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Review Article on Breast Cancer Awareness in Nigeria

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Abstract

Background: Breast cancer is a global disease with varying capacity for needed care. Since differences exist in resources / infrastructural availability and cultural factors, awareness and responses to this leading cancer among women vary from country to country. This study aims at reviewing available literature on public awareness on breast cancer in Nigeria, with emphasis on breast cancer epidemiology, breast cancer awareness (BCA), agencies and organizations involved in breast cancer public enlightenment, methods of breast cancer information dissemination, and barriers to breast cancer awareness in Nigeria.
Materials and Methods: Literature search was conducted on breast cancer awareness in Nigeria. Data obtained was critical analyzed for discussion in the review.
Results: The figures for breast cancer awareness were variable in the geopolitical zones depending on the population being evaluated, with wide differences between city and community dwellers. The attitude and practice (on breast self-examination, clinical examination and mammography) demonstrated was generally poor. While there were many agencies and organizations interested in breast cancer awareness in Nigeria, a central coordination of activities that should culminate in the needed impact / attitudinal change at the community level was lacking. Identified barriers to breast cancer awareness included financial, political, religious / traditional / cultural, etc.
Conclusion: There is need for a central coordination of BCA efforts to achieve needed impact at community level. A policy for subsidized care of breast cancer in Nigeria could be part of the needed incentive for public participation, as a diagnosis of breast cancer without funded treatment is a sore deterrent among participants of screening programs.

Keywords: ***Breast cancer; Awareness; Knowledge; Awareness actors; Methods of awareness campaigns; Barriers; Nigeria***

1. Introduction

Awareness of oneself and environment is critical to survival. The response to external (or internal) stimuli, a cardinal characteristic of living things is a critical example authenticating this statement. Injuries or unwanted outcomes are therefore inevitable where ability to respond is impaired as a result of blunted awareness. Disease awareness enables preparations and appropriate responses (preventive and therapeutic) to be made, as could be seen in the recent COVID-19 pandemic [1-3]. Limited or poor individual awareness on breast cancer therefore affects individual actions / responses to preventive and treatment measures [4,5]. Globally, while 18.1 million women are diagnosed with breast cancer, 9.6 million died of the disease in 2018 [6,7]. With rising incidence of breast cancer, especially in low- and middle-income countries, control measures include: accurate and timely diagnosis (clinical evaluation, tissue sampling, tumor markers), treatment (surgery, radiation therapy, systemic / drug therapy), and supportive services [8]. Breast cancer program implementation also takes into cognizance evaluation of local situation including disease burden, resource availability, existing infrastructure, social and cultural barriers [8].

Since differences exist in resources / infrastructural availability and cultural factors, awareness and responses to this leading cancer among women vary from country to country. In the United States of America, a nationally coordinated breast cancer awareness month was found to have successfully improved public awareness on breast cancer using non-medical industries, influencers affected by breast cancer, and an awareness symbol [9]. In a study in France, emphasis was made on awareness of patients and health staff of the benefits of organized breast cancer screening and opportunistic screening especially with the encouragement of general practitioners and gynecologists [10]. However, it was observed that the French population that had the most chance of dying from breast cancer had the least access to screening services [11]. Among German women, general awareness of breast cancer was 78.8% [12], while awareness of breast cancer risk factors was reported as 35.9% - 73%.[12,13] In Russia, combined use of breast self-examination, clinical breast examination, and increased breast cancer awareness (BCA) was found to have facilitated detection of early breast cancer among population with high risk for advanced disease [14]. In another study in Turkey, the reason (as expressed by 98.5%) for not doing breast self-examination was not knowing how to do it [15].

In Asia, a study done in Riyadh City among women shows BCA to be 54%, and 62% could conduct breast self-examination (BSE), while only 38% were aware of mammography screening [16]. The experience from New Delhi India was that of lack of awareness, fear, familial and social stigma, myths and misconceptions about breast cancer [17]. In Indonesia, urban-dwelling women had lower knowledge of breast cancer risk factors, and women with higher level of education had 70% worse attitude towards BCA [18]. A 19.7% breast cancer mean knowledge score was observed in a study where awareness of BSE was 67.2% in Malaysia [19]. However, in Jeddah Saudi Arabia breast cancer knowledge was found to be inadequate as 50.5% of women were reported to be aware of breast lump as a warning sign of breast cancer, 79% had heard about BSE, while only 47.5% knew how to perform BSE [20].

In the African setting, some form of BCA programs also exists. The impact of BCA program organized by a Ghanaian non-governmental initiative - Breast Cancer International - was reported to have improved the knowledge, attitude and practice of women in the Ashanti region of Ghana [21]. In Angola, insufficient knowledge of breast cancer was reported among both medical and non-medical university students, according to a study reported in 2012 that concluded in favor of advocacy for

increasing awareness for screening and early detection of breast cancer in Africa [22]. In the study on BCA in the Sub-Saharan African ABC-DO cohort published in 2018, it was reported that BCA was particularly lowest in Uganda and Nigeria with as much as one in four women having no BCA, and two in three women having no knowledge of breast cancer cure [23]. In this study, low educational level, unskilled employment, low socioeconomic position, rural residence, older age, being unmarried, and in some settings HIV-positivity were noted to be associated with low BCA.

There is an "old saying" among the locals that "what you do not know, does not know you and cannot kill you". The issue of BCA is one of such examples that prove such "sayings" to be untrue. Victims of breast cancer from the interior villages often express the fact that they had not been involved in harming their fellow man, exhibit this denial of existence of breast cancer at initial diagnosis, in apparent re-enactment of the early theory of diseases that hinges on mythology / superstition [24-27]. This typical example highlights the importance of re-orientation on breast cancer for which awareness of the disease is key. A knowledge, attitude and practice study in rural South African community also revealed low, negative attitude, and found majority of women who had never been exposed to breast cancer diagnostic services [28]. There is therefore need to know where we are now, in order to be able to clearly define where we hope to be. This study aims at reviewing available literature on the public awareness on breast cancer in Nigeria.

2. Materials and Methods

Literature search was conducted on breast cancer awareness (BCA) in Nigeria. Data was obtained from relevant journal articles, and books using Google Scholar, Medline, PubMed databases and Google Search on breast cancer epidemiology, BCA, agencies and organizations involved in breast cancer public enlightenment, methods of breast cancer information dissemination, and barriers to BCA in Nigeria. Critical analysis of obtained information was done by the authors. Only studies written in English language on the subject were included and review articles were excluded.

3. Results / Discussion

3.1 Breast cancer burden / Epidemiology in Nigeria

Breast cancer has attained a global disease status with rising incidence especially in Sub-Saharan Africa, and has become the most common cancer among women, and these facts still hold true in Nigeria [29-32]. Additionally, a subset of triple negative tumors lacking in androgen receptor expression described as quadruple negative breast cancer that accounts for 75%-80% of triple-negative breast cancer are seen in Sub-Saharan Africa, including Nigeria [33,34]. These cancers are more chemo-resistant and have poorer prognosis [35,36].

Breast cancer in Maiduguri North-Eastern Nigeria, observed among people with age ranging from 17 and 85 years with a peak at 40-49 years, was reported in 2008 to be 13.9% of all cancers [30]. A more recent study from the same region of Nigeria shows age range of 20 to 86 years, and a female mean age 44.98 years [37]. In North-Western Nigeria, similar pattern of presentation was seen with breast cancer occurring mostly in fourth and fifth decades in premenopausal women in late stages of invasive ductal carcinoma [38]. Overall, the survival rate was low. In Keffi North-Central Nigeria, similar epidemiological profile was reported with early breast cancer accounting for only 30% of cases seen, and of the many cases being sporadic in nature and biologically aggressive [39].

The experience of practitioners in Nigeria's South Western region also reinforced high prevalence of advanced breast disease (80.6%), mean age of 48years, dominance in premenopausal women, mean symptom duration of 11.2 months, commonality in left breast, poor outcome and poor response to follow up at out-patient clinics [40]. Other studies also highlighted similar pattern of breast cancer in this region of Nigeria [41-43]. In South-Southern Nigeria, data from Calabar cancer registry show similarity with other parts of Nigeria, and the age specific incidence rate of breast cancer was reported as 37.4 per 100,000 [44]. Similar studies in South-Southern Nigeria highlighting late presentation, histopathologic type, and triple negativity also exist [45-52]. Similarity also exist in breast cancer studies reported in South-Eastern Nigeria [53,54]. In Abakiliki South-Eastern Nigeria, age-related occurrence of breast cancer was noticed among patients with breast lumps with 1 in 5 biopsies for patients at 20-29 years, and 3 in 5 biopsies for those in 40-49 years age range [55].

3.2 Breast cancer public awareness in Nigerian

The burden of breast cancer highlighted should ordinarily translate into increased public awareness and action, however it is clear from the foregoing that breast cancer is a "big issue" among our women in Nigeria. This section is dedicated to evaluating the degree of public awareness so far in knowledge, attitude, and practice on breast cancer-related issues in the different regions of Nigeria.

North-Western Nigeria: In 2012, in a study that investigated the knowledge, attitude and practice of female health workers to breast cancer and mammography, it was found that awareness on mammography was 84%, and only 9 % had carried out the procedure [56]. This was a poor result considering that these were educated persons, who lived in the city, and were health workers who should know better. In another study done among patients, it was reported that 24% were not aware that breast cancer screening could improve the outcome of treatment, 8% believed that breast cancer screening could lead to loss of breast, while 46% were not sure if breast cancer screening leads to loss of breast [57]. In a study in Kaduna Metropolis among school teachers, low knowledge and poor attitude to screening was observed [58]. So essentially in North-Western Nigeria, awareness of breast cancer among patients, teachers and health workers was low. There were few other studies in the region that reported varied findings [59,60].

North-Central Nigeria: A study among nurses in Bida Nigeria reported good knowledge of breast cancer among 74.7% of respondents, breast self-examination monthly performance among 38.3%, ever done clinical breast examination in 14.7%, and mammography done by participants was only among 8% [61]. In another study among healthcare workers in Jos Nigeria, 91.7% knew about breast cancer prevention, 87.2% knew how to perform breast self-examination (BSE), and 36.8% were aware that the BSE should be monthly [62]. In another study on breast self-examination in Ilorin Nigeria, while 81.9% have heard of BSE, only 53.5% of respondents practiced it, and less than 20% actually did so on monthly basis [63]. Similar study conducted in a rural setting revealed poor knowledge among respondents, and particularly highlighted those who were of the opinion that the cause of breast cancer was spiritual, use of brassieres, excessive breast feeding, among others [64]. However, it is reassuring to note in this same study that more than half of participants were willing to undergo BSE "if beneficial". There were still some other studies in the same region where varied findings were reported [65,66].

North-Eastern Nigeria: In Maiduguri Nigeria, a study reported in 2013 highlighted BCA to be at 89.3% and knowledge of screening methods to be 95% [67]. Awareness of BSE, clinical breast examination (CBE), and mammography were 75.5%,

51.0%, and 87.1% respectively [67]. In this study among female health workers, the attitude and practice to screening methods was described as poor. Another study among female university students in the same Maiduguri concluded that the high awareness of breast cancer seen among respondents was inconsistent with the poor attitude to practice of breast cancer screening methods [68]. Other studies also reported findings on BCA in the North Eastern Nigeria [69,70].

South-Western Nigeria: A study done in Ile-Ife and reported in 2017 revealed high awareness on breast cancer among participants (94%), and a willingness to participate in CBE [71]. Another study in Ife and Iwo Nigeria showed high awareness for breast cancer (Ife 94%, Iwo 97%), but very low awareness on mammography services awareness (Ife 11.8%, Iwo 11.4%) [72]. In yet another study in Sagamu Nigeria, awareness of BSE was 58.2% while actual performance of BSE by respondents was 5.3% [73]. However, knowledge and practice of breast cancer screening was found to be low among community-based women in Ogbomosho within in the same South Western Nigeria as reported in 2019 [74]. Varied results were reported in other South-Western Nigerian studies on BCA [75-78]. The implication of these studies in Western Nigeria is that most BCA programs were concentrated in cities (where the first study was carried out), excluding the rural dwellers (where the latter study was done).

South-Eastern Nigeria: A study carried out in Nnewi Nigeria in 2011 revealed that as high as 47.9% of breast cancer patients declined offer of mastectomy, and only 28.3% of those with locally advanced disease who were place on neo-adjuvant chemotherapy completed their treatment [79]. Another study done in Owerri among female undergraduates and reported in 2015 revealed that 98.9% of respondents were aware of BSE while only 32.5% correctly performed the examination every month [80]. In a similar study in Abakiliki, while majority had good knowledge of BSE, only 15.9% of respondents actually performed the examination on monthly basis [81]. There were still some other studies where varied findings were reported [82-86]. From the foregoing, it would be safe to conclude that the experience on breast cancer awareness and attitude in South-Eastern Nigeria was generally below average.

South-Southern Nigeria: In South-Southern Nigeria, relatively high level of awareness of breast cancer was found in several studies among university students, secondary school teachers, health workers [87-89], There were also studies that reported the patterns of awareness not too different from the usual low attitude to practice seen in other regions [90-95]. A study in Benin Nigeria conducted among adolescents stressed the importance of peer education strategy in improving breast cancer and BSE knowledge [96]. There were still some other studies where varied findings were reported [97-99].

3.3 Agencies and organizations involved in breast cancer public enlightenment

The essence of BCA programs is to upgrade public knowledge to improve public responses to available interventions for improved state of health, early detection and treatment of disease. The credibility of the messenger is as important as the message in order to evoke the needed acceptance and response of the public. The messenger therefore has to be trustworthy, and the message has to be consistent and compatible with scientific knowledge and also with the local culture, educational system and social goals. The World Health Organization is interested in breast cancer awareness across the globe [100,101].

In the Nigerian setting, the National Orientation Agency - an agency of government, some departments of tertiary health institutions, some primary health care agencies are examples of agencies and parastatals of government that directly or

indirectly have dealings on breast cancer awareness issues. Some professional organizations like Nigerian Medical Association, Medical Women Association of Nigeria, etc. are also involved in information dissemination. Notable non-governmental organizations (NGOs) are also involved in public awareness on breast cancer. These include: Breast Cancer Association of Nigeria (BRECAN), Cancer Aware Nigeria, Rose of Sharon Foundation, Abuja Breast Cancer Support Group (ABC-SG), Joyful Tears Initiative, Root Out Breast Cancer Initiative, MicCom Cancer Foundation, ARISH Health Initiative, Ugo's Touch of Lives Foundation, Mother and Child Foundation, Run for a Cure Africa, Project Pink Blue, Efferent cares Initiative, Save a Life Cancer Awareness and Support Network, and some Corporate Bodies (As Corporate Social Responsibility) [102, 103]. These organizations through their activities directly or indirectly influence BCA through advocacy, or support for screening and treatment of breast cancer in Nigeria. Local trado-medical companies (complementary and alternative medicine practitioners) using roadside loud-speakers, are also involved in unregulated information dissemination in Nigeria, some of which relate to breast cancer.

3.4 Methods of breast cancer information dissemination in Nigeria

The methods used in creating breast cancer awareness (BCA) / health information literacy in Nigeria is here "x-rayed" for pros and cons, and their effectiveness in achieving the needed goals.

Radio / Television on Breast Cancer: The audio-visual media has the widest one-time coverage in BCA programs. However, most of the population in the rural areas may not be privileged to listen to and watch the programs due to poor electric power supply and hence sidelined. A study carried out in six state capitals evaluating public perception on mass media BCA campaign in Nigeria acknowledged some positive impact and recommended such campaigns to be carried down to the grassroots using community-based organizations [104].

Print Media on Breast Cancer: The print media - magazines / newspapers are more formal means of conveying health information [105,106]. However, the readership is limited to the educated few within the cities, limiting its reach.

Social Media on Breast Cancer: The social media has been used for purposes of breast cancer awareness in Nigeria [107]. The reach here includes the younger generation and the educated, with minimal or no impact on the less educated people in rural communities. Limited availability of internet services in the rural communities may restrict the needed impact of this mode of public awareness.

Health Talks in Religious Organizations on Breast Cancer: A study on communicating breast cancer in rural Igbo community in Eastern Nigeria concluded that radio and religious organizations meetings were veritable means of conveying breast cancer information in our setting [108]. This may be associated with the weight of importance that the Nigerian public attaches to religious meeting and the mixed population of attendees in such gatherings. One of the causes of delay in presentation of breast cancer is also religious beliefs / spiritual healing [109-113]. Communication of the "right" information in these gatherings could significantly contribute to correcting negative public consciousness on breast cancer.

Health Talks on Breast Cancer in Schools / Other Institutions: This is a common method used by most organizations for raising awareness on breast cancer [114-116]. The students and teachers form the target for this mode of awareness. The benefits

of this method are that the students are informed about the disease and are likely to influence their parents on the subject. However, the limitation of this method is that the parents may underate the weight of information provided by the school children, and hence stick to their "superior" knowledge.

City / Community Enlightenment Campaigns on Breast Cancer: City or community-based awareness campaigns organized around certain activities (road-work, carnival, games, or other events) are often utilized [117,118]. However, most of these activities are concentrated in the cities, and were often occasional efforts. Use of individual community customized campaign efforts would be more effective.

Pamphlets / Booklets on Breast Cancer: This is a tool for conveying health information to the public. Information on breast cancer is conveyed in easy-to-read manner and displayed in public places (usually free of cost) like health institutions, banks, airports, etc. for members of the public to pick and read. However, this medium is also limited by ability to read and write, implying that it is suitable for the educated. It does not seem to be suitable for community-based awareness approach.

3.5 Barriers to breast cancer awareness in Nigeria

It has been reported that many public health intervention programs do not really achieve their goals. Six key areas are therefore advocated to be addressed for effective implementation: innovation, a rigorously established technical package, management, partnerships, communication, and political commitment [119].

Financial Barriers: Financial barriers have been identified as constraints against utilization of available screening and therapeutic services for breast cancer in Nigeria [79,120-122], especially for the lowest socioeconomic class that may constitute the majority of the victims of this disease. Similar thought is conveyed by other researchers who preferred to label this as social barrier [65,123]. The implication of this is that those who know that they could not afford the screening and treatment services may resort to faith and not pay attention to advocacy programs of any form. The use of unconventional methods by our breast cancer patients who present late (reluctantly though) may not outrightly be their first choice, but an available apparently affordable method which probably ended up not being effective, hence the "late presentation."

Patient Barriers: Absence of a relative for patient care has also been reported as constraint to breast cancer services [79].

System / Political Barriers: Most of the barriers to BCA in Nigeria are modifiable. A governmental leadership with the needed "Political will" could greatly reduce the impact of religious, financial, traditional / cultural incursions into BCA efforts. Lack of hospital bed-space for admission of breast cancer patients in some government hospitals as reported in some studies[79,124], is a factor that could indirectly and negatively affect awareness efforts - "when the center cannot hold". General difficulties faced by patients and relatives in accessing care in some government tertiary hospitals, and the unfriendly environment of care are also modifiable deterrents to breast cancer awareness.

Religious Barriers: Religion has positive, negative and existential effect on breast cancer perceptions in Nigeria [122,125]. Nigerians generally have a religious mindset, therefore any effort at improving awareness on breast cancer should be inclusive

of the religious houses. What the "Man of God" says is significant to influence whether to go for screening services ("it is not my portion mentality"), accept offer of treatment, etc.

Traditional / Cultural Barriers: Impact of culture is a known barrier to health services delivery including breast cancer. The reasons and form of impact may vary from concealment and denial of the existence of the disease (due to held belief) to decline of offered treatment like mastectomy [125-127]. This barrier is a weighty reality among the locals who may also decline ablative treatment like mastectomy whose consequence may be social stigma, and consequent burial (at death) in the "evil forest" in some communities. It becomes obvious then why some patients would prefer to die with their breast rather than accept offer of mastectomy and live.

Segregation of Awareness Intervention Programs: Most of the breast cancer campaign programs are concentrated in the cities with less attention to community dwellers.

Lack of Awareness: A study done in Ife and Iwo in South Western Nigeria quoted "lack of awareness" as a barrier to utilization of available mammographic services in that local government [72]. This calls to question the effectiveness of current efforts at public enlightenment on breast cancer, implying that in some communities there were no campaign efforts at all despite availability of needed services.

Study Limitations: This is an empirical review of studies relevant to breast cancer intended to capture and present a panoramic view of issues on breast cancer awareness in Nigeria, and therefore may not have captured all publications on breast cancer in Nigeria.

4. Conclusion

Public awareness on breast cancer in Nigeria is generally reported to be poor, amidst glaring evidence of breast cancer among Nigerian women to the tune of 1 in 5 (among age range 20-29 years) and 3 in 5 (in those aged 40-49 years) breast lump excisions as seen in some centers, with a tendency towards relatively younger age group, late presentation and histopathologic type characterized by poorer prognosis. More vigorous awareness programs are therefore advocated.

5. Recommendations

There is need for a governmental approach to instituting a centrally organized structured breast cancer awareness program for Nigeria, from national to community level to replace the current apparently sporadic awareness programs by different organizations. A well-funded and supervised National Orientation Agency (NOA), equipped with necessary personnel could drum home the needed consciousness on monstrous illness that has affected every community in Nigeria. This could also be in the form of a national action plan for health literacy as it is done in other climes [32], instead of the current sporadic "rag-tag" efforts that appear not to be yielding needed result.

A policy for subsidized care for breast cancer in Nigeria could be part of the needed incentive for public participation, as screening and diagnosis of breast cancer without funded treatment is a sore deterrent among participants of screening programs.

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7. Research Ethics Statement

The approval of the Research Ethics Committee of the Rivers State University Teaching Hospital was obtained.

8. Conflict of Interest

The second author is a survivor and wishes to use this piece to advocate for a more robust awareness program for breast cancer in Nigeria.

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