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Article *in* Trends in Psychology · August 2023

DOI: 10.1007/s43076-023-00327-2

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ORIGINAL ARTICLE

Complementary and Alternative Medicine Use by Ghanaian Patients with Breast Cancer

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Accepted: 18 August 2023

Abstract

Complementary and alternative medicine (CAM) is widely used by Ghanaian patients with breast cancer. We explored the experiences of CAM use among women with breast cancer. Twelve women participated in individual in-depth interviews. Data were analysed using reflexive thematic analysis anchored in the social constructivist paradigm. Findings show that most participants viewed CAM use (i.e., herbal medicine and faith healing) as a *lost cause*. In other words, participants' accounts suggested that CAM use for treating breast cancer had little or no chance of succeeding. Our findings highlight the public health consequences of using herbal medicine and faith healing for treating breast cancer. They also highlight the complexity of the breast cancer experience for Ghanaian patients and provide opportunities for health literacy promotion. Additional studies are needed to identify the scope of the risk factors associated with CAM use for treating breast cancer in Ghana.

Keywords Breast cancer · Complementary and alternative medicine · Herbal medicine · Faith healing

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Published online: 29 August 2023

Introduction

Conventional treatment for breast cancer includes surgery, chemotherapy, radiotherapy, immunotherapy, endocrine therapy, and targeted therapy (see Costa et al., 2020; Nounou et al., 2015) and are available in Ghana. Despite this, complementary and alternative medicine (CAM) use among Ghanaian women with breast cancer remains common and widespread (see Clegg-Lamptey et al., 2009; Mburu et al., 2021). The World Health Organisation (WHO) describes CAM as "a broad set of health care practices that are not part of that country's tradition or conventional medicine and are not fully integrated into the dominant health-care system" (WHO website at https://www.who.int/health-topics/traditional-complementary-and-integrative-medicine#tab=tab_1). Various types of CAM exist for cancer treatment. They include, but are not limited to, relaxation, homeopathy, hypnotherapy, aromatherapy, reflexology, meditation/mindfulness, yoga, acupuncture, herbal medicine, dietary supplements, medicinal mushrooms, and faith healing (see Calcagni et al., 2019; Greenlee et al., 2017; Jeitler et al., 2020; Posadzki et al., 2013; Shneerson et al., 2013).

Keene et al. (2019) systematically reviewed the evidence on CAM use in cancer treatment and care in order to determine the prevalence and demographic profiles of CAM users. They included 61 cancer studies with a total sample size of 21,249. Of this sample, 51% reported using CAM to treat cancer. They found that younger age, being a female cancer patient, earning higher income, and having higher education were predictors of CAM use. Keene et al. (2019) noted that the motivations for CAM use included improving general health and reducing complications associated with chemotherapy. In a study assessing the patterns of CAM use among 282 breast cancer patients from 11 countries in Europe, Molassiotis et al. (2006) found that 44.7% of the sample reported using CAM since their diagnosis with breast cancer. They found that the most common CAMs used included herbal medicine, spiritual healing, homeopathy, relaxation techniques, medicinal teas, and vitamins/minerals. Of these CAMs, 46.4% of the patients reported using herbal medicine. The researchers noted that only 6.5% of the sample reported dissatisfaction with CAM use. Based on the results, they concluded that high usage of CAM by patients with breast cancer could have serious implications for clinical management of the disease (Molassiotis et al., 2006).

Bazrafshani et al. (2019) investigated the prevalence and predictors of herbal medicine use among 315 Iranian breast cancer patients. They found that 84.1% of the sample reported using herbal medicine during chemotherapy but only 16.1% discussed herbal medicine use with their physicians. They observed that living in an urban area was a predictor of herbal medicine use. The researchers concluded that because herbal medicine use among breast cancer patients was common, physicians should engage patients on CAM use during chemotherapy. Tautz et al. (2012) investigated CAM use and information and communication needs of breast cancer patients in oncology settings in Germany. They found that patients were not willing to discuss CAM use with medical oncologists but instead relied heavily on family and friends or general practitioners or the mass media for their

information needs. The researchers concluded that oncologists must be trained to engage patients on CAM use in conventional oncological care. Ashikaga et al. (2002) examined the prevalence and patterns of CAM use among 148 breast cancer patients in Vermont, USA. They found that 72.3% of the patients reported using at least one CAM following surgery. Ashikaga et al. (2002) observed that the most common CAMs used by the sample were herbal treatments, meditation, traditional massage, vitamins, and non-food supplements.

In addition, Hill et al. (2022) studied the prevalence of and reasons for using traditional, complementary, and alternative medicine (TCAM) by 263 adult cancer patients in Malawi. Hill et al. (2022) found TCAM prevalence to be 84%, whereas 60% of the patients reported combining TCAM use with conventional cancer treatment. They observed that 64% of the patients reported using faith-based healing, and 56% reported using herbal medicine. They called for additional studies to identify the risk factors and the benefits associated with TCAM use for treating cancers. Moreover, Choi et al. (2022) investigated prevalence of traditional and complementary medicine (TCM) use such as Ayurveda and yoga among Nepalese cancer patients. They found a widespread use of TCM by the patients and observed that cancer type, cancer stage, and patient's self-rated disease severity influenced TCM use in the sample. They noted that most Nepalese TCM users obtained information about TCM from informal sources such as family and relatives and refused to disclose their use to their doctors. Choi et al. (2022) concluded that physicians should seek information on TCM use by patients during routine patient assessments to ensure patient safety.

Nejat et al. (2022) found high prevalence of CAM use among Iranian breast cancer patients such as yoga, prayer therapy, medicinal plants, and visiting holy places. They observed that while most patients (73.2%) were using CAM to improve physical conditions, and 25% used it to reduce pain, other patients (61.4%) combined its use with conventional cancer treatment. Participants reported visiting holy places, using yoga, prayer therapy, medicinal plants, and special diets. They called for educational campaigns on the use of spiritual therapies, yoga, medicinal plants, and diet therapy among Iranian cancer patients and healthcare professionals. Other work among 864 cancer patients in Poland found that most patients (91%) reported using CAM as complementary therapy, whereas 9% reported using it as alternative therapy in order to strengthen their immune system, improve well-being, and to reduce the side effects associated with conventional medicine use (Kasprzycka et al., 2022). In a cross-sectional study among 95 women with breast cancer in Saudi Arabia, Albabtain et al. (2018) found that 81.1% of the patients reported using CAMs such as spiritual therapy (70.5%), honey (36.8%), olive oil (24.2%), and herbal medicine (23.2%) for treating cancer. They concluded that healthcare providers should discuss CAM use with breast cancer patients to assess possible benefits and risk factors. Other review works have reported the high prevalence of CAM use in general and clinical populations in the Association of Southeast Asian Nations (ASEAN, Peltzer & Pengpid, 2015), and among cancer patients in low income and lower-middle income countries (Hill et al., 2019).

In Ghana, the commonly used CAM by women with breast cancer includes traditional herbal medicine, prayer, and faith healing (see Brinton et al., 2017; Mburu

et al., 2021). In a study among 117 women with breast cancer presenting at a teaching hospital in Ghana, Obrist et al. (2014) found that seeking treatment with traditional healthcare providers was one of the major risk factors preventing women from seeking conventional treatment. The authors called for interventions to address the cultural and religious factors preventing women with breast cancer from seeking conventional treatment. In addition, Kugbey et al. (2020) investigated illness perceptions among 11 women receiving breast cancer care in Ghana, using a qualitative research approach. They found that most of the participants perceived their disease to be curable through divine intervention from a Supreme Being aside from conventional treatment. Kugbey et al. (2020) noted that most participants relied heavily on spirituality as a healing and coping resource, and thus called for interventions to be tailored towards the spiritual needs of women with breast cancer. Moreover, Clegg-Lamptey et al. (2009) investigated the reasons for late presentation among 66 newly diagnosed Ghanaian women with breast cancer aged 20 and 84 years. They found that seeking herbal treatment (37.1%) and prayer camp visitation (28.6%) were major reasons for late presentation at conventional treatment facilities. They called for education and counseling among women with breast cancer during diagnosis. Sanuade et al. (2021) reported similar findings.

From this research, it seems clear that most Ghanaian women with breast cancer resort to traditional herbal treatment and faith healing before presenting at conventional treatment facilities in the country. Aside from informing us that most patients with breast cancer consult CAM providers because of the high cost of conventional cancer treatment, this research has not investigated the personal experiences of patients who consulted CAM providers (i.e., herbal medicine and faith healing), which research could illuminate our understanding of the factors motivating them to present finally at a conventional treatment facility. There is therefore a lacuna in the emerging breast cancer literature in Ghana which requires immediate filling. Women with breast cancer may experience misdiagnosis or wrong prognosis while seeking healthcare with providers of herbal medicine and faith healing, which can explain why they present finally at conventional treatment facilities in Ghana (see Agbokey et al., 2019; Mburu et al., 2021). It is also probable that some of the women receive good diagnosis and prognosis from the providers of CAM and thereby remain with the providers without presenting at conventional treatment facilities at all. It appears clear that any effort aimed at understanding the personal experiences of women with breast cancer who consulted providers of traditional herbal medicine and faith healing in Ghana would seem a useful research goal.

We used a qualitative research approach (see Creswell, 2007) guided by the social constructivist and interpretive paradigm (see Schwandt, 1998) to offer our participants the opportunity to provide rich descriptions of their personal experiences with CAM use. This approach would enable them to construct concepts and explanatory models to make sense of their experiences. The social constructivist paradigm also offers research participants opportunities to modify socially constructed knowledge in the light of new experiences (see Gergen & Gergen, 2003). Within the social constructivist paradigm, we expected women with breast cancer to demonstrate similar or different constructions of their interactions with providers of CAM. We also expected the socially constructed meanings of their experiences to occur at the

personal and relational levels. The following research questions guided our study. What are Ghanaian women with breast cancer's experiences with CAM use (i.e. traditional herbal medicine and faith healing) before presenting at conventional treatment facilities? How do presenting Ghanaian women with breast cancer negotiate their treatment with CAM providers? The present study aimed to explore the personal experiences of Ghanaian women with breast cancer who consulted providers of CAM before finally presenting at a conventional treatment facility.

Method

Design

This study used a qualitative exploratory design.

Study setting and participants

A total of 12 women living with breast cancer participated in qualitative interviews. The women were recruited at the Korle Bu Teaching Hospital (KTH), Accra, Ghana. Their ages ranged from 22–69 years. They were outpatients receiving breast cancer treatment at the Oncology Clinic of the hospital. Located in the Greater Accra Region of Ghana, KTH is the third biggest referral centre in Africa (https://kbth.gov.gh/brief-history/). Established in 1923 and considered a centre of excellence in healthcare, KTH has about 2,000 beds, 21 clinical and diagnostic departments and three centres of excellence. The clinical and diagnostic departments include Laboratory and Radiology, Internal Medicine and Therapeutics, Surgery, Trauma and Orthopaedics, Obstetrics and Gynaecology, Anaesthesia, Reconstructive Plastic Surgery and Burns Centre, Child Health, Family Medicine/Polyclinic, Accident & Emergency, Psychiatry, Pathology, Pharmacy, and Accident and Emergency. In addition, KTH provides advanced scientific treatment in various subspecialties such as Oncology, Radiotherapy, Neurosurgery, Cardiothoracic Surgery, Paediatric surgery, Nuclear Medicine, Ophthalmology, Renal, Ear, Nose & Throat (ENT), Dental/Oral maxillofacial, and Dermatology (https://kbth.gov.gh/brief-history/). On average, KTH has a daily outpatient attendance of 1,500 together with 250 inpatient admissions. Note that conventional treatment for breast cancer is not free in Ghana. As an example, a cost-of-illness study in the KTH by Adanu et al. (2022) found the average household expenditure on breast cancer treatment to be USD990.40, with medical cost being (USD789.78), non-medical cost being (USD150.73), and indirect cost being (USD50).

Purposive sampling (see Robinson, 2014) was used to recruit participants with diverse socioeconomic backgrounds regarding age, educational level, employment, marital status, and duration of disease. The inclusion criteria were being a woman, being 18 years of age or older, receiving treatment for breast cancer, and being willing to participate in the study. The exclusion criteria were being below 18 years of age, experiencing too much pain to participate in a study, and being diagnosed

with comorbidity (i.e., the presence of other health conditions in addition to breast cancer). We excluded patients diagnosed with comorbidity because (a) we were not interested in comorbidity data, and (b) comorbidities may be wrongfully attributed to an index condition and breast cancer comorbidities have been shown to affect its symptoms, severity, disease progression, response to treatment, and mortality (see Arneja & Brooks, 2021; Ewertz et al., 2018; Nechuta et al., 2013).

Data Collection

Data were collected through individual in-depth interviews, using a pretested, open-ended, semi-structured interview guide. Participants were specifically asked to recall their experiences during the time they used complementary and alternative medicine (CAM) before presenting at the teaching hospital. Therefore, the interview questions revolved around open exploration of women's treatment-seeking pathways (treatment decision-making), following the detection of lumps in their breast. They were asked, "What next did you do after detecting symptoms of breast cancer?" More specifically, they were asked, "Have you consulted providers of CAM (i.e. traditional herbal medicine or faith healing) before presenting at this hospital?". If a participant responded in the affirmative, we then asked, "How did you decide to seek healthcare with providers of CAM?", and "What was your experience with CAM use?". Participants' responses were probed by the researchers for elaboration when necessary. All interviews were audio-recorded and transcribed. To achieve reflexivity, field notes and memos were kept alongside the recording. Interviews were conducted at the convenience of participants, and suitable locations within the hospital. The interviews were conducted in English, GaDangme, and Twi languages. The first and third authors (ETK and YAAU) are native speakers of GaDangme. The second author (ASG) is fluent in Twi. The interviews lasted between 45 min and 1 h.

Ethics and Patient Consent

Approval for this study was granted by the Ethics Committee for the Humanities (ECH) of the University of Ghana (Ref#: ECH104/16–17). The Medical Directorate of the teaching hospital provided permission to recruit patients. Participants received information about the aims of the study and relevant ethical considerations such as confidentiality of participation and anonymity of responses. Before each interview, each invited participant provided verbal informed consent. The ethical standards followed in this study are consistent with those of the 1964 World Medical Association's Declaration of Helsinki and its later amendments or comparable ethical standards, including the International Committee of Medical Journal Editors' (ICMJE) Recommendations for the Protection of Research Participants.

Data Analysis

Data were analysed using reflexive thematic analysis (Braun & Clarke, 2019, 2021) within the social constructivist paradigm. All the interviews were transcribed by

the researchers (ETK, YAAU, and ASG) and were imported into ATLAS.ti (Friese, 2014), a computer assisted qualitative data analysis software package, for data management and analysis. The inductive coding theory (Braun et al., 2014; Chandra & Shang, 2019) guided the analysis of the interview transcripts. Anchored in the social constructivist paradigm, the inductive coding approach is data-driven and is sometimes referred to as empirico-inductive approach (Bendassolli, 2013; Fardet et al., 2021). The social constructivist paradigm assumes that intersubjectivity will attend the meaning-making process as individuals (e.g., breast cancer patients) construct their own reality and knowledge about their condition. Thus, the inductive coding approach was considered useful for the present analysis because it enabled us to refrain from fitting the interviews into a pre-existing theoretical coding frame. Braun and Clarke's (2006, 2019) six-step reflexive thematic analysis framework is based on the inductive coding theory. The six steps are as follows (a) familiarising oneself with the data, (b) generating initial codes, (c) identifying themes, (d) reviewing themes, (e) defining and naming themes, and (f) writing a research report.

All of the interview transcripts were independently coded by ETK (first author) and YAAU (third author) in ATLAS.ti. Using the six-step reflexive thematic analysis framework outlined by Braun and Clarke (2006), the interview transcripts were carefully read to get a sense of the data, while noting keywords, sentence fragments, and paragraphs that reflected experiences of CAM use (i.e. traditional herbal medicine, prayer, or faith healing). Codes that reflected these experiences were generated and sorted into subthemes to create meaningful units. Next, conceptual thematic codes were generated by regrouping similar and differing subthemes that relate to experiences of CAM use in an iterative process. Throughout the coding process, efforts were made to maintain the contextual relevance of the codes vis-à-vis the original data. To enhance the inter-coder agreement, codes and themes were reviewed and coding discrepancies were resolved through discussion. The review and revision of emergent codes and themes led to one final theme and four subthemes (see Fig. 1). Following this, a set of illustrative quotes were identified to be used to support the themes. The theme and subthemes from the data are presented and illustrated with quotations from the interviews. Quotations are annotated with participant identifiers. All of the participant identifiers used in this study are pseudonyms.

Trustworthiness

To increase the trustworthiness of the findings, the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines (see Tong et al., 2007) were followed. In addition, Lincoln and Guba's (1986) four criteria (i.e. credibility, dependability, confirmability, and transferability) were followed and integrated into the design, development of interview guide, data collection, and data analysis processes as recommended by Schou et al. (2012) and by Forero et al. (2018). The research team comprises two women and one man. The team did not have any interactions with the participants prior to the start of the study. In addition, member-checking was used to request participant feedback on the transcribed data. Member-checking was achieved by returning the transcribed data to four of the participants.

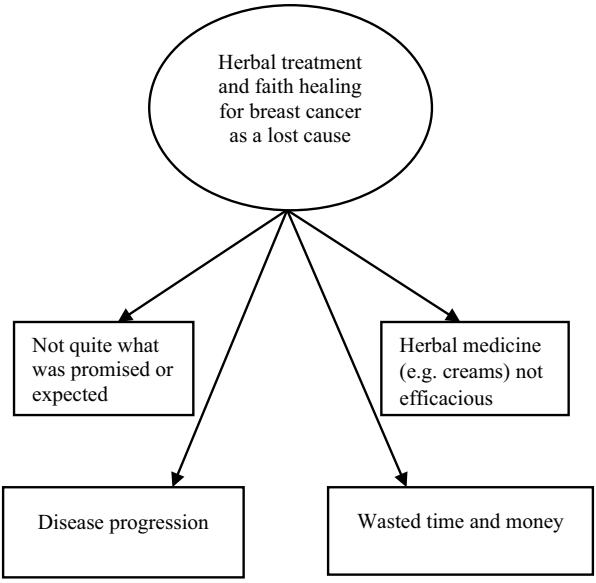

Fig. 1 Thematic map showing final theme and subthemes. Final latent theme is indicated by an oval and subthemes are indicated by rectangles

Further, being qualitative researchers, the researchers are aware of the potential influence their epistemological positions and ontological perspectives can have on the meaning-making process in the study. For this reason, they used bracketing (see Gearing, 2004) to hold in abeyance their internal suppositions such as their personal knowledge, values, experiences, cultural context, and methodological and theoretical orientations during the data collection, analysis, and interpretation. By setting aside their presuppositions, their goal was to unpack the essences of the experience of breast cancer and CAM use to inform praxis.

Findings

Sociodemographic Characteristics of the Participants

Of the 12 participants interviewed, 7 (58.3%) were aged 40–59 years, 3 (25%) were aged 20–39 years, and 2 (16.7%) were aged 60–79 years. For marital status, six (50%) of the participants stated that they were single, 4 (33.3%) were married, and 2 (16.7%) were separated/divorced. In terms of educational qualification, five (41.7%) participants reported having tertiary education, 5 (41.7%) had secondary education, and 2 (16.7%) had basic education. Nine (75%) of the participants self-identified as Christians while 3 (25%) self-identified as Muslims. For employment status, six (50%) of the participants indicated that they were self-employed, 4 (33.3%) were employed, and 2 (16.7%) were unemployed. Regarding living arrangement, most of the participants, 8(66.7%) were living with family whereas the rest, 4

(33.3%) were living alone. In terms of the number of years lived with breast cancer, 5(41.7%) indicated that they were living with breast cancer between 1 and 3 years, 3 (25%) between 4 and 6 years, 2 (16.7%) for than 6 years, whereas 2 (16.7%) were living with it for less than one year. Regarding monthly household income, 5 (41.7%) earned a monthly income of Gh¢1000–1,999, 3 (25%) earned less than Gh¢999 monthly, and 2 (16.7%) earned Gh¢2000–2,999 monthly. Only one participant reported earning greater than Gh¢4000 a month, whereas one person earned Gh¢3000–3,999 per month.

Main Findings

Figure 1 shows the final thematic map generated from the interview data. As can be seen in Fig. 1, one central theme emerged from the data and was supported by four subthemes. The theme and subthemes are presented below.

A Lost Cause

It seemed clear from the accounts of participants who had consulted providers of complementary and alternative medicine (i.e. traditional herbal medicine and faith healing) that they were disappointed because what they expected to happen did not. In other words, most of the participants suggested that they did not receive the cure or healing for which they had consulted providers of CAM, which is why they presented finally at the hospital.

Not Quite what was Promised/Expected

Some of our participants expressed feelings of disappointment in faith healing for breast cancer. Their accounts suggested that the healing promised to them by the faith healers did not happen as promised. Those who expected to receive healing seemed to have had their hopes dashed. Sylvia and Alice recounted their experiences.

> *Some people have that faith because I know a woman who said she knew of a prayer camp and believed in their prayers. She came for me and took me to the prayer camp. She told me that if I attended the prayer meeting just once, I would receive healing. I was at the prayer camp three times but I saw no change in my condition. When I noticed there was no change [breast cancer] I stopped attending. (Sylvia, 28-year-old)*

A patient (Alice) recounted her experience with faith healing in this conversation with the researcher.

> *Researcher:* What next did you do after detecting symptoms of breast cancer?
> *Participant (Alice, 36-year-old):* As for me, when I look at what I have been going through, it makes me feel that mine is spiritual. Initially, I went to see a certain spiritual woman. She showed me the photos of the women and the stages of their breast cancer she had healed. The photos convinced

me that the woman could heal me. You can see from the photos the stages of breast cancer the spiritual woman had healed, it's not small…
Researcher: Did you meet some of those women you saw in the photos there?
Participant: No. The spiritual woman said she takes a photo of a woman's breast during a presentation before healing them and keeps the photos to show to other patients who visit her place. So when I went there she brought the photos to me to see.
*Researcher :*Hmmmm, what happened next?
Participant: So the spiritual woman saw mine [breast], it was swollen but not filled with fluid. It didn't burst, but those I saw in her photos were no joke. However, the spiritual woman said she was able to heal all of them. So she said mine [breast cancer] was so simple for her and that she could heal it easily. I believed her. But she tried to heal mine for weeks but without success. Then she looked at me quietly and told me she felt there was a stone in my breast, and that it was a spiritual thing.

Wasted Time and Money

Most of our participants indicated that seeking healthcare for breast cancer with providers of traditional herbal medicine seemed like a waste of precious time and scarce financial resources. It seemed clear from the narratives that had they known in advance that they were not going to get the cure or healing they were looking for; they wouldn't have wasted their precious time. Following are the accounts of some of our participants.

I won't go anywhere again [herbal treatment centre], it's not helpful. They will waste your time and your money. If you are not careful, you will die and leave your children behind. So the best place for treatment is in the hospital. (Kate, 52-year-old)
When I detected the lump in my breast, I told my daughter about it. She was in a nursing school then. My daughter suggested we go to the hospital but I said "no" and I suggested we rather get traditional herbal medicine. I attended the herbal clinic for a long time and spent over Gh¢5000 (USD830) there. But still, there was no improvement. (Irene, 40-year-old)
There is this woman who is a popular herbal medicine practitioner in my area. She said she could cure my breast problem and asked me to pay Gh¢370 (USD62) for the herbal treatment. I didn't have the money so I went and borrowed Gh¢200 (USD33) to enable me to begin the treatment. The woman treated me for two weeks but still what I was experiencing before I went there was still there. So I told a brother who wanted to help me that I needed to see a medical doctor, and the brother and I came here [hospital]. (Audrey, 25-year-old)

Inefficacy of Herbal Medicine

Some participants in the present study expressed misgivings about the herbal medicine (i.e., cream, powder, or and lemon juice) that had been prescribed for the cure of their breast lump or cancer. While most of them used the herbal medicines and followed the instructions regarding their use, they would later discover that they were not efficacious at treating breast cancer after all. Some of our participants shared their experiences in the following accounts.

> *Because of what I've been through I've seen that I have gained some knowledge now. That is, when you see that a very little lump has developed in your breast, fast, you have to run to see your doctor so that whatever measures they have to take, they can do so quickly. Don't sit down and say I will use this or that herbal medicine, never. I tried herbal medicine and realized it doesn't work for breast cancer. The best thing is to go to the hospital to see your doctor. (Evelyn, 59-year-old)*
>
> *As for me when I noticed it [breast lump] I resorted to the use of herbal medicine, you see, with the hope that it would cure the lump. It was when I spoke to a friend about my condition that she advised me to stop using the herbal medicine and report to this hospital. Truly, I noticed the herbal medicine was not working. (Yolanda, 43-year-old)*
>
> *Eh… I was home one time when an herbal practitioner was called in to treat my in-law who had a stroke. I told him I felt something in my breast, so I asked him if he could get something [medicine] for me to treat my breast [lump]. He said that he could get some herbs prepared for me to melt the lump away. I got the medicine and applied it to my breast. It did not even get to a month when I realised the herbal medicine was not potent, then I forgot [abandoned] about him. (Ivy, 60-year-old)*

Disease Progression

Because the alternative medicines (i.e. traditional herbal medicine) prescribed for the cure of their illness did not work as promised, they affected their breast in ways that worsened their breast cancer situation (i.e., disease progression). Some participants appeared surprised at the turn of events. Here is what they had to say.

> *I first went to an herbal treatment facility at 'YY'. I told them that I heard they could treat breast cancer so I have also come for treatment. I went there on January 3 but they didn't tell me my condition was beyond them and that I should go to the hospital. They rather gave me herbal powder and one that I had to boil to drink and asked me to come back a month later. When I applied the powder for about two weeks then I realized my nipples had started developing sores. I went back to tell them that my breast had developed a sore and they prescribed a cream for me. When I applied the*

cream the sore worsened and started spreading, and I couldn't understand what was happening. (Samuella, 45-year-old)

In the following conversation with the researcher, a participant (Charlotte) recounted her experiences with traditional herbal treatment.

Researcher: How did you decide to seek traditional herbal treatment for your breast cancer?
Participant (Charlotte, 47-year-old): I detected a small lump in my breast in May 2018, but at times when I touched it I didn't feel it again. I didn't pay attention to it because at that time my husband had died and there was so much pressure on me.
Researcher: Sorry for your loss. What happened afterward?
Participant: Later, someone suggested to me that she knew an herbal practitioner who is very good at treating breast cancer. I decided to see this herbal practitioner. When I met him [herbal practitioner] he told me that my cancer had reached the third and fourth stages so he gave me some herbal medicine to drink and some to apply to my breast. When I applied the medicine, my breast burst. Afterward, he gave me some medicine and told me it would heal the sore. I couldn't eat again because he told me to stay away from a lot of food. As a result, I became slim. He made me drink 15 lemons a day…
Researcher: How did you do that?
Participant: Hmmm. I would squeeze the juice from the lemon and drink it. But after all that, I didn't notice any improvement in my condition. Finally, I realized this treatment was not helping me, and my dad pressurized me to come to the hospital.

Discussion

The purpose of this qualitative study was to explore the use of complementary and alternative medicine (CAM) by women living with breast cancer in Ghana. The analysis of the interviews revealed one overarching theme and four subthemes. The overarching theme was *lost cause*. That is, in general, our participants viewed the use of CAM (i.e., traditional herbal medicine, prayer, and faith healing) for the treatment and cure of breast cancer as a *lost cause*. In other words, most of our participants' accounts suggested that they viewed the use of traditional herbal medicine, prayer, and faith healing for the treatment of breast cancer as an exercise in futility (i.e., a treatment regimen that has no chance of succeeding).

This overarching theme (i.e., *lost cause*) finds support in previous research among cancer patients. For example, in a comparative study to assess the impact of conventional cancer treatment versus alternative medicine treatment on cancer patients' survival, Johnson et al. (2018) found that, compared with cancer patients who used conventional cancer treatment ($n = 560$), those who used alternative medicine ($n = 280$) had greater risks of death. Johnson et al. (2018) observed that breast cancer patients who used alternative medicine had higher odds of death, compared with lung cancer and colorectal cancer patients who used alternative

medicine. Further, a previous longitudinal work among Australian women with breast cancer found that, compared with women who reported not using CAMs, CAM users experienced greater stress (see Beatty et al., 2012). Beatty et al. (2012) concluded that CAM users experienced more psychological vulnerability than non-users concerning stress and that CAM use did not lead to any improvement in women's health-related quality of life. Consistent with the findings of this study, Saghatchian et al. (2014) found that among 184 early-stage breast cancer patients in France who reported using CAMs such as homeopathy, phytotherapy, and other dietary methods also complained of experiencing side effects associated with their use. Additionally, the current findings compare favourably with those of other qualitative research among 160 breast cancer patients in Nigeria which found that, among those who reported using CAMs, 68.3% felt disappointed, whereas 67.3% did not find any benefits in their use (Ezeome & Anarado, 2007). According to the researchers, only 23% of those who used CAMs reported satisfaction with their use.

We note that although the previous studies reviewed here reported results that corroborated our current findings, there may be contextual differences in the motivations for CAM use between patients in the current cultural context (Ghana) and those from other social contexts. This is because health behaviour scholars have long established that health beliefs and by extension health behaviours do not occur outside of a social context, as proposed by the health belief model (see Janz & Becker, 1984), common-sense model of illness perceptions (Hagger & Orbell, 2003; Leventhal et al., 2016), and the necessity-concerns medication beliefs framework (Horne et al., 2013). Other scholars have demonstrated that the individual and their social context make each other up in an on-going cycle of mutual constitution (Markus & Kitayama, 1991, 2010).

One of the subthemes that emerged from our data was the inefficacy of herbal medicine for treating breast cancer. Most of the participants in the current study shared experiences of their *diseased* breast bursting and developing sore following the application of the herbal medicine prescribed for them. Other participants suggested being compelled to take an overdose of herbal medicine such as squeezed juice from 15 lemons a day, all of which did not lead to any improvement in their illness or health-related quality of life. The current finding regarding the inefficacy of herbal medicine for treating breast cancer is consistent with that of Ma et al. (2011) who reported that herbal medicine use for treating breast cancer was associated with poorer health-related quality of life and poorer survival in long-term breast cancer survivors. Similarly, Rockwell et al. (2005) found that a popular herbal medicine called "black cohosh" used by breast cancer patients had the ability to alter cancer cells' response to radiation and to four drugs used in cancer treatment. They warned that cancer patients who simultaneously take herbal drugs alongside conventional cancer therapy may not respond well to treatment. The current finding is also consistent with Sanuade et al. (2021), who in a recent qualitative study among Ghanaian women with breast cancer in the Greater Accra Region of Ghana, found that women who used alternative medicine (i.e. herbal medicine), reported experiencing a worsening of their illness. Listen to this quote from one of their participants in their focus group discussions (FGD).

…there was a little sore on my breast and my breast swelled up and we took it to the hospital and I was diagnosed with breast cancer. We tried treating it there but the amount we were charged was too much and we could not afford and we stopped the treatment at the hospital and we started using herbal medicine. The situation worsened and the whole breast became sore and we then decided to come to Korle-Bu. (FGD2-R3), Sanuade et al., 2021, p.361; [emphasis, ours]

However, this finding contrasts with that of Bahall (2017), who, in a mixed-methods study, conducted at an oncology clinic in Trinidad and Tobago, found that medicinal herbs and spiritual therapy were commonly used by patients with cancer because of their perceived benefits and satisfaction (see also Jaradat et al., 2016). The differences in findings may be due to sample characteristics, context, and type of medicinal herbs and spiritual therapy used.

Related to the theme of the inefficacy of herbal medicine for the treatment of breast cancer, at least, for the present sample, is the theme of deterioration in the breast cancer condition (i.e., disease progression) following the use of alternative medicine. In their view, the deterioration arose from the herbal medicine they had applied to the breast or had ingested. It is possible that the prescribed herbal medicine had important side effects that were not disclosed to the women before using them. This situation seemed to have affected their worldview regarding the use of CAM for the treatment of breast cancer. The current finding is consistent with that of Chang et al. (2006) who found that breast cancer patients who used CAM instead of conventional treatment such as surgery experienced disease progression. The current result also finds support in a previous research which found that CAM use for treating breast cancer was associated with disease progression and increased risk of cancer recurrence and death (Han et al., 2011). Moreover, the present finding regarding the use of CAM and disease progression is consistent with that of a qualitative study among patients with breast cancer in the Ashanti Region of Ghana (see Agbokey et al., 2019). Similar to our finding, Agbokey et al. (2019) noted that their participants reported a deterioration in their illness, following the use of herbal medicine. Here is the account of one of their participants.

"I used to come for treatment here but I stopped for a while because I could not afford the high cost of medication so I was advised by my children to go to seek herbal treatment elsewhere at the Dr. "XX" Herbal Centre and then it deteriorated after almost six months of going there so I stopped and came back here [KATH] after my children had promised to help foot the cost of medication." (IDI with BCP No. 07), Agbokey et al., 2019; p. 5; [emphasis, ours]

Another subtheme that emerged from the narratives was the disappointment with the cure or healing that was promised them by the CAM providers (i.e. herbal practitioners and faith healers). Most participants recounted how they were promised so much and went to seek healthcare with great expectations, only to observe a deterioration instead. In their view, seeking healthcare for breast cancer with CAM providers was more like chasing after the wind. This finding does not differ significantly from those of a systematic review of CAM use by cancer patients which found mixed results (Calcagni et al., 2019). Whereas Calcagni et al. (2019) found some evidence of

positive impact of CAM use on symptom outcomes particularly on pain and fatigue management, they observed that on quality of life only 8 articles found a positive association between CAM use and quality of life as against 10 articles that reported a negative association between CAM use and quality of life. Similarly, in a cross-sectional study on quality of life among 173 Malaysian women with breast cancer, Yusoff et al. (2022) found that women who used traditional medicine to treat breast cancer reported lower quality of life. The present finding is similar to that of Weru and Nafula (2022) who noted that traditional healers are considered a crucial part of African religion and for this reason cancer patients consult them for herbal treatments, ancestral incantation, and faith healing. Weru and Nafula (2022) observed that most cancer patients in sub-Saharan Africa only seek conventional cancer treatment when CAM providers have failed to provide the healing they promised them. Further, given the numerous research findings suggesting the inefficacy of prayer and faith healing for treating breast cancer, breast cancer advocates in Ghana have called on the Government to enact laws to prevent pastors from attending to patients with breast cancer (see Mohammed-Nurudeen, 2023). The advocates have also warned Ghanaian breast cancer patients to stay away from the services of herbal medicine providers and faith healers (see Latsu, 2022).

Moreover, a related theme from the data was the theme of *wasted time and money*. Most of the participants suggested that aside from wasting their precious time and financial resources on CAM, they did not also receive what they bargained and paid for. They seemed to recognize that this is a disease that is time-bound and that the slightest waste of time may be fatal for the individual. The notion that time is of the essence in breast cancer diagnosis and treatment is well known. For example, growing empirical breast cancer research among Ghanaian women has consistently linked poor disease outcomes to the late presentation at conventional treatment facilities (see Bonsu & Ncama, 2019; Sanuade et al., 2021). A systematic review and meta-analysis have reported that the stage at presentation and diagnosis at a conventional treatment facility is a major contributing factor to poor survival from breast cancer (see Jedy-Agba et al., 2016). This finding is consistent with growing cancer research which has found that CAM use is positively associated with late presentation among women with breast cancer. For example, a study among 340 Malaysian breast cancer patients reported a positive association between CAM use and late presentation (Mohd Mujar et al., 2017). Similar findings have been reported among Indonesian children with breast cancer (Sari et al., 2023) and Pakistani breast cancer patients (Malik & Gopalan, 2003).

Overall, consistent with breast cancer research results from Malaysia, Indonesia, and Pakistan, the current findings illuminate our appreciation of the reasons why most Ghanaian women with breast cancer present at conventional treatment facilities with advanced stages of cancer, following disappointment in CAM use.

Finally, conventional treatment for breast cancer is not free in Ghana. Thus, it is probable that most of our participants turned to alternative medicine for breast cancer treatment because of the high cost associated with conventional treatment for breast cancer in Ghana. For example, almost 42% of our participants reported that they earned between Gh¢1000–1,999 (USD87.65–175.22) per month, which is substantially lower than the average USD990.40 breast cancer treatment cost incurred

by households in Ghana (see Adanu et al., 2022). And although most of our participants (83.3%) reported holding tertiary degrees and secondary school certificates, and would normally be expected to understand the advantages of conventional medicine over CAM use, the high cost of conventional treatment in Ghana is way above their income levels and for that matter alternative treatment may seem to be an attractive choice for them.

Implications for Practice

The present findings have important implications for practice. Our findings suggest that CAM (i.e. herbal medicine and faith healing) for breast cancer is patronized by most Ghanaian women. Out of the 12 participants in this study, 10 reported consulting CAM providers. This information would be useful to medical practitioners and other healthcare professionals. For example, medical practitioners could engage with herbal practitioners within the communities where they work to design a memorandum of agreement to enable CAM providers to quickly refer patients on arrival to conventional treatment facilities. They may also collaborate with CAM providers to integrate the good aspects of CAM into the conventional cancer care system. Moreover, medical professionals should show interest in patients' treatment-seeking journeys to the conventional facility. Open talk about patients' treatment journeys may bring to the fore whether some patients are using CAM alongside chemotherapy or radiotherapy. Good doctor-patient communication has the potential to uncover such useful pieces of information. From the interview data, it became apparent that most patients were influenced to use CAM or introduced to CAM by family or friends. It seems clear that the use of CAM in Ghana may have implications for cancer control efforts. Therefore, any health education interventions for breast cancer control should include the family and friends of patients with breast cancer.

Limitations

A limitation to note in this study is that the findings are based on individual subjective experiences, and thus may not be transferrable beyond the present sample. The sample was recruited from a single teaching hospital in one region out of 16 administrative regions of Ghana. Thus, the findings of the present study regarding the inefficacy of herbal medicine and faith healing for breast cancer treatment should be considered preliminary and not conclusive. It is possible that patients with breast cancer from other settings in Ghana may record benefits of CAM depending on the CAM providers they consult. Further research is warranted to collaborate our findings. Another limitation to note is that because this study focused on understanding the experiences of patients who consulted providers of alternative medicine before finally presenting at the hospital, we did not probe further to assess whether some of our participants used CAM alongside conventional treatment. Future research may consider this a useful research goal. Despite these limitations, our study contributes

to a preliminary understanding of the treatment journeys and experiences of Ghanaian women with breast cancer who consulted providers of CAM.

Conclusion

The findings of the present study echo the complexity of the breast cancer experience for most patients and present a case for the public health consequences of using herbal medicine and faith healing for treating breast cancer. Our participants' accounts suggested that the use of traditional herbal medicine and faith healing for the treatment of breast cancer is a *lost cause*. In other words, their personal experiences with CAM for breast cancer seemed to make them believe that embarking on such healthcare-seeking journeys was similar to chasing after the wind. Additional studies are needed to assess the magnitude of the impact of CAM use on breast cancer outcomes in Ghana.

Abbreviations CAM: Complementary and alternative medicine; TCAM: Traditional, complementary and alternative medicine; T&CM: Traditional and complementary medicine; WHO: World Health Organisation; ECH: Ethics Committee for the Humanities; COREQ: Consolidated Criteria for Reporting Qualitative Research

Acknowledgements We would like to thank the managers of the teaching hospital for permitting their patients to participate in this study. Our grateful thanks go to all participants of this study. We wish you all a speedy recovery!.

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Data Availability The data on which the article reports are available from the corresponding author on reasonable written request.

Declarations

Ethics Approval The study protocol was approved by the Ethics Committee for the Humanities (ECH), University of Ghana (Ref#: ECH104/16–17). All procedures performed in the study were consistent with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Consent to Participate Informed consent was obtained from all the participants of the study.

Conflicts of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

Adanu, K. K., Bansah, E. C., Adedia, D., & Aikins, M. (2022). Household treatment cost of breast cancer and cost coping strategies from a tertiary facility in Ghana. *PLOS Global Public Health, 2*(3), e0000268. https://doi.org/10.1371/journal.pgph.0000268

Agbokey, F., Kudzawu, E., Dzodzomenyo, M., Ae-Ngibise, K. A., Owusu-Agyei, S., & Asante, K. P. (2019). Knowledge and health-seeking behavior of breast cancer patients in Ghana. *International Journal of Breast Cancer*, 5239840, 1–9 pages. https://doi.org/10.1155/2019/5239840

Albabtain, H., Alwhaibi, M., Alburaikan, K., & Asiri, Y. (2018). Quality of life and complementary and alternative medicine use among women with breast cancer. *Saudi Pharmaceutical Journal, 26*(3), 416–421. https://doi.org/10.1016/j.jsps.2017.12.020

Arneja, J., & Brooks, J. D. (2021). The impact of chronic comorbidities at the time of breast cancer diagnosis on quality of life, and emotional health following treatment in Canada. *PloS One, 16*(8), e0256536. https://doi.org/10.1371/journal.pone.0256536

Ashikaga, T., Bosompra, K., O'brien, P., & Nelson, L. (2002). Use of complementary and alternative medicine by breast cancer patients: Prevalence, patterns and communication with physicians. *Supportive Care in Cancer, 10*, 542–548. https://doi.org/10.1007/s00520-002-0356-1

Bahall, M. (2017). Prevalence, patterns, and perceived value of complementary and alternative medicine among cancer patients: A cross-sectional, descriptive study. *BMC Complementary and Alternative Medicine, 17*, 345. https://doi.org/10.1186/s12906-017-1853-6

Bazrafshani, M. S., Khandani, B. K., Pardakhty, A., Tajadini, H., Afshar, R. M. P., Moazed, V., Nemati, & A., Nasiri, N., & Sharifi, H. (2019). The prevalence and predictors of using herbal medicines among Iranian cancer patients. *Complementary Therapies in Clinical Practice, 35*, 368–373. https://doi.org/10.1016/j.ctcp.2019.03.009

Beatty, L. J., Adams, J., Sibbritt, D., & Wade, T. D. (2012). Evaluating the impact of cancer on complementary and alternative medicine use, distress and health-related QoL among Australian women: A prospective longitudinal investigation. *Complementary Therapies in Medicine, 20*, 61–69. https://doi.org/10.1016/j.ctim.2011.09.008

Bendassolli, P. F. (2013). Theory building in qualitative research: Reconsidering the problem of induction. *Forum: Qualitative Social Research, 14*(1), 25.

Bonsu, A. B., & Ncama, B. P. (2019). Recognizing and appraising symptoms of breast cancer as a reason for delayed presentation in Ghanaian women: A qualitative study. *PLoS ONE, 14*(1), e0208773. https://doi.org/10.1371/journal.pone.0208773

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology, 18*(3), 328–352. https://doi.org/10.1080/14780887.2020.1769238

Braun, V., Clarke, V., & Rance, N. (2014). How to use thematic analysis with interview data. In A. Vossler & N. Moller (Eds.), *The counseling & psychotherapy research handbook* (pp. 183–197). Sage.

Brinton, L., Figueroa, J., Adjei, E., Ansong, D., Biritwum, R., Edusei, L., Nyarko, K. M., Wiafe, S., Yarney, J., Addai, B. W., Awuah, B., & Clegg-Lamptey, J. N. (2017). Factors contributing to delays in diagnosis of breast cancers in Ghana, West Africa. *Breast Cancer Research and Treatment, 162*(1), 105–114. https://doi.org/10.1007/s10549-016-4088-1

Calcagni, N., Gana, K., & Quintard, B. (2019). A systematic review of complementary and alternative medicine in oncology: Psychological and physical effects of manipulative and body-based practices. *PLoS ONE, 14*(10), e0223564. https://doi.org/10.1371/journal.pone.0223564

Chandra, Y., & Shang, L. (2019). Inductive coding. In Y. Chandra & L. Shang (Eds.), *Qualitative Research Using R: A Systematic Approach* (pp. 91–106). Springer. https://doi.org/10.1007/978-981-13-3170-1_8

Chang, E. Y., Glissmeyer, M., Tonnes, S., Hudson, T., & Johnson, N. (2006). Outcomes of breast cancer in patients who use alternative therapies as primary treatment. *The American Journal of Surgery, 192*(4), 471–473. https://doi.org/10.1016/j.amjsurg.2006.05.013

Choi, S. J., Kunwor, S. K., Im, H. B., Hwang, J. H., Choi, D., & Han, D. (2022). Traditional and complementary medicine use among cancer patients in Nepal: A cross-sectional survey. *BMC Complementary Medicine and Therapies, 22*(1), 70. https://doi.org/10.1186/s12906-022-03555-8

Clegg-Lamptey, J., Dakubo, J., & Attobra, Y. N. (2009). Why do breast cancer patients report late or abscond during treatment in Ghana? *A Pilot Study. Ghana Medical Journal, 43*(3), 127–131.

Costa, B., Amorim, I., Gärtner, F., & Vale, N. (2020). Understanding breast cancer: From conventional therapies to repurposed drugs. *European Journal of Pharmaceutical Sciences, 151*, 105401. https://doi.org/10.1016/j.ejps.2020.105401

Creswell, J. (2007). *Qualitative inquiry and research design* (2nd ed.). Sage.

Ewertz, M., Land, L. H., Dalton, S. O., Cronin-Fenton, D., & Jensen, M. B. (2018). Influence of specific comorbidities on survival after early-stage breast cancer. *Acta Oncologica, 57*(1), 129–134. https://doi.org/10.1080/0284186X.2017.1407496

Ezeome, E. R., & Anarado, A. N. (2007). Use of complementary and alternative medicine by cancer patients at the University of Nigeria Teaching Hospital, Enugu. *Nigeria. BMC Complementary and Alternative Medicine, 7*, 28. https://doi.org/10.1186/1472-6882-7-28

Fardet, A., Lebredonchel, L., & Rock, E. (2021). Empirico-inductive and/or hypothetico-deductive methods in food science and nutrition research: Which one to favor for a better global health? *Critical Reviews in Food Science and Nutrition, 63*(15), 2480–2493. https://doi.org/10.1080/10408398.2021.1976101

Forero, R., Nahidi, S., De Costa, J., Mohsin, M., Fitzgerald, G., Gibson, N., McCarthy, S., & Aboagye-Sarfo, P. (2018). Application of four-dimension criteria to assess rigour of qualitative research in emergency medicine. *BMC Health Services Research, 18*, 120. https://doi.org/10.1186/s12913-018-2915-2

Friese, S. (2014). Qualitative data analysis with ATLAS.ti (2nd ed). SAGE Publications Ltd.

Gearing, R. E. (2004). Bracketing in research: A typology. *Qualitative Health Research, 14*, 1429–1452. https://doi.org/10.1177/1049732304270394

Gergen, K., & Gergen, M. (2003). *Social construction: A reader*. SAGE publications.

Greenlee, H., DuPont-Reyes, M. J., Balneaves, L. G., Carlson, L. E., Cohen, M. R., Deng, G., Johnson, J. A., Mumber, M., Seely, D., Zick, S. M., Boyce, L. M., & Tripathy, D. (2017). Clinical practice guidelines on the evidence-based use of integrative therapies during and after breast cancer treatment. *CA: A Cancer Journal for Clinicians*, *67*(3), 194–232. https://doi.org/10.3322/caac.21397

Hagger, M. S., & Orbell, S. (2003). A meta-analytic review of the common-sense model of illness representations. *Psychology and Health, 18*(2), 141–184. https://doi.org/10.1080/088704403100081321

Han, E., Johnson, N., DelaMelena, T., Glissmeyer, M., & Steinbock, K. (2011). Alternative therapy used as primary treatment for breast cancer negatively impacts outcomes. *Annals of Surgical Oncology, 18*, 912–916. https://doi.org/10.1245/s10434-010-1487-0

Hill, J., Mills, C., Li, Q., & Smith, J. S. (2019). Prevalence of traditional, complementary, and alternative medicine use by cancer patients in low income and lower-middle income countries. *Global Public Health, 14*(3), 418–430. https://doi.org/10.1080/17441692.2018.1534254

Hill, J., Seguin, R., Manda, A., Chikasema, M., Vaz, O., Li, Q., Gopal, S., & Smith, J. S. (2022). Prevalence of traditional, complementary, and alternative medicine (TCAM) among adult cancer patients in Malawi. *Cancer Causes & Control, 33*(8), 1047–1057. https://doi.org/10.1007/s10552-022-01563-0

Horne, R., Chapman, S. C., Parham, R., Freemantle, N., Forbes, A., & Cooper, V. (2013). Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions: A meta-analytic review of the Necessity-Concerns Framework. *PloS One, 8*(12), e80633. https://doi.org/10.1371/journal.pone.0080633

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education Quarterly, 11*(1), 1–47. https://doi.org/10.1177/109019818401100101

Jaradat, N. A., Shawahna, R., Eid, A. M., Al-Ramahi, R., Asma, M. K., & Zaid, A. N. (2016). Herbal remedies use by breast cancer patients in the West Bank of Palestine. *Journal of Ethnopharmacology, 178*, 1–8. https://doi.org/10.1016/j.jep.2015.11.050

Jedy-Agba, E., McCormack, V., Adebamowo, C., & dos-Santos-Silva, I. (2016). Stage at diagnosis of breast cancer in sub-Saharan Africa: A systematic review and meta-analysis. *Lancet Global Health, 4*(12), e923–e935. https://doi.org/10.1016/S2214-109X(16)30259-5

Jeitler, M., Michalsen, A., Frings, D., Hübner, M., Fischer, M., Koppold-Liebscher, D. A., Murthy, V., & Kessler, C. S. (2020). Significance of medicinal mushrooms in integrative oncology: A narrative review. *Frontiers Pharmacology, 11*, 580656. https://doi.org/10.3389/fphar.2020.580656

Johnson, S. B., Park, H. S., Gross, C. P., & Yu, J. B. (2018). Use of alternative medicine for cancer and its impact on survival. *JNCI: Journal of the National Cancer Institute, 110*(1), 121–124. https://doi.org/10.1093/jnci/djx145

Kasprzycka, K., Kurzawa, M., Kucharz, M., Godawska, M., Oleksa, M., Stawowy, M., Slupinska-Borowka, K., Sznek, W., Gisterek, I., Boratyn-Nowucka, A., Rucinska, M., Osowiecka, K., & Nawrocki, S. (2022). Complementary and alternative medicine use in hospitalized cancer patients—study from Silesia, Poland. *International Journal of Environmental Research and Public Health, 19*(3), 1600. https://doi.org/10.3390/ijerph19031600

Keene, M. R., Heslop, I. M., Sabesan, S. S., & Glass, B. D. (2019). Complementary and alternative medicine use in cancer: A systematic review. *Complementary Therapies in Clinical Practice, 35*, 33–47. https://doi.org/10.1016/j.ctcp.2019.01.004

Kugbey, N., Oppong Asante, K., & Meyer-Weitz, A. (2020). Illness perception and coping among women living with breast cancer in Ghana: An exploratory qualitative study. *BMJ Open, 10*, e033019. https://doi.org/10.1136/bmjopen-2019-033019

Latsu, D. A. (2022, October 18). *Avoid seeking breast cancer treatment from herbalists, churches*. Ghana News Agency. Available at https://gna.org.gh/2022/10/avoid-seeking-breast-cancer-treatment-from-herbalists-churches/, accessed March 10, 2023.

Leventhal, H., Phillips, L. A., & Burns, E. (2016). The Common-Sense Model of self-regulation (CSM): A dynamic framework for understanding illness self-management. *Journal of Behavioural Medicine, 39*, 935–946. https://doi.org/10.1007/s10865-016-9782-2

Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Evaluation, 1986*(30), 73–84. https://doi.org/10.1002/ev.1427

Ma, H., Carpenter, C. L., Sullivan-Halley, J., & Bernstein, L. (2011). The roles of herbal remedies in survival and quality of life among long-term breast cancer survivors-results of a prospective study. *BMC Cancer, 11*, 1–10. https://doi.org/10.1186/1471-2407-11-222

Malik, I. A., & Gopalan, S. (2003). Use of CAM results in delay in seeking medical advice for breast cancer. *European Journal of Epidemiology, 18*, 817–822. https://doi.org/10.1023/A:1025343720564

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224

Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual constitution. *Perspectives on Psychological Science, 5*(4), 420–430. https://doi.org/10.1177/1745691610375557

Mburu, W., Mensah, A. B. B., Virnig, B., Amuasi, J. H., Awuah, B., Porta, C. M., Osei-Bonsu, E., & Kulasingam, S. (2021). Pathways to breast cancer diagnosis and treatment among women in Ghana: A qualitative study. *Women's Health Reports, 2*, 1. https://doi.org/10.1089/whr.2020.0117

Mohammed-Nurudeen, M. (2023, February 28). *Government urged to enact laws to prevent pastors from treating breast cancer*. *MyJoyonline.com*. Available at https://www.myjoyonline.com/government-urged-to-enact-laws-to-prevent-pastors-from-treating-breast-cancer/, accessed March 10, 2023.

Mohd Mujar, N. M., Dahlui, M., Emran, N. A., Abdul Hadi, I., Wai, Y. Y., Arulanantham, S., Hooi, C. C., & Mohd Taib, N. A. (2017). Complementary and alternative medicine (CAM) use and delays in presentation and diagnosis of breast cancer patients in public hospitals in Malaysia. *PloS One, 12*(4), e0176394. https://doi.org/10.1371/journal.pone.0176394

Molassiotis, A., Scott, J.A., Kearney, N., Pud, D., Magri, M., Selvekerova, S., Bruyns, I., Fernadez-Ortega, P., Panteli, V., Margulies, A., & Gudmundsdottir, G., Milovics, L., Ozden, G., Platin, N., & Patiraki, E. (2006). Complementary and alternative medicine use in breast cancer patients in Europe. *Supportive Care in Cancer, 14*, 260–267. https://doi.org/10.1007/s00520-005-0883-7

Nechuta, S., Lu, W., Zheng, Y., Cai, H., Bao, P. P., Gu, K., Zheng, W., & Shu, X. O. (2013). Comorbidities and breast cancer survival: A report from the Shanghai Breast Cancer Survival Study. *Breast Cancer Research and Treatment, 139*, 227–235. https://doi.org/10.1007/s10549-013-2521-2

Nejat, N., Rahbarian, A., Mehrabi, F., & Rafiei, F. (2022). Complementary and alternative medicine application in cancer patients in Iran. *Journal of Cancer Research and Clinical Oncology, 149*(6), 2271–2277. https://doi.org/10.1007/s00432-022-04317-2

Nounou, M. I., ElAmrawy, F., Ahmed, N., Abdelraouf, K., Goda, S., & Syed-Sha-Qhattal, H. (2015). Breast cancer: Conventional diagnosis and treatment modalities and recent patents and technologies. *Breast Cancer: Basic and Clinical Research, 9*(S2), 17–34. https://doi.org/10.4137/BCBCR.S29420

Obrist, M., Osei-Bonsu, E., Ahwah, A., Watanabe-Galloway, S., Merajver, S. D., Schmid, K., & Soliman, A. S. (2014). Factors related to incomplete treatment of breast cancer in Kumasi. *Ghana. Breast, 23*(6), 821–828. https://doi.org/10.1016/j.breast.2014.08.014

Peltzer, K., & Pengpid, S. (2015). Utilization and practice of traditional/ complementary/alternative medicine (T/CAM) in Southeast Asian Nations (ASEAN) member states. *Studies on Ethno-Medicine, 9*(2), 209–218. https://doi.org/10.1080/09735070.2015.11905437

Posadzki, P., Watson, L. K., Alotaibi, A., & Ernst, E. (2013). Prevalence of use of complementary and alternative medicine (CAM) by patients/consumers in the UK: Systematic review of surveys. *Clinical Medicine, 13*(2), 126–131. https://doi.org/10.7861/clinmedicine.13-2-126

Robinson, O. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology, 11*(1), 25–41. https://doi.org/10.1080/14780887.2013.801543

Rockwell, S., Liu, Y., & Higgins, S. A. (2005). Alteration of the effects of cancer therapy agents on breast cancer cells by the herbal medicine black cohosh. *Breast Cancer Res Treatment, 90*, 233–239. https://doi.org/10.1007/s10549-004-4260-x

Saghatchian, M., Bihan, C., Chenailler, C., Mazouni, C., Dauchy, S., & Delaloge, S. (2014). Exploring frontiers: Use of complementary and alternative medicine among patients with early-stage breast cancer. *The Breast, 23*(3), 279–285. https://doi.org/10.1016/j.breast.2014.01.009

Sanuade, O. A., Ayettey, H., Hewlett, S., Dedey, F., Wu, L., Akingbola, T., Ogedegbe, G., & Ama de-Graft Aikins, A. (2021). Understanding the causes of breast cancer treatment delays at a teaching hospital in Ghana. *Journal of Health Psychology, 26*(3), 357–366. https://doi.org/10.1177/1359105318814152

Sari, N. M., Devansyah, S., Modjaningrat, I., Suryawan, N., Susanah, S., Rakhmillah, L., Wahyudi, K., & Kaspers, G. J. (2023). Type of cancer and complementary and alternative medicine are determinant factors for the patient delay experienced by children with cancer: A study in West Java, Indonesia. Pediatric Blood & Cancer, e30192. https://doi.org/10.1002/pbc.30192

Schou, L., Høstrup, H., Lyngsø, E. E., Larsen, S., & Poulsen, I. (2012). Validation of a new assessment tool for qualitative research articles. *Journal of Advanced Nursing, 68*(9), 2086–2094. https://doi.org/10.1111/j.1365-2648.2011.05898.x

Schwandt, T. A. (1998). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *The landscape of qualitative research: Theories and issues* (pp. 221–258). Sage.

Shneerson, C., Taskila, T., Gale, N., Greenfield, S., & Chen, Y.-F. (2013). The effect of complementary and alternative medicine on the quality of life of cancer survivors: A systematic review and meta-analyses. *Complementary Therapies in Medicine, 21*, 417–429. https://doi.org/10.1016/j.ctim.2013.05.003

Tautz, E., Momm, F., Hasenburg, A., & Guethlin, C. (2012). Use of complementary and alternative medicine in breast cancer patients and their experiences: A cross-sectional study. *European Journal of Cancer, 48*(17), 3133–3139. https://doi.org/10.1016/j.ejca.2012.04.021

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care, 19*(6), 349–357.

Weru, J. K., & Nafula, E. W. (2022). Psychosocial-spiritual healing: an impression of the impact of culture and faith in cancer care in Africa, Kenya, Sub-Saharan Africa, culture, beliefs, traditional healers, herbal treatment, religion, spirituality, ethnic groups, ancestors. In M. Silbermann & A. Berger (eds.), Global perspectives in cancer care: religion, spirituality, and cultural diversity in health and healing (pp. 295). https://doi.org/10.1093/med/9780197551349.003.0028

Yusoff, J., Ismail, A., Abd Manaf, M. R., Ismail, F., Abdullah, N., Muhammad, R., Suhaimi, S. N. A., & Mat Zin, R. R. (2022). Quality of life of women with breast cancer in a tertiary referral university hospital. *Health and Quality of Life Outcomes, 20*(1), 1–13. https://doi.org/10.1186/s12955-022-01921-1