were performed. Interviews were concluded once data saturation was reached. All sessions were audio-recorded, transcribed verbatim, and analyzed using the six steps of Braun and Clarke's thematic analysis with ATLAS.ti software. To ensure trustworthiness, member checking and triangulation were employed. **Results:** Analysis of data from all 17 participants generated three themes. Theme one positioned CHWs as catalysts for early breast cancer prevention through building community confidence in breast self-examination and guiding individuals to professional care. Theme two focused on capacity development, emphasizing skill and confidence building alongside trust-building communication strategies. Theme three highlighted health system support and collaboration, identifying the need for adequate resources and formal recognition of collaborative efforts. **Conclusion:** CHWs have a pivotal role in early breast cancer prevention. Strengthening their capacity through targeted training and trust-based communication, supported by adequate resources and collaborative recognition within the health system, is essential for optimizing their impact. Future research should focus on designing targeted interventions grounded in empowerment models to enhance CHWs' early detection skills.

Keywords: breast cancer, breast self-examination, community health workers, primary health care, qualitative study

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Introduction

Breast cancer remains the most common cancer among women worldwide, accounting for 2.3 million new cases reported in 2022, and is the number one cause of cancer death among women globally [1]. Breast cancer was the second most common cancer after lung cancer in Asia, with nearly one million cases being estimated in the same year, and both breast cancer incidence and mortality rates are rising in the region, including Indonesia [2]. In Indonesia, breast cancer is the leading cause of cancer-related deaths and has been prioritized within the national cancer control plan for 2024–2034 [3].

Breast cancer involves complex consequences that extend beyond clinical outcomes. Patients often experience physical symptoms related to the disease and its treatment, including pain, fatigue, nausea, and respiratory discomfort [4, 5]. Psychological distress, such as stress, depression, reduced quality of life, and body image concerns, frequently accompanies these physical challenges [6]. In addition, financial burden and disruptions in social relationships can affect both patients and their families [7]. These multifaceted effects indicate that breast cancer should be addressed not only through clinical treatment but also through broader public health and community-based prevention strategies.

Prevention and early detection are key pillars in breast cancer control. Primary prevention aims to reduce modifiable risk factors and promote healthy lifestyles to lower disease incidence [8]. Secondary prevention focuses on early detection through screening approaches such as mammography and Clinical Breast Examination (CBE) [9]. Education on Breast Self-Examination (BSE) can further support early symptom recognition and

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encourage timely health-seeking behavior [10]. Together, these strategies highlight the importance of strengthening community awareness and engagement in early detection efforts, particularly in resource-limited settings.

However, access to breast cancer prevention and screening services remains uneven, particularly in low- and middle-income countries (LMICs) where health systems often face shortages of trained professionals and limited infrastructure [11]. In this context, community health workers (CHWs) have increasingly been recognized as a key component of community-based health systems, acting as intermediaries between communities and formal health services [12]. CHWs can facilitate health education, increase awareness of cancer symptoms, and support referrals to health facilities [13]. Evidence from different regions demonstrates that CHW-based interventions can improve cancer awareness and screening uptake, including patient navigation programs in the United States, CHW initiatives in African countries, and volunteer-based health systems in Asia, such as village health volunteers in Thailand and the ASHA program in India [13–16].

Indonesia faces similar structural challenges, including geographic barriers and an unequal distribution of health professionals across its vast archipelago [17]. Consequently, primary health care services are predominantly provided by CHWs, referred to as Posyandu Cadres (Kader Posyandu) [18]. Previous studies have demonstrated their important contributions to maternal and child health programs and immunization services [19, 20]. Nevertheless, their potential role in cancer prevention, particularly in promoting early detection of breast cancer, remains insufficiently explored. Existing research in Indonesia has primarily focused on women's knowledge and practices regarding breast self-examination [21] or on evaluating isolated training interventions for health workers [22]. These studies provide a limited understanding of how CHWs' roles can be strengthened through broader community engagement and health system support.

Furthermore, understanding CHWs' role in breast cancer prevention and identifying strategies to enhance their role requires deep exploration from CHWs and healthcare professionals. Qualitative research is particularly suitable for capturing these contextual and experiential dimensions [23]. Therefore, to address these gaps, this study aimed to explore the role of CHWs and identify strategies to enhance their contribution to breast cancer prevention.

Materials and Methods

Study design and setting

This study employed a descriptive qualitative research design using an interpretivist paradigm. The study was conducted in the Kaliwates district, Jember, Indonesia, from May 2024 to January 2025. Epidemiological data from the Ministry of Health, revealing an estimated 10 to 15 new breast cancer cases annually in Kaliwates, underscores the critical need to investigate and strengthen the role of CHWs in prevention strategies.

Participants

The participants were divided into two groups, selected using a purposive sampling technique. 12 CHWs meet the inclusion criteria: have over 1 year of experience in managing Non-Communicable Diseases (NCDs), specifically cancer; can speak Indonesian; and are not currently on leave or an administrative assignment. Five Healthcare Professionals (HCPs), consisting of 1 doctor and 4 nurses, who met the inclusion criteria and were actively involved in CHW empowerment in the Public Health Center (PHC) setting, could speak Indonesian and were not holding purely managerial roles. When no new code or category was found in two consecutive interviews, the interviews were deemed saturated and concluded.

Data collection

Primary data were collected through face-to-face in-depth interviews, averaging 2–3 sessions, each lasting 60–90 minutes. Interviews were conducted by PSC and MZA in Indonesian, using an interview guide developed through an iterative process with the research team and participants' permission. Interviews were audio-recorded, transcribed verbatim, and analyzed using confidential codes (CHW 1–12, HCP 1–5), with reporting following the COREQ checklist [24].

Data analysis

The analysis was conducted using the six-step thematic analysis framework from Braun and Clarke [25] and employed ATLAS.ti software for data management. The analysis began with PSC and KK engaging in thorough familiarization by repeatedly listening to and transcribing all interviews, treating the entire interview as the unit of analysis. Subsequently, MZA and PSC conducted preliminary coding by methodically examining the texts, focusing on paragraphs, phrases, and words identified as semantic units (clusters of related words/sentences) to extract and categorize initial codes. MZA, IAS, FNQ, and RR collaborated to identify, analyze, define, and designate the final themes, consolidating similar codes and classifying them to establish main categories.

Trustworthiness

This study meticulously adhered to the standards established by Guba and Lincoln to ensure the reliability of the findings [26]. Credibility was established through member checking with 13 participants to determine the relevance of emerging themes from recent interviews. Moreover, participant triangulation, achieved by gathering data from both CHWs and HCPs, and data analysis triangulation, involving multiple coders (MZA and PSC), were also used. An audit trail documenting all study methods and providing comprehensive descriptions was used to maintain dependability and confirmability.

Results

A total of 17 participants, comprising 12 CHWs and 5 HCPs, agreed to participate, and saturation was achieved within each participant group. Table 1 shows that all CHWs were female (100%), with an average age

Table 1. Respondent Characteristic

Respondent Characteristic	Frequency	Percentages (%)
Community health workers (n=12)		
Gender		
Female	12	100
Male	0	0
Age (Mean±SD)	46.92±6.47	
Level of Education		
Elementary school	0	0
Junior high school	2	16.6
Senior high school	6	50
Bachelor	4	33.4
experiences become CHW	9.33±7.07	
Health Care Providers (n=5)		
Gender		
Female	3	60
Male	2	40
Age (Mean±SD)	37.2±5.12	
Profession		
Nurse	4	80
Doctor	1	20

of 46.92±6.47, and the highest education level was senior high school (60%). In the HCP group, the majority were female (60%), with an average age of 37.2±5.12. The most common profession was nursing (80%). This study identified three themes and seven subthemes. Theme 1 addresses the initial purpose of this study by describing the roles of CHWs in breast cancer prevention, including raising awareness of Breast Self-Examination (BSE), driving collective screening, and facilitating access to professional care. Themes 2 and 3 address the second purpose by describing strategies to strengthen these roles, including capacity building, resource allocation, and collaboration with health professionals and community stakeholders.

Theme 1: CHWs as catalysts for early breast cancer prevention

The findings demonstrate that CHWs function as key catalysts in translating early breast cancer prevention into community practice. Their embeddedness within the community enables them to reframe early detection from a clinical recommendation into a socially embedded practice shaped by trust, familiarity, and collective norms.

However, this role is not uniformly effective, as CHWs must continuously negotiate between biomedical expectations and community beliefs, including fear, stigma, and skepticism toward screening. This tension shapes how prevention strategies are implemented in practice. This theme is reflected in three interconnected subthemes.

Subtheme 1.1: Building breast self-examination (BSE) confidence

CHWs enhance women's confidence to perform BSE through repeated, simplified, and contextually relevant education. This process reduces emotional barriers such as fear and embarrassment, making early detection more accessible at the community level. This role is reflected in participants' experiences, where CHWs emphasize step-by-step guidance and the importance of building trust gradually:

"*We teach women how to do BSE step by step, using simple language. At first, they feel shy or afraid, but after we explain that it can save their lives, they become more confident."* (CHW 6)

Similarly, HCP highlighted how familiarity influences acceptance:

"CHWs make BSE feel less scary. When information comes from someone familiar, women trust it more and feel more capable to try." (HCP1, Doctor)

Subtheme 1.2: Driving collective screening

CHWs mobilize community participation in screening through group-based approaches, leveraging social networks and peer influence to normalize screening behavior. This strategy is effective since it transitions decision-making from an individual to a collective process, wherein involvement is shaped by group dynamics and shared experiences. This collective strategy is illustrated by CHW, who describe how group participation encourages wider engagement:

"*We do not just tell them; we go together. When the community sees others coming, more women are willing to join."* (CHW 9)

HCP also emphasized the effectiveness of this approach compared to formal communication:

"When CHWs mobilize groups, screening attendance increases significantly. Their influence is stronger than official announcements." (HCP2, Nurse)

Subtheme 1.3 Navigating to professional care

CHWs act as informal patient navigators, assisting women in accessing health services and providing emotional support and guidance through referral processes. This navigation perform underscores inadequacies in the formal health system, where access is constrained not only by infrastructure but also by patients' fear, uncertainty, and lack of procedural comprehension. CHW described how this support reduces fear and facilitates access to care:

"Sometimes they are afraid to go alone, so we accompany them. That makes them feel supported." (CHW 4)

From the HCP's perspective, this role is recognized as critical in reducing delays:

"CHWs act like patient navigators. They reassure women and ensure they follow through with referrals, which reduces delays in diagnosis." (HCP5, Nurse)

Theme 2: Capacity development of CHWs

The findings indicate that strengthening CHWs' roles depends on continuous capacity development that encompasses not only knowledge but also confidence and communication skills. Capacity development functions

as a key strategy that enables CHWs to adapt health messages to community contexts, but its effectiveness depends on continuity and practical relevance rather than one-time training. This theme is reflected in two interconnected subthemes.

Subtheme 2.1: Skill and confidence development

Training improves CHWs' knowledge and confidence, enabling them to provide more accurate information and strengthening their credibility within the community. CHWs frequently face complex questions and misunderstandings that necessitate flexible communication abilities, indicating that training programs should evolve from simply information delivery to problem-solving and experiential learning approaches. CHW described how training transformed their ability to communicate health information:

"Training from the Puskesmas (PHC) really helped. Before, I only knew general health topics, but now I can explain breast cancer more clearly." (CHW 2)

HCP also observed improvements in communication quality:

"We see that trained Kader (CHWs) communicate better and the information they give is more accurate."

(HCP 2, nurses)

Subtheme 2.2: Trust-building communication

CHWs use culturally sensitive communication by adapting messages to local language, age, and social context. This communication strategy is crucial in reducing resistance to sensitive topics like cancer, where stigma and fear may obstruct open discussion. This approach is reflected in how CHWs tailor their communication strategies:

"For older women, we use examples from daily life. They understand better that way, but it is sometimes difficult to talk about cancer itself." (CHW 12)

HCP similarly emphasized the importance of cultural familiarity:

"Kader (CHWs) know the local language and values; that is why people trust them more than us sometimes, but it needs to improve in health care problems." (HCP 4, nurses)

Theme 3: Health system support and collaboration

In addition to individual capacity, the expansion of CHWs' roles is also influenced by support from the health system and collaborative relationships with various stakeholders. Institutional support, resource availability, and recognition of CHWs' contributions are key factors in sustaining their involvement in breast cancer prevention activities. This finding highlights that CHWs' effectiveness is not solely determined by individual capacity but also by the extent to which the health system provides consistent support and integration. This theme is reflected in two interconnected subthemes.

Subtheme 3.1: Support and resources for CHWs

The availability of resources such as educational materials, transportation, and operational support facilitates CHWs' ability to conduct health education and community mobilization activities. This support also serves as recognition of their contributions to public health programs. CHW emphasized the importance of sustained support:

"If the program stops or the incentives are late, many cadres lose motivation. We need continuous support." (CHW 4)

HCP reinforced the need for structural support:

"Kader (CHWs) are passionate, but they need strong structural support, such as: transport, materials, and feedback." (HCP 1, doctor)

Subtheme 3.2: Collaborative recognition

Collaboration between CHWs, health workers, and community leaders is a key strategy for strengthening their roles in the community. Joint activities lend credibility to the health messages conveyed by CHWs and increase community trust in breast cancer prevention programs. This collaboration also helps link community-based activities with clinical services at health facilities. CHW described how joint activities reinforce their role:

"We feel stronger when Puskesmas (PHC) staff join us in the field." (CHW 10)

From the HCP perspective, collaboration improves outreach:

"Partnerships with Kader (CHWs) make outreach smoother. They open the door; we bring the clinical part." (HCP 3, nurses)

Figure 1 illustrates the interconnected and iterative relationships among the three themes. The catalytic role of CHWs (Theme 1) is shaped by capacity development (Theme 2) and health system support (Theme 3). These relationships are reciprocal and dynamic: capacity building and system support enhance CHWs' effectiveness, while their field experiences generate feedback that informs future training and system improvements. This interconnectedness highlights that strengthening CHWs' roles requires alignment between community dynamics and health system structures.

Discussion

This study emphasizes the pivotal role of CHWs as

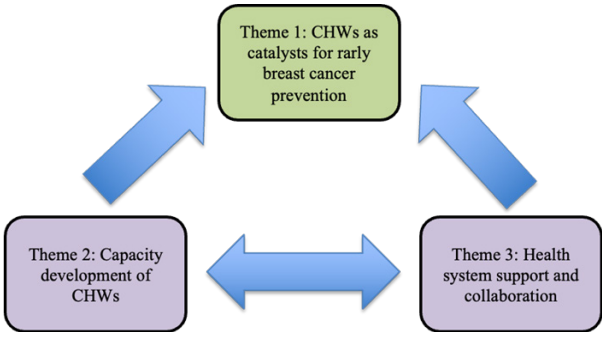

Figure 1. Correlation among Theme Findings

facilitators in early breast cancer prevention, transcending mere health teaching to encompass social mediation and system navigation. Although previous research has shown the effectiveness of CHWs in enhancing awareness and screening participation [14, 15, 19], the current findings offer a more detailed comprehension of the mechanisms and rationale behind these roles within community and health system frameworks.

The results can be analyzed through the framework of community health systems and task-shifting, in which CHWs serve as bridges between formal health services and community contexts [27]. Their effectiveness stems not merely from the dissemination of knowledge but also from their capacity to convert medical information into culturally significant activities, shaped by trust and social conventions. This elucidates why ongoing BSE education and informal communication effectively diminished anxiety and stigma, aligning with prior studies [28, 29]. The ongoing resistance among certain women indicates that behavioral change is an iterative, socially negotiated process rather than a linear one.

The results in theme 1 indicate that CHWs affect both individual behavior and collective action via group-based screening. This corroborates social network theory, which holds that peer dynamics and collective norms influence health habits. Although previous research indicates enhanced screening uptake with CHWs' involvement [12, 30], this study emphasizes that reliance on group dynamics may limit participation when community engagement is limited.

A major finding in theme 1 is the recognition of CHWs as informal patient navigators. Their function highlights enduring disparities in access and communication across formal healthcare systems. Despite facilitating referrals, CHWs offer emotional reassurance, which encourages women to seek care. This aligns with nursing concepts such as compassion and therapeutic communication, wherein emotional support is fundamental to fostering health-seeking behavior [31]. This role also presents emotional costs that are often neglected in current training programs.

In theme 2, capacity development is identified as a vital strategy; yet, the results suggest that individual training is inadequate. This study demonstrates that CHWs need adaptive communication and problem-solving skills to address complex community issues, despite past studies that have highlighted the need for knowledge enhancement. This discovery aligns with adult learning theory, which prioritizes continuous, experiential education over individual training sessions [32]. The ongoing difficulties in addressing sensitive subjects like cancer emphasize the necessity for culturally sensitive and emotionally focused training strategies.

Theme 3 highlights that CHWs' effectiveness is inherently integrated throughout the health system framework. Although inconsistent incentives and inadequate resources have been previously documented [28, 33], this study expands upon these findings by demonstrating that support also functions as symbolic recognition. Feedback, monitoring, and collaboration enhance CHWs' legitimacy and motivation, underscoring that acknowledgment is as essential as financial support [34]. It emphasizes the importance of nurses in mentoring and integrating CHWs into primary healthcare systems through supportive supervision and collaborative practice in cancer prevention [35].

The interrelation of these issues indicates that enhancing CHWs' functions requires a systemic approach. Capacity development, community involvement, and health system support function reciprocally and iteratively, with enhancements in one area impacting and strengthening the others. This discovery enhances understanding of CHWs not solely as program executors but also as dynamic agents within complex adaptive health systems [36].

This study has several strengths. The qualitative design provided an in-depth investigation of CHWs' roles in breast cancer prevention within actual community and health system contexts, encompassing experiential and relational aspects that are frequently neglected in quantitative research. The incorporation of both CHWs and healthcare experts facilitated the triangulation of perspectives, thereby augmenting the legitimacy and depth of the findings.

Nonetheless, some limits must be acknowledged. The study does not adequately capture the longitudinal changes in CHWs' roles over time, particularly in relation to ongoing interventions or policy changes. Furthermore, although the findings can be associated with established frameworks such as community health systems and task-shifting, this study does not explicitly formulate or evaluate a formal theoretical model, thereby limiting its explanatory scope across many contexts.

In conclusion, this study demonstrates that CHWs play a crucial role in early breast cancer prevention as community-based agents that enhance awareness, promote collective screening, and enable access to care. Their efficacy is influenced by the dynamic interplay of individual capability, community involvement, and health system support. Strengthening the roles of CHWs requires a systematic, iterative strategy that includes continuous capacity-building, culturally sensitive communication, and sustained institutional support. From a nursing standpoint, teamwork between CHWs and primary healthcare providers is crucial for ensuring continuity of care and providing patient-centered support.

Future research ought to focus on creating community-based intervention models to empower CHWs, hence improving early detection skills, especially in breast cancer screening and referral procedures. Moreover, governments and primary healthcare systems must emphasize coordinated support, encompassing continuous training, oversight, and resource distribution, to sustain the effectiveness of community-based breast cancer prevention initiatives.

Author Contribution Statement

MZA was responsible for conducting in-depth interviews, initial data coding, identifying and defining the final themes, and finalizing the manuscript. PSC contributed to conducting in-depth interviews, transcribing

data, initial coding, and identifying and defining the final themes. IAS played a role in the data familiarization process through listening to and transcribing the interviews. FNQ, RR, and KK contributed to manuscript writing and to the identification of final themes. AW contributed to manuscript writing.

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General

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Ethical Declaration

All participants were provided with comprehensive oral and written information. Informed written consent was obtained from all participants before their involvement. Additionally, this research received ethical clearance from the Faculty of Nursing, Jember University review board (number 366/UN25.1.14/KEPK/2024) dated November 5, 2024.

Data Availability

Research data is confidential. However, the corresponding author can provide it upon reasonable request.

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Conflict of Interest

The authors have reported no conflicts of interest.

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