EXPLORING KNOWLEDGE, BELIEFS, AND MISCONCEPTIONS ON BREAST CANCER IN AN URBAN FISHING COMMUNITY IN GHANA -A QUALITATIVE STUDY

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Abstract

Objective: This study set out to understand the beliefs of an indigenous population and explore the reasons behind this delayed presentation.

Methodology: This qualitative study adopted a cross-sectional design and was carried out in Jamestown, Ghana. The participants included opinion leaders and ordinary community members. Four focused group discussions (FGDs) and six key-informant interviews (KIIs) were conducted. A general inductive approach was used to analyze the data. Transcripts of interviews were coded in line with the developed codebook.

Results: A total of 46 participants aged 18-70 years were enrolled in this study comprising six key informants and 40 FGD participants. The median age of the key informants was 47.4 years and that of the FGD participants was 39.1 years. Females constituted 45.7% of all participants. The main themes that emerged for causes of breast cancer were; sexual fore play, exposures (risky practices), infections and "at risk groups". "Breast changes" was the main theme for presentation of breast cancer while stigma, fear, support systems, religion and attitude of healthcare workers were the dominant themes that influenced care seeking behaviour of participants.

Conclusion: The people of Jamestown had some misconceptions regarding the causes of breast cancer. They also had some knowledge about the signs and symptoms of breast cancer. They believed that early diagnosis and prompt treatment could improve the outcome of breast cancer but fear and stigma associated with the condition prevented affected individuals from seeking care early.

Key words: *Jamestown, breast cancer, qualitative study, misconceptions, knowledge*

Introduction

Breast cancer is a major public health problem that calls for collective approaches, to address the challenges[1,2]. Globally, breast cancer remains one of the most commonly diagnosed cancers in women and the leading cause of cancer-related death for women[3]. In sub-Saharan Africa (SSA), it has become the leading cause of cancer death among females[3,4,5]. Global trends have demonstrated incidence and mortality trends have decreased in developed countries in the past two decades as a result of breast screening programs and early detection[6]. However, in SSA, the incidence of breast cancer is rising due to inadequate awareness of the disease[7]. Studies in Ghana have reported a rise in incidence of breast cancers occurring in women age less than 40 compared to high-income countries where the average age at diagnosis is between 50 to 69 years[8,9,10].

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Moreover, studies in SSA demonstrate a larger percentage of aggressive breast cancer tumor subtypes than seen in other populations [11,12]. Access to care is quite complex and is influenced by patient level of breast cancer awareness, beliefs, misconceptions, lack of coordinated multidisciplinary care, low socioeconomic status, and geographic barriers[13,14,15]. As a result, breast cancer management in SSA and other low-and middle-income countries is faced with several challenges given that diagnosis at a more advanced stage often requires more resources, is more expensive, and outcomes are poorer[5,6,7,12].

The 5-year breast cancer survival rate is 40% in developing countries such as Ghana compared to over 90% in most high-income countries[16]. Early detection of breast cancer has a great impact on morbidity and mortality with a high chance of survival[17]. There are numerous factors that impact poor survival and late presentation is a major factor[10]. Delay in treating breast cancer may arise from patient delay or health system delay[11]. In many communities, late presentation stems from society-specific cultural beliefs and assumptions. As a result, interventions to promote earlier diagnosis must be tailored for each community, taking into consideration regional beliefs[12]. This study therefore

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sought to explore knowledge, beliefs, and misconceptions of the people living in an urban fishing community, Jamestown.

Materials and Methods

Study Design

To explore the knowledge, beliefs, and misconceptions surrounding breast cancer in the Jamestown community, a community-based, cross-sectional, qualitative approach was employed. Data was collected through focus group discussions (FGDs) and key informant interviews (KIIs). Field data collection was conducted in December 2021.

Study Area

This study was carried out in Jamestown, a traditional, urban, fishing community located in the center of Ghana's capital, Accra. Accra has a population density of 1,300/m^2, and Jamestown is equally densely populated (Fig 1). Jamestown has two electoral areas with one serving as the hub of the area's fishing industry and the other being more residential. There is a mix of religious, political, social, and economic classes in this area and a large indigenous population. Jamestown therefore represents a microcosm of the Ghanaian society, mirroring traditional values and beliefs. Furthermore, Jamestown is in very close proximity (2 km) to Korle Bu Teaching Hospital (KBTH) which serves as one of two tertiary referral centers for breast cancer cases offering the most comprehensive breast cancer care in the country.

Study Participants and Interviews

To qualify for participation in the study's focus group discussions (FGDs), participants were required to be adult residents of Jamestown, age 18 years or older, who were able to give consent. Two FGDs were conducted in each of the two electoral areas in Jamestown for a total of 4 FGDs. In each electoral area, there were separate male and female discussion groups. This was to enable the research team explore thoughts on the subject matter from all segments of the community. Participants for the FGDs were recruited with the help of the community leaders. Each FGD was comprised 10 participants and lasted between 35 to 50 minutes.

A total of six key informants were also interviewed. These key informants were leaders within the community and included the Chief of Jamestown (who was represented by the "Mankralo"- the Chief Kingmaker), the Queen Mother of Jamestown (who is the leader of the women in Jamestown), the traditional Chief Priest (the custodian of the customs and traditions), the Assemblyman (a political leader) and two religious leaders (one representing the Christian faith and the other representing the Islamic faith given that these are the dominant religions of the area). Both religious leaders were also community leaders who serve on the Jamestown Council of Elders where they represent the interests of their respective faiths.

A FGD guide and an interview guide containing standard questions and prompts were used for all the FGDs and KIIs respectively. All interviews and discussions were recorded using a digital voice recorder. Areas covered by the discussions and interviews included knowledge on breast cancer, causes of breast cancer, disease prevention, treatment modalities and misconceptions regarding breast cancer. Most of the discussions and interviews took place in the local language (Ga) and therefore the audio files were translated into English and transcribed by two independent translators and reviewed by a consultant well versed in both languages. Areas of disagreement were resolved by consensus.

Ethical Clearance and Consent

The study protocol was reviewed and approved by the Korle Bu Teaching Hospital Institutional Review Board (KBTH-STC/IRB/00099/2021). Written informed consent was obtained from all participants and research was conducted in line with standard research ethical principles. To ensure confidentiality, no participants' identifying details (names) were used on any form or in reports.

Data Analysis

A general inductive approach was used to analyze the data in order to achieve our a priori objective of exploring the beliefs, knowledge, and misconceptions related to breast cancer in Jamestown. This approach was used because it provided a convenient and efficient way of analyzing the qualitative data collected. An overall coding scheme was constructed with more general, upper-level categories defined by the aim of the evaluation: identifying key beliefs, knowledge, and misconceptions regarding breast cancer. More specific, lower-level codes were created from the statements presented in the raw transcribed text. Transcripts for interviews conducted with participants were received on a rolling basis and were coded in line with the developed codebook. Discrepancies were resolved through conversation between the two data analysts with direct consideration of the original data.

Results

A total of 46 participants aged 18-70 years were enrolled in this study. All study participants lived in Jamestown. There were six key informants interviewed and 40 FGD participants. The median age of the key informants was 47.4 years (range: 30-66 years) and that of the FGD participants was 39.1 years (37.5 years for the females and 40.8 years for males).

Regarding the causes of breast cancer, the following themes emerged; sexual fore play, exposures (risky practices), infection and "at risk groups". "Breast changes" was the main theme under presentation of breast cancer while stigma, fear, support systems, religion and attitude of healthcare workers were the emerging themes under influences of care seeking

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behaviour. The main theme under breast cancer outcomes was "early detection (Fig. 2).

Causes of Breast Cancer

Two main themes were identified in relation to the perceived causes of breast cancer: sexual foreplay and risky practices (exposures). Other themes that emerged were "infections" and "at risk groups".

(i) Sexual foreplay (oral breast stimulation)

Male participants attributed breast cancer to actions related to sexual foreplay. Some males reported a belief that breast cancer results from oral stimulation of the breast while others thought that breast cancer rather occurred from lack of oral stimulation. Most males, however, thought that breast cancer does not develop in women who allow their breasts to be orally stimulated or massaged by their partners. Many of the males who were interviewed shared the belief that they are able to remove "lumps" in the breast of their female partners through sexual foreplay and that, when not done, these "lumps" result in hardening of the breast and development of breast cancer.

"*Recently I was watching TV and they were discussing breast cancer and one of the messages was that the men should try and regularly suck the breast of their wives or partners. If that is done then your partner will not get breast cancer". Male Key Informant 1*

A female participant however, believed that 'allowing your breast to be sucked too much' could also result in breast cancer. This view was also shared by another male participant.

"I feel that if you have a boyfriend who always wants to suck your breast, you could get breast cancer." Female FGD2 P3

"I don't know but we hear that when the men over suck the breast, the breast milk can also form lumps leading to breast cancer" Male Key informant 2

(ii) Exposures (risky practices)

Majority of the participants attributed breast cancer to factors related to lifestyle and habits such as wearing tight clothing (especially brassieres) for long hours or putting items such as money or mobile phones in their upper clothing and brassieres. Other causes mentioned by participants included the use of skin lightening/bleaching creams, exposure to smoke from household cooking, alcohol consumption, and eating certain local foods such as kenkey (a meal prepared from fermented corn flour).

"*I know that when you put money by your breast in your brassier, you could get breast cancer. Also, when you grow old and you also drink alcohol*." Female FGD2 P1

"*I will say that most of the girls in this community like to bleach (lighten) their skin and some even use acid for the bleaching and I think this behaviour will not help us at all. So, there will be a time that the ages of people getting breast cancer will no longer be in the 50 years but rather in the 25 years. The girls of today are really bleaching which pose as risk factor to breast cancer"* Male FGD1 P4.

"I also hear that when you eat kenkey, you can get cancer but I don't know which kind of cancer it is." Female FGD1 P1

(iii) Infection

While some participants postulated that breast cancer was an infectious condition, others had a contrary opinion.

"*If I am diagnosed with breast cancer, it's not my actions that brought it and it's not infectious that anyone who gets in contact with me will get infected*" Female key informant 1

"*I can say it's infectious because if there are droplets from the affected breast into the bra and someone also wears it without washing the bra, she can be affected as well*" Male FGD2 P2.

(iv) At risk groups

All participants were aware of breast cancer affecting mainly middle-aged women although there was also the perception that women could be affected regardless of their age.

"There is no age group and anybody can get diagnosed with breast cancer. Recently, I know of a lady who was diagnosed and I think she is around 25 years and her breast was cut and she died like 3 months afterward". Male FGD1, P1

"First it was the elderly ones that were affected by breast cancer but now due to the environment, it can affect every age." Female FGD1 P2

Participants also had mixed perceptions relating to males getting breast cancer. Those who endorsed that men could develop breast cancer believed that this was uncommon compared to female breast cancer.

"I have heard that males can also be diagnosed with breast cancer but I don't know the ways in which they can get diagnosed with breast cancer". Female FGD1, P5

Presentation of Breast Cancer

Participants described their knowledge of how the disease presents itself.

(i) Breast changes

Both male and female participants reported changes in breast size, lumps and pain as important features signalling a diagnosis of breast cancer. Most participants were of the opinion that detecting these breast changes early is beneficial for treatment and that late detection likely result in loss of life.

"*One of the breasts will be bigger than the other. So, when you see such things, you quickly have to rush to*

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the hospital for care. But some people will not go to the hospital and before they realize, it will be too late". Male FGD2, P3

"There are several symptoms of breast cancer. The tip of the breast becomes reddish, the discharged is sluggish." Male FGD1, P2

Influences of Care Seeking Behavior

(i) Stigma

Majority of the focus groups and the interview participants acknowledged that there is a cultural stigmatization of women in the community who develop breast cancer. Some reported that some breast cancer patients stigmatize themselves and thus avoid getting close to other people for fear of being rejected. Others are stigmatized by the people around them and this manifests as rejection. Stigmatization of the condition was also related to late presentation at the health facility and was responsible for breast cancer patients not informing their family and friends early.

"You will be neglected and people will start to gossip and reject you. They want to avoid you in order not to also get affected" Female FGD2, P3

"I have to encourage her to go to the hospital for care. I don't have to neglect her else she will feel rejected." Male FGD1, P5

(ii) Fear

Fear was a common emotion that was mentioned by several participants. Whereas, female FGD participants mentioned worry and fear related to surgery of the affected breast, male participants alluded that breast cancer was dangerous and could easily result in loss of life. Some participants also attributed their fears to the outcome of breast cancer diagnosis seen in others including family members and friends while others worried about the cost of management and the financial burden that the cancer imposed on the individual and the family.

"They are afraid that if they go to the hospital, they will be told they have cancer." Male key informant 2

"My sister suffered from breast cancer and she said it started like a boil in her armpit and she went to Korle Bu Hospital for treatment. She was given medicines and was booked for surgery to remove the lumps in her breast. After the surgery they didn't see anything in her breast and they stitched it back. But after a while, the thread removed and it developed into a sore and she couldn't get better till she died. So, when I hear about cancer, I get worried a lot". Male key informant 3

"*If the treatment can be made free, that will encourage people to seek prompt care when they don't have money. There are some diseases for which treatment is free so breast cancer treatment can be made free as well. Then we could get the drugs free and we can seek early treatment"* Female FGD2, P3

(iii) Support systems

Support systems in the form of family, community and spiritual/prayer were outlined. Both female and male participants mentioned that spousal support was very important during the period. In addition, financial support was referenced as a major factor influencing delay or not seeking care for breast cancer. Male participants described their role in providing emotional and financial support for their partners during the time of treatment. Prayer was also mentioned as a way of relieving the anxiety and fear due to the condition.

Sometimes people are afraid when they are going for surgery so then we add prayers to guide them through safely" male key informant.

"When you realize that your partner or sister is diagnosed with breast cancer, you should be able to help her with the treatment. Even if she is afraid, you need to force and take her to see the doctor. If you leave your partner without supporting her, she might be having thoughts of this breast cancer and that could lead to her death. So, males play a role and must be fully involved". Male key informant

Some women seek spiritual or prayer support as part of the treatment process.

I don't see this disease as a spiritual problem but you could consult the family priest for prayers Female key informant.

The KIIs endorsed male support of their female partners in the treatment process.

"As a male, if your wife, sister or relative is diagnosed with breast cancer, you need to support the person in this condition in terms of visit to the hospital for treatment and provision of financial assistance to the person. The man needs to play a key role in the treatment process." Male key informant

In addition, female respondents believed that they can get the needed support from their male counterparts when they ask for it.

"It's mostly your brother or sister who can support you for the treatment process. Also, if it's the mother who is diagnosed with breast cancer, then the children who love the mother will support the treatment process." FGD female participant

"I will say that you should not be afraid as the man but then take your partner to the hospital for treatment" FGD Male participant

"I will give the go ahead (for surgery of the affected breast) if that will help save her life. Male key informant

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(iv) Religious Influence of Care

One of the considerations for some women seeking care for breast cancer was the religious interplay. Specifically, there was a preference of "faith-based" medical care providers, care provided by health care professionals of their same religious background, and a preference for female nurses and doctors amongst Islamic patients.

"As a Muslim, we have a lot of problems as to how and when our women are being treated. Majority of the Islamic women would like to be treated by a fellow Islamic woman. This is because our religion does not approve of any other man seeing the nakedness of a woman apart from her husband. Unfortunately, we don't have it that way. The only recognized Islamic clinic that we have is Iran clinic." male key informant 6

"So, if you give them that assurance in a meeting or forum that female nurses or doctors will be provided to take care of them, then that will be well accepted by all" male key informant 6.

(v) Attitude of healthcare workers and long waiting times

Some participants complained about the attitude of some healthcare workers and indicated that it was the reason why some patients reported late or refused to seek help at healthcare facilities. The long waiting times before one can see a doctor was also mentioned as a factor that influences health care seeking behaviour.

"Delays by the care providers: I am saying this because my sister delivered at Korle Bu hospital and we had to get blood for her. So, whiles waiting a patient was brought in but the nurses sat there chatting unconcerned" Male FGD1, P5

"At times when we are sick and need to see a doctor, you think about the long waiting time that we spend at the hospital and will rather want to buy drugs at the pharmacy and take. But we are advised not to just walk into pharmacy and buy drugs. Maybe the person is an apprentice working with someone and cannot stay all day at the hospital seeking care. So, then she will buy drugs at the pharmacy and take. So, the doctor and nurses should work on the long delays at the hospital." Female FGD2, P3

Breast Cancer Outcomes

Participants expressed the fact that early detection saves lives. They mentioned that the factors contributing to
delays in seeking early care were multifaceted including attitude of some care providers and individual's delay/denial of the disease condition.

"But the good thing is that, when you seek early care at the hospital, the doctors will know the stage of the disease and provide the needed care for you before it gets to the worse stage". Male key informant

"*It's not always about the money because in my sister's case, we had the money but then maybe she had the condition long ago but didn't voice out early and it was when things got to the worse stage that she voiced out and we rushed her to the hospital. Just two weeks afterwards, her breast was cut off". FGD,* male participant

Breast Cancer Treatment

The participants described several treatment/control options available to persons diagnosed with breast cancer. The main treatment options mentioned were surgery (mastectomy) and use of medications. Some participants have heard of herbal or local remedies but are not certain of the validity of these cures.

"*Yes, every disease has cure for it but then when you discover it early then treatment is given on time*" male key informant 3.

"*No, but I heard a man selling drugs in a bus who said there is herbal treatment for cancer. He showed some herbs that can be used in addition with shea butter and applied on the affected breast. But as to whether what the man was saying in the bus was true or not, we cannot tell. But then we don't have any local herbal treatment for breast cancer in this community*". Female FGD1, P5

"*If she goes to the hospital early for care and she is given medicines for treatment, I think it will help than delaying to getting it worse off to the point of cutting*". Male key informant 4

Breast Cancer Prevention

There has been support for the breast cancer awareness month held in October every year, however there were concerns that these educational programs are not sustainable and most end with the month-long campaign on breast cancer in October every year. Participants called for educational programs from time to time to improve awareness of breast cancer. Individuals believe that through more education to the community outcomes will improve for women diagnosed with breast cancer.

"When these celebrations are over then that is all. Last month when we planned to have the breast screening as part of breast cancer awareness day, the people in the community were not even aware of the occasion and we had to go round in the community with megaphone to create awareness before people came. After the celebration of the day, there isn't enough education. So, there is no sustained education after a health event. The frequent education will help the community to be updated on health issues and how to prevent or get treatment". Male key informant

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"We need to educate our wives to avoid the causes of breast cancer". Male FGD1, P1

"We can also educate our sisters, other females we know on those things that cause breast cancer. Male FGD2, P5

Discussion

Perceived Causes of Breast Cancer

From the findings of both the focus group discussions and key informant interviews, the perceptions of the participants on the causes of breast cancer were quite different from the thoughts of participants of a qualitative study on breast cancer carried out in rural Northern Ghana in 2010[1]. In that study, the participants had poor knowledge of the aetiology and risk factors of breast cancer, especially considering they did not even have local terms to describe breast cancer. Again, participants of that study, who were homogenously female, had a perception that breast cancer risk (especially the type they categorized as chronic) was related to women having large breasts and being either slim or obese. These thoughts were quite different from that of the participants in our current study more than ten years later, who thought the risk for breast cancer was related predominantly to either sexual foreplay involving the breasts (or the lack of it), or putting money and other foreign materials close to the breast. The difference in findings could have been from a variety of factors such as changing times (that is, information availability and accessibility over the years), the rural-urban setting difference or even the differences in the gender constitutions of the participants of both studies. On the other hand, a survey carried out on some Ugandan women (aged 25 years and above), found the beliefs of women on the cause of breast cancer to be similar to what the participants of our study expressed. In their 2014 survey, 47% of their respondents were of the belief that putting items in the brassier was a cause of breast cancer and this opinion was significantly associated with no previous education on breast cancer, emphasizing the importance of proper education on important health issues such as breast cancer[21].

A cross-sectional study in rural and urban Ethiopia assessing knowledge of young women on the risk factors of breast cancer showed that nearly 82% of the participants had low awareness on the risk factors of breast cancer[17]. This finding corroborates our findings of low knowledge of the actual causes of breast cancer in our cosmopolitan area of study, even though our study had participants of varying ages and gender.

Knowledge and Experience of Breast Cancer Symptoms

None of the participants of the interviews and discussions were survivors of breast cancer, however, some had some second or third hand experience of the disease through relatives and acquaintances. Their view that though breast cancer affects mostly the middle aged, people of all ages were at risk was similar to the view of the Ugandan women who participated in a survey assessing beliefs on breast cancer[17].

The mixed perceptions of the occurrence of breast cancer in males were not unique to our participants. Even among male relatives of women who have had breast cancer, there seems to be low awareness of men being at risk of breast cancer[22]. A more recent quantitative study in 2018 among male university students in Brazil also yielded similar findings, that awareness of breast cancer occurrence in males was poor[23]. And this finding was independent of the area of study (health, sciences, or humanities) of these students. If students of health sciences have low knowledge on breast cancer in males, then there is indeed a large knowledge gap that must be filled.

Even though most of the participants in our study had mixed perceptions about breast cancer in males, the same cannot be said about their knowledge regarding symptoms of breast cancer. They all agreed that the common symptoms of breast cancer were breast lumps, pains and changes in breast size. They however demonstrated inadequate knowledge regarding early presentation and diagnosis. In agreement with the review of barriers to early presentation and diagnosis of breast cancer among African women, carried out by Akuoko et al.[24], the urgency and necessity of improving education and knowledge dissemination among the members of the Jamestown community and beyond, cannot be overemphasized[24].

In addition, when the subject of breast cancer being infectious came up, our participants had dichotomous views. Some said breast cancer was not infectious, while others thought sharing an unwashed brassiere can result in breast cancer transfer, similar to the thoughts of the Ugandan women in the survey, who said wearing dirty second-hand bras could cause breast cancer[21].

Stigma and Fear

From the discussions with our participants, stigma and fear were two major barriers of health seeking for early diagnosis and intervention where breast cancer was concerned. These findings are in agreement with other studies[24]. In the study by Akuoko et al.[24] women with breast cancer feared being ostracized by their families because of their health condition[24]. Participants in our current study however were of the view that people may delay in seeking help because of fear of being stigmatized by their own families.

Even when it came to discussing fear related to breast cancer, the men in our study groups had a different view to what the women thought; the men were more concerned about the potential loss of life associated with breast cancer while the women were more concerned about loss of the breast through surgery. These fears and others highlighted in the results seem to be common to people who have to deal with the threat of breast cancer as referred to by eight of the publications reviewed by Akuoko et al.[24] As these fears are common and not localized, education on breast cancer must intentionally

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be engineered to allay the fears of people as much as possible so as to improve health-seeking behaviour and outcomes in cases of positive diagnosis.

Other Barriers to Health Seeking

Aside fear and stigmatization, the other barriers to health seeking in cases of suspected breast cancer identified by participants included financial constraints and poor attitude of some healthcare professionals.

One noticeable thing was that participants in this study did not mention alternate sources of treatment (particularly herbal or spiritual) as a natural preference for some people faced with fearful conditions like breast cancer unlike what was explained by the findings of a study by Opoku, Benwell and Yarney (2012) in Accra and Kumasi- two urban cities in the Ghana[25]. Other findings of that study on the barriers of health-seeking were similar to what our participants reiterated; unsupportive healthcare systems, financial constraints, fears and stigma[25].

Support

There seemed to be a consensus on the necessity of support for victims of breast cancer among our study participants- both males and females. From their views, they expressed willingness to support should they have to, and even convince or "force" the victims to seek health care if necessary.

Support structures are needed in the healing and recovery process. Spousal support was outlined as a vital role in the treatment process. Of note were family support as well as emotional and financial support from husbands and this is supported by a Ugandan study involving breast cancer survivors, who affirmed the importance of family support in their healing and survival process[20].

Conclusion

The people of Jamestown had some misconceptions regarding the causes of breast cancer; they believed that keeping money and other items in the brassieres could cause breast cancer. They also believed that sexual foreplay, particularly the sucking of the breast was associated with breast cancer. They also had some knowledge about the signs and symptoms of breast cancer. They believed that early diagnosis and prompt treatment could improve the outcome of breast cancer but fear and stigma associated with the condition prevented affected individuals from seeking care early enough.

Recommendation

This study identified one key factor that requires health system strengthening and that is the request for female clinicians to address the health needs of female Islamic women. The inadequate presence of female clinicians at health facilities has inhibited the seeking of care by some Islamic women in Ghana. This calls for pragmatic collaboration among faith-based healthcare providers to design interventions to bridge such gaps and create the grounds for healthcare for all women in Ghana.

Secondly, education and awareness creation on breast cancer should not be limited to the month of October which has been set aside as breast cancer awareness month. Rather, The Ministry of Health, Ghana Health Service and their partners should work towards achieving and maintaining an all-year-round education and awareness creation on breast cancer to sustain the gains made during the month of October (which is dedicated to breast cancer awareness creation).

Data Availability

All data for this study may be found at https://doi.org/10.6084/m9.figshare.25195583.v1

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