

Young Women's Perceptions and Behaviours Towards Breast Cancer Campaigns on Digital Media

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Abstract

Breast cancer is a significant social issue that has garnered attention from scholars worldwide. While numerous studies have examined awareness and prevention strategies, there has been limited research into the impact of digital media campaigns on young women's perceptions and behavioral changes regarding breast cancer and breast self-examination. This study explores how young Nigerian women perceive breast cancer campaigns on digital media and how these campaigns influence their knowledge, attitudes, and breast self-examination (BSE) practices. The research draws on the Health Belief Model, Elaboration Likelihood Model, and the Uses and Gratification Theory to frame its analysis. A mixed-methods approach was adopted, comprising a survey of 369 purposively and stratified selected female undergraduates and a focus group discussion (FGD) with eight participants. Quantitative data were analyzed using SPSS version 26, with results presented in frequency tables, means, and standard deviations. FGD responses were analysed through an explanation building technique. The quantitative findings revealed a positive influence of digital media campaigns on perceptions of breast cancer, with a mean score of 4.22, and on behaviors related to breast self-examination (BSE), with a mean score of 4.02. Qualitative findings supported these results, indicating that digital media campaigns effectively addressed misconceptions and encouraged positive behaviors. It is recommended that for effective message impact, there should be increased frequency of these campaigns and incorporation of narratives from breast cancer survivors.

Keywords: Breast Cancer, Breast Cancer Perception, Breast Self-Examination, Digital Media Campaigns.

Introduction

Breast cancer poses a significant global health concern for women, and it contributes to a high morbidity and mortality rate worldwide (1, 2). The World Health Organization estimated that around 2.3 million women were diagnosed with breast cancer in 2022, with 670,000 deaths (3). Perhaps, the severity and spread of breast cancer made the National Cancer Institute forecast that by the year 2040, an additional 30 million new cancer cases and 15.3 million mortalities would have been recorded (4). This reveals the severity of breast cancer cases as there have been calls to increase awareness, especially among young women globally. Breast cancer has not been prioritized as a significant women's health issue in Sub-Saharan Africa, even though it is the most common cancer among women within the region (2, 5-7). Nigeria is estimated to have the highest breast cancer rate in Africa, accounting for 18.1% of all cancer deaths

(2, 8). In several parts of Nigeria, factors such as limited access to healthcare services, cultural stigmas, and lack of awareness exacerbate the burden of the disease. These issues frequently lead to late-stage diagnoses, which result in poorer survival outcomes (9, 10). Furthermore, data retrieved from several medical centres in Nigeria show a worrisome trend of breast lumps that need excision. The data revealed that about 60% of the patients are between ages 40 and 49, while 20% are 20 to 29 (11). This implies that breast cancer is affecting the comparatively younger female population in Nigeria. As with many cases in Nigeria, the patients in the report are primarily at the advanced stage where the tumour is already aggressive (12). Poverty and misinformation are significant factors in the late detection of breast cancer, which increases the mortality rate caused by cancer (2). This implies that women need the

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right information to make good decisions about their health. Additionally, cultural beliefs surrounding breast cancer, including misconceptions about its causes and fears related to treatment, significantly influence health-seeking behaviors. These beliefs often stem from traditional narratives, such as ancestral punishment or curses for wrongdoing, leading to denial of risk and reluctance to seek early diagnosis (13, 14). Furthermore, socio-economic barriers, including poverty and financial constraints, hinder access to necessary treatments and support services (15, 16). Hence, awareness and attitudes towards breast cancer are central to combating its impact. Research findings from a cross-sectional survey conducted in Southeast Nigeria revealed varying levels of awareness among women, emphasizing the need for targeted educational interventions (10).

Given these challenges, digital media campaigns have emerged as a potentially effective tool for enhancing breast cancer awareness. Social media platforms can facilitate information dissemination and engage communities in discussions that challenge misconceptions and stigma surrounding the disease (17). Although studies have examined the media's role in creating breast cancer awareness in Nigeria, there is less evidence of the role of digital media campaigns against breast cancer. This study addresses this gap by exploring how digital media breast cancer campaigns shape awareness, attitudes and self-care practices, particularly, breast self-examination (BSE) among young Nigerian women. More specifically, the study aims to: examine the frequency of young women's exposure to digital media campaigns on breast cancer, assess the effectiveness of digital media campaigns in enhancing breast cancer awareness among young women, and assess the impact of digital media campaigns on influencing behavioural changes related to self-breast cancer screening and early detection practices among young women.

Digital Media and Health Communication

New media has enjoyed significant use by the medical and health industries to disseminate health information due to their several advantages over traditional media. Digital media presents avenues for medical firms, practitioners, and health investigators to reach large and varied

populations with targeted medical health messages, required educational capital, and behaviour change interventions (18). This is done through digital media tools such as websites, telemedicine, social media platforms, mobile health apps, etc. With the aid of algorithms, digital media users are often exposed to more health topics in which they have shown interest. This has both advantages and disadvantages. While the algorithm can help deepen knowledge about a topic that the digital media user seems to be interested in, it creates knowledge silos, where the same digital media user is less informed about other important health issues. Digital media ultimately improves access to health messages with real-time tracking applications (19, 20).

Furthermore, with the introduction of artificial intelligence, conversational bots and AI-driven platforms provide custom-made instruction and engagement prospects. As individuals are encouraged to participate actively in their health management, patient empowerment becomes an important part of modern healthcare. Options for digital media campaigns include but are not limited to influencer partnerships, especially those who have a personal connection to breast cancer to share authentic stories and promote awareness initiatives; interactive challenges where people are encouraged to complete daily activities like sharing facts, performing self-exams, or donating to charities; themed content series; virtual panels and interviews where oncologists, researchers, and survivors to provide in-depth insights and foster community engagement. Other options are social media takeovers, educational infographics that depict risk factors, symptoms, treatment options, and prevention tips; animated videos, augmented reality filters that incorporate breast cancer awareness elements; virtual reality experiences that educate users about breast cancer journeys and treatment processes; digital posters; user-generated content campaigns, storytelling marathons and so on.

Social media platforms offer educational tools while providing patients with social media support bubbles. These support bubbles are groups of people interested in a particular health topic, such as breast cancer, or patients who join online groups or are algorithmically aggregated because of shared interests. Such social media bubbles further encourage the patients to know they are

not alone and provide opportunities to explore other curative opportunities while promoting self-management practices (21, 22). Examples of such social media platforms are Facebook, YouTube, WhatsApp, Instagram, TikTok, WeChat, Snapchat, X, Reddit, Pinterest, LinkedIn, Telegram, etc.

However, it is important to note that fact-checking online health information and managing privacy issues are crucial for sustaining trust in information obtained from digital media platforms (23). This is particularly important because, as much as there is important health information in the digital media, fake information also exists that could be potentially harmful to health.

Digital Media Campaigns and Breast Cancer

Several scholars have worked on media campaigns on breast cancer in Nigeria (11, 24, 25), but not much has been done on the impact of digital media on the topic. Despite the number of campaigns done on breast cancer, research showed that a significant number of women do not have adequate knowledge about it. In a study among female health workers in Nigeria, some women either do not know or have inadequate knowledge of mammography and its benefits (26). The rate of lack of awareness was reported to be more significant among those with minimal education (27). To what extent have digital media campaigns raised awareness and initiated behavioural change among young women in Nigeria?

Digital media campaigns have developed as powerful tools serving as catalysts for behaviour change, including health behaviour change (28, 29). The ability of digital media campaign tools to reach diverse populations and bring tailored interventions has made them progressively prevalent in public health communication. An example of such tools through digital media is storytelling. When appealing descriptions are narrated through digital platforms, they can efficiently communicate multifaceted social problems and stimulate desired actions (30). Digital media campaigns are potentially effective when they incorporate frequency, intensity, interactivity, and feedback mechanisms (31).

Similarly, influencers play a significant role in health digital media campaigns (32). They leverage their large followings and credibility to disseminate health information, promotes awareness, and encourages healthy behaviours. A

breast cancer digital media influencer can be a cancer survivor or an authority regarding health issues. This gives credibility to the message through the messenger. While digital media influencers can significantly boost health digital media campaigns through public education, behavioural change promotion, and reaching diverse audiences, their use requires painstaking consideration to guarantee that the health information they share is accurate and reliable. Consequently, to what extent have social media influencers influenced cancer health behaviour among young women in Nigeria?

Digital media campaign interventions have shown mixed results in achieving sustained behaviour change. Positive outcomes have been observed in physical activity promotion, nutrition improvement, and preventive screenings. Research reported that significant levels of digital health literacy are positively correlated with reducing dangerous behaviours. At the same time, structured healthcare education and robust institutional support encourage advanced digital health literacy levels, positively contributing to improved behavioural results (33). However, evidence for behavioural changes in other behaviours, such as tobacco cessation or medication adherence, remains inconsistent (34). Constant messaging on the risks that alcohol consumption poses to breast cancer risk was recommended to get the significant attention of young ladies so they can reduce it and potentially reduce the chances of having cancer (35).

Theoretical Framework

Drawing upon the Health Belief Model (HBM), Elaboration Likelihood Model (ELM), and the Uses and Gratification Theory (UGT), this study investigates how digital media campaigns have influenced Nigerian young women's perception of breast cancer and subsequent behavioural changes. The HBM was propounded in the 1950s by social psychologists Hochbaum, Leventhal, Kegeles, and Rosenstock, and is widely documented around health behaviour research. The HBM posits that two major factors influence health behaviour: the worth of avoiding ailments and the belief that precise health activities will either avert or heal ailments (36). The model emphasises how perceived susceptibility, severity, benefits, barriers, and self-efficacy are critical for

shaping young women's perceptions of breast cancer risks and their behavioural responses to digital media campaigns.

Similarly, the Elaboration Likelihood Model (ELM) explains how people process messages and the likelihood that persuasion will occur (37). The model explains two routes to persuasion, which include central route (cognitive and logical processing of messages) and the peripheral route (emotional and other cues outside of the message content). This model helps the study to understand if young women are influenced by digital media campaign messages, as well as the credibility of these digital media sources.

Lastly, the Uses and Gratification Theory (UGT) (38), explains why people seek out specific media content and how it satisfies their needs. The theory postulates that media audiences consume media content that satisfies their needs. They get gratification from the media or media channels that satisfy these needs by always accessing their information. UGT justifies this study by acknowledging the role of young women as active media consumers who pursue needs or desires through their interaction in cyberspace. The postulations of this theory suit the study because it shows that young women in recent times are more attached to their digital devices and will likely look for information to satisfy their needs on digital media. This research will investigate how their involvement with the campaign can represent these needs for information, social support or comfort in terms of reassurance and identity. By investigating how the campaign content affects their understanding of breast cancer, beliefs towards preventive measures and, in turn, behaviours such as breast self-examinations, this study will be able to identify whether the campaign is successfully meeting these needs while inspiring positive action within individuals' patterns of digital media consumption.

Methodology

The study employed a mixed methods approach comprising qualitative and quantitative data to achieve its objectives. This method is helpful for

gathering in-depth data about a phenomenon from respondents. Quantitative data was collected using a structured online survey, while qualitative data was gathered through a Focus Group Discussion (FGD) session. The study population comprised female undergraduates from Bowen University, Iwo, Osun State, Nigeria. Statistics from the Office of the Directorate of Students Support Services (DSSS) of the University reveal a total of 2852 female students as of January 2025. Hence, quantitative data was gathered from 369 female students using stratified and convenience sampling techniques. The respondents were stratified according to their Colleges in the University, and data was gathered from students across the 6 Colleges on Campus (College of Agriculture, Engineering and Science; College of Law; College of Computing and Communication Studies; College of Liberal Studies; College of Environmental Science, and College of Health Sciences). Additionally, qualitative data was gathered from a Focus Group Discussion with 8 students. Data was gathered concurrently, and results were merged and discussed. The quantitative data comprised statements ranked on the Likert Scale where respondents selected from options ranging from Strongly Agree, Agree, Neutral, Disagree, and strongly disagree and were analysed using SPSS version 26 and presented using descriptive and inferential statistics. Also, qualitative data was analysed using an explanation-building approach. Ethical approvals were obtained, and respondents were assured of the confidentiality of the data.

Ethical approvals were granted by the Bowen University Teaching Hospital Research Ethics Committee (BUTHREC). All ethical procedures were explained to the respondents and voluntary participation was sought. Respondents were assured of anonymity, privacy and confidentiality of data and no known risks involved in the study. In addition, informed consent forms were signed by interested respondents who were willing to participate in the research. Respondents were also informed that they have the right to withdraw their participation from the study at any time.

Results

Table 1 - Respondents Demographic Data

Demography	Data	Frequency	Per cent
Gender	Female	369	100

Age Range	16 – 20 years	275	74.5
	21 – 25 years	80	21.7
College	26 – 30 years	14	3.8
	COCCS	64	17.3
	COLAW	42	11.4
	COLBS	29	7.9
	COHES	140	37.9
	COEVS	4	1.1
	COAES	39	10.6

The results from Table 1 reveal that all respondents for this study were female, which aligns with the study's objectives. Also, most of the respondents (74.5%) are between the age range of 16 – 20 years, which is the typical age range of the average undergraduate in Nigeria, while there are respondents from 21 – 25 age range (21.7%) and 26 – 30 years (3.8%). These respondents are young, mostly from the generation Z (Gen-Z) and are regarded as digital natives (literate). Since the study was conducted among female undergraduates at Bowen University, Iwo, Nigeria, the results reveal a spread of respondents from all Colleges within the University. For instance, most of these respondents (37.9%) were from the College of Health Sciences (COHES), while the least respondents (1.1%) were from the College of

Environmental Sciences (COEVS). Other respondents included 17.3% from the College of Computing and Communication Sciences, 11.4% from the College of Law (COLAW), 7.9% respondents from the College of Law Liberal Studies (COLBS), and 10.6% respondents from the College of Agriculture Engineering and Science (COAES).

The Frequency of Young Women's Exposure to Digital Media Campaigns on Breast Cancer

This objective aimed to understand the frequency of respondents' exposure to digital media campaigns. Quantitative results are presented in Table 2, while qualitative data are also explained:

Table 2: Frequency of Young Women's Exposure to Digital Media Campaigns on Breast Cancer

Statement	SA	A	U	D	SD	Mean	Standard Dev. (SD)
I often see breast cancer awareness posts or advertisements when I scroll through social media platforms.	74 (20%)	163 (44.2%)	77 (20.9%)	39 (10.6%)	16 (4.3%)	3.65	1.05
I often watch videos or stories about breast cancer on digital media platforms	84 (22.8%)	232 (62.9%)	31 (8.4%)	17 (4.6%)	5 (1.4%)	4.01	.78
I regularly receive email newsletters or notifications related to breast cancer awareness campaigns.	27 (7.3%)	74 (20.1%)	247 (66.9%)	15 (4.1%)	6 (1.6%)	2.27	.72
I often notice influencers discussing breast cancer awareness on digital platforms.	23 (6.2%)	48 (13%)	49 (13.3%)	243 (65.9%)	6 (1.6%)	2.62	.84

Grand mean score = 3.78

Key: SA-Strongly Agree; A-Agree; D-Disagree; SD-Strongly Disagree; U-Undecided

Decision Rule: If the mean score is between 0 and 1.89, the degree of perception is very low; 1.90 - 2.69 is low; 2.70 - 3.49 is moderate; 3.50 - 4.29 is high; and 4.30-5.00 is very high (39)

The data from Table 2 reveals the frequency of respondents' exposure to digital media breast cancer campaigns. The results show that there are more respondents (64.2%) who often see digital media posts on breast cancer when they scroll through social media platforms, as opposed to 14.9% of respondents who do not. The mean rating of 3.65 implies a *high* agreement with the statement. While there is a high agreement, it should be noted that 20.9% of respondents remain undecided. Furthermore, the data from Table reveals that more respondents (85.7%) agree that they watch videos or stories about breast cancer on digital media. Also, a mean rating of 4.01 indicates a *high* agreement with the statement. This implies that the prevalence of informative campaigns suggests a high quality of educational content within them, fostering knowledge acquisition by the target audience.

Furthermore, data from Table 2 reveals that although 27.4% of respondents regularly receive emails or newsletters related to breast cancer awareness, there are 5.7% of respondents who do not. However, there are more respondents (66.9%) who are Undecided. A mean score of 2.27 implies a very low agreement. Hence, fewer respondents regularly receive email, newsletters, or other notifications related to breast cancer awareness campaigns. Lastly, the results also revealed that more respondents (67.5%) do not notice social media influencers discussing breast cancer awareness on digital platforms, as against 19.2% of respondents who agree. A mean score of 2.62 also implies a very low perception. Hence, digital influencers must do more to increase awareness of breast cancer campaigns on social media platforms.

Qualitative data from the focus group discussions also reveal responses similar to those of the survey. For instance, the discussants agreed to have seen digital media campaigns about breast cancer and breast self-examinations (BSE). Although the frequency may not be often, they have at some point seen breast cancer-related messages. One of the participants revealed that "I have come across videos and pictures about breast cancer before, particularly around Breast Cancer Awareness month. I see videos on Tiktok, Instagram, I also see threads on X about breast

cancer" (Participant A, focus group discussion, 2025). Similarly, another participant noted that:

I do see videos and pictures as well talking about breast cancer, but it mostly comes up during Breast cancer awareness month around October" (Participant B, Focus group discussion, 2025)

This response shows that Breast Cancer Awareness Month is a useful time to discuss breast cancer. However, beyond this time, awareness should be done more often. Another respondent, while discussing the role of social media influencers, noted that:

There was a time I saw a video of Aproko Doctor on my Instagram where he was talking about the different sizes of breast, comparing it to oranges and how to examine them properly" (Participant E, focus group discussion, 2025)

The quantitative and qualitative data reveal similar patterns. One is that respondents are active social/digital media users who observe posts. Additionally, they have, at one point or another, seen digital media campaigns and awareness of breast cancer. Although the frequency is high, especially through social media platforms, more work must be done using emails and other similar newsletter notifications. This helps to create awareness using the same digital media.

Effectiveness of Digital Media Campaigns in Enhancing Breast Cancer Awareness

The study further examined the effectiveness of these digital media campaigns in enhancing breast cancer awareness among young women. The quantitative findings are presented in Table 3, while qualitative data for each corresponding statement is discussed.

Table 3 provides data on the effectiveness of digital media campaigns in enhancing breast cancer awareness among the respondents. The data reveals that an overwhelming majority of 86.7% of the respondents believe that breast cancer is preventable because of their exposure to awareness via digital media. A mean rating of 4.66 indicates a very high agreement with the statement.

Table 3 - Effectiveness of Digital Media Campaigns in Enhancing Breast Cancer Awareness among Young Women

Statement	SA	A	U	D	SD	Mean	Standard Dev.(SD)
I believe that breast cancer is preventable due to my exposure to digital media campaigns.	297 (80.5%)	23 (6.2%)	47 (12.7%)	1 (.3%)	1 (.3%)	4.66	.72
I am confident in my ability to identify potential signs of breast cancer after seeing breast cancer campaigns on digital media	92 (24.9%)	179 (48.5%)	52 (14.1%)	45 (12.2%)	1 (.3%)	3.86	.94
Digital Media campaign portrays a realistic picture of breast cancer.	189 (51.2%)	111 (30.1%)	66 (17.9%)	1 (.3%)	2 (.5%)	4.31	.80
Digital media campaigns have increased my knowledge about breast cancer	144 (39%)	119 (32.2%)	102 (27.6%)	2 (.5%)	2	4.10	.90
Overall, digital media makes me feel more empowered about my breast health	248 (67.2%)	61 (16.5%)	5 (1.4%)	3 (.8%)	52 (14.1%)	4.21	1.40

Grand Mean score =4.22

Key: SA-Strongly Agree; A-Agree; D-Disagree; SD-Strongly Disagree; U-Undecided

Decision Rule: If the mean score is between 0 and 1.89, the degree of perception is very low; 1.90 - 2.69 is low; 2.70 - 3.49 is moderate; 3.50 - 4.29 is high; and 4.30-5.00 is very high (39)

Hence, digital media awareness of breast cancer can prove effective. Similarly, qualitative data from the FGD session reveals that all participants agreed that breast cancer is preventable and there are cures for it through lifestyle changes. For instance, one of the participants noted that:

Before I started following breast cancer awareness campaigns on social media, I had no idea that lifestyle changes could reduce their risks. The info graphics about regular exercise and maintaining a healthy weight, all of which I saw on social media, really opened my eyes. As a result, I truly believe these preventative measures can make a difference" (Participant D, FGD, 2025).

Additionally, quantitative data from Table 3 reveals that 73.4% of the respondents agree that they are confident in identifying potential signs of breast cancer due to breast cancer campaigns via digital media. A mean score of 4.31 also indicates very high agreement with the result. However, 14.1% of the respondents are undecided. The results imply high confidence ability among most of the respondents, which also indicates that there is more work to be done for those undecided.

Similarly, the findings of the qualitative data also reveal that 7 out of the 8 FGD participants believe that they could identify signs of breast cancer due to pictures and videos from social media platforms on breast cancer awareness. For instance, one of the participants stated that:

That interactive tutorial on Instagram showing what to look for

during a self-exam was incredibly helpful. It was not just text—they used real images and video demonstrations that made me feel more confident. Now, I know the difference between normal breast tissue changes and potential warning signs. The digital campaign removed the mystery and gave me practical knowledge I can use (Participant A, FGD, 2025)

Another respondent stated that:

I saw mine on Twitter, where Aproko Doctor (a popular Twitter influencer and Dr Olujemisi explained these signs. Although they did not use real humans, they had toys and other illustrations to show us the signs and symptoms of breast cancer in women. (Participant C, FGD, 2025)

Furthermore, the data from Table 3 reveals that an overwhelming majority of 81.3% of respondents agree that digital media often portray realistic pictures of breast cancer. A mean score of 4.31 shows a very high agreement with the data. Hence, digital media campaigns can help show realistic pictures that women can identify with.

What I appreciate most about today's digital campaigns is their honesty. They show real survivors with real stories and messages of hope. The documentary-style video series I watched on YouTube featured women from different backgrounds discussing their diagnosis, treatment side effects, and recovery process. It was not sugar-coated but balanced with factual information about survival rates and treatment advances. This realistic portrayal helped me understand the disease better than any pamphlet ever could. (Participant E, FGD, 2025)

Also, results show that 71.2% of the respondents agree that digital media campaigns increased their knowledge about breast cancer, while surprisingly, 27.6% of the respondents are undecided. A mean score of 4.10 reveals a high agreement rate with the data. This implies that although digital media

can be effective, further targeted campaigns should still be done to increase knowledge of breast cancer.

A follow-up question was asked to FGD participants to further test their knowledge level of breast cancer. Their responses revealed good knowledge of breast cancer and its signs. For instance, one of the respondents noted that:

Breast cancer is a disease that has to deal with an incurable growth in the breast of a woman. People always mention chemotherapy and all, but I heard it is also very expensive and that makes it hard to pay for (Participant C, FGD, 2025)

Another participant notes that:

Breast cancer, as said before, is a disease that is caused by a very painful growth in the breast of a woman. This can make the person's breast become sour and very big if it is not taken care of. The breast cancer awareness video series I followed on TikTok completely transformed my understanding of the disease. Before, I only knew about the importance of breast self-examination, but through these short, informative videos, I learned about genetic factors, environmental risks, and early detection techniques beyond just breast self-examination. What made these digital campaigns effective was how they broke down complex medical information into simple content that I could revisit at any time (Participant D, FGD, 2025)

However, one of the respondents who were unsure about breast cancer information through digital media campaign opines that:

I have seen countless breast cancer awareness posts online, but I'm still unsure if they've increased my knowledge in any meaningful way. There's just so much content out there, and it's hard to know what information to trust. Some campaigns focus exclusively on emotional stories without providing actionable health information, while others throw so many statistics at

you that it becomes overwhelming.
(Participant H, FGD, 2025).

Overall, the data shows that digital media makes an overwhelming majority of the respondents, 83.7%, feel more empowered about their breast health. However, 14.1% of the respondents disagree. Nonetheless, a mean score of 4.21 implies a high agreement with the data. This shows the power of digital media campaigns about respondents' breast health. Nevertheless, the data shows that more awareness must be carried out, as some disagree.

Impact of Digital Media Campaigns on Influencing Behavioral Changes Related to Self-Breast Cancer Screening and Early Detection Practices

Lastly, the study examined the impact of these breast cancer media campaigns in influencing behavioral changes such as self-screening and early detection practices among respondents. Quantitative data are explained in Table 4, while qualitative data responses are merged with corresponding quantitative data.

Table 4: Impact of Digital Media Campaign on Respondents' Breast Cancer Behavior

Statement	SA	A	U	D	SD	Mean	Standard Dev. (SD)
I believe young girls should begin breast self-examination at the age of 14.	246 (66.7%)	56 (6.2%)	10 (2.4%)	57 (15.4%)	0	4.33	1.10
After viewing breast cancer awareness on social media, I am confident in conducting the self-breast examination.	92 (24.9%)	59 (16%)	209 (56.6%)	8 (2.2%)	1 (.3%)	3.43	.90
Digital media content about breast cancer has taught me specific techniques for conducting effective self-examinations that I now practice.	74 (20.1%)	126 (34.1%)	103 (27.9%)	56 (15.2%)	10 (2.7%)	3.53	1.06
Information from digital media campaigns on breast cancer has motivated me to discuss screening options with a specialist	286 (77.5%)	23 (5.7%)	51 (14.4%)	8 (2.2%)	1 (.3%)	4.66	.70
Digital media campaigns have influenced me to speak with family or friends about breast cancer and breast self-examination.	39 (10.6%)	301 (81.6%)	21 (5.7%)	4 (1.1%)	4 (1.1%)	3.99	.60

Grand Mean score =4.02

Key: SA-Strongly Agree; A-Agree; D-Disagree; SD-Strongly Disagree; U-Undecided

Decision Rule: If the mean score is between 0 and 1.89, the degree of perception is very low; 1.90 - 2.69 is low; 2.70 - 3.49 is moderate; 3.50 - 4.29 is high; and 4.30-5.00 is very high (39)

Data from Table 4 shows the impact of digital media campaigns on respondents' breast cancer behaviours. The results reveal that 72.9% of

respondents believe that young girls should begin breast self-examination from the age of 14 or whenever they begin to develop breasts. Although

15.4% of respondents disagree, only 2.4% of the respondents are undecided. A mean score of 4.33 implies a very high degree of perception of the result. Hence, young girls should begin breast self-examination at an early age (14 years or whenever they start to develop breasts).

Additionally, the data reveals that 40.9% of the respondents agree to be confident in conducting self-breast examinations after viewing breast cancer awareness on social media. However, 56.6% of the respondents are undecided. Also, a mean score of 3.43 indicates a *moderate* perception of the results. The data, therefore, implies that although there are respondents who are confident in self-examining their breast health, there are more who are undecided. This further implies that more awareness and building confidence in self-examining breast health are important.

Furthermore, the results from Table 4 reveal that more respondents, numbering 54.2%, agree that digital media content about breast cancer has taught them specific techniques for conducting effective breast self-examination, while 27.9% are undecided. A mean score of 3.53 indicates a *high* degree of perception of the result. This further implies that although digital media creates breast cancer awareness and teaches specific techniques, there are fewer people who have full confidence to self-examine.

It is this same Aproko Doctor who made me know how to perform breast self-examination in the video on Instagram, where he likened breasts to oranges and showed how the hand moves gently around the nipple and other areas of the breast with my fingers to check for lumps in my breast. Ever since then, I do it once a month every month. (Participant B, FGD, 2025).

In addition, another participant states that:

It is as if all of us are talking about this Aproko Doctor because I remember one of his videos that gave me confidence in identifying some of the signs of breast cancers in a video, I saw on Tiktok where he explained the "orange peel" type of formation on the breast and how secretion of liquid from the breast

could be signs of breast cancer. Since then, I started checking for those signs and that made me start conducting breast self-examination as well. (Participant D, focus group discussion, 2025)

Despite the lack of confidence to self-examine the breast, most respondents (83.2%) agree that the breast cancer information they receive through digital media campaigns has motivated them to discuss screening options with specialists. Also, a mean score of 4.66 indicates a *very high* perception of the results. This further implies that although more respondents may not have confidence in their abilities to self-check, however, they are motivated to discuss with specialists about their breast health.

The qualitative data revealed that digital media campaigns have remarkably impacted their overall breast health because they can visit specialists. One participant states thus:

Well, I remember seeing a specialist just for a regular check-up on my breast after I had heard Aproko Doctor say, "Go and see a specialist!!!" several on Instagram during Breast Cancer Awareness month and seeing that it is okay to open up and talk to someone about my breast. This made me feel the need to speak up. It took a while for me to get comfortable and it had to be a female specialist (participant F, FGD, 2025)

This response emphasizes the importance of regular information dissemination and clear calls to action in spurring the participant to take action about her health. It implies that recurring messages with clear calls to action actually inspire women to take action.

Lastly, the results from Table 4 reveal that an overwhelming majority of 92.2% of the respondents agree that they are persuaded to reach out to family and friends and receive support. A mean score of 3.99 indicates a high perception of the results.

Discussion

Frequency of Young Women's Exposure to Digital Media Campaigns on Breast Cancer

The respondents for this study are mostly young women, mainly between 16 – 25 years. This age range represents those born from late 1990s till mid-2000s, and is characterized by the global spread of the internet and advanced technological use such as smartphones. These respondents are young, mostly from the generation Z (Gen-Z) and are regarded as digital literates - a term used to describe those with access to latest technological tools and high-speed internet. Research suggests that digital literates have better academic performance, greater employability and enhanced civic engagement (40-42). This is due to their access to diverse digital information and adaptability to evolving technologies. Research has shown that young women of this age range are prone to having lumps in their breasts, which can develop to cancer if not checked (43, 44). More specifically, young black women are nearly twice as likely to be diagnosed with triple-negative breast cancer (TNBC), an aggressive subtype without many treatment options (43). Nevertheless, the findings reveal that young women have significant exposure to breast cancer awareness content on digital media platforms, particularly through social media posts (64.2%) and video content (85.7%). However, exposure through email newsletters (27.4%) and influencer content (19.2%) is notably lower. The grand mean score of 3.78 indicates a high overall exposure level, suggesting that digital platforms effectively reach the target audience. These findings align with previous research indicate that social media has become a dominant channel for health communication among young adults (45). Digital media platforms provide unprecedented opportunities for disseminating health information due to their widespread use among younger demographics. The high exposure through video content (85.7%) supports the growing preference for visual health communication, which is more engaging and memorable than text-based content. Additionally, these digital media campaigns are often disseminated mainly through info graphics on Instagram and TikTok, short skits by digital influencers mainly through Twitter (e.g. Aproko Doctor) and educational content on YouTube.

The qualitative data further reveals that exposure is particularly heightened during Breast Cancer Awareness Month (October), suggesting that

concentrated campaign periods effectively increase visibility. However, the seasonal nature of exposure indicates a potential gap in year-round awareness efforts, which may limit sustained knowledge and behavior change. The Health Belief Model (HBM) provides a theoretical framework for understanding these exposure patterns. According to the HBM, individuals are more likely to engage with health information when they perceive the relevance and severity of a health threat. The concentrated exposure during awareness months likely leverages the "cues to action" component of the HBM, where external triggers prompt attention to health threats. The lower engagement with influencer content (19.2%) suggests that perceived credibility—another key element of the HBM—may be influencing which sources young women trust for breast cancer information.

The UGT theory also suggests that young women engage with these campaigns to fulfil their informational needs and satisfy social desires for connection and belonging. This engagement deepens their knowledge and awareness of breast health, reflecting a broader trend towards utilizing digital platforms for health education and awareness.

Effectiveness of Digital Media Campaigns in Enhancing Breast Cancer Awareness

The study findings demonstrate that digital media campaigns greatly enhance breast cancer awareness among young women, thereby suggesting an agreement with the Elaboration Likelihood Model (ELM). An overwhelming majority (86.7%) believe breast cancer is preventable due to digital media exposure, an extension of the perceived credibility of the message source. Similarly, 73.4% report confidence in identifying potential signs of breast cancer, and 81.3% believe digital media portrays realistic pictures of breast cancer. These findings support existing research on the effectiveness of digital health communication (46). This research showed that well-designed digital campaigns can increase health knowledge and self-efficacy by providing accessible, engaging, and relatable content. The high perception (81.3%) that digital media portrays realistic pictures of breast cancer is particularly significant, as authenticity has been identified as a critical factor in effective health

communication (Table 3). The qualitative data provides deeper insights into the mechanisms of this effectiveness. Participants highlighted the value of visual demonstrations, real survivor stories, and practical information that "removed the mystery" around breast cancer. Again, the cognitive engagement component of the ELM is revealed through this finding. This suggests that digital media's multimodal nature—combining text, images, videos, and interactive content—contributes significantly to its effectiveness in health education. From a theoretical perspective, these findings align with several components of the Health Belief Model. The high confidence in identifying breast cancer signs (73.4%) reflects enhanced perceived self-efficacy, a key predictor of health behaviour adoption, according to the HBM. The realistic portrayal of breast cancer contributes to accurately perceived severity and susceptibility—two critical variables in the HBM that influence health decision-making. These findings are consistent with previous research, which emphasises the role of digital media in disseminating health information effectively and fostering positive reactions among audiences (47). Overall, respondents trust in digital media enhances their confidence in digital media content. However, the data also reveals that 27.6% of respondents remain undecided about whether digital media has increased their knowledge about breast cancer. This suggests that information overload or conflicting messages may hinder effective knowledge acquisition for some individuals, highlighting the need for more targeted and consistent messaging strategies (Table 3). Also, the UGT explains how digital media campaigns can influence young women's perception of breast cancer by looking at why they engage with the Campaigns in the first place. Young women might be seeking information, a need fulfilled by campaigns offering clear explanations of self-awareness and early detection. Furthermore, UGT highlights the social aspect. Interactive elements like forums can foster a sense of community and shared experience, empowering young women and potentially leading to a more positive perception of the situation and motivating them to take action.

Impact of Digital Media Campaigns on Influencing Behavioral Changes

The findings regarding behavioral impact reveal

mixed results. While 72.9% of respondents believe young women should begin breast self-examination early (age 14), only 40.9% report confidence in conducting self-examinations after viewing breast cancer awareness content on social media, with 56.6% remaining undecided. This gap between awareness and behaviour reflects a common challenge in health promotion. More positively, 54.2% report that digital media has taught them specific examination techniques, and 83.2% are motivated to discuss screening options with specialists. Additionally, 92.2% are persuaded to discuss breast cancer with family and friends, indicating a strong potential for social diffusion of awareness shown in Table 4.

These findings correspond with existing research on the impact of behavioural change on digital health campaigns (47). Studies have demonstrated that digital interventions can effectively motivate initial awareness and intention to act but may be less effective at sustaining complex behavioural changes without additional support mechanisms. The high motivation to discuss screening with specialists (83.2%) suggests that digital media campaigns may be particularly effective at prompting healthcare-seeking behaviours, which require less sustained self-efficacy than regular breast self-examination practices.

The Health Belief Model provides valuable insights into these behavioural impacts. The gap between awareness and breast self-examination confidence aligns with HBM's emphasis on perceived barriers and self-efficacy as critical determinants of behaviour adoption. While digital media appears effective at addressing perceived severity and susceptibility (awareness components), it may be less effective at overcoming perceived barriers and building the self-efficacy needed for regular breast self-examination.

The qualitative data highlights the impact of specific influencers (particularly "Aproko Doctor") who provide concrete demonstrations and clear calls to action. This finding underscores the importance of message specificity and actionable guidance in translating awareness into behaviour change. The repeated mentions of this influencer across multiple participants suggest that trusted messengers can be crucial in bridging the awareness-behavior gap. These findings are consistent with existing literature, such as (36), which highlights the role of social media in

increasing awareness and knowledge about BSE, although the direct impact on behavior varies. The HBM, ELM and UGT theory provide theoretical support, explaining how these campaigns serve as cues to action and fulfil the desire for knowledge among young women, thereby normalizing and promoting BSE practice.

Conclusion

This study examined young women's perceptions and behaviors toward digital media campaigns on breast cancer, focusing on exposure frequency, awareness effectiveness, and behavioural impact. The findings reveal that digital media campaigns are highly effective channels for breast cancer awareness among young women, with a powerful impact through social media platforms and video content. The study demonstrates that these campaigns significantly enhance awareness and knowledge about breast cancer, with most respondents reporting high confidence in their understanding of the disease and its prevention. Digital media's ability to present realistic portrayals of breast cancer through survivor stories and visual demonstrations appears to be particularly effective in building this awareness. However, the research also identifies a notable gap between awareness and behavioural adoption, particularly regarding regular BSE practices. While digital campaigns effectively motivate healthcare-seeking behaviours and discussions with family and friends, they appear less effective at building the sustained self-efficacy needed for regular breast self-examination. Thus, digital media campaigns represent a powerful tool for enhancing breast cancer awareness among young women, with significant potential to motivate preventive behaviours. By addressing the identified gaps between awareness and action, these campaigns can further strengthen their contribution to early detection and improved breast cancer outcomes.

Several practical implications emerge from the study. First, healthcare communicators should leverage the strengths of digital platforms, particularly social media and video content, while expanding year-round awareness efforts beyond Breast Cancer Awareness Month. Second, campaigns should incorporate more interactive elements and specific, actionable guidance to bridge the awareness-behavior gap. Third, the

influence of trusted messengers and clear calls to action highlights the potential value of influencer partnerships in breast cancer communication. The study's findings also support the UGT and HBM, which suggest that digital media campaigns can affect the consumer's behaviour through frequent calls to action, the trust one already has for the medium, and the benefits of performing such health practices. This could be seen as respondents claimed to conduct breast self-examination after seeing campaign messages.

The study recommends that public health organizations can create digital media initiatives for young women by developing strategic messages, specific to different age groups and sent through targeted digital media platforms. This content could be tailored to the strengths of each platform, such as short videos, infographics, short educational YouTube videos, etc. Furthermore, for more positive engagement and effectiveness of media use, the study recommends that health promotion experts increase campaign frequency on these digital platforms and not only limit it to Breast Cancer Awareness Month alone. Also, health message designers should incorporate more relatable and interactive content featuring real-life breast cancer survivors to promote realistic hope and belief in survival, emphasising awareness and preventive measures alongside negative aspects of the disease. In addition, health communication experts should include interactive campaign elements like quizzes and peer discussions and emphasise the demonstrative aspect of the BSE.

Abbreviations

BSE: Breast Self-Examination, ELM: Elaboration Likelihood Model, HBM: Health Belief Model, TNBC: Triple-Negative Breast Cancer, UGT: Uses and Gratifications Theory.

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Author Contributions

All the authors contributed to the study from conception, writing, reviewing, methodology, data curation, analysis, proofreading and editing.

Conflict of Interest

There is no conflict of interest among the authors.

Ethics Approval

The study received the required institutional approval (BUTH/REC-2639) and all participants provided informed consent for their participation in this study.

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