The Cultural Adaptation and Pilot Feasibility Testing of Helping Her Heal (HHH), an Educational Counseling Intervention for Spouse Caregivers of Women with Breast Cancer in Ghana

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Abstract

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Background. Breast cancer is the leading cancer in Ghana and accounts for 31.8% of cancers in women. In partnered relationships spouses are the primary caregivers and assist wives experiencing breast cancer with activities of daily living, supporting their wives financially and emotionally. Caregiving places burden and strain on spouses. Spouse caregivers are known to have anxiety, depressed mood and sometimes have higher levels of depressed mood than wives. There is therefore a need for an intervention to help spouse caregivers cope better with their wives' breast cancer and caregiving.

Purpose. The overall purpose of this dissertation is to advance the science in spouse caregiving of women with breast cancer in Ghana. In Study 1 (Chapter 2), a three-phase approach and the

Ecological Validity Framework (EVF) was employed to culturally adapt Helping Her Heal (HHH), an educational counseling intervention for spouse caregivers of women with breast cancer. The purpose of Study 2 (Chapter 3) was to conduct a field test to assess the appropriateness of the adapted draft HHH-Ghana. The purpose of Study 3 (Chapter 4) was to conduct a pilot study to ascertain the feasibility and short-term impact of the adapted HHH-Ghana.

Methods. Both qualitative and quantitative research approaches were utilized in this dissertation. Spouse caregivers were included in all three studies if they could speak and read English, living with their wives or partners for at least 6 months and if their wives had Stages I, II or III breast cancer. Participants from Studies 1 and 2 were the same. In Studies 1 and 2, a single occasion in-depth interview was used to elicit feedback on the intervention manuals from breast cancer nurses and spouse caregivers. The interviews were audio recorded and transcribed verbatim. Both deductive and inductive content analysis were carried out in analyzing the interview data from Study 1. Deductive analysis was conducted for Study 2, a single group pre-post design was employed in Study 3 to ascertain the feasibility and short-term impact of the adapted HHH-Ghana. Five standardized instruments (STAI-Y, CES-D, MIS, CASE and Spouse Skills Checklist) were used to measure the outcome variables of interest. The Wilcoxon Signed Ranked Test was used to assess the short-term impact of the intervention in spouse caregivers of women with breast cancer in Ghana. Exit interviews were conducted with participants at the end of Study 3 to assess what spouse caregivers thought they had gained by participating in the study.

Results. Studies 1 and 2 included two breast cancer nurses and four spouse caregivers. Fourteen spouse caregivers participated in Study 2**.** In Study 1, participants found the intervention to be acceptable and understandable but recommended some changes to be made. A spouse participant

said he perfectly understood all the tasks and assignments in the intervention manual while another suggested the inclusion of faith-based activities as a strategy to unwind. In Study 2, participants said the adapted draft HHH-Ghana reflected their feedback and was relevant. A spouse indicated that the adapted draft intervention was relevant because writing a letter to their wives as a way of appreciating them had been modified to verbally expressing appreciation for their wives because it was not in the Ghanaian culture to write letters to their partners. Study 3 showed that the intervention was feasible as recruitment strategies were adequate in enrolling participants, the retention was 87.5% and spouse participants engaged actively in intervention sessions by responding to questions, providing answers, and completing at home assignments with wives. Significant results were achieved in all the outcome variables except one. There was significant improvement in anxiety, depressed mood, spouse self-efficacy, self-care skills and communication. The measure for communication among the couple (MIS) did not record significant change but communication did not get worse. This finding was contrary to the report from the interview data where participants indicated that they were communicating better because of participating in the study.

Conclusion. The three-phase approach and the EVF were useful in culturally adapting the HHH. Participants from Study 1 and 2 found the HHH to be acceptable and understandable and made suggestions for change to make it more acceptable and relevant to spouse caregivers of women with breast cancer in Ghana. Study 3 showed that the HHH was feasible and improved anxiety, depressed mood, self-efficacy, and spouse skills in taking care of themselves and their wives. A larger clinical trial can be conducted to ascertain the efficacy of HHH in spouse caregivers of women with breast cancer in Ghana. The HHH-Ghana can be implemented and evaluated at the breast unit of the Korle-Bu Teaching Hospital where the study was conducted. Results from this

evaluation will inform policy making regarding the inclusion of HHH in the usual care of women with breast cancer.

Dedication

This dissertation is dedicated to my children Audrey, Francis, and Nathan for being resilient under very trying circumstances under which I enrolled in the PHD program. I do this to encourage them to aspire to greatness.

The work is also dedicated to Godwin, one of the spouse participants who passed on a few weeks after completing the study, and all the other spouses who became vulnerable by sharing their experiences with me.

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Chapter 1. Introduction

A report in 2103 indicated that breast cancer accounted for 7.5% of all cancers in Ghana and was the fourth most prevalent after liver, cervix and Burkitt tumor (Edmund et al., 2013). A decade later in 2024, breast cancer is the leading cancer in both sexes and in women accounting for 31.8% of cancer cases in women (Sung et al., 2021). There has been increased awareness of breast cancer in the Ghanaian media in recent times which could explain the increasing incidence.

There is a growing body of evidence from breast cancer research with a plethora of studies on the psychosocial experiences of women with breast cancer in Ghana (Anim-Sampong et al., 2021; Boakye et al., 2024; Boateng et al., 2021; Chidebe et al., 2024; Kugbey et al., 2021; Kyei et al., 2020) , characteristics of breast cancer cases (Ohene-Yeboah & Adjei, 2012), factors contributing to delays and screening (Brinton et al., 2014; Clegg-Lamptey et al., 2009; Opoku et al., 2012) and treatment modalities (Mburu et al., 2021; Okifo et al., 2021).

In partnered relationships, women with breast cancer in Ghana have indicated their spouses to be their primary caregivers, supporting them during diagnosis, treatment and recovery (Boamah Mensah et al., 2020; Boatemaa Benson et al., 2020). A report from Nigeria however has shown that although some women disclosed their diagnosis to family and partners and got the needed support, many women kept their diagnosis from their family members and partners for fear of putting family at a greater risk of dying out of worry, stigma, fear and lack of support (Chidebe et al., 2024). Evidence from elsewhere and Ghana show that spouse caregivers suffer along with their wives during the trajectory of the disease and are known to have depression and anxiety (Bamgboje-Ayodele et al., 2021; Boamah Mensah et al., 2020; Congard et al., 2019; Janda et al., 2017). Despite the caregiving burden spouse caregivers face, little research has been

done involving spouse caregivers of women with breast cancer in Ghana. To date, there are only two published studies exploring the experiences of spouse caregivers of women with breast cancer (Boamah Mensah et al., 2020; Diji et al., 2015). Other studies have focused on caregivers in general of women with breast cancer (Kusi, Boamah Mensah, et al., 2020; Kusi, Mensah, et al., 2020). Studies involving only spouse caregivers in Ghana revealed that the burden associated with caregiving threatened the marriage, spouses' relationship with others, work and finances (Boamah Mensah et al., 2020). Also, some spouses had difficulty in coping and communicating with their wives about breast cancer (Diji et al., 2015). The above two studies have recommended the development of an intervention for spouse caregivers to help them cope with the stress of caregiving while supporting their wives during the trajectory of breast cancer. In Ghana, women with breast cancer get some psychosocial support from breast cancer nurses but there are no behavioral services or support for the dyad, and spouse caregivers of women with breast cancer have no one in the healthcare system to which they can turn for information, support, or guidance in helping themselves or their wives during breast cancer.

Limited resources in low- and middle-income countries stop the development of science and health-related interventions that are tailored to their settings leading to reliance on Evidence Based Interventions (EBIs) from elsewhere. Simply adopting EBIs developed in high-income-countries to new populations in low and middle-income countries without culturally adapting them can lead to harm in the new population (Perera et al., 2020). Cultural adaptation is "systematic modification of an evidence-based treatment (EBT) or intervention protocol to consider language, culture, and context in such a way that it is compatible with the client's cultural patterns, meanings, and values." (Bernal et al., 2009, p. 361-362). Thus, it has been

suggested that EBIs should not be implemented in new populations without cultural adaptation (Perera et al., 2020).

Helping Her Heal (HHH) is an evidence-based educational counseling intervention for spouse caregivers of women with breast cancer. It was developed and efficacy tested in the U.S. It is a spouse- focused skill- building educational counselling intervention whose goals are to improve spouse caregivers' and wives' depressed mood, anxiety, and cancer-related marital communication; spouses' behavioral skills and confidence in interpersonally supporting their wife and managing their own cancer-related distress; and increase wives' positive appraisal of spouses' interpersonal support and cancer-related marital communication. The HHH was culturally adapted for spouse caregivers of women with breast cancer in Ghana.

Rational

Due to the increased incidence of breast cancer in Ghana and the number of spouses who have become spouse caregivers with its attendant challenges that come with caregiving, there is the need to have an intervention for spouse caregivers. However limited resources needed to develop new interventions have stalled the development of an intervention tailored to the needs of Ghanaian spouse caregivers.

Purpose

The overarching purpose of this dissertation was to advance the science in family caregiving in Ghana with focus on spouse caregivers of women with breast cancer by culturally adapting an EBI developed and efficacy tested in the U.S. for spouses of women with breast cancer.

Specific Aims

Aim 1(Study 1): Culturally adapt Helping Her Heal (HHH), an educational counseling intervention for spouse caregivers of women with breast cancer in Ghana using the Ecological Validity Framework.

Aim 2 (Study 2): Conduct a field test of the culturally adapted draft HHH.

Aim 3 (Study 3): Conduct a pilot study to ascertain feasibility and short-term impact of the culturally adapted final HHH.

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Chapter 2. The Cultural Adaptation of Helping Her Heal (HHH), an Educational Counseling Intervention for Spouse Caregivers of Women with Breast Cancer in Ghana.

Abstract

Background: The cultural adaptation of Evidenced Based Interventions (EBIs) is useful in preventing loss of resources used in developing new interventions for different populations, and this is particularly useful in low- and middle-income countries such as Ghana. The process of a cultural adaptation must be scientific, guided by a conceptual framework, and documented.

Purpose: The purpose of this study was to culturally adapt Helping Her Heal (HHH), an educational counseling intervention for spouses of women with breast cancer, to Ghanian spouse caregivers using the Ecological Validity Framework (EVF). The goal of the HHH intervention is to improve spouse caregivers' and wives' depressed mood, anxiety, and cancer-related marital communication; spouses' behavioral skills and confidence in interpersonally supporting their wife and managing their own cancer-related distress; and increase wives' positive appraisal of spouses' interpersonal support and cancer-related marital communication. The material to be culturally adapted consisted of a Patient Educator Manual and a Spouse Workbook.

Methods: A three-phase approach together with the eight dimensions of the EVF (language, person, metaphors, content, concept, goals, methods, and context) were used in the adaptation process. The phases included: 1) Expert consultation and initial adaptation by the student investigator (Principal Investigator), 2) Stakeholder consultation and 3) Preliminary content adaptation. A single occasion in-depth interview was used to elicit feedback from four spouse caregivers and two breast cancer nurses on the HHH manuals in phase 2. Deductive content analysis was used to analyze interview data pertaining to the EVF and inductive content analysis was used to analyze the remaining data that did not pertain to the EVF.

Findings: The student investigator, spouse caregivers and breast cancer nurses found the HHH to be applicable and relevant in the Ghanaian context. However, changes were made in the language, context, and metaphor dimensions of the EVF. The self-care strategy "engaging in faith-based activities" was included while "talking to a friend" was removed. The phrase "sounding board" was replaced with "confidante."

Conclusion: The 3- phase approach and the 8 dimensions of the EVF led to the development of the adapted draft HHH-Ghana. This adapted version retained all five of the original intervention sessions and the structure and content of the Patient Educator's Manual and Spouse Workbook. Refinements resulted in the adapted draft HHH-Ghana that was now ready for field testing.

Introduction

The purpose of this study (Paper 1 of the dissertation studies) is to apply the Ecological Validity Framework to culturally adapt the Helping Her Heal (HHH) Program to spouse caregivers in Ghana and to generate a draft of the culturally adapted HHH for field testing during Study 2. The paper is organized into four sections: background to the study, methods, results, and discussion. The words "spouse" and "spouse caregiver" are used interchangeably.

Background

Cultural Adaptation & Issues with Culturally Adapted Interventions

The cultural adaptation of evidence-based interventions (EBI) is critical in preventing the loss of resources such as time and money for new intervention development that could be channeled to other competing needs in low- and middle-income countries such as Ghana. The discourse around cultural adaptation of scalable interventions has been in existence for almost three decades, having its root in the adaptation of psychotherapy when therapists made attempts to provide psychotherapy, a Western idea, to other non-Western groups. This past approach led to its attendant problems of imposing Western norms, values, and morals on others (Domenech Rodríguez & Bernal, 2012). From psychotherapy, cultural adaptation has extended to interventions, including decisions to screen for colorectal cancer (Ko et al., 2014), healthy eating (Cameron et al., 2017), and parenting skills (Parra-Cardona et al., 2017).

Cultural adaptation is the "systematic modification of an evidence-based treatment (EBT) or intervention protocol to consider language, culture, and context in such a way that it is compatible with the client's cultural patterns, meanings, and values" (Bernal et al., 2009, p. 361-362). This modification can be as minimal as a change in language or as extensive as taking into

consideration norms, values and sociohistorical and environmental factors of the new population (Castro et al., 2004). Cultural adaptation is critical to prevent the loss of resources and, in some cases harm, by simply importing EBI to new populations (Perera et al., 2020).

Various meta-analyses have shown that culturally adapted interventions are more efficacious than those that are not (Benish et al., 2011; Chowdhary et al., 2014; Griner & Smith, 2006; Soto et al., 2019). In a recent study, there was high engagement, retention, and satisfaction in two culturally adapted versions of an evidenced-based parenting intervention, further making a case for cultural adaptations (Parra-Cardona et al., 2017). Despite these encouraging outcomes, scientists have tensions on whether it is worth putting time and resources into cultural adaptations. Some of these tensions include the issue of "presumptive truth fallacy" and "imperialist fallacy," both of which cause scientists to stay fastidious in their interventions, not wanting to allow for modifications. A presumptive truth fallacy is when a scientist becomes attached to their idea and preaches it as if it were the only truth; when they insist it be adopted, it becomes an imperialist fallacy (Bernal & Domenech Rodríguez, 2012).

Another debate that hinders cultural adaptation is the issue of fidelity and fit (Castro et al., 2004). Developers of interventions want to stay true to the components of the intervention to ensure consistent and maximum dosage, fidelity to attribute changes in outcomes to their intervention. Fit on the other hand ensures that interventions are appropriate to suit the new population to which they are being transferred. Failure to ensure fit leads to mismatch of intervention in domains such as language, ethnicity, socioeconomic status and urban-rural context (Castro et al., 2004). The purpose of the current study is to culturally adapt HHH, an educational counseling intervention for spouse caregivers of women with breast cancer in Ghana to ensure fit for the new population. Three elements come together in Ghana, Africa, that framed

the purpose of the current study to culturally adapt an EBI for spouse caregivers of women with breast cancer: the high prevalence of breast cancer in Ghana, the limited resources in Ghana to design and develop a new program for spouse caregivers, and the current state of science on cultural adaptation of an EBI.

The Need for Intervention for Spouse Caregivers of Women with Breast Cancer

Breast cancer is the leading cancer diagnosed in women globally with an estimated 2.3 million new cases in 2020 and an estimated 287,850 new cases in the US in 2022 (Siegel et al., 2022). In Ghana breast cancer is the leading cancer accounting for 31.4% of all cancers in women. The number of new cases in 2020 in Ghana was 4,482 with a mortality rate of 18.1% in a population of 31 million (Sung et al., 2021).

The detrimental effects of breast cancer in women globally and Ghana are well documented and include depression, anxiety, fear of death, body image issues, burnout, pain, trouble sleeping and fatigue (Ahmad et al., 2015; Boatemaa Benson et al., 2020; Campbell-Enns & Woodgate, 2017; Hubbeling et al., 2018; Puigpinós-Riera et al., 2018; Torres et al., 2016). However, suffering is not limited to the woman diagnosed with breast cancer but also impacts the family caregiver or intimate partner. There is evidence from the US that spousal caregivers sometimes have greater anxiety and depression during the trajectory of the disease than the woman with breast cancer (Lewis et al., 2008). Thus, breast cancer has been described as a couple event (Charvoz et al., 2016). Many women with breast cancer are cared for by their spouses during diagnosis, treatment and beyond; an estimated 30-40% of caregivers of patients with chronic illness such as breast cancer are spouses (Barani et al., 2019; Boatemaa Benson et al., 2020; Kusi et al., 2020; Vahidi et al., 2016).

Spouses support their wives with activities such as bathing, administering medication, helping with mobility, cooking, cleaning, and emotional, social, and financial support (Berger et al., 2019; Boamah Mensah et al., 2020; Kusi et al., 2020). These activities add strain and burden on spouses (Gabriel et al., 2019; Rha et al., 2015), causing weariness in some (Neris & Anjos, 2014). Spousal caregivers usually sacrifice their comfort by neglecting themselves and become exhausted in the process (MacLeod, 2011), thus the need for an intervention to help spouse caregivers during the trajectory of breast cancer as they support their wives.

Interventions for Couples Dealing with Breast Cancer

There are only two published intervention studies focused solely on spouses of women with breast cancer (Duggleby et al., 2017; Lewis et al., 2019). These spouse-focused interventions are distinct from the growing number of intervention studies which engage both members of the dyad (Baucom et al., 2012; Çömez & Karayurt, 2020; Fergus et al., 2014; Heinrichs et al., 2012; Kayser et al., 2010; Nicolaisen et al., 2014; Price-Blackshear et al., 2020; Scott et al., 2004). The HHH has the advantage of not requiring enrollment of the wife, considering the challenges involved in enrolling and retaining couples in intervention studies when enrollment of both partners has low uptake (Regan et al., 2013). A spousal intervention also avoids imposing additional time/effort on the woman who may be involved in multiple treatments, but the woman can still experience positive impacts through their spouse by way of dyadic adjustment.

Helping Her Heal (HHH), an EBI

The HHH EBI was developed-and efficacy tested in the U.S. It is a spouse- focused skill-building educational counselling intervention whose goals are to improve spouse caregivers' and wives' depressed mood, anxiety, and cancer-related marital communication; spouses' behavioral skills and confidence in interpersonally supporting their wife and managing their own cancer-related distress; and increase wives' positive appraisal of spouses' interpersonal support and cancer-related marital communication (Lewis et al., 2019). In a two-group, randomized controlled trial, spouses in the experimental arm (HHH) significantly improved on depressive symptoms, anxiety, cancer related communication, interpersonal support to the ill partner, self-care skills and self-confidence to support his wife and attend to his own self-care. Improvements in spouse self-care skills and communication were sustained over time (Lewis et al., 2019). Additionally, participating wives in the experimental group, compared to controls, reported significantly improved interpersonal support.

Compared to the intervention by Duggleby et al (2018), which is also spouse-focused, but web based, the HHH Program can be delivered face-to-face. This approach is useful because Ghana is a low- and middle-income country in which internet/web accessibility is not available to a large proportion of the population. A web-based intervention would not be suitable. Based on the above factors, the HHH is a suitable intervention to be culturally adapted and tested with Ghanaian spouse caregivers of women with breast cancer.

The HHH intervention as originally developed and tested for efficacy is a five-session scripted psychoeducational skills-based intervention for spouses of women with breast cancer (Lewis et al., 2019). Each session takes 30-45 minutes and is offered at 2-week intervals directly to the spouse caregiver. The intervention model was derived from Bandura's Social Cognitive

Theory (Bandura et al., 1999) and a relational model of adjustment to breast cancer (Ben-Zur et al., 2001; Fang et al., 2001; Hilton et al., 2000; Lewis, 2004; Northouse & Swain, 1987).

The intervention materials are scripted, and they are contained in two manuals called: 1) The Patient Educator's Manual and 2) The Spouse Workbook. These two manuals, which are unpublished, provide the internal physical structure of the content, sequence and words that are used to counsel the spouse during each of the five sessions of the intervention. The Spouse Workbook contains the didactic text the nurse engages the spouse in. Every word, sequence, and at-home assignment the nurse helps the spouse work through in advance during the intervention session was reviewed by both the nurses and the spouses.

Session 1: Anchoring yourself to be strong for her

Session 1 invites the spouse to describe his experience with his wife's breast cancer and how he deals with it, including what is working and not working for him. The session assists him to learn and practice stress-reducing strategies and associate stress reduction with his improved ability to support his wife. Spouses can be attentive listeners to their wife if they are able to emotionally regulate their own anxiety. The spouse is given an assignment to complete with his wife.

Session 2: Listening and not fixing: Letting go of superman

Session 2 helps refine the spouse's skills to be a highly attentive listener for his wife and her breast-cancer-related concerns. Skilled listening involves three distinct components, all of which are taught and practiced with the educational counselor. These listening skills are linked with the wife's perception of feeling supported by her spouse. This session assists the spouse to develop skills to deeply listen and quietly attend to his wife's thoughts and feelings about breast cancer. It includes gaining skills to hold in abeyance his tendency to prematurely reassure her or try to 'fix'

a problem at a time when his wife wants him to be her listener, not her 'fixer'. The spouse engages in an in-session exercise and is given an assignment to complete with his wife.

Session 3: Gaining a deeper understanding of her

Session 3 builds on Session 2 but focuses the spouse on more advanced skills in eliciting and helping his wife elaborate her concerns or feelings about breast cancer, particularly when she is reticent or withdrawn. Such skills help him discover new things about her response to the cancer and ways he can support her. It is one thing to engage a talkative wife (Session 2); it is another thing to draw out a wife who is not forthcoming. The spouse engages in three in-session exercises and is given an assignment to complete with his wife.

Session 4: Connecting with her: Creating special times

Session 4 focuses on three new non-verbal strategies the spouse can use to increase and enhance the quality of interpersonal connection between him and his wife despite the breast cancer. These new strategies, unlike prior sessions, do not rely on talking, but on other ways of interpersonal relating and connecting to each other as a couple.

Session 5: Putting the pieces together

The final session adds to the spouse's skills to identify ways to continue to use the strategies he gained from the program. It is also an opportunity for the spouse to reflect on what he did and gained, thereby enhancing his self-confidence to manage in future situations. This self-reflection is an essential method to enhance the spouse's self-efficacy, anchoring the skills into a new self-formulation (Tougas et al., 2015).

Conceptual Framework for the Adaptation of HHH

The Ecological Validity Framework (EVF) (Bernal et al., 1995) was used to culturally adapt the HHH. Developed in 1995 (Bernal et al., 1995), it is frequently cited in the literature because of its usefulness in guiding the process of cultural adaptation (Bernal & Domenech Rodríguez, 2012; Domenech Rodríguez et al., 2011; Peterson et al., 2017) The EVF was used to culturally adapt Step-by-step (SBS), an evidence based intervention developed by the World Health Organization (WHO) to address depression among Chinese young adults in Macao and mainland China (Sit et al., 2020) and a parenting skills intervention for Latino parents (Domenech Rodríguez et al., 2011). The EVF has eight dimensions in which adaptations can occur. The dimensions are:

Language: Interventions must be delivered in a language that the recipient can understand. This language must be culturally appropriate, acceptable, syntonic, and not merely a simple translation. Use of jargon/slang can be considered if that is the acceptable language of the client.

Person: This dimension relates to the client-therapist relationship. Issues that affect this relationship must be considered as this relationship is enhanced when the dyad has cultural similarities. Clients must be able to relate and feel comfortable with their therapists.

Metaphors: This is the use of symbols and content of the client's culture. This use is achieved by using folk sayings and objects from the client's culture within the intervention itself and in the environment where the intervention is delivered.

Content: Knowledge of cultural values, norms and customs is important to achieve the goals of the therapy, thus treatment manuals should have examples that the client can relate to, and the therapist should respect the client's cultural values.

Concepts: The therapist's appraisal of the problem must be in alignment with that of the client. Cultural explanations of the cause of disease or problem must be explored because what a therapist thinks is a problem may not be from the client's perspective.

Goals: The goal of treatment should be framed within the client's culture, values, customs, and tradition. This is the cultural expectation of treatment. An example is a goal being framed as teaching a child "respect" instead of "discipline".

Methods: How a goal is achieved must be in line with the client's culture. An example is including the family in treatment if this is a norm of the client. Including family members in the therapy can enhance compliance with the treatment or intervention.

Context: Socioeconomic and family factors can affect the uptake of the intervention. Therefore, these factors should be explored to ensure that they do not prevent the achievement of goals. An example is that a parent struggling with financial issues may not be able to attend treatment sessions thus affecting the dosage and fidelity of the intervention.

Methods

Design

The cultural adaptation of HHH proceeded through three phases: 1) Expert consultation and initial adaptation by the student investigator; 2) Stakeholder consultation; and 3) Preliminary content adaptation. The methods used in each of these phases are described below.

Phase One: Expert Consultation and Initial Adaptation by the Student Investigator

This phase involved initial changes in content or directions in the intervention manual of HHH and then debriefing with the expert developer of the HHH. This debriefing protected the

fidelity and fit of each of the changes the student investigator wanted to recommend before taking the HHH into the field with nurses working with women with breast cancer and spouse caregivers.

Initial minor changes in the content and directions of HHH by the student investigator were based on the student investigator's professional opinion, cultural background, and over 7 years of experience working with spouses of women with breast cancer in Ghana. Before making these initial recommended edits to the HHH intervention manual and spouse caregiver workbook, the student investigator reviewed the two handbooks extensively. Content that was seen to not reflect the Ghanaian experience, was removed, modified or, in some cases, new content was added to the intervention manuals after review and approval by the developer of the intervention. This review by the developer ensured fidelity to the original intervention so as not to alter the core structure of the intervention. See Table 5 for specific examples of recommended wording changes in both the Patient Educator's Manual and Spouse Workbook by the student investigator. All wording changes were reviewed and approved by the original author of the HHH. From the initial adaptation phase the investigator believed the HHH was largely appropriate to the Ghanaian experience. However, some of the strategies in Session One for unwinding were found not to be applicable in Ghanaian society. Those strategies were removed, and others were included. Additionally, some phrases were modified to make it easier to understand in the Ghanaian context.

Phase Two: Stakeholder Consultation

Individual interviews were conducted with two Ghanaian nurses with experience in working with women and their spouses and with four spouses of women diagnosed with breast cancer; both individually provided their opinion on the intervention manuals. Both registered nurses had at

least a BSN and had been working at the breast clinics for over five years. These criteria ensured that they had experience and knowledge of couples dealing with breast cancer. Individual interviews were conducted with four spouses living with wives who had breast cancer within one year of diagnosis for them to share their opinion on the intervention based on their own experience. See Tables 6 and 7 for a summary of the recommended edits from the nurses and spouse caregivers.

Phase Three: Preliminary Content Adaptation

After consultation with the breast cancer nurses and spouses, their recommended changes were combined with the student investigator changes and incorporated into the HHH intervention materials to obtain the adapted draft HHH-Ghana. These adapted materials were then ready for field testing in Study 2.

Setting

The study was conducted at two health facilities in Accra, the capital city of Ghana: The Korle-Bu Teaching Hospital (KBTH) and the Sweden Ghana Medical Center (SGMC). The KBTH is the premier tertiary and national referral healthcare facility in Ghana, providing specialized healthcare to clients from all over the nation and the sub-region. Participants were recruited from the Department of Surgery and the National Radiotherapy Oncology and Nuclear Medicine Centre. The Sweden Ghana Medical Center (SGMC) is a state-of-the-art private cancer facility that offers private cancer care in West Africa.

IRB Approval

Ethical approval was initially obtained from the UW Human Subjects Committee and then by the Institutional Review Board of the Korle-Bu Teaching Hospital and the Ethics

Committee of the Sweden Ghana Medical Center. The purpose, potential benefits and risks of study participation were explained to potential participants after which they were requested to sign an informed consent form when they agreed to participate in the study. See Appendices A and B for the consent forms.

Sample and Data Collection

Purposive sampling technique was used to select two nurses from the Korle-Bu Teaching Hospital and the Sweden Ghana Medical Center. One of the nurses had worked with couples for five years while the other eight years. Four spouse caregivers were convenience-sampled from the two centers through their wives who had come for medical treatment, recruitment flyers, referral from nurse intermediaries at the two centers and by the student investigator when approached by potential participants. Spouses were eligible if they could speak and read English (the official language), were living with their wife/partner for at least 6 months, and their wives had Stage I, II and III breast cancer. See Appendices C and D for the recruitment flyer and brochure.

The nurses were handed both the Patient Educator's Manual and the Spouse Workbook and given up to one week to review it. The spouses were given only the Spouse Workbook and given up to one week to review it. Participants were given instructions on how to review the manuals. See Appendices E and F for instructions on how to review the manuals. After each participant completed their review of the manual, individual interviews were conducted with them by the student investigator to elicit their opinions on the manuals. Four interviews were conducted in a private space provided in the facilities. One interview was conducted in the spouse's home and one by telephone. Confidentiality and privacy were ensured during all the interviews. The interviews were audio recorded and lasted between 45-70 minutes. Interview

guides consisting of specific questions relating to the contents of the intervention were used during the interview with both breast cancer nurses and spouses. See Tables 1 and 2 for example interview questions that were asked of the nurses and of the spouse caregivers. See Appendices G and H for the complete interview questions.

Table 1

Example of Interview Questions Asked of the Nurses

Question
• In what way does the content of Session 1 have relevance to spouses? • What part of Session 1 do you think has personal relevance to spouses? • What was not useful or what things did you not like about Session 1? • What would you say about HOMEWORK ASSIGNMENT for Session 1 in terms of spouses being able to complete it, given all they would be going through at the time?

Table 2

Example of Interview Questions Asked of Spouses

Question
• Between the nurse and the doctor, who would you be most comfortable to work with you through this intervention? • If any other, please indicate
• What can you say about the clinical environment in which you and your wife are being cared for?
• In what way do you understand the content of session 1 • What part of Session 1 has personal relevance to what you experienced with your wife? • What was not useful or what things did you not like about Session 1? • What would you say about HOMEWORK ASSIGNMENT for Session 1 in terms of being able to complete it, given all you were going through at the time of initial diagnosis?

Data Analysis

Prior to data analysis, interviews were transcribed verbatim, and the accuracy of transcripts was ensured by comparing them to the audio recordings and having Lewis (Chair of student investigator's dissertation committee) review some of the recordings and transcripts. Both deductive and inductive content analysis were used to analyze the data. Deductive analysis was used to ascertain responses to questions that related to EVF and was organized around the eight dimensions of the EVF. Inductive analysis was used to analyze the remaining data that did not relate to the EVF. Inductive content analysis proceeded in 5 steps: 1) The student investigator read the transcripts to become familiar with the data and obtain a general idea of the whole. 2) Inductive content analysis was used to inductively generate codes using words, phrases and sentences that capture concepts and ideas from the remaining data. The unit of coding was a complete idea expressed by the participant. 3) These inductively generated codes were then sorted to form categories. 4) After the first round of inductive coding, similar ideas under a category were grouped into clusters to form sub-categories. The categories and sub-categories were defined and were used to code subsequent transcripts. 5) Words from participants were used to label the codes (Hsieh & Shannon, 2005). Constant comparative analysis was carried out throughout the coding process where different parts of a transcript from a single participant were compared to ensure consistency in the participant's narratives. Also, transcripts from among spouses were compared, and finally transcripts from spouses and nurses were compared (Boeije, 2002).

Category labels were used to organize the inductive content analysis, complemented by quotes that represent categories and sub-categories. Peer debriefing with Lewis was done to ascertain the accuracy of transcripts, emerging categories, and subcategories. An audit trail was

maintained to protect the trustworthiness of study results and a field diary was used to take short notes during the interviews. At the end of the analysis, findings relating to proposed changes were incorporated into the existing manual in consultation with Lewis to obtain the adapted draft HHH-Ghana. Consultation with Lewis ensured balance between fidelity to the intervention and fit to Ghanaian men. Edits were made to reflect feedback from participants.

Results

Table 3 and 4 show the demographic information of spouse participants and the disease-related information of their wives. Changes made after consultation with the developer of the intervention, breast cancer nurses and spouse caregivers are shown in Tables 5,6 and 7.

Table 3

Sociodemographic Data of Spouse Participants

Participant ID	Age	Religion	Wife's age	Number of years married	Number of children	Educational level	Wife's educational level	Employment status	Wife's employment status	Ethnicity	Wife's ethnicity
S1	70	Christian	53	28	4	University degree	Primary	Retired	Employed	Ewe	Kwawu
S2	48	Muslim	43	19	4	University degree	Secondary	Employed	Employed	Dagomba	Dagomba
S3	41	Christian	41	14	3	University degree	Tertiary	Employed	Employed	Ewe	Fante
S4	51	Christian	48	6	4	University degree	Secondary	Employed	Employed	Ga	Fante

Table 4

Disease-Related Data of Wives

Participant ID	Time since wife's diagnosis	Stage of wife's cancer	Type of treatment received
S1	12 months	3	Surgery, Chemotherapy
S2	6 months	3	Chemotherapy
S3	12 months	3	Surgery, Chemotherapy
S4	4 months	1	Chemotherapy

Table 5

Initial Adaptations to the HHH Manuals (Patient Educator's Manual and Spouse Workbook) by Student Investigator

Dimensions of Ecological Validity Framework	Definition of dimension	Content of intervention manual before adaptation	Issue with content of intervention manual before adaptation	Content of intervention manual after adaptation
Person	The client and therapist relationship and their compatibility.	Not applicable	No issues were identified	No changes were made
Language	The use of text that the recipient can understand.	"and we have kind of scattered mealtimes" "Sounding board" "What's your experience been in being a listener or a sounding board for your wife?" "Everybody has to fend for themselves on laundry." "And things like grocery shopping"	These phrases are not commonly used in Ghanaian parlance thus the phrases were modified.	"and I am unable to cook." "Confidante." "How has it been to be a listener or a confidante for your wife?" "Everybody has to wash their clothes." "And things like going to the market."

Dimensions of Ecological Validity Framework	**Definition of dimension**	**Content of intervention manual before adaptation**	**Issue with content of intervention manual before adaptation**	**Content of intervention manual after adaptation**
Metaphors	Use of symbols and contents of client's culture in the content and within the environment where the intervention is delivered.	"Each time we fly, we are instructed, in case of an emergency, to put on our own oxygen mask, before assisting the person next to us. This first session is about getting your own oxygen mask in place before assisting your wife."	The analogy of flying was seen not to be applicable because flying is not a regular means of transportation thus the analogy was changed.	"Each time we travel on the bus, we are instructed, in case of an emergency, to get to safety, before assisting the person next to us. The first session is about getting to safety before assisting your wife."
Content	Examples in the manual that clients can relate to.	Strategies for unwinding: • Walking the dog • Taking a bicycle ride • Do a wood working project • Garden • Go to a swap meet • Play golf, racquet ball, bowl • Paint • Play a computer game • Bird watch • Go for a hike • Camp out • Go climbing • Go swimming • Soak in a hot tub	These strategies may not be applicable in the larger Ghanaian society and thus were removed and new ones added.	The following strategies were included: Attending social gatherings like funerals, weddings, naming ceremonies Play football or any sport of choice

Dimensions of Ecological Validity Framework	Definition of dimension	Content of intervention manual before adaptation	Issue with content of intervention manual before adaptation	Content of intervention manual after adaptation
		• Putter • Throw out stuff "half an hour"	It is common to have long waiting hours in hospitals thus "30 minutes" was not a realistic time to get a patient upset thus the time was increased.	"two hours"
		"That would mean we couldn't go away in two weeks the way we planned."	Going away is not a popular activity and thus the scenario was changed to attending a social event which is more valued.	"That would mean we couldn't go for my sister's wedding."
		"I was going out, driving a car".	Many women in Ghana may not relate to the driving example.	"I was going to the market."
Concepts	The therapist's appraisal of the problem and whether it is congruent with the client's or not.	Not applicable	No issues were identified	No changes were made

Dimensions of Ecological Validity Framework	Definition of dimension	Content of intervention manual before adaptation	Issue with content of intervention manual before adaptation	Content of intervention manual after adaptation
Goals	The cultural expectation of treatment.	Not applicable	No issues were identified	No changes were made
Methods	Ways by which the goal of treatment is achieved, example, inclusion of family members and the mode of delivery.	Not applicable	No issues were identified	No changes were made
Context	Socioeconomic and family factors that can affect uptake of the intervention.	Not applicable	No issues were identified	No changes were made

Table 6

Recommended Adaptations to the HHH Manuals (Patient Educator's Manual and Spouse Workbook) from Nurses

Dimensions of Ecological Validity Framework	Definition of dimension	Content of intervention manual before adaptation	Issue with content of intervention manual before adaptation	Frequency N=2	Content of intervention manual after adaptation
Person	Client and therapist relationship and their compatibility.	Not applicable	No issues were identified	-	None
Language	The use of text that the recipient can understand.	"blood draw"	One of the nurses felt that this phrase was not common in Ghanaian parlance and suggested another phrase.	1	"lab test"
Metaphors	Use of symbols and contents of client's culture in the content and within the environment where the intervention is delivered.	"letting go of superman"	One of the nurses said the phrase made men look egoistic and suggested a modification.	1	"being the sweetest superman"
Content	Examples in the manual that clients can relate to.	"talking to a friend"	One of the nurses said it was not a good idea to talk to friends because spouses may end up	1	Took out "talking to a friend"

Dimensions of Ecological Validity Framework	Definition of dimension	Content of intervention manual before adaptation	Issue with content of intervention manual before adaptation	Frequency N=2	Content of intervention manual after adaptation
			talking about wife's diagnosis which could lead to stigmatization.		
		"Appreciation of her and what she is going through –creating a letter to her which reflects your appreciation of what she is going through – what you see her doing well – what you admire in her.	Both nurses said writing a letter is not a common practice and should be modified to appreciating wife verbally and also buying her a gift	2	"Appreciation of her and what she is going through - buying her a gift and then verbally telling her your appreciation of what she is going through – what you see her doing well – what you admire in her"
		"reading a magazine"	Both nurses said reading of magazine should be taken out because magazines are not available these days	2	Reading magazine was removed.
Concepts	The therapist's appraisal of the problem and whether it is congruent with client's or not.	Not applicable	No issues were identified	-	None

Dimensions of Ecological Validity Framework	**Definition of dimension**	**Content of intervention manual before adaptation**	**Issue with content of intervention manual before adaptation**	**Frequency N=2**	**Content of intervention manual after adaptation**
Goals	The cultural expectation of treatment.	Not applicable	No issues were identified	-	None
Methods	Ways by which the goal of treatment is achieved, example, inclusion of family members and the mode of delivery.	Not applicable	No issues were identified	-	None
Context	These are socioeconomic and family factors that can affect uptake of the intervention.	Not applicable	No issues were identified	-	None

Table 7

Recommended Adaptations to the Intervention Manual (Spouse Workbook) from Spouses

Dimensions of Ecological Validity Framework	Definition of dimension	Content of the intervention manual before adaptation	Issue with the content of the intervention manual	Frequency N=4	Content of the intervention manual after Adaption
Person	Client and therapist relationship and their compatibility.	A trained health care professional was eligible to deliver the HHH; in the seminal study, this included nurses, social workers, certified masters prepared health educators	No issues were identified as spouses mentioned they were comfortable with either a nurse or a physician delivering the intervention to them	-	None
Language	The use of text that the recipient can understand.	Not applicable	No issues were identified as enrolled spouses could communicate in English	-	None
Metaphors	Use of symbols and contents of client's culture in the content and within the environment where the intervention is delivered.	Not applicable	No issues were identified	-	None
Content	Examples in the manual that clients can relate to.	"talking to a friend"	Most of the spouses did not disclose their wives' diagnosis to others and were afraid that if they talked to a	4	Talking to a friend was removed from the list of strategies

Dimensions of Ecological Validity Framework	Definition of dimension	Content of the intervention manual before adaptation	Issue with the content of the intervention manual	Frequency N=4	Content of the intervention manual after Adaption
			friend, they would accidentally disclose the diagnosis, thus did not want to talk to a friend.		
		"writing letter"	Spouses felt uncomfortable having to write a letter to their wives. Additionally, they felt their wives will appreciate a gift instead, thus writing a letter was removed.	4	"buying her a gift and then verbally telling her your appreciation of what she is going through – what you see her doing well – what you admire in her"
		"reading a magazine"	A spouse said magazines were not relevant and suggested a new strategy.	1	"prayer and faith related activities"
Concepts	The therapist's appraisal of the problem and whether it is congruent with client's or not.	Not applicable	No issues were identified	-	None

Dimensions of Ecological Validity Framework	**Definition of dimension**	**Content of the intervention manual before adaptation**	**Issue with the content of the intervention manual**	**Frequency N=4**	**Content of the intervention manual after Adaption**
Goals	The cultural expectation of treatment.	Not applicable	No issues were identified	-	None
Methods	Ways by which the goal of treatment is achieved, example, inclusion of family members and the mode of delivery.	Not applicable	No issues were identified	-	None
Context	Socioeconomic and family factors that can affect uptake of the intervention.	Not applicable	No issues were identified	-	None

Summary of Results Relating to EVF

Example quotes are presented here to support changes that were suggested by breast cancer nurses and spouses in the domains of the EVF. Quotes also reflect the domains in which changes were not made. Quotes indicate from which spouse (S) or nurse (N) they came.

Person

With regards to person, the focus is on whether the spouse is comfortable with the person delivering the intervention. Spouses mentioned that they didn't mind who took them through the intervention and when asked to choose, half of them said they would prefer a nurse while the other half preferred a doctor. *"I'm cool with any of them in so far as they are experts in the field. So it doesn't really matter who will take me through whether the doctor, and since they work in collaboration with each other, but I may tilt towards the doctor."* (S3), *"I would be comfortable… I don't mind working with both. But if you really have to make a choice…, then I would be comfortable working with the nurse."* (S4).

Language

It is important for users of the intervention to be able to comprehend the text in the intervention manual. It was a dimension in which both nurses and spouses recommended changes, although they agreed that the language used in the manuals was comprehensible; they indicated, *"most of the things were ok. I perfectly understood all the tasks, the assignments and whatever is being asked."* (S3), *"I think they [text in manuals] are all basic, basic and at everybody's level, to understand."* (N1). One of the nurses suggested changing "blood draw" to "blood test" by saying "In our setting for instance, we don't use blood draw, we use lab test" (N2).

Metaphor

The focus of adaptation in this dimension was whether sayings or expressions used in the HHH were relevant to spouses. Spouses did not make any recommendations for change; however, the student investigator and nurses made some changes. For example, "letting go of superman" was changed to "being the sweetest superman" when a nurse said, *"But if you say letting go of the Superman, they will think you are telling them they are egoistic, they want to be heard all the time and you are telling them indirectly that they are being too known."* (N1).

Content

Users of the intervention must be able to relate to the examples used in the intervention manuals, thus the student investigator, nurses and spouses recommended changes in the strategies suggested for unwinding in the intervention manual. One of the spouses suggested including engaging faith-based activities, *"The things that you can add is prayer. The person should be rooted in prayer…And believe in God that everything is in the hand of God, that God can work out this situation for good."* (S1).

Concept

This dimension has to do with whether the therapist and spouse see the problem in the same way. Both nurses and spouses mentioned financial challenges as the biggest problem when they said, *"And I told you from the beginning that most of our patients are not working. So usually the financial burden falls on the spouse."* (N2), *"the first thing is financially certainly."* (S1), *"finances, because some of them, it is only this partner, the man, that is the breadwinner, that is footing every bill, everything concerning the treatment."* (N1).

Goals

This dimension has to do with if the goal of treatment was framed within the client's culture, values, customs, and tradition. Nurses and spouses understood that the intervention may help couples communicate better and draw them closer to each other. Spouses said, "*It [intervention] would have offered me to have a closer relationship with my wife. Certain areas that we need to be more tolerant and then probably just as in the Session 2, not being bossy."* (S1) and *"I think I would have gained a lot in terms of knowing how to talk to her, learning how to listen to her more, learning how to give her the chance to talk more. I would arrange an outing with her."* (S4). One of the nurses also agreed by saying *"It (intervention) will make our spouses get committed… this will help spouses get involved in their wives' care and the care being given to them. So, it's really relevant, and I wish it comes out very quickly because it's very practical."* (N2).

Methods

This dimension has to do with ways by which the goal of treatment is reached, and this applies to the face-to-face format in which the intervention is being delivered and whether spouses are willing to visit the facility to receive the intervention. Both nurses and spouses said the current format of the intervention was alright with them. *"So the biweekly sessions is not bad. The specific date is what matters."* (N2), *"So once they read the booklet and they know what it entails, they will be willing to attend sessions."* (N1). A spouse also said nothing would stop him from attending sessions. *"There is nothing that will prevent me from attending to everything here."* (S2).

Context

This dimension has to do with socioeconomic or family factors that can prevent spouses from receiving the intervention. Spouses mentioned that they would be willing to visit the hospital to receive the intervention and thought their wives would not have a problem working on the homework assignments with them *"She will respond. As I said, I have a unique way of doing things with her. All that I tell her she listens, so her inclusion will be very good."* (S2)

Results from Inductive Content Analysis

The inductive analysis of data that was not related to the EVF produced three categories and seven subcategories which were additional findings from the study. See Table 8. These results did not lead to any changes to the intervention manuals but provided additional insight into the experiences of spouse caregivers.

Table 8

Categories and sub-categories

Category	Sub-categories
Taking a toll	Toll on everything Emotionally challenging Childcare
Enhanced understanding	Understanding wife better Understanding breast cancer
Local medicine/ Traditional medicine	Recommended by friends Complicating treatment

Taking a Toll

Spouses stated how their wives' breast cancer took a toll on every aspect of their lives when they said, *"So, it's a whole me and has taken toll on everything that I wanted to do."* (S2),

"Family life was challenging in the sense that the things that you used to do together you can no longer do." (S3).

Two of the spouses reported how taking care of their children became challenging by saying, *"Like we left the children in the house, who will take them to school?...when we come here (hospital), it affects the children's regular attendance to the school."* (S2), *"Because despite everything the two of us are still caring for our children and it's demanding."* (S3).

Enhanced Understanding

Spouses mentioned that their wives' breast cancer has enabled them to understand the disease better when they said *"but from our personal experience, sometimes I feel like an oncologist myself, because I have come to appreciate how it starts, the various stages that it goes through, what is associated with each stage." (*S3), *"It really offered me a lot because, it actually helped for me to understand, to have a deeper understanding of this (breast cancer)."* (S2).

Local Medicine/Traditional Medicine

Spouses talked about friends and family advising the use of local or traditional medicine and the fact that other women had died from not visiting the hospital. They said, "*And then because apart from the Orthodox method, people, friends will say there is this traditional something you must apply this, you must do this.*" (S1), "*People come telling you that there's this herbal. You know you want to try it. It doesn't work, the situation gets worser and then you have to come back to the medical field…. If you're not careful, by the time you come back the situation is so bad." (*S4). Another spouse said, *"They just go to the local… I just forget about it. This thing doesn't need any local attention or local treatment because a lot of people died back home because of the local treatment. That's why we have to seek medical attention."* (S2).

Discussion

Breast cancer affects many women in Ghana, and spouses play a key role in supporting their wives during the trajectory of the disease. Spouses suffer along with their wives while providing support. This is the first study to culturally adapt an EBI for spouse caregivers of women with breast cancer in Ghana and incorporated a rigorous method to culturally the HHH. Culturally adapted EBIs have better outcomes than simply transferring an EBI to a new population (Chowdhary et al., 2014; Parra-Cardona et al., 2017; Soto et al., 2019), thus the need for this study which outlines the process for culturally adapting the HHH in Ghana. The three-phase approach and the EVF provided a systematic way of collecting data for the adaptation process and is discussed.

Phase one and two involved expert and stakeholder consultation. The student investigator and the developer of the intervention ensured that changes did not alter the core structure or the validity of the intervention but were acceptable to participants, thus ensuring fidelity and fit for the new population. This approach was similarly used in other studies to culturally adapt Step-by-Step, a WHO digital mental health intervention for two different populations, stakeholder and expert consultation was done to elicit feedback in the adaptation process (Carswell et al., 2018; Garabiles et al., 2019). The core structure of HHH and mode of delivery was acceptable to the nurses and spouse participants, accounting for the minimal changes that were made. It was noted that spouse participants recommended fewer changes. We do not know why the spouses suggested few changes; spouses answered most questions regarding relevance of various sessions of the intervention in the affirmative. The recommended changes were incorporated into the HHH manuals to obtain the preliminary adapted HHH in phase three.

The use of a conceptual framework determined the data to be collected. The EVF takes into consideration other factors like symbols from client's culture, examples that clients can relate to, and jargon the client can understand. This enabled adaptation of words and phrases like "Everybody has to fend for themselves on laundry." to "Everybody has to wash their clothes." The EVF was useful because the framework goes beyond simply translating materials and focuses on the use of language that is acceptable. This consideration was particularly useful because in Ghana there was no need to translate the HHH into English; the official language is English and, over 70% of the population are literate. Being literate according to the 2021 population census refers to the ability to read and write with understanding in any language (Ghana Population and Housing Census, 2021). In other similar studies to culturally adapt EBIs for Chinese and Latino populations however, intervention manuals were translated at the initial stages to enable participants to comprehend the content (Domenech Rodríguez et al., 2011; Nisar et al., 2020; Sit et al., 2020). The student investigator, nurses and spouse caregivers in this current study found the text used in the HHH manuals to be comprehensible and easily understandable. However, some words and phrases like "blood draw" and "sound board" were modified or changed to "blood test" and "confidante" respectively because theses expressions were not commonly used expressions in Ghana.

Most of the adaptions to the HHH occurred in the Content dimension of the EVF in which the student investigator, nurses and spouse participants suggested changes to be made because they thought some of the self-care strategies in the manuals were not applicable in the Ghanaian context. Strategies like bird watching, hiking, campouts, and soaking in a hot bath within the American culture were removed and replaced with "Attending social gatherings" by the student investigator. Attending social gatherings like weddings, naming ceremonies, birthday

parties and funerals is more applicable in the Ghanaian context as described in the book, Culture and Customs in Ghana (Salm & Falola, 2002). Ghanaians are highly religious people, and this is evident in the religious characteristics of the spouse caregivers, where 75% were Christians. This finding is consistent with the 2021 population census report where Christians were 71.3%, Muslims 19.9%, Traditionalist 3.2%, other religions 4.5%, with only 1.1% of the population having no religion (Ghana Housing and Population Census, 2021). This religious affiliation accounted for the suggestion to include “Engaging in faith-based activity” as a self-care strategy by a spouse caregiver.

Another modification made in the Content dimension was changing the phrase “Letting go of Superman” to “Being the Sweetest Superman” as suggested by one of the nurses. The nurse explained that the original phrase sounded like spouses were being mocked and made them look egoistic and thus the words were not acceptable. In a study in China to culturally adapt an EBI to address depression in Chinese young adults, participants expressed similar sentiment of some content not being acceptable (Sit et al., 2020). Another significant change was to modify “Writing a letter”. The two nurses and all four spouses suggested spouses could “Verbally appreciate their wives” since it was not common practice amongst couples in Ghana to write letters to each other. The waiting time was changed to 2 hours because the 15 minutes in the HHH manual was not perceived to be a long waiting time that would upset a patient. Similar changes were made to reflect socially acceptable Chinese culture in the study by Nisar et. al., 2020 to culturally adapt the Thinking Healthy Program for perinatal women in China. Participants suggested alternative stressful situations like conflict with in-laws which was applicable in the Chinese culture.

Results from the inductive analysis showed that family and friends had mentioned or suggested the use of traditional/herbal medicine to spouses and wives. This is consistent with studies from Ghana revealing that 19.7% and 28.6 % of women with breast cancer reported being late to health facilities because of the use of alternative treatments (herbal preparations and attending prayer camps (Brinton et al., 2017; Clegg-Lamptey, 2009). Seeking alternative treatment led to delay in treatment of 23 out of 86 women (Clegg-Lamptey et al., 2009). Due to the abuse of unapproved herbal medications leading to some of these delays, the Government of Ghana and Ministry of Health has made efforts to incorporate traditional medicine into the orthodox treatment (Asante & Avornyo, 2013). The Mampong Scientific Research in Plant Medicine in Ghana conducts research into plant medicine and approves herbal medication that is used for the treatment of various illnesses in some designated health facilities to reduce the use of unapproved herbal preparations.

Limitations and Strengths

Two factors limit this study and its generalizability. First, the small sample size limited the amount of feedback that could be obtained. Second, the eligibility criteria eliminated some potential spouse caregivers and involved only spouses who were able to read and speak English. This inclusion criterion resulted in a sample of highly educated spouses whose experiences may differ from that of the general Ghanaian spouse caregiver population. Despite these limitations the study's strength is in the approach used. The three-phase method that allowed feedback from the student investigator, the developer of the intervention, nurses, and spouses led to comprehensive stakeholder consultation. The EVF was useful in providing a systematic way of collecting data that can be replicated.

Implications for Nursing Science

There are several implications for nursing science from this study. The three-phase approach to culturally adapt the HHH and the EVF used in the process of culturally adapting the HHH provided a cogent, systematic, efficient approach in further studies relating to cultural adaptations of future, additional EBIs in Ghana. Based on study results, future adaptations of the HHH may include scheduling intervention sessions to coincide with wives' treatment schedules as suggested by some spouse caregivers. Future studies can consider adapting intervention manuals into audio visual materials that could be more appropriate for spouse caregivers who are unable to speak and read English. Results from this study led to a culturally adapted HHH that was ready for field testing in Study 2.

Conclusion

This study involved a process of culturally adapting the HHH intervention for spouse caregivers of women with breast cancer in Ghana. Results showed that the three-phase approach and EVF were useful in guiding the cultural adaptation process. The HHH was largely acceptable and applicable in the Ghanaian context, but changes were made in the language, content, and metaphor dimensions of the EVF to make the HHH more acceptable and applicable. The culturally adapted HHH is now ready for a field test to ascertain its acceptability after adaptation.

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Appendix A

UNIVERSITY OF WASHINGTON

NURSE CONSENT FORM: STUDY 1 AND 2

HELPING HER HEAL: GHANA

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I am asking you to be in a research study. This form gives you information to help you decide whether or not to be in the study. Being in the study is voluntary. Please read this carefully. You may ask any questions about the study. Then you can decide whether or not you want to be in the study. Your participation in the study is voluntary.

PURPOSE OF THE STUDY

The purpose of this study is to culturally adapt an educational program developed and tested in the US for spouses of women with breast cancer. The program was developed to help spouses communicate better with their wives, improve the marriage relationship, give spouses skills in taking care of themselves, and reduce their anxiety and depression. Before recommending the use of the program in Ghana, I am recruiting nurses like yourself who work with couples dealing with breast cancer to help determine if the program in its current form is appropriate for Ghanaian spouses. Your feedback will help improve the program and make the program appropriate and useful for Ghanaian spouses.

STUDY PROCEDURES

I will ask you to review a program for spouses of women with breast cancer at two different times. The first time I will ask you for your initial feedback on the sessions of the program in terms of the appropriateness of the program in the Ghanaian context. I will then make changes to the program based on your feedback and ask you to review the revised program a second time. After your review, I will interview you to talk about your feedback on the program. The interview will be audio recorded and last about 30-40 minutes. Your name and identification will not appear in the audio recorded interview.

RISKS, STRESS, OR DISCOMFORT

We do not anticipate any risk to you. However, if there is emotional distress because of recounting the experiences of your clients (couples) dealing with breast cancer, I will gladly assist you in getting a referral to an appropriate resource. Your permission must be given before a referral is made because all information you share with me is kept strictly confidential within the limits of the law.

COMPENSATION

To compensate you for the time you spend reviewing the documents, you will be given a token of $25 US dollars after completing the two interviews.

BENEFITS OF THE STUDY

This study may not benefit your current patients directly but the information you provide will help improve the program and help spouses in the future whose wives have breast cancer.

SOURCE OF FUNDING

The study is the dissertation of the researcher in partial fulfilment of the award of a Doctoral degree in Nursing Science and is funded by the researcher.

CONFIDENTIALITY OF RESEARCH INFORMATION

I will store your interview information separately from your consent form so that your responses cannot be linked to you. I will use a participant identification number instead of your name to identify you. All the responses you provide will be confidential.

OTHER INFORMATION

You may refuse to participate, and you are free to withdraw from this study at any time.
If you wish to withdraw, please contact the researcher listed on page 1 of this consent form.

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, or if I have been harmed by participating in this study, I can contact the researcher listed on the first page of this consent form. If I have questions about my rights as a research subject, I can call Dr Frances Marcus Lewis (Chair of the student's supervisory committee) on +12063214479. I will receive a copy of this consent form.

I voluntarily consent to have the interview audio recorded. Only the researcher and Dr. Frances Marcus Lewis (Chair of the researcher's supervisory committee) will be able to listen to the recordings. Those recordings, however, will only have your code number, not your name, identifying the recording.

Yes, I agree to be audio recorded as part of this research.

Printed name of subject Signature of subject Date

Copies to: Researcher
Subject

Appendix B

UNIVERSITY OF WASHINGTON

SPOUSE CONSENT FORM: STUDY 1 AND 2

HELPING HER HEAL: GHANA

Researcher: Brenda Osei-Assibey
Department of Child, Family & Population Health
+1-206-604-8716/ +233-244-861-405

I am asking you to be in a research study. This form gives you information to help you decide whether or not to be in the study. Being in the study is voluntary. Please read this carefully. You may ask any questions about the study. Then you can decide whether or not you want to be in the study. Your participation in the study is voluntary.

PURPOSE OF THE STUDY

The purpose of this study is to culturally adapt an educational program developed and tested in the US for spouses of women with breast cancer. The program was developed to help spouses communicate better with their wives, improve the marriage relationship, give spouses skills in taking care of themselves and reduce their anxiety and depression. Before recommending the use of the intervention in Ghana, I am recruiting spouses like yourself to help determine if the intervention in its current form is appropriate for Ghanaian spouses. Your feedback will help improve upon the program and make the program appropriate and useful for Ghanaian spouses.

STUDY PROCEDURES

I will ask you to review a program for spouses of women with breast cancer at two different times. The first time I will ask you for your initial feedback on the sessions of the program in terms of the appropriateness of the program in the Ghanaian context. I will then make changes to the program based on your feedback and ask you to review the revised program a second time. After your review, I will interview you to talk about your feedback on the program. The interview will be audio recorded and last about 30-40 minutes. Your name and identification will not appear in the audio recorded interview.

RISKS, STRESS, OR DISCOMFORT

We anticipate a risk of emotional distress or discomfort because of personal and possibly sensitive questions, or because of talking about your wife's breast cancer. This distress is usually short-lived, but should you want assistance in dealing with these feelings, I will gladly assist you in getting a referral to an appropriate resource. Your permission must be given before a referral is made because all information you share with me is kept strictly confidential within the limits of the law.

BENEFITS OF THE STUDY

This study may not benefit you directly but the information you provide will help improve the intervention and help other spouses whose wives have breast cancer.

COMPENSATION

To compensate you for the time and resources you spend transporting yourself to the facility and reviewing the documents, you will be given a token of $25 after completing the two interviews.

SOURCE OF FUNDING

The study is the dissertation of the researcher in partial fulfilment of the award of a Doctoral degree in Nursing Science and is funded by the investigator.

CONFIDENTIALITY OF RESEARCH INFORMATION

I will store your interview information separately from your consent form so that your responses cannot be linked to you. I will use a participant identification number instead of your name to identify you. All the responses you provide will be confidential. However, if I learn that you intend to harm yourself or others, I must report that to the Domestic Violence and Victim Support Unit (DOVVSU).

OTHER INFORMATION

You may refuse to participate, and you are free to withdraw from this study at any time without penalty or loss of benefits to which you or your wife are otherwise entitled. If you wish to withdraw, please contact the researcher listed on page 1 of this consent form.

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, or if I have been harmed by participating in this study, I can contact the researcher listed on the first page of this consent form. If I have questions about my rights as a research subject, I can call Dr Frances Marcus Lewis (Chair of researcher's supervisory committee) on +12063214479. I will receive a copy of this consent form.

I voluntarily consent to have the interview audio recorded. Only the researcher and Dr. Frances Marcus Lewis (Chair of researcher's supervisory committee) will be able to listen to the recordings. Those recordings, however, will only have your code number, not your name, identifying the recording.

Yes, I agree to be audio recorded as part of this research.

Printed name of subject Signature of subject Date

Copies to: Researcher
Subject

Appendix C

RECRUITMENT FLYER

Helping Her Heal: Ghana, A Program for Spouses of Women with Breast Cancer

The woman you care about has breast cancer. In addition to the questions you have about her health, you may also be wondering about the best way to support her through this experience. ***Helping Her Heal: Ghana*** is a research study designed to help you support the woman you love (wife or partner) and add to your ways to deal with the impact of breast cancer in your everyday life.

The study includes ways you can:

- ✓ Strengthen yourself so you can be strong for her.
- ✓ Discover, specifically, what your wife/partner needs from you related to the breast cancer.
- ✓ Help your wife/partner feel cared for by you.

You can take part in the study if:

- ✓ You are a man married to or in a committed, partnered relationship with a woman who is diagnosed with early-stage breast cancer (stage I, II, or III).
- ✓ Your wife's first diagnosis of breast cancer is within 12 months.
- ✓ You live in Accra.
- ✓ You can speak and read English.
- ✓ You have access to a telephone.

Compensation

For your time and effort in participating in the study, you will be compensated with $25 at the end of the studies 1 and 2 and $50 at the end of study 3.

To talk to someone further about enrolling in this study, please call:

Brenda Osei-Assibey, RN, MN
0244 861 405
Email: bosei@uw.edu

Appendix D
Recruitment Brochure

".. I was asking myself what can I do? How can I help her? How can I be of assistance to her? I was helpless." Spouse 1

"I felt bad, I felt her pain she was going through" Spouse 2

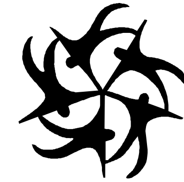
"Since the time of the surgery, I don't have the energy and happiness…" Spouse 3

"It came to a time I said, I have to keep everything inside of me. I didn't want her to be thinking so I tried to control and suppress my own emotions." Spouse 4

"I kept this secret. I did not tell anybody. I kept it to myself and decided to fix my own problems" Spouse 5

"I knew very little about the disease. I had heard something about it on Spouse 6
TV mostly about people refusing to have their cancerous breast removed and dying afterward" Spouse 7

"Before the surgery, she was worried and when she gets worried it bothers me a lot and I become anxious…her worry is my worry." Spouse 8



Helping Her Heal: Ghana

A Program

for Spouses[1] of

Women with Breast Cancer

[1] Spouses include intimate male partners, not just married partners

Helping Her Heal: Ghana A Program for Spouses[1] *of Women with Breast Cancer*

The woman you care about has breast cancer. In addition to questions you have about her health, you may also be wondering about the best way to support her through this experience.

Helping Her Heal: Ghana is a research study designed to help you support the woman you love (wife or partner) and add to your ways to deal with the impact of breast cancer in your everyday life.

The study includes ways you can:

- Strengthen yourself so you can be strong for her
- Discover, specifically, what your wife/partner needs from you related to the breast cancer
- Help your wife/partner feel cared for by you

This study was created in response to men, like you, telling the developers of the program about the challenges they experienced in supporting their wives who were going through treatment for breast cancer.

The ***Helping Her Heal: Ghana Program*** is offered through the University of Washington School of Nursing as the doctoral study of the researcher. Experts and nurse clinicians carefully created the materials used in the program, based on over 15 years of research and clinical experience working with women with breast cancer and their families.

The ***Helping Her Heal: Ghana Program*** **is available at no charge to you.** The program is designed to help spouses/partners help and support their loved one with breast cancer. You will be purposively selected to assist in culturally adapting (making changes) the program by reviewing the program or receiving the program.

The program involves 5 sessions offered at 2-week intervals by the researcher who is a trained nurse and has also been trained on the program.

As part of the research study, you will be asked to complete a carefully selected set of questions that will help the researcher judge if the program is helpful. These questions will be completed before you begin the program and after you receive the program.

The ***Helping Her Heal: Ghana Program*** is available to men who are married to or in a committed, partnered relationship with a woman who is:

- Diagnosed with early stage breast cancer (stage I, II, or III)
- Within 12 months of her first diagnosis of breast cancer
- Living in Accra
- Can speak and read English
- Access to telephone

To talk to someone further about enrolling in this study, please call:

Brenda Osei-Assibey, RN, MN

0244 861 405

Email: bosei@uw.edu

Appendix E

Instructions on How to Review the Patient Educator Manual and Spouse Workbook by Nurses

No	Instructions
1.	Read sections of the Patient Educator Manual and the Men's Workbook sequentially, starting from session one
2.	Make notes on each booklet separately. While reading and reviewing each session, notes may include: 1. Content that you found is not relevant to spouses of women with breast cancer based on your experience working with couples. 2. Content that you would like to be included based on your experience working with couples. 3. Content that you would like to be taken out.

Appendix F

Instructions on How to Review Spouse Workbook by Spouses

No	Instructions
1.	Read sections of the Men's Handbook sequentially, starting from session one.
2.	Make notes on each session while reading and reviewing the manual. Notes may include: 1. Content that you thought was not relevant to your experience with your wife's breast cancer. 2. Content that confused you or you did not understand. 3. Content that is inconsistent with what you think a Ghanian man should know or do. 4. New content that you would like to include. 5. Content that you would like to be removed. 6. Content that makes you feel uncomfortable, nervous, or anxious. 7. What you want us to do to revise the manual so that it is more appealing or relevant to you.

Appendix G

Interview Questions for Interview with Nurses

Q No	Question	Dimension of EVF
Based on your experience caring for couples with breast cancer:		
1.	In what way does the content of Session 1 have relevance to spouses? What part of Session 1 do you think has personal relevance to spouses? What was not useful or what things did you not like about Session 1? What would you say about HOMEWORK ASSIGNMENT for Session 1 in terms of spouses being able to complete it, given all they would be going through at the time?	Metaphor/Content
2.	In what way does the content of Session 2 have relevance to spouses? What part of Session 2 do you think has personal relevance to spouses? What was not useful or what things did you not like about Session 2? What would you say about HOMEWORK ASSIGNMENT for Session 2 in terms of spouses being able to complete it, given all they would be going through at the time?	Metaphor/Content
3.	In what way does the content of Session 3 have relevance to spouses? What part of Session 3 do you think has personal relevance to spouses? What was not useful or what things did you not like about Session 3? What would you say about HOMEWORK ASSIGNMENT for Session 3 in terms of spouses being able to complete it, given all they would be going through at the time?	Metaphor/Content
4.	In what way does the content of Session 4 have relevance to spouses? What part of Session 4 do you think has personal relevance to spouses? What was not useful or what things did you not like about Session 4? What would you say about HOMEWORK ASSIGNMENT for Session 4 in terms of spouses being able to complete it, given all they would be going through at the time?	Metaphor/Content
5.	In what way does the content of Session 5 have relevance to spouses?	Metaphor/Content

	What part of Session 5 do you think has personal relevance to spouses? What was not useful or what things did you not like about Session 5?	
6.	What are some of the problems you see spouses face based on your experience working with them?	Concepts
7.	What can you say about the examples used in the scenarios of His Workbook, are they relevant to spouses? What would you suggest?	Content
8.	What are your expectations from this or any intervention that seeks to support spouses?	Goals
9.	What is your response to the written text (in terms of simplicity of words and phrases) in the Patient Educator's manual and the Men's workbook?	Language
10.	Looking at the challenges including financial and emotional that couples may be faced with, as you look over the entire program and think about their experience, what in the long term do you think this program would have offered the spouse? Thinking back on caring for couples with breast cancer, do you think spouses can visit or would be willing to visit the clinic 5 times, every other week to receive the program?	Context
11.	I am thinking of delivering the program with 3 clinic appointments and 2 telephone sessions or the whole program being delivered by telephone. What do you think?	Methods
	Additional Questions	
12.	Looking at the program, how would you add it to your regular workload?	
13.	What is your response to the title of the program?	
14.	What is your response to the titles of the sessions?	
15.	What additional feedback would you like to give us about the Patient Educator's Manual? What additional feedback would you like to give us about the Men's Workbook?	
16.	What information do you think spouses need to know about breast cancer in general?	

Appendix H

Interview Questions for Interview with Spouses

Q No	QUESTION	Dimension of EVF
1.	Between the nurse and the doctor, who would you be most comfortable to work with you through this intervention? If any other, please indicate	Person
2.	What can you say about the clinical environment in which you and your wife are being cared for?	Metaphor
3.	In what way do you understand the content of session 1 What part of Session 1 has personal relevance to what you experienced with your wife? What was not useful or what things did you not like about Session 1? What would you say about HOMEWORK ASSIGNMENT for Session 1 in terms of being able to complete it, given all you were going through at the time of initial diagnosis?	Metaphor/Content
4.	In what way do you understand the content of Session 2? What part of Session 2 has personal relevance to what you experienced with your wife? What was not useful or what things did you not like about Session 2? What would you say about HOMEWORK ASSIGNMENT for Session 2 in terms of being able to complete it, given all you were going through at the time?	Metaphor/Content
5.	In what way do you understand the content of Session 3? What part of Session 3 has personal relevance to what you experienced with your wife? What was not useful or what things did you not like about Session 3? What would you say about HOMEWORK ASSIGNMENT for Session 3 in terms of being able to complete it, given all you were going through at the time?	Metaphor/Content
6.	In what way do you understand the content of Session 4? What part of Session 4 has personal relevance to what you experienced with your wife? What was not useful or what things did you not like about Session 4? What would you say about HOMEWORK ASSIGNMENT for Session 4 in terms of being able to complete it, given all you were going through at the time?	Metaphor/Content
7.	Looking at the strategies for connecting with your wife, which of them will you personally implement? Which of them was comfortable for you and which of them was least comfortable? What recommendations do you have?	Content

8.	In what way do you understand the content of Session 5? How do you value the content of Session 5? What was not useful or what things did you not like about Session 5?	Content
9.	What examples used in the scenarios of the Men's Workbook are relevant or not relevant to you? What would you suggest?	Content
10.	How has your wife's breast cancer affected you?	Concept
11.	What are your expectations from this or any intervention that seeks to support you?	Goals
12.	How do you feel about including your wife in this intervention? How do you think your wife will respond/ or work with you on the homework?	Method
13.	What will prevent you from attending all the sessions of the intervention?	Context
14.	Think about the 5 sessions of the intervention at 2-week intervals. How would this frequency and interval have affected you when you were dealing with the first 6 months of your wife's diagnosis and treatment?	Context
15.	What is your response to the written text (in terms of simplicity of words and phrases in the His Workbook?)	Language
16.	I am aware of the challenges including financial and emotional that you and your wife may be faced with but as you look over the entire program and think about your experience, what in the long term do you think this program would have offered you? Thinking back on the amount of time that you had, could you have come into clinic 5 times, every other week to receive the program? I am thinking of delivering the program with 3 clinic appointments and 2 telephone sessions or the whole program being delivered by telephone. What do you think?	Context Method
	Additional Questions	
17.	What is your response to the title of the program?	
18.	What is your response to the titles of the sessions?	
19.	What additional feedback would you like to give us about the workbook?	
20.	What do you know about breast cancer in general? What would you like to know about breast cancer in general?	

Chapter 3. Field Testing of Helping Her Heal-Ghana, a Culturally Adapted Evidence-Based Educational Counseling Intervention for Spouse Caregivers of Women with Breast Cancer

Abstract

Background: Cultural adaptation is critical in preventing harm that may be caused by simply transferring Evidence-Based Interventions (EBIs) to new populations and the loss of resources when developing new interventions for different populations. Field testing is an integral step in the process of cultural adaptation to determine the appropriateness of adapted interventions.

Purpose: The purpose of this study was to field test the culturally adapted HHH-Ghana to: determine if the content of the adapted draft HHH-Ghana reflected the feedback from participants in the study, ascertain the appropriateness (relevance/applicability and understandability) of the adapted draft of the HHH, and refine and generate the adapted final HHH-Ghana based on data from this study.

Methods: A cross-sectional, single occasion study design was used. The student investigator conducted six separate interviews, two with breast cancer nurses and four with spouse caregivers of women with breast cancer (same participants from Study 1). Interviews were guided by an IRB-approved interview schedule that was organized around reflecting feedback, appropriateness, relevance, and understandability. Each interview was audio recorded and transcribed verbatim. Deductive analysis was used to organize answers around the interview questions.

Findings: The adapted draft HHH-Ghana reflected feedback obtained earlier from the participants. A nurse participant said she could see changes made and felt good that her comments counted. In relation to the appropriateness, a spouse caregiver said the adapted HHH-Ghana was more African in the way it portrayed the spouse as the “Sweetest Superman”. A nurse said the adapted

intervention was relevant because it will enable spouses to speak about their wives' breast cancer. Participants found the adapted intervention understandable when a nurse said it sounded better to the ears, and some of the phrases were better after the changes were made.

Conclusion: The field test showed that the adapted draft HHH-Ghana was acceptable, applicable, and understandable to the study informants. A pilot study is needed next to ascertain the feasibility and impact of the HHH-Ghana spouses of women with breast cancer in Ghana.

Introduction

The purpose of this study (Paper 2 of the dissertation studies) is to field test the culturally adapted draft HHH-Ghana to: determine if the content of the adapted HHH-Ghana reflects the feedback from participants in Study 1, ascertain the appropriateness (relevance/applicability and understandability) of the adapted draft of the HHH-Ghana and refine and generate the final HHH-Ghana based on data from this study. The paper is organized into four sections: background to the study, methods, findings, and discussion. For this study, the words "spouse" and "spouse caregiver" are used interchangeably.

Background

Cultural Adaptation and Field Test

There is growing evidence for the cultural adaptation of evidence- based interventions (EBIs) because culturally adapted EBIs are more effective than simply transferring EBIs to new populations (Benish et al., 2011; Chowdhary et al., 2014; Griner & Smith, 2006; Parra-Cardona et al., 2017; Soto et al., 2019). Cultural adaptation also prevents loss of resources needed to develop new interventions and harm that may be caused by simply transferring EBIs to new populations (Perera et al., 2020). Cultural adaptation is defined as "enabling an intervention to produce its desired psychological effect with a particular group in a specific context" (Heim et al., 2021, p. 4) and "involving additions or add-ons, omissions, and modifications and such changes can occur within any part of the totality of what might be involved in the implementation of an intervention (e.g., changes to an intervention's deep structure, intervention processes or materials, and/or intervention support structures)." (Ferrer-Wreder et al., 2012, p. 151). Cultural adaptation can therefore be "surface" involving simply translating intervention

materials and mode of delivery or "deep" such as changing the core structure of the intervention to accommodate factors such as culture (Resnicow et al., 1999).

Evidenced Based Interventions have been successfully adapted for populations different from that which it was developed for. Step-by-Step, an intervention developed by the World Health Organization (WHO) for depression (Carswell et al., 2018) has been culturally adapted for other populations including Chinese young adults (Sit et al., 2020), overseas Filipino nurses (Garabiles et al., 2019), Syrian refugees (Burchert et al., 2019) and South Sudanese refugees in Uganda (Tol et al., 2018). The Thinking Healthy Program (THP), originally developed in Pakistan for perinatal women needing psychological help for depression (Rahman et al., 2008) has been endorsed by the WHO. The THP has been culturally adapted and field tested for perinatal women in China (Nisar et al., 2020) and Vietnam (Fisher et al., 2014), and these adapted interventions were found to be safe, comprehensible, and understandable in field tests.

The term "field test" has been used to describe various types of studies including clinical trials (Verplanken & Roy, 2016; Williams et al., 2019). Field test has also been used to describe studies involving ascertaining the suitability and acceptability of a culturally adapted intervention by delivering the intervention without obtaining measures to run quantitative analysis (Nisar et al., 2020). Field tests can be used to compare versions of culturally adapted interventions (Benyamini et al., 2017) as in the case of this current study.

Breast Cancer and Spouse Caregivers

Breast cancer is the leading cancer in women globally with 2.3 million new cases in 2020 (Sung et al., 2021). In Ghana the situation is the same with breast cancer being the leading cancer accounting for 31.4% of cancers in women (Sung et al., 2021). The deleterious effects of breast

cancer in women in Ghana and elsewhere include anxiety, depression, pain, fear of death and fatigue (Ahmad et al., 2015; Boatemaa Benson et al., 2020; Campbell-Enns & Woodgate, 2017; Hubbeling et al., 2018; Puigpinós-Riera et al., 2018; Torres et al., 2016). These effects are not limited to only the woman who is sick but also the intimate partner, as women in Ghana have revealed their spouses to be their caregivers during the trajectory of breast cancer (Boatemaa Benson et al., 2020; Bonsu et al., 2014). Partners from Ghana and elsewhere are known to suffer along with their wives and have reported anxiety, depressive symptoms (Dionne-Odom et al., 2016; Kusi et al., 2020; Oechsle et al., 2019) and sometimes report even more anxiety (Lewis et al., 2008) and high care burden (Gabriel et al., 2019). Couple interventions have been efficacious in improving anxiety, depression and communication in couples dealing with breast cancer (Çömez & Karayurt, 2020; Duggleby et al., 2017; Fergus et al., 2022; Lewis et al., 2019; Price-Blackshear et al., 2020).

These spouse and couple interventions were all developed and tested in high income countries. Limited resources prevent development of context appropriate interventions for patients and spouse caregivers in low-and-middle income countries such as Ghana leading to reliance on interventions from HMIC. Simply transferring interventions from HMIC may not produce the desired effect in the new population (Domenech Rodríguez & Bernal, 2012). There is therefore the need to culturally adapt EBIs before transferring to new populations. Culturally adapted interventions have been found to be more efficacious than EBIs that are not culturally adapted (Chowdhary et al., 2014; Parra-Cardona et al., 2017; Soto et al., 2019).

Helping Her Heal (HHH) is an intervention for spouses of women with breast cancer. It has been tested for efficacy in the US and has been found to improve symptoms of depression and anxiety, communication relating to the breast cancer, interpersonal support, self-care skills

and self-confidence (Lewis et al., 2019). In Ghana, there is no existing intervention for spouse caregivers of women with breast cancer. The HHH was therefore culturally adapted in Study 1 for spouses of women with breast cancer in Ghana using the Ecological Validity Framework (Bernal et al., 1995). The EVF was used in this cultural adaptation process because it had been used successfully to adapt EBIs to new populations (Domenech Rodríguez et al., 2011; Fisher et al., 2014; Nisar et al., 2020; Sit et al., 2020).

The purpose of this field test was to review the content and texts of the HHH Patient Educator Manual and the Spouse Workbook with nurses and spouse caregivers to determine if the content of the adapted draft HHH-Ghana reflected the feedback they provided to the student investigator in Study 1. More specifically, the goal was to ascertain the appropriateness (relevance/applicability and understandability) of the adapted draft of the HHH and to further adapt the materials, based on feedback.

Methods

Setting

The study was conducted at two health facilities in Accra, the capital city of Ghana: The Korle-Bu Teaching Hospital (KBTH) and the Sweden Ghana Medical Center (SGMC). The KBTH is the national referral healthcare facility in Ghana providing specialized healthcare to clients from all over the nation and the sub region. Participants were recruited from the Department of Surgery and the National Radiotherapy Oncology and Nuclear Medicine Centre. The Sweden Ghana Medical Center (SGMC) is a state-of-the-art private cancer facility that offers private cancer care in West Africa.

IRB Approval

After review and approval of the UW Human Subjects Committee, ethical clearance was given by the Korle-Bu Teaching Hospital and the Sweden Ghana Medical Center. The same participants from Study 1 participated in this study, thus consent was given for both Studies 1 and 2 together.

Design

A cross-sectional, single occasion study design was used. Single occasion elicitation interviews were conducted, allowing participants to provide in-depth responses to a set of pre-determined questions to ascertain the appropriateness of the adapted draft HHH-Ghana from Study 1.

Sample and Data Collection

Participants from Study 1 participated in Study 2. Participants were two breast cancer nurses from the two health facilities and had both worked with couples with breast cancer for over five years each and four spouse caregivers of women diagnosed with breast cancer. The nurses were emailed both the Adapted draft Patient Educator's Manual and the Spouse Workbook and given up to one week to review it. The spouses were emailed only the Adapted draft Spouse Workbook and given up to one week to review it. Spouse caregivers were required to be able to speak and read English, be living with their wives for at least 6 months and wives having Stage I, II or III breast cancer. Participants were given instructions on how to review the manuals. See Table 1 and Table 2. After each participant reviewed the manual, telephone interviews were conducted with one of the nurses and the spouses. A face-to-face interview was conducted with the other nurse. One of the spouses indicated that the adapted draft intervention reflected his feedback from Study 1 after reviewing it and declined to be interviewed.

Table 1

Instructions for Nurses on How to Review the Adapted Patient Educator's Manual and Spouse Workbook

Item	Instruction
1.	Read sections of the adapted draft Patient Educator Manual and Spouse Workbook sequentially, starting from session one
2.	Review the sessions and make notes while reading with attention to portions where you made comments (**highlighted portions**) and provided feedback from your first interaction in Study 1.
3.	Note areas where you do not see changes based on your feedback from study 1
4.	Note down any additional feedback you would like to provide

Table 2

Instructions for Spouses on How to Review the Adapted Spouse Workbook

Item	**Instruction**
1.	Read sections of the adapted draft Spouse Workbook sequentially, starting from session one.
2.	Review the sessions and make notes while reading with attention on portions where you made comments (**highlighted portions**) and provided feedback from your first interaction in Study 1.
3.	Note down areas where you do not see changes based on your feedback from Study 1.
4.	Note down any additional feedback you would like to provide

Confidentiality and privacy were ensured during all the interviews. The interviews were audio recorded and lasted between 4-10 minutes. Interview guides consisting of specific questions relating to the contents of the intervention were used during the interview with both breast cancer nurses and spouses. See Tables 3 and 4 for the interview questions.

Table 3

Interview Questions Asked of Nurses

Item	Question
1.	Looking at each session now, in what way does the content have relevance to spouses of women with breast cancer?
2.	What changes in the adapted Patient Educator Manual do you see in this version of the program? What changes in the adapted Spouse Workbook do you see in this version of the program?
3.	Does the adapted draft intervention reflect your feedback from our initial interaction in study 1?
4.	In what way is the content of the adapted draft intervention appropriate for spouses of women with breast cancer?
5.	Looking at each session now, what can you say about the language used for the content? How simple is the text used in the manual?
6.	What further feedback do you have regarding the intervention?

Table 4

Interview Questions Asked of Spouses

Item	Question
1.	Looking at the sessions you have reviewed now, in what way does the content have relevance to you in relation to your experience with your wife's breast cancer?
2.	What changes do you see in the adapted draft intervention?
3.	Does the adapted draft intervention reflect your feedback from our initial interaction in study 1?
4.	In what way is the content of the adapted draft intervention appropriate for your experience?
5.	Looking at the sessions you have reviewed now, what can you say about the language used in the content? How simple is the text used in the manual?
6.	What further feedback do you have regarding the intervention?

Data Analysis

Prior to data analysis, interviews were transcribed verbatim, and accuracy of transcripts was ensured by comparing them to the audio recordings and having Lewis (Chair of student

investigator's dissertation committee) review some of the recordings and transcripts. Transcripts were read to familiarize the student investigator with the data to obtain a general idea of the whole. Deductive analysis was used to organize answers to each of the questions from spouses separately from answers obtained from nurses (Hsieh & Shannon, 2005).

Results

Table 5

Participants Response to Appropriateness of the Adapted draft HHH-Ghana

Themes	**Nurses (N=2)**	**Spouses (N=3)**
Adapted HHH reflects feedback	2	3
Appropriateness	2	3
Relevance	2	3
Understandability	2	3

Reflection of Participants' Feedback on Adapted draft HHH-Ghana

Quotes are annotated to indicate which spouse (S) or nurse (N) they came from.

Adapted HHH Reflected Their Feedback

All participants indicated that contents of the adapted draft HHH-Ghana reflected their feedback. See Table 5. One of the nurses stated, *"Yes, yes it does. I saw the changes highlighted and I read them."* (N1), and the other said, *"Yes, it does, and I'm happy it's been changed."* (N2) and added that she was happy her feedback has been implemented. *"So basically it feels good to know that our little comments count."* (N2). A spouse also said, *"Yes, yes it very much does."*

(S1), and another said, *"For instance, like we all had concerns with the letter writing which of course has been considered or yielded to. I think it's not so much an African man thing."* (S3).

Appropriateness

Both nurses reported that the content of the adapted draft HHH-Ghana was appropriate for spouses of women with breast cancer in Ghana by saying, *"It will help them. The edited version is more African. I said that because African men want to be praised in everything and they don't want things to be imposed on them."* (N1). The other nurse also thought it was appropriate because the program will help spouses come up with strategies to help their wives when she said, *"It will help them a lot to come up with so many strategies that will help them to assist their spouses better. So, it is really relevant in our context as Ghanaians and southern Ghana, it's really important."* (N2).

Spouse participants also indicated that the adapted draft HHH-Ghana was appropriate. This was evident in the report of one of the spouses who suggested adding a faith-based activity as a strategy for unwinding by saying:

> *"This will be in relation to the faith-based issue. That is very relevant in the way that, apart from the treatment and other thing that gives her hope, the faith base issue will also add more to that because it's looking at an external factor, an eternal factor that could do anything irrespective of what has gone wrong, so that may give her more confidence believing that she will live and not die."* (S1).

Relevance

A nurse indicated that contents of the adapted draft HHH-Ghana was relevant to spouses because spouses are not open about their wives' breast cancer, *"It is relevant with the mind that a*

lot of men shy away just knowing that your wife has cancer or has been diagnosed." (N1) and added that some spouses prevent their wives from getting the needed treatment, *"Some of them go to the extent of telling their wives not to go for the mastectomy because they want them to have this breast."* (N1). The other nurse also said, *"It's highly relevant because it speaks to their[spouses'] problems, and it will help them to voice out for us to know what more problems they are going through that has not been shared."* (N2).

One of the spouses said inclusion of the faith-based strategy makes the intervention relevant to him and his wife when he said, *"So for example with the faith based issue, I myself being a pastor, and she being the Asafomaame [title for first lady of the church], it makes her feel very confident and then she continues to do the very thing she was doing just before the sickness, etc."* (S1). Another spouse narrated, *"It's just related perfectly to the situation of my wife because getting yourself prepared for her has actually helped a lot in making her get herself well."* (S2).

Understandability

All participants said the language and text used in the content was easy for them to understand. A nurse stated, *"It's better now. It sounds better to the ears, the wording of the phrases is better compared to the previous."* (N2). The other nurse also added that the text was alright but asked for a modification for spouses who could not read by *saying, "For my Level it's OK. But as we said, it would depend on the spouses of the patients too as well because if the spouse hasn't got this caliber of exposure, it means it will have to be modified to suit them, but for me the content is ok."* (N2).

The spouses also agreed that the text was easy for them to understand by saying, *"I think the language is simple and straightforward."* (S1) and *"it was very easy for me. Very simple for me to take it."* (S2).

Additional Feedback

When participants were asked if they had any further feedback, one of the nurses said no, while the other mentioned that the educational background of spouses must be considered, and provisions made for those who cannot read themselves. The nurse said, *"It should consider their educational background. That is the only thing… if there is a way that he wouldn't have to read it himself if he can't read and interpreted to his understanding, then it will be appreciated by him."* (N2) and suggested the use of audio visuals by saying:

> *"You know those with just basic level of education, sometimes they can't even read our Twi [a local language]. So, English they can't read, Twi they can't read. So, its audio visuals, if it's something that we can design towards that or in that direction, it will help those in that category as well."* (N2).

Only one spouse provided further feedback and asked that a program be developed for post- treatment and recovery by saying, *"We should look at the post also and not just the current or the ongoing situation, but probably afterwards. Let's look at developing something to help to aid in that aspect as well."* (S3).

It was found that participants did not only review the HHH manual but also implemented the contents. One of the nurses said, *"So with this write up, I have already started using it in my own way although it is not official yet."* (N1) and further explained how using the program benefited a spouse. *"In fact, he was ignorant about everything but now this one is an eye opener*

to him, so he now understood the wife's situation. So he will try and do as I said." (N1). A spouse also said, *"It helps me to implement certain basic ideas that will not even cost anything, but that will even help in the healing process."* (S3).

The second nurse was looking forward to having the program in the health system when she said:

> *"Healthcare should not be patient focused alone because the family goes through much more stress caring for someone with a terminal condition or someone with a life-threatening condition. So bringing this is going to shape the scope of our care for patient caregivers, and it is something that we are really looking forward to in having in the system."* (N2).

Discussion

A field test is an important step in the cultural adaptation process. It enables a comparison between versions of the adapted intervention (Benyamini et al., 2017) to ascertain acceptability. This study makes an important contribution to the literature on interventions for spouses of women with breast cancer and rigorous methods of cultural adaptation of evidence-based interventions.

The adapted HHH-Ghana reflected feedback from participants, was appropriate, relevant, applicable, and understandable as similarly shown in other cultural adaptation studies (Fisher et al., 2014; Nisar et al., 2020). A nurse said the adapted draft HHH-Ghana was appropriate because it was more African. She further explained that using "Being the Sweetest Superman" instead of "Letting go of Superman" was more appropriate because Ghanaian men like to be praised and heard. This is because of the patriarchal nature of the Ghanaian society where men are the head

of the family, the stronger gender, and have authority over the family (Ardayfio-Schandorf, 2006). This patriarchal nature of Ghanaian society makes some spouse caregivers the decision makers, preventing their wives from getting treatment as revealed by one of the nurses. Thus a study from Ghana indicated that married women were more likely to abscond from treatment than unmarried ones (Clegg-Lamptey, 2009). Contrary to this finding is another report from Nigeria and Ghana revealing that being single was associated with late presentation for treatment (Brinton et al., 2017; Ibrahim & Oludara, 2012). This conflicting report needs further investigation to understand the phenomenon to develop an appropriate solution to the problem.

A spouse said the adapted draft HHH-Ghana was appropriate because of the inclusion of engaging in faith-based activities as a strategy for unwinding. This strategy was appropriate because Ghanaians are spiritual with people believing in either Christianity (71.3%), Islam (19.9%), African Traditional Belief (3.2%), other religions (4.5%) or 1.1% of the population not believing in any religion (Ghana Housing and Population Census, 2021). Other studies have similarly found that family caregivers, including spouse caregivers of breast cancer patients, cope with spirituality and trust God for the healing of their wives (Barani et al., 2019; Levy, 2011; Montford et al., 2016; Silva et al., 2010; Zahlis & Lewis, 2010). The adapted draft HHH-Ghana was found to be relevant by one of the nurses, who reported the intervention will enable spouses communicate better with their wives. Other research has similarly found that spouses found it difficult to talk about breast cancer with their wives (Neris & Anjos, 2014).

Both nurses and spouses found the text and language used in the adapted draft HHH-Ghana easily understandable because all the study spouse caregivers had a university degree. However, a nurse suggested that future studies regarding the intervention should consider the

educational background of spouse caregivers to include those who cannot read and speak English. She further suggested the use of audiovisuals.

Limitations and Strengths

This study is limited by the small sample size, the eligibility criteria, and the fact that only participants from study 1 participated in this study. The small sample size did not allow for varied opinion and feedback. Spouse participants were required to be able to speak and read English and this led to a sample of educated spouse caregivers whose experiences may not be representative of the population of spouse caregivers in Ghana. Only participants from Study 1 participated in this study and this could have led to participant fatigue from reviewing the manuals a second time. Including newly recruited participants would have led to diverse views regarding the appropriateness of the adapted draft HHH-Ghana.

Implications for Nursing Science

Future studies should include a diverse population. This can be achieved by having a larger and more robust recruitment strategy. Intervention materials can also be converted into audio visuals to enable spouses who cannot read English be eligible. This study has laid the foundation for other cultural adaptation studies involving other populations, EBI's and frameworks.

Findings from this study led to the adapted final HHH-Ghana. What is needed is a pilot study. A pilot study can be conducted to assess the feasibility and short-term impact of HHH-Ghana in spouse caregivers of women with breast cancer in Ghana. Further studies, including a larger clinical trial, are potentially warranted, pending results from a future pilot study.

Conclusion

This study involved the field testing of a culturally adapted HHH-Ghana an EBI for spouse caregivers of women with breast cancer. Results indicated that the adapted draft HHH-Ghana reflected feedback from participants, was appropriate, relevant, applicable, and understandable. The adapted final HHH-Ghana was generated based on these findings.

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Chapter 4. Pilot Feasibility Testing of Helping Her Heal-Ghana, a Culturally Adapted Evidence-Based Educational Counseling Intervention for Spouse Caregivers of Women with Breast Cancer

Abstract

Background: Breast cancer is the leading cancer in Ghana accounting for 31% of all cancers in women. The deleterious effects of breast cancer are not limited to only the woman but also the spouse caregiver. Spouse caregivers suffer along with their wives and have anxiety, depression, and coping difficulties. Helping Her Heal-Ghana is a culturally adapted evidenced-based intervention that can improve health outcomes of spouse caregivers.

Purpose: The purpose of this study is to ascertain the feasibility, acceptability, and short-term impact of a culturally adapted evidenced-based intervention for spouses of women with breast cancer in Ghana. The goals of the intervention were to improve the spouse's self-care skills, communication among the couple, and interpersonal relationship and reduce anxiety and depressed mood due to breast cancer.

Methods: This study employed a single group pre-post design with 14 spouse caregivers. Participants were spouse caregivers above 18 years who had been living with their wives for at least 6 months and their wives had Stage I, II, or III breast cancer. Five standardized measures were used to obtain data on the study variables and analyzed with Wilcoxon Signed Ranked Test. Individual exit interviews were conducted at the end of the study to ascertain what participants thought of and had gained because of the intervention. Inductive content analysis was used to analyze interview data.

Findings: The intervention was feasible and acceptable: spouses actively engaged in the sessions of the intervention, and retention was 87.5%. There were statistically significant improvements on

all but one of the standardized measures of spouse functioning. There was a significant improvement in spouses' anxiety ($p=0.010$), depressed mood ($p=0.002$), self-care skills ($p=0.006$) and self-efficacy ($p=0.002$). There was no statistically significant change in spouse communication although spouses indicated in their exit interviews that the intervention enabled them to communicate better. Spouses also said they were able to take time off for themselves, understand breast cancer and their wives better, and support their wives better.

Conclusion: Findings indicate that the intervention was feasible, acceptable and can reduce anxiety, depressed mood and improve spouse self-care skills, self-efficacy, and communication among the couple. Results from this pilot feasibility study can serve as ground- work for a larger clinical trial. Results can lead to a pilot implementation and evaluation of the HHH-Ghana.

Introduction

The purpose of this study (Paper 3 of the dissertation studies) is to examine the feasibility, acceptability, and short-term impact of the culturally adapted HHH-Ghana. The paper is organized into four sections: background to the study, methods, results, and discussion. For this study, the words “spouse” and “spouse caregiver” are used interchangeably.

Background

Breast cancer is the leading cancer globally with an estimated incidence of 2.3 million cases (Sung et al., 2021). In Ghana, breast cancer is the leading cancer accounting for 31.4% of all cancers in women and in 2020, the number of new cases in Ghana was 4,482 with a mortality rate of 18.1 % (Sung et al., 2021). Unpublished reports from the National Radiotherapy Oncology and Nuclear Medicine Centre indicate a steady increase in cases from 607 in 2021 to 661 in 2022.

Women globally and in Ghana suffer adverse effects from breast cancer including anxiety, depression, fear of death, body image issues, burn out, pain, trouble sleeping and fatigue (Ahmad et al., 2015; Boatemaa Benson et al., 2020; Campbell-Enns & Woodgate, 2017; Hubbeling et al., 2018; Puigpinós-Riera et al., 2018). This suffering is not limited to the woman but extends to the spouse in a partnered relationship, thus breast cancer is often referred to as a couple’s disease (Charvoz et al., 2016). During the trajectory of the disease, women in Ghana and elsewhere turn to their spouses for support in carrying out activities of daily living, and for emotional and financial support (Berger et al., 2019; Boamah Mensah et al., 2020; Kusi et al., 2020), all of which cause strain, burden and weariness in spouses (Gabriel et al., 2019; Neris & Anjos, 2014; Overcash et al., 2019; Rha et al., 2015). Spouses are known to neglect themselves,

their self-care, and their own wellbeing in the process of caregiving and become exhausted (MacLeod, 2011). In addition to the above, spouses also suffer from anxiety, depression and fatigue (Bamgboje-Ayodele et al., 2020; Congard et al., 2019; Janda et al., 2017).

Although engaging in self-care is known to predict lower anxiety, lower depression and improved health related quality of life in caregivers of cancer patients (Dionne-Odom et al., 2016), family caregivers are less likely to engage in any form of self-care (Rha et al., 2015). Due to this, spousal caregivers have reported unmet needs such as making time for self-care (Badr, 2017). Dionne-Odom et al. (2016) additionally found that caregivers of cancer patients who engaged in very little self-care had worse anxiety and depression. Spouses who give care for extended periods up to 12 months suffer cognitive, physical and psychological impact and manage this by suppressing their own stress (Lopez et al., 2012).

A breast cancer diagnosis is known to affect communication in the marital relationship, which places additional demands on the relationship (Keesing et al., 2016).Spouses have been found to have difficulty in talking about the breast cancer (Neris & Anjos, 2014), and there is a documented association between observed spouses' avoidance in communication and anxiety, depression and stress when their wife had breast cancer (Yu & Sherman, 2015). Spouses are also more likely to be depressed if they are in less well-adjusted marriages (Lewis et al., 2008).

Spouse confidence in their ability to talk about cancer strengthens the marriage, reduces couple's stress, and improves mental health (Chen et al., 2021; Magsamen-Conrad et al., 2015). Spouses' self-efficacy in talking about cancer with their wives predicts the couple's ability to cope with cancer (Magsamen-Conrad et al., 2015), and it has been shown that spouses who have lower self-efficacy in caregiving have more depressive symptoms (Yeung et al., 2020).

Despite all the challenges a breast cancer diagnosis brings to a couple, there are only two known interventions directly delivered to spouse caregivers of women with breast cancer (Duggleby et al., 2017; Lewis et al., 2019), even though there are a growing number of interventions that have been conjointly delivered to the couple (Baucom et al., 2009; Budin et al., 2008; Çömez & Karayurt, 2020; Fergus et al., 2022; Heinrichs et al., 2012; Kayser et al., 2010; Nicolaisen et al., 2014). Some of these interventions have shown efficacy in reducing anxiety and depression (Lewis et al., 2019; Nicolaisen et al., 2018) and improving the quality of life of couples (Kayser et al., 2010). See Table 1 for a summary of these studies.

Table 1 *Characteristics of Studies and Study Outcomes of Couple- and Spouse- Focused Interventions*

Study and location	Study design	Sample and characteristics	Measures used (Cronbach alphas)	Outcome of intervention
Fergus et al., 2022 Canada	Randomized controlled trial with wait list control group	67 dyads < 50-year-old patients with non-metastatic, invasive breast cancer or ductal carcinoma in situ within the last 36-months and their partners.	Positive Dyadic Coping (PDC; 0.90); Revised Dyadic Adjustment Scale (0.86); Kansas Marital Satisfaction Survey (0.93); Breast Cancer and Relationship Measure (0.86); Hospital Anxiety and Depression Scale (HADS; 0.83 and 0.79 for anxiety and depression subscale).	Modest improvement seen in positive dyadic coping but not sustained at 3 month follow up and no observed between group effects for relationship adjustment. PDC and HADS-Anxiety were sensitive.
Lewis et al., 2019 US	Randomized Controlled Trial	322 dyads Stage 0-III BC	Center for Epidemiologic Studies-Depression (0.892 for caregivers and 0.894 for patients); State-Trait Anxiety Inventory (0.935 for caregivers and 0.945 for patients); Mutuality and Interpersonal Sensitivity Scale (spouses' open communication subscale for the study sample were 0.92 and 0.86, respectively, and 0.88 and 0.82 for the expressing sad feelings subscale for wives and spouses, respectively);What I Do for Her Checklist (0.64 for wife support subscale) and (0.51 for self-care subscale); Cancer Self-Efficacy Scale (total scale was 0.952 for the study sample and 0.949 for the wife-focused and 0.810 for the self-care subscales); What He Does for Me Questionnaire (completed by wife, 0.88).	At 3 months spouses in the treatment group had improved on anxiety, depressed mood, cancer related marital communication, interpersonal support, and self-care. All differences except anxiety and depression were sustained at 9 months.
Duggleby et al., 2017 Canada	Randomized controlled trial, mixed methods, concurrent	40 dyads Patients had stage I-III BC Partners mean age = 55.4 years.	Herth Hope Index (Test-retest r = 0. 91, p=<0.05, Validity, r = 0.84, p=<0.05, Criterion, r = 0.092, p=<0.05, Divergent, r = -0.73, p=<0.05); General Self-Efficacy Scale (0.91), test-retest reliability r = 0.82); Caregiver Guilt	Non-significant treatment effects on all measures.

Study and location	Study design	Sample and characteristics	Measures used (Cronbach alphas)	Outcome of intervention
	feasibility study		Questionnaire (0.93); Caregiver Quality of Life Index – Cancer (Test-retest reliability r = 0.95, internal consistency r = 0.91); Functional Assessment of Cancer-Breast (0.93); Male Transition Toolkit Evaluation Questionnaire was used to evaluate ease of use of the program	
Nicolaisen et al., 2017 Denmark	Randomized controlled trial	198 dyads Patients with newly diagnosed with breast cancer Partners mean age = 57.4 years	Impact of Event Scale (0.89 to 0.92 for patients and 0.83 to 0.89 for partners); Hospital Anxiety and Depression Scale (0.78 to 0.87 for patients and 0.79 to 0.84 for partners); Revised Dyadic Adjustment Scale (0.77 to 0.93 for patients and 0.83 to 0.94 for partners).	Cancer related distress, anxiety, and depression reduced within the groups but there were no significant intervention effects. There was a significant sustained improvement on the Revised Dyadic Adjustment scale.
Heinrichs et al., 2012 Germany	Randomized controlled trial (superiority trial) Comparing two interventions	90 dyads Patients recently diagnosed with BC and gynecologic cancer and their partners Partners mean age = 52.7 years.	Questionnaire on Stress in Cancer Patients (0.87); Fear of Progression Questionnaire (0.87); Dealing with Illness Inventory-Revised, (0.54 and 0.51 for women and men, respectively); Posttraumatic Growth Inventory (0.92 and 0.91 for women and men, respectively); Quality of Marriage Index (0.95); Partnership Questionnaire (0.86 women and 0.82 men).	Superiority of the intervention is limited to fear of progression, avoidant coping, posttraumatic growth, communication, and dyadic coping.
Kayser et al., 2010 US	Randomized controlled trial	Patients with primary, nonmetastatic breast cancer within the last three months Partners mean age = 48.7.	The Functional Assessment of Cancer Therapy–Breast (0.92 for the entire scale and alphas ranging from 0.78 to 0.86 for the four subscales); Quality of Life Questionnaire for Spouses (0.94) and the Illness Intrusiveness rating Scale (0.91).	Quality of life of women and their partners improved in the intervention group but the difference between the two groups was not statistically significant.

Study and location	Study design	Sample and characteristics	Measures used (Cronbach alphas)	Outcome of intervention
Baucom et al., 2009 US	Pilot feasibility study	14 dyads Patient had Stage I or II breast cancer	Quality of Marriage Index (0.97 and 0.93 for women and men, respectively); Derogatis Inventory of Sexual Functioning (0.76 and 0.05 for women and men, respectively); Brief Symptom Inventory—18 (0.90 and 0.91 for women and men, respectively); Posttraumatic Growth Inventory (0.97 and 0.96 for women and men, respectively); Functional Assessment of Cancer Therapy Breast (0.70 for women); Self-image Scale (0.90); Brief Fatigue Inventory (0.90 for women); Brief Pain Inventory (BPI); Rotterdam Symptom Checklist (0.74 for women).	No significant mean differences between intervention and control on any measures in patients or partners. There was improvement on measures within group. Derogatis Inventory of Sexual Functioning and Quality of Marriage Index recorded the most improvement.
Budin et al., 2008 US	Randomized clinical trial with 4 groups (1 control and 3 intervention)	249 dyads Patient has a breast lesion with a confirmed or strongly suspected diagnosis of cancer. Partners mean age = 51.6	Psychosocial Adjustment to Illness Scale; Profile of Adaptation to Life Clinical Scale; Self-rated Health subscale and Breast Cancer Treatment Response Inventory. Internal reliabilities were described as "excellent" for all measures.	Overall, regardless of group assignment, significant main effects for time were seen for both patients and partners in several outcome variables. Partner scores significantly improved over time in physical symptoms and social adjustment.
Scott et al., 2004 Australia	Randomized controlled trial with 3 treatment conditions	Patient about to begin treatment for a primary (localized) breast or gynecological cancer Partners mean age = 53 years	Dyadic Adjustment Scale; Brief Index of Sexual Functioning. "Good" internal consistency was reported on all subscales. Client satisfaction questionnaire was also used.	There was no between group treatment effect although there was within group improvement in coping in the treatment group.

Regardless of study participants in the interventions summarized in Table 1, none of the interventions were tested in low resource environments; all were developed in and tested in high income countries. None were developed or tested in Africa or Ghana.

Helping Her Heal-Ghana (HHH-Ghana), described in Table 2, is the culturally adapted intervention that was pilot tested in this Study 3. The HHH is a spouse- focused intervention developed based on Bandura's Social Cognitive Theory (Bandura et al., 1999) and the relational model of adjustment to breast cancer (Ben-Zur et al., 2001; Fang et al., 2001; Hilton et al., 2000; Lewis, 2004; Northouse & Swain, 1987). It involves 1:1 delivery (by telephone or ZOOM or in-person) and consists of 5 scripted intervention sessions. The intervention sessions are fully scripted with each session having the same internal structure. The structure consists of short educational presentations delivered by the patient educator to the spouse, skills building enactments, efficacy enhancing exercises, short in-session exercises and short at home assignments to be completed by the spouse with his wife. The HHH was developed to improve tension in the dyadic relationship between the spouse and patient, spouses' anxiety, depressed mood, interpersonal communication, and self-care. It has been efficacy tested in the US and shown to reduce anxiety, depression, improve communication, spouse's self-efficacy and skills in self-care (Lewis et al., 2019). Helping Her Heal was culturally adapted in two previous studies (Studies 1and 2), and the aim of the current study was to test the feasibility, acceptability, and short-term impact of the culturally adapted program, now called HHH-Ghana, for spouses of women with breast cancer in Ghana.

Table 2

Session- Specific Description of Helping Her Heal- Ghana

Session	Specific objectives
Session 1: Anchoring yourself to be strong for her. This session invites the spouse to describe his experience with his wife's breast cancer and how he is dealing with it, including what is working and not working for him. The session assists him learn and practice stress-reducing strategies and associate stress reduction with his improved ability to support his wife.	**Specific objectives** • Identify the effects of their wife's breast cancer on their lives. • Identify how their own stress changes their interactions with their wife. • Identify ways to unwind. • Plan to use at least a strategy to unwind for 10–15 minutes each day.
Session 2: Listening and not fixing: Being the sweetest superman. This session helps refine the spouse's skills to be a highly attentive listener for his wife and her breast-cancer-related concerns. Skilled listening involves three distinct components, all of which are taught and practiced with the educational counselor.	**Specific objectives** • Identify how it feels to have someone listen to them. • Identify their own behaviors and/or statements that would demonstrate to their wives that they are listening. • Identify how their role as listener differs from their role as fixer, problem solver, comforter, etc. • Learn through enactment of the 3-Part Listening Strategy
Session 3: Gaining a deeper understanding of her. This session builds on Session 2 but focuses the spouse on more advanced skills in eliciting and helping his wife elaborate her concerns or feelings about breast cancer, particularly when she is reticent or withdrawn. These skills help spouses discover new information about their wife's breast cancer and how to support her.	**Specific objectives** • Identify open-ended and closed-ended questions • Examine the benefit of using open-ended questions • Construct open-ended questions • Create open-ended questions about their wife's breast cancer
Session 4: Connecting with her: Creating special times This session focuses on three new non-verbal strategies the spouse can use to increase and enhance the quality of interpersonal connection between him and his wife despite the breast cancer.	**Specific objectives** • Identify additional strategies to emotionally connect with their wife by using any of the two below: i) Appreciating her ii) Using touch iii) Taking a vacation from the breast cancer
Session 5: Putting the pieces together The final session adds to the spouse's skills to identify ways to continue to use the strategies he gained from the program. The spouse reflects on what he did and gained, thereby enhancing his self-confidence to manage in future situations.	**Specific objectives** • Identify strategies from the program the spouse wants to use in future • Examine personal gains from participating in the program

Methods

Study Design

The study employed a single group pre-post design to ascertain the feasibility, acceptability, and short-term impact of the culturally adapted HHH-Ghana.

Settings and Participants

Prior to enrollment, this study was approved by the University of Washington Human Subjects Division, the Institutional Review Board of the Korle-Bu Teaching Hospital (KBTH) and the Ethics Committee of the Sweden Ghana Medical Center (SGMC). A total of 16 participants were recruited from the KBTH and the SGMC through: their wives who had come for medical treatment, recruitment flyers, referral from nurse intermediaries at the two centers and by the student investigator when approached by potential participants; see Figures 1 and 2. The KBTH is the national referral center located in Accra, the capital city of Ghana. The SGMC, a private health facility provides specialized cancer care to patients in Ghana and the sub region is also located in Accra. Spouses were eligible if they were married by law or co-in habiting with their partner and living together for at least 6 months, could read and speak English, and their partner had stage I, II or III breast cancer. Potentially eligible spouses who gave approval to be approached, were given details of the study, and invited to ask questions about the study, including their time for participation and type of participation. Spouses were recruited through two processes; see Figures 1 and 2. See Appendix A for a copy of the approved Consent Form.

Figure 1. *Recruitment through Wife*

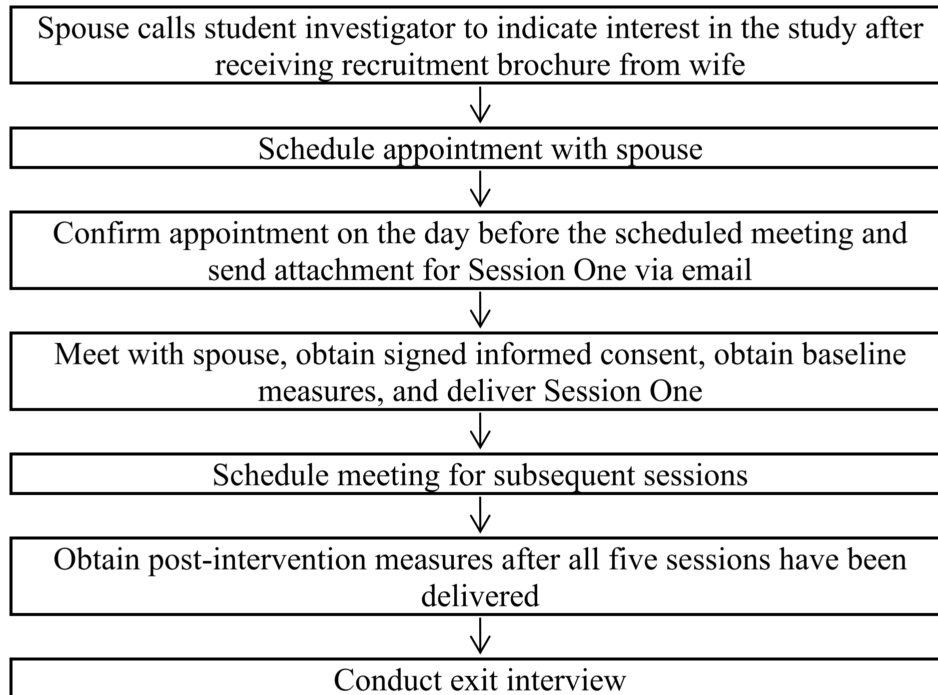
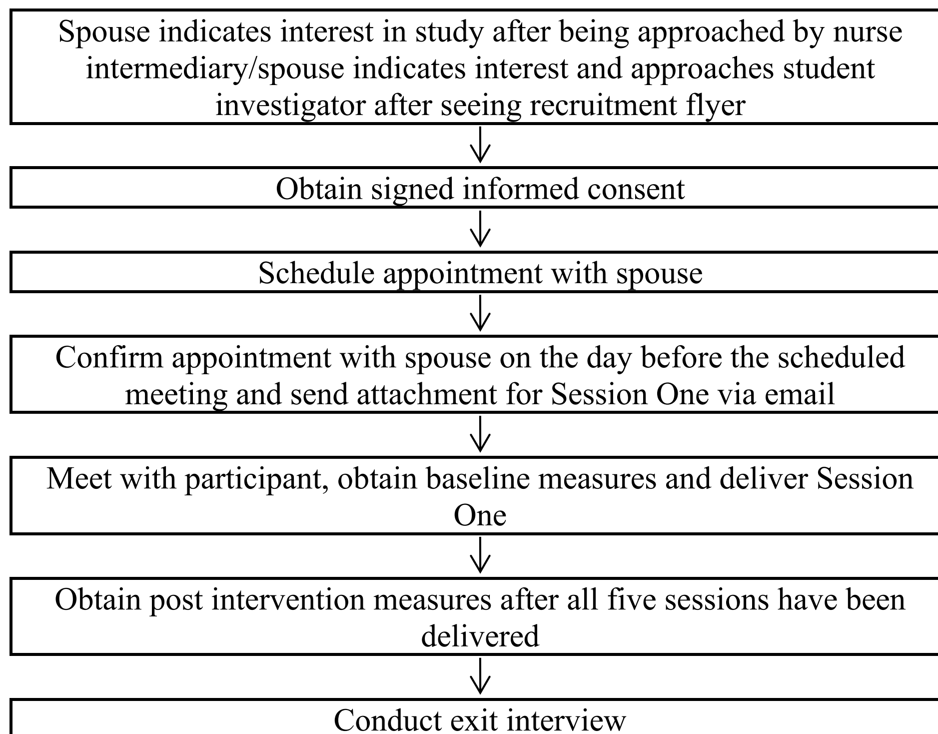


Figure 2. *Direct Recruitment of Spouse*



Measures

Depressed mood was measured with the Center for Epidemiologic Studies- Depression (CES-D) scale (Radloff, 1977). The scale measures the frequency of symptoms of depressed mood experienced within the past week. It is a 20-item self-report four-point Likert type scale ranging from rarely (0), some (1), most (2) and almost all the time (3). A summated score of 16 or higher indicates more symptoms of depression. The internal reliability consistency has been well established to be 0.80-0.90 (Radloff, 1977) and 0.85-0.90 in other studies (Given et al., 2004; Milette et al., 2010).

Anxiety was measured with the state anxiety subscale of the State-Trait Anxiety Inventory (STAI - Spielberger; Spielberger, 1983). The state anxiety subscale is a 20-item scale that evaluates feelings of apprehension, nervousness, and worry right now. It is a self-report measure consisting of a four-point Likert type scale ranging from not at all (1), somewhat (2), moderately so (3) and very much so (4), with higher scores indicating higher anxiety. A summated score of 40 or higher indicates anxiety. The internal reliability consistency is well established to be 0.90 (Spielberger, 1983) and 0.935-0.94 in other studies (Edwards & Clarke, 2004; Lewis et al., 2019).

Communication within the couple was measured by the Mutuality & Interpersonal Sensitivity Scale (MIS; Lewis, 1996). The MIS is a 32-item self-report measure that assesses the content and ways by which couples communicate about breast cancer. The measure consists of two subscales: (1) open communication, “We spend a lot of time talking about how things are going with the breast cancer” and (2) expressing sad feelings, “Sad thoughts about the breast cancer only make things worse”. Response to the questions ranged from always true (5), occasionally true (4), sometimes true (3), seldom true (2) and never true (1). A higher score

indicates a better quality of communication about the cancer within the couple. The internal consistency reliabilities for spouses' open communication and expressing sad feelings subscale from a previous study were 0.86 and 0.82, respectively (Lewis et al., 2019).

Spouses' skills in supporting their wives and engaging in self-care were assessed with the What I Do for Her Checklist, a scale developed by the HHH study team. It is a spouse report that describes the specific communication and interpersonal support skills the spouse carries out with the wife related to breast cancer. The wife support subscale contains six items and measures spouses' ways of behaviorally interacting with her about the cancer, "I listen calmly to my wife when she tells me sad or negative things about her breast cancer." The self-care subscale has six items and measures spouses' ways of coping with their own cancer-related stress, "I have specific things I do to keep myself calm when my wife talks about fearful things regarding her breast cancer". The response to the questions and their scores ranges from never (1), once in a while (2), some of the time (3), most of the time (4) to all of the time (5). Higher scores indicate better communication and interpersonal skills. The scale was assessed for content validity by three expert clinicians. Construct validity was evaluated by examining its correlation with spouses' depressed mood, anxiety, self-efficacy, and wife-reported perceived support. The internal consistency reliability was 0.64 (wife support subscale) and 0.51 (self-care subscale) (Lewis et al., 2019).

Spouses' self-efficacy was measured by the Cancer Self-Efficacy Scale (CASE), a 19-item self-report questionnaire that measures spouse's degree of self-confidence to support his wife and carry out his own self-care (Lewis, 1996; Lewis et al., 2008). The scale contains a wife-focused subscale and a self-focused subscale. The wife-focused subscale (14 items) measures spouses' confidence in talking with their wife about her cancer-related concerns and being

supportive to her, “I know how to ask my wife questions that help her talk about the breast cancer”. The self-care subscale (five items) measures spouses' confidence in helping themselves cope with the demands and challenges of the breast cancer, “I know what to do to be emotionally supportive to my wife about the breast cancer”. The measure is scored on a scale of 1 to 10 with 1 being “not at all confident” and 10 indicating “very confident”. A higher score indicates a higher degree of self-confidence of the spouse to support his wife and carry out his own self-care. The internal consistency reliability from the clinical trial of the HHH for the total scale was 0.95, 0.95 for the wife-focused scale, and 0.81 for the self-care subscale (Lewis et al., 2019).

Data Collection

After obtaining signed informed consent, baseline measures were obtained, after which the student investigator delivered Session 1 of the HHH-Ghana. The remaining four sessions were held 1, 2 and 3 weeks apart based on spouses’ availability and schedule. The intervention was delivered in a private room in one of the facilities or the spouse participant’s home. Two participants opted for Zoom meetings while one participant had 3 sessions in person and two sessions on Zoom. All intervention sessions were audio recorded. Post- intervention measures were obtained immediately after completing Session 5, the last session of the intervention.

Monitoring and Maintaining Intervention Integrity

To ensure fidelity to the intervention, the student investigator was trained by an interventionist on the HHH core research team. In addition, all sessions were audio recorded and the audio recordings were examined against the intervention manual and an audiotape review checklist. See Appendix B for a copy of the Audiotape Review Checklist that was used to review the audio recorded intervention sessions. Audio recordings of all five sessions of the first three

participants and four other randomly selected participants were reviewed by the student investigator against the audiotape review checklist to ascertain any deviations from the script of the intervention manual. See Table 3 for scores on the checklist for each session.

Table 3

Scores Obtained on Audiotape Review Checklist

	Scores obtained for each session				
Participant ID	Session1 (theoretical max =42)	Session 2 (theoretical max =64)	Session 3 (theoretical max =72)	Session 4 (theoretical max =40)	Session5 (theoretical max=38)
P1	39	62	70	38	30
P2	42	64	71	37	38
P3	42	64	72	38	38
P8	42	64	72	38	38
P11	40	62	70	37	37
P15	42	63	71	38	38
P16	42	64	72	38	38

Analysis of Quantitative Data

Before analyzing the study data to address the study aims, the data were inspected for sampling distributions (mean, mode, median), outliers, floor, and ceiling effects. The impact of the intervention was tested according to a per protocol analysis in which only pre-post paired data from participants who completed all five sessions. Data were analyzed using the Wilcoxon

Signed Rank Test because of the small sample size, data is not normally distributed and there were repeated measures from same sample. The level of significance was set at 0.05.

Feasibility was determined by spouse attrition (percent of enrolled spouses who completed the five sessions and provided baseline and 3-month post- baseline measures); reasons and timing of dropping out; number of spouses recruited; number of spouses enrolled; and reasons for refusing to participate. Also, accessibility of spouses (the ease with which spouses were enrolled) was determined by keeping a record of the number of times a spouse was contacted before they enrolled.

Acceptability was determined by the perceived burden in completing questionnaires, participants' engagement during the actual counseling intervention sessions, completion of homework with wives, and spouses' feedback about the intervention. In addition to asking what spouses gained from the intervention in Session 5, an exit interview was conducted after post intervention measures were collected to obtain additional feedback from spouses about the intervention. See Appendix C for the interview guide that was used to obtain feedback after collecting the post-intervention measures.

The exit interviews were audio recorded and transcribed verbatim. The accuracy of transcripts was ensured by comparing them to the audio recordings. Inductive content analysis was employed and proceeded as follows: 1) Student investigator read transcripts to become familiar with the data to obtain a general idea of the whole. 2) Inductive content analysis was used to inductively generate codes using words, phrases and sentences that captured concepts and ideas from the data. The unit of coding was a complete idea expressed by the participant. 3) These inductively generated codes were then sorted into categories. 4) After the first round of inductive coding, similar ideas under a category were grouped into clusters to form sub-

categories. The categories and sub-categories were defined and used to code subsequent transcripts. 5) Words from participants were used to label the codes (Hsieh & Shannon, 2005). Constant comparative analysis was carried out throughout the coding process where different parts of a transcript from a single participant were compared to ensure consistency in the participant's narratives. Where there was inconsistency, participants were asked to clarify information. Category labels were used to organize the inductive content analysis, complemented by quotes that represented categories and sub-categories. An audit trail was maintained to protect the trustworthiness of study results and a field diary was used to take short notes during the interview.

Results

Feasibility

A total of 34 potentially eligible spouses were recruited to the study, 24 through referral from the nurse intermediary, and 6 through student investigator and 4 through wives. Sixteen consented to participate in the study, giving an enrollment rate of 47%. The remaining 18 spouses declined due to tight work schedules, the number of sessions involved, or wives not wanting to be discussed. Fifty percent of spouses enrolled after the first initial contact by the student investigator, which was either a personal meeting or a phone call. An average of three attempts were made for the remaining participants to enroll. Referral from the nurse intermediary was the most effective and efficient way to identify participants with 10 participants being enrolled through this means. Once enrolled, the retention rate was 87.5%; 14 out of 16 participants completed all 5 sessions of the study.

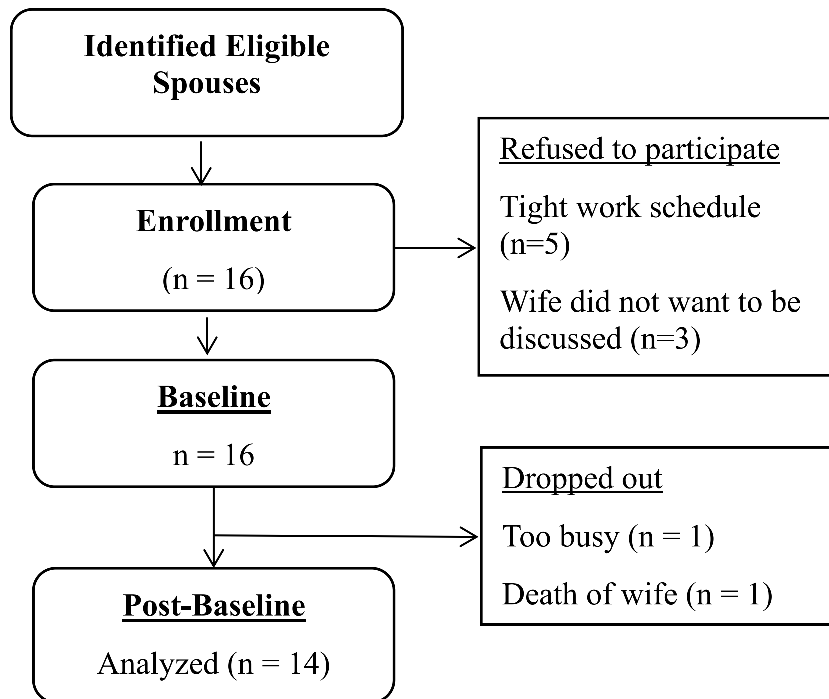
Acceptability

Participants took 30-50 minutes to complete the study questionnaires, and all participants completed the measures with minimal assistance. However, the majority (10/14) of participants complained that there were too many measures. Some participants initially expressed concern on whether they would make it for all five sessions, but once session 1 was delivered, they began to appreciate the potential usefulness of the intervention to them according to their report during the intervention sessions. Thus, they attended all the sessions, actively engaged in the sessions by providing responses to questions and completed at home assignments with their wives.

Short-Term Impact

A total of 16 spouses were enrolled (consented and completed baseline data). After enrollment, two participants withdrew from the study, one due to inability to make time for scheduled appointments and the other due to death of his wife. See Figure 3 for Participant Flow Chart. There were no clear differences between drops and completers on demographic and baseline scores.

Figure 3. Participant Flowchart



Description of Enrolled Study Sample

A total of 14 spouses completed the Helping Her Heal-Ghana Program. Most, or 43% (n = 6), of the wives were diagnosed with Stage I breast cancer. An additional 29% (n = 4) were diagnosed with Stage II and another 29% (n = 4) with Stage III. Spouses came from multiple different ethnic groups in Ghana. There were 5 Akan's, 5 Ewes, and one spouse each from Dagomba, Ga, Zamrama, Ga Dangme and Gonja ethnic groups. Wives came from different ethnic groups. There were 9 Akans, 3 Ewes and one wife each from Dagomba and Ga Dangme tribes all of which are common ethnic groups in Ghana. Wives of spouse participants were diagnosed an average of 10 months at entry into study; median, 12 months. All 14 women (100%) were receiving chemotherapy, radiation therapy, or both at the time of the spouse's participation in the study. Spouses averaged 49 years of age (SD 8.76) and wives averaged 44 years (SD 8.17). Seven (50%)

of the wives and most of the spouses (79%) had a university degree. Most of the wives (79%) and spouses (93%) were employed. Spouses were married an average of 17 years (SD 8.16); median 18 years, and all couples had 1 or more children.

Comparison of pre- and post-test scores on spouses' measures of functioning

There were statistically significant improvements on all but one of the standardized measures of spouse functioning. See Table 4. Measures of depressed mood (CES-D) and anxiety (STAI-Y) significantly diminished ($p = 0.002$ and $p = 0.010$, respectively). Self-efficacy (CASE) significantly improved on the total as well as on the self-care and wife-focused subscales ($p = 0.002$, $p=0.011$ and $p=0.001$, respectively). Spouses' skills significantly improved on the wife support subscale ($p=0.049$) as well as on the self-care subscale ($p=0.006$).

There were no statistically significant changes in the MIS, the cancer-specific measure of marital quality. Neither the total scale nor subscales significantly improved. See Table 5 for a comparison of baseline scores from the current study and original HHH-Pilot (Lewis et al., 2008).

Changes in Spouses Scoring in the Clinical Range

Comparisons were made between pre- and post-test scores on measures with well-established clinical cutoff scores for distress: depressed mood (CES-D $\geq$ 16) and state anxiety (STAI-Y $\geq$ 40). We examined whether spouses scoring in the clinical range at baseline (pre-test) showed improved or decreased functioning at post-test. We also examined whether spouses scoring within a normal range at pre-test backslid at the end of the program.

At baseline, eight spouses (57%) scored in the clinical range of distress on depressed mood and eight (57%) on state anxiety. Of the eight spouses scoring in the clinical range on depressed mood at baseline, only one spouse remained in the clinical range at post-test (Fisher's Exact test p

= 1.00). None of the spouses scoring in normal range on depressed mood at pre-test backslid into the clinical range at post-test. Of the eight spouses in the clinical range on anxiety, only one (the same participant who remained in the clinical range for depressed mood at post-test) remained in the clinical range at post-test (Fisher's Exact test $p = 1.00$). One of the six spouses in the normal range on state anxiety backslid at exit from the program.

Table 4

Wilcoxon Signed Ranked Tests on Measures of Spouse Functioning

	Mean (SD) N=14	Median	p-value
Mood and Anxiety			
CES-D Depressed Mood			
Pre-test	19/11.74	17	0.002
Post-test	7.5/6.39	6	
STAI-Y state anxiety			
Pre-test	45.07/14.85	40.5	0.010
Post-test	30.21/10.48	27.5	
Self-efficacy			
CASE total scale			
Pre-test	141/28.83	149	0.002
Post-test	172.29/12.23	174	
CASE wife-focused subscale			
Pre-test	97.71/21.16	103	0.001
Post-test	119.21/7.81	121	
CASE self-care subscale			
Pre-test	35.5/9.57	38.5	0.011
Post-test	43.71/4.71	44.5	
Marital quality			
MIS – total			
Pre-test	116.71/16.84	117.5	0.530
Post-test	118.57/10.52	116	
MIS– open-communication subscale			
Pre-test	31.5/7.08	33	0.949
Post-test	32.35/4.40	32	
MIS – Avoid bad thoughts subscale			
Pre-test	26.71/7.63	26	0.900
Post-test	26.86/8.65	24.5	
Spouse Behavioural Skills			
Wife support subscale			
Pre-test	19.71/3.20	19	0.0498
Post-test	22.29/2.89	22.5	
Self-care subscale			
Pre-test	17/3.94	16.5	0.006
Post-test	19.71/4.32	19.5	

Note. Wilcoxon signed ranks test; two-tailed test. CES-D = Center for Epidemiologic Studies-Depression, STAI-Y = State Trait Anxiety Inventory, CASE = Cancer Self -Efficacy Scale, MIS = Mutuality & Interpersonal Sensitivity Scale, $\alpha = 0.05$.

Table 5

Comparison between Baseline Scores of HHH-Ghana and HHH Pilot Study (Lewis, 2008)

	Study	
	HHH-Ghana Mean /Median N=14	**HHH-Pilot Mean /Median N=20**
Mood and Anxiety		
CES-D Depressed Mood		
Pre-test	19/17	11.40/8.5
STAI-Y state anxiety		
Pre-test	45.07/40.5	33.90/34
Self-efficacy		
CASE wife-focused subscale		
Pre-test	97.71/103	87.05/84
CASE self-care subscale		
Pre-test	35.50/38.5	30.74/31
Marital quality		
MIS – total		
Pre-test	116.71/117.5	105.32/105.5
Spouse Behavioral Skills		
Wife support subscale		
Pre-test	19.714/19	22.26/23
Self-care subscale		
Pre-test	17/16.5	16.63/16

Note. CES-D = Center for Epidemiologic Studies-Depression, STAI-Y = State Trait Anxiety Inventory, CASE = Cancer Self Efficacy Scale, MIS = Mutuality & Interpersonal Sensitivity Scale.

Spouse Exit Interviews

Exit interviews were conducted with spouses; they were asked what they gained because of participating in the HHH-Ghana and, overall, what they would like to say about the program. Responses are summarized in Table 6. Analysis revealed three categories and fourteen subcategories. Each category is more fully described below. Quotes are annotated to indicate which spouse (S) or nurse (N) they came from.

Table 6

Categories and Subcategories from Exit Interviews (N= 14)

Category	Subcategories
Helping us	• Improving my mood • Being heard • Paying attention to self • Being in a better position to support wife • Supporting wife • Improving relationship with wife • Wife not feeling neglected
Improving understanding	• Learning new things • Adding to what I know • Teaching me what to do and not do • Understanding wife • Understanding breast cancer
Communicating better	• Improving communication with wife • Listening to wife

Helping Us

Spouses claimed the program helped them and their wives by improving their mood. One spouse said, "*When I put it all together, I look much relieved than the time I came*" (P3). Another spouse offered, *"I think it's a therapy because I've seen it as going through some kind of an exercise to help me mentally, you know, redress some of the challenges we were dealing with."* (P16). Spouses also said the program gave them an opportunity to be heard by saying, "*And after that nobody cares about me again. So I think with this program at least you will feel that somebody cares about you as well.*" (P8). Aside from being heard, spouses felt the program enabled them to gain skills in paying attention to themselves and being in a better position to support their wives. One of the spouses said he had even neglected his own health previously but that has changed due to the program, saying, "*I'm always thinking about her alone without*

checking myself. I have an eye problem but I was not going for my checkups. But now I have to check myself, too." (P15). Another said, *"it [taking time to unwind] helps me to be even more stronger. When I take time off just to unwind by walking, meditating and reading my book, taking my mind off everything and all that."* (P16).

Spouses revealed that the program has enabled them to support their wives when they said, *"that will help especially the man to be supportive to the woman with breast cancer."* (P1). This subsequently improved their relationship with their wives. "*So if not that I came here, I will still be fighting her, having problems with each other."* (P3), *"I like these two aspects [taking time to unwind and appreciating her] a lot. It has changed the connection between us in our house and our home in a positive way."* (P5) and making wife not feel left alone, "*So that she will not feel neglected."* (P1).

Improving Understanding

Spouses described how much knowledge they gained because of the program. They talked about learning new things by saying, *"I think the fact that this gave me the opportunity to learn new things which I didn't know."* (P6) and "*The program has been an eye opener. There are things I never knew but because of the training I have gained some knowledge.*" (P7) Another also mentioned that the program has added to what they already knew. "*So it has added a lot of ideas to what I have already so at least I can use it.*" (P4). Spouses mentioned that the program has taught them what to do, with one saying, "*The program is very educative. It teaches you what to do and not to."* (P3).

Spouses mentioned that the new things they had learned from the program improved their understanding of their wives and breast cancer. A spouse said, "*A better understanding of what*

my wife is going through." (P10) Another said, "*So for me it has improved on my understanding of the breast cancer situation.*" (P7).

Communicating Better

Spouses said the program improved communication with their wives. "*I've seen how to communicate with her, how to understand her mood swings."* (P4), *"So from the beginning of the program to now, I'll say that it has drastically improved on the way we communicate."* (P11) Another spouse said:

> "*The open-ended question. This is a beauty because it takes me out of all the hassle and the struggle, because when I ask why and what, it's a headache, because you ask one question, you get five questions back. This one is open-ended, and then you just listen. So, it makes it very relaxing, right."* (P16).

Spouses also said because they were communicating better, they listened more by saying, "*Now, I tend to listen."* (P7). Another spouse also said:

> "*Not that I don't listen, but generally given I'll say Africans, we don't listen. We talk past each other. But I've seen that the communication in the marriage should completely change when one of you is in this condition."* (P16).

Discussion

Findings from this pilot feasibility study show that a five-session scripted intervention was feasible, acceptable, and improved anxiety, depressed mood, and self-efficacy and self-care skills of spouse caregivers.

The demographic data showed that most wives (43%) had Stage I breast cancer and this is because spouses indicated that they went to health facilities as soon as they and their wives noticed an anomaly in their wives' breast because they had heard about breast cancer in the news. This finding is however contrary to previous studies from Ghana in which 66% and 85.2% of cases were diagnosed with advanced disease, Stage III and IV disease at initial diagnosis (Clegg-Lamptey et al., 2009; Ohene-Yeboah & Adjei, 2012). The majority of spouses (35%) and their wives (64%) in this study were from the Akan ethnic group, and this is consistent with a report from the 2021 Ghana population census in which 45.7% of the population were Akans with Ewes and Ga-Dangbes being the third and fourth majority ethnic groups, respectively (Ghana Population and Housing Census, 2021).

The intervention was feasible despite initial challenges in identifying potential participants and obtaining informed consent, with an enrolment rate of 47%. The retention rate in this current study was high, 87.5%, because the study recruited only spouses, rather than couples. This finding is consistent with a report indicating the difficulty in the uptake and retention of participants in couple interventions involving the dyad (Regan et al., 2013). Spouses indicated how their communication and relationship had improved due to participation in the study. Spouses also found the intervention acceptable as reflected in their attending scheduled sessions and completing homework assignments with their wives. Spouses also reported that attention was being paid to them.

Findings from this study showed statistically significant improvements in anxiety, depressed mood, self-efficacy, and spouse behavioral skills. This is consistent with previous studies of the HHH (Lewis et al., 2019; Lewis et al., 2008). Jones et al., 2013 also reported

similar findings in their research involving the same intervention but delivered to spouses in a group format.

The Mutuality and Interpersonal Sensitivity Scale did not show statistically significant changes in marital quality. This non-significant change is consistent with findings by others (Jones et al., 2013; Lewis et al., 2019; Lewis et al., 2008). These non-significant results run counter to what spouse participants in the current study claimed in their exit interviews, namely, that the intervention improved their relationship with their wives.

Spouse participants who scored in the distressed clinical range on depressed mood and anxiety improved at exit from the study indicating that the HHH-Ghana intervention helped all participants regardless of baseline scores. Comparison of baseline scores from the current study with HHH-Pilot (Lewis et al., 2008) indicated higher scores on both anxiety and depressed mood in spouses from the current study. We do not know the cause of these more elevated scores and are only able to speculate on potential causes. Spouses mentioned the financial burden on them due to their wives' breast cancer and this may have accounted for the higher scores on anxiety and depressed mood in the Ghanaian sample. Currently, in Ghana, the national health insurance scheme does not cover the full cost of treatment, and thus spouses must purchase some of the medications. In cases where specific medications are covered by the scheme, the medications are sometimes not available at the health facilities when patients need them. In such cases, spouses must purchase the medication from elsewhere at an increased price. This places financial burden on spouses since some women with breast cancer stop working during treatment.

Spouses said the intervention helped them by improving their mood and enabled them to pay attention to themselves, which hitherto they did not do because they didn't know they should. These gains, they said, placed them in a better position to support their wives,

communicate better and improve their relationship. This perspective is consistent with findings from the pilot feasibility study by Lewis et al., 2008, in which spouses indicated that they now had a deeper understanding of their wives and felt better about themselves.

Limitations and Strengths

Some factors limit the generalizability of this study, including the sample size, sampling technique, and the strict eligibility criteria regarding language. The sample size of 14 likely led to a sample that is not representative of the population under study. In addition, the convenience sampling technique likely led to sampling bias producing a sample that is systematically different from the general Ghanian population. Eligible spouses were required to be able to speak and read English. Although English is the formal language in Ghana, spouse participants who could not speak and read English were excluded from the current study, preventing their experiences to be captured in this current study. This approach led to a sample of highly educated men which is evident in the demographic data. Despite the above limitations, the current study has some strengths including the strict study protocols that were adhered to and preliminary findings that can inform future research. All sessions for each spouse participant were audio recorded and an audiotape review checklist was used to assess accuracy of 50% of all the sessions. This methodological rigor ensured dosage and fidelity to the intervention. The study included both quantitative and qualitative data which gave a deeper and holistic understanding of the phenomenon under study.

Implications for Nursing Science

This study is the first of its kind in Ghana relating to breast cancer and spousal caregiving and has unearthed the potential usefulness of such an intervention to spouse caregivers. A robust recruitment strategy needs to be developed to enroll a larger and more diverse sample in future studies. Results laid the foundation for a larger clinical trial to examine the efficacy of HHH-Ghana. A larger pilot/ implementation study with a more diverse sample is warranted for the needs of women with breast cancer and their spouse caregivers.

Conclusion

The aim of this study was to ascertain the feasibility, acceptability, and short-term impact of a culturally adapted evidence-based intervention for spouses of women with breast cancer in Ghana. Findings indicate that the study measures were adequate, participants enrolled into the study, engaged in intervention sessions, and completed the study. The intervention had the potential to reduce anxiety and depressed mood and improve spouse self-care skills, self-efficacy, and communication in the couple. Spouses indicated that the intervention enabled them to understand breast cancer and their wives better and to make time for themselves. These effects made them feel less stressed out. A larger clinical trial needs to be conducted to ascertain the efficacy of the HHH-Ghana so that it can be implemented for spouse caregivers to get the support they need while caring for their wives with breast cancer.

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Appendix A

UNIVERSITY OF WASHINGTON

SPOUSE CONSENT FORM: STUDY 3

HELPING HER HEAL: GHANA

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I am asking you to be in a research study. This form gives you information to help you decide whether or not to be in the study. Being in the study is voluntary. Please read this carefully. You may ask any questions about the study. Then you can decide whether or not you want to be in the study. Your participation in the study is voluntary.

PURPOSE OF THE STUDY

The purpose of this study is to test the feasibility of an educational intervention developed and tested in the US for spouses of women with breast cancer. The intervention has been culturally adapted to suit Ghanaian spouses. The program was developed to help spouses communicate better with their wives, improve the marriage relationship, give spouses skills in taking care of themselves, and reduce their anxiety and depression. Before recommending the use of the program in Ghana, I am recruiting spouses like you to help determine if the intervention is feasible, acceptable and have any impact in Ghanaian spouses. Your feedback will help improve the intervention.

STUDY PROCEDURES

I will ask you to complete copies of a set of 5 questionnaires at the beginning of the study and then again at 3 months following entry into the study. You can choose not to answer any questions you do not want to answer. The study questionnaires will take about 35-45 minutes to complete, and I will be present to help you should you need assistance. These questionnaires will help me judge the quality of the program and how things have gone for you and your wife. Examples of the most sensitive items on the questionnaires include:

- I listen calmly to my wife when she tells me sad or negative things about her breast cancer. The options include never, once in a while, some of the time, most of the time and all of the time.
- I felt depressed. The options of answers include Rarely or none of the time, some of the time, moderate amount of time and most or all of the time.

Once you have completed the first set of questionnaires, I will deliver the first session of the intervention with you. I will then schedule the remaining 4 sessions at 1-2 week intervals. Each session will last approximately 45 minutes. The sessions will be scheduled at a time convenient to your schedule and not more than 2 weeks apart. These sessions will include short activities for you to do with your wife. You will be taught these activities by me.

Your participation in the study will last approximately 3 months. I ask your permission to audio record your sessions which will be kept for educational purposes. Your name and identification will not appear in the audio recordings.

RISKS, STRESS, OR DISCOMFORT

We anticipate a risk of emotional distress or discomfort because of possibly sensitive questions or because of talking about your wife's breast cancer. This distress is usually short-lived, but should you want assistance in dealing with these feelings, I will gladly assist you in getting a referral to an appropriate resource. Your permission must be given before a referral is made because all information you share with me is kept strictly confidential within the limits of the law.

BENEFITS OF THE STUDY

This study may not benefit you directly but the information you provide will help improve the intervention and help other spouses whose wives have breast cancer in the future.

COMPENSATION

To compensate you for the time and resources you spend transporting yourself to the facility, you will be given a token of 25 US dollars at the beginning of the study and another 25 US dollars after completing the questionnaires at the end of the study.

SOURCE OF FUNDING

The study is the dissertation of the researcher in partial fulfilment of the award of a Doctoral degree in Nursing Science and is funded by the investigator.

CONFIDENTIALITY OF RESEARCH INFORMATION

I will store your interview information separately from your consent form so that your responses cannot be linked to you. I will use a participant identification number instead of your name to identify you. All the responses you provide will be confidential and only your ID number, never your name, will be used. However, if I learn that you intend to harm yourself or others, I must report that to the Domestic Violence and Victim Support Unit (DOVVSU).

OTHER INFORMATION

You may refuse to participate, and you are free to withdraw from this study at any time without penalty or loss of benefits to which you or your wife are entitled. If you wish to withdraw, please contact the researcher listed on page 1 of this consent form.

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, or if I have been harmed by participating in this study, I can contact the researcher listed on the first page of this consent form. If I have questions about my rights as a research subject, I can call Dr Frances Marcus Lewis (Chair of researcher's supervisory committee) on +12063214479.

I will receive a copy of this consent form.

I voluntarily consent to have the interview audio recorded. Only the researcher and Dr. Frances Marcus Lewis (Chair of researcher's supervisory committee) will be able to listen to the recordings. Those recordings, however, will only have your code number, not your name, identifying the recording.

Yes, I agree to be audio recorded as part of this research.

Printed name of subject Signature of subject Date

Copies to: Researcher
Subject

Appendix B

Helping Her Heal - GHANA

Criteria for Audiotape Review

Reviewer: ____________________Session Date: ______________

Date Reviewed: _______________ Interventionist: ______________

<u>Session 1</u>: Anchoring Yourself To Be Strong for Her

Directions for scoring: In the space before each item, mark: **2** if behavior is present; **1** if behavior partially present (behavior is ineffective or misleading); **0** if behavior is absent or misinformation is given, and **NA** if not applicable.

NEW IN-SESSION WORK:

____ 1. Invites man to talk about his experience with his wife's/partner's breast cancer.

____ 2. Invites man to elaborate on the most challenging parts of her cancer for him.

____ 3. Invites man to elaborate on what the effect of her breast cancer is on him.

____ 4. Asks him to describe what he notices about the way he feels and acts when he's feeling stressed.

____ 5. Instructs man in value of attending to his own needs as a way of preparing himself to support his wife/partner.

____ 6. Invites man to describe what he notices about himself when he's <u>not</u> feeling stressed out.

____ 7. Invites man to describe how it changes the way he is with his wife when he feels more relaxed.

____ 8. Shares the handout: Benefits of Unwinding

____ 9. Invites man to talk about what he does to unwind when he needs a break.

____ 10. Invites man to talk about how what he's doing to unwind is working for him.

____ 11. Asks man to reflect on how satisfied he is right now with the way he is managing his level of stress.

____ 12. Asks man if he needs to do more to lower his stress.

____ 13. If man answers yes to #11, asks man what gets in the way of taking time for himself?

____ 14. If man answers yes to #11, asks man to describe what he would do if he had 10-15 minutes a day to unwind.

____ 15 If man answers yes to #11, asks him to circle activities on handout: Ways to Unwind which are a fit for him.

____ 16. Encourages man to take time to unwind on a regular basis.

____ 17. Invites him to share what are the key ideas he takes away from the session.

ASSIGNING HOMEWORK

____ 18. Reviews Spouse's Workbook pages with man.

___ 19. Instructs man on how to do Homework Assignment #1::*Anchoring Yourself to Be Strong* for *Her*.

____ 20. Invites man to make a specific plan to do homework.

____ 21. Invites man to identify potential barriers to completing homework assignment

Helping Her Heal -GHANA

Criteria for Audiotape Review

Reviewer:_____________________ Session Date: _______________

Date Reviewed: ________________ Interventionist: ______________

<u>SESSION 2</u>: Listening and Not Fixing: Being the Sweetest Superman

Directions for scoring: In the space before each item, mark: **2** if behavior is present; **1** if behavior partially present (behavior is ineffective or misleading); **0** if behavior is absent or misinformation is given, and **NA** if not applicable.

CHECKING-IN:

____ 1. Asks man what success he had in finding time to unwind

____ 2. Invites man to talk about what got in the way of taking time to unwind.

____ 3. Asks man how it was to take time for himself.

____ 4. Encourages man to continue to take at least 10-15 minutes a day to unwind.

____ 5. Invites man to read through his wife's/partner's responses to questions for the homework Assignment #1: *Anchoring Yourself to Be Strong for Her*.

_____ 6. Invites man to talk about what he learned from his wife/partner.

____ 7. Invites man to talk about what, if anything, surprised him about what she said was the effect of his stress on her.

NEW IN-SESSION WORK

____ 8. Reads text to man about adding to his skills to listen to his wife/partner.

____ 9. Invites man to talk about a time when he was going through something difficult, and another person listened to him.

____ 10. Invites man to talk about how it was to have someone listen.

____ 11. Invites man to talk about his experience in being a listener or a confidante for his wife/partner.

____ 12. Asks man to talk about what it's been like to listen to his wife – wanting to fix it – and knowing there are some things he just can't fix.

____ 13. Invites man to talk about a time when his wife needed him to <u>only</u> listen and he tried to fix or problem solve the situation.

____ 14. Asks man how he knows when his wife/partner needs him to <u>only</u> listen.

____ 15. Reads text to man about strategy #2: *Listening to Understand Her Experience*.

____ 16. Asks man to share is overall take of this strategy for listening.

____ 17. Invites man to write out his responses to the in-session exercise*: Letting Go of Superman*.

____ 18. Invites man to read aloud his responses in the exercise (as a fixer and as a listener).

____ 19. Helps man to create listener responses by showing him the text describing the 3 parts of listening, re-reading the text and reviewing them to help him to create "listener" responses if he is unsuccessful in writing out listener responses.

____ 20. Asks man how it feels to respond with as a listener.

____ 21. Engages man in role-play scenario with the man playing the role of a woman while the patient educator models listening responses using strategy #2: *Listening to Understand Her Experience*.

_____ 22. Asks man what he noticed the patient educator did when playing the husband.

_____ 23. Asks what his response, as the woman, was in the role play

_____ 24. Engages man in role-play scenario with the man as the listener and the patient educator as the woman.

_____ 25. Assists man to respond in second role-play with responses drawn from the listening strategy.

_____ 26. Asks man how it was for him to use the listener responses in the role play.

_____ 27. Asks man what are the main ideas he takes away with him from today's work.

ASSIGNING HOMEWORK

____ 28. Reviews workbook pages with man.

____ 29. Instructs man on how to do Homework Assignment #2 (part 1): *Being a Listener for Her*.

____ 30. Instructs man on how to do Homework Assignment #2 (part 2): *The Listening Experience*.

_____ 31. Invites man to make a specific plan to do homework.

____ 32. Invites man to identify potential barriers to completing homework assignment

Helping Her Heal -GHANA

Criteria for Audiotape Review

Reviewer:____________________ Session Date: _______________

Date Reviewed: ________________ Interventionist: ______________

<u>SESSION 3</u>: Gaining a Deeper Understanding of Her

Directions for scoring: In the space before each item, mark: **2** if behavior is present; **1** if behavior partially present (behavior is ineffective or misleading); **0** if behavior is absent or misinformation is given, and **NA** if not applicable.

CHECKING IN:

____ 1. Asks man about his success in finding time to unwind.

____ 2. Asks man what benefit there was for him taking some time for himself.

____ 3. Encourages man to continue to take time to unwind during his day.

____ 4. Asks man what, if anything, new he learned from wife/partner about her experience with breast cancer when he completed the assignment*: Being a Good Listener for Her*.

____ 5. Asks man what helped him to quietly listen.

____ 6. Asks man how it was for him to only listen.

____ 7. Asks man what was comfortable about being a listener.

____ 8. Invites man to talk about what was difficult about only listening and not trying to “fix” or reassure her.

____ 9. Invites man to read aloud his wife's/partner's responses to the assignment: *The Listening Experience.*

____ 10 Invites man to share what, if anything, he would like to change about the way he listens to his wife/partner.

NEW IN-SESSION WORK:

____ 11. Reads text to man about the value of using open-ended questions

____ 12. Shares the handout*: Gaining a Deeper Understanding of Her.*

____ 13. Guides the man through in-session exercise: *Creating Open-ended Questions*.

____ 14. Shares Strategy #3: *Asking Open-Ended Questions*, the Communication Tip Sheet.

____ 15. Invites man to read his 2 questions aloud for the in-session exercise*: Creating Open-Ended Questions.*

____ 16. Asks man to check that his questions are open-ended.

____ 17. Asks man to describe the process he went through in creating the questions. (How did he keep the questions open-ended?)

____ 18. Asks the man the value for the woman if she were asked these questions by her husband.

____ 19. Reads text to man about value of using open-ended questions with his wife/partner.

____ 20. Invites man to describe a situation with his wife about which he wants further clarity.

____ 21. Using in-session Exercise #2: *Gaining a Deeper Understanding of Her*, invites man to write out a brief description of the situation.

____ 22. Invites the man to write out 2 open-ended questions he could ask his wife/partner to encourage her to describe and elaborate her experience and to increase his understanding.

____ 23. Asks the man to check if the questions are open-ended.

____ 24. Engages man in role-play scenario with the man as his wife and the patient-educator modeling open-ended responses, listening skills, and asking about support.

____ 25. Asks man what he noticed patient educator said to keep the conversation going.

____ 26. Asks what he learned from the patient educator's use of open-ended questions.

____ 27. Asks man how it felt to be asked about support by the patient educator.

____ 28. Engages in role-play scenario with the man as himself and the patient educator as his wife.

____ 29. Asks him to talk about his use of open-ended questions in the role play.

____ 30. Asks him what parts, if any, from the 3 part listening strategy he used in the role-play.

_____ 31. Asks him how it feels to ask about support in the role-play.

_____ 32. Invites man to share what he can take away for his own use from today's session.

ASSIGNING HOMEWORK

____ 33. Reviews homework pages with man.

____ 34. Instructs man on how to do Homework Assignment #3: *Gaining a Deeper Understanding of Her Using Open-Ended Questions.*

____ 35. Invites man to make a specific plan to do homework.

____ 36. Invites man to identify potential barriers to completing homework assignment.

Helping Her Heal -GHANA

Criteria for Audiotape Review

Reviewer:____________________ Session Date: _______________

Date Reviewed: ________________ Interventionist: ______________

SESSION 4: Connecting with Her: Creating Special Times

Directions for scoring: In the space before each item, mark: **2** if behavior is present; **1** if behavior partially present (behavior is ineffective or misleading); **0** if behavior is absent or misinformation is given, and **NA** if not applicable.

CHECKING IN:

____ 1. Asks man about his success in finding time to unwind.

____ 2. Asks man if anything got in the way of finding time to unwind..

____ 3. Invites man to talk about what helped him to successful in taking time to unwind.

____ 4. Encourages man to continue to take time to unwind during the day.

____ 5. Invites man to share how doing the assignment: *Gaining a Deeper Understanding of Her* went for him.

____ 6. Invites man to share what was particularly challenging or difficult for him.

____ 7. Invites man to talk about his ability to keep from trying to problem-solve or fix the situation or to reassure her.

____ 8. Asks the man what he learned were his wife's/partner's thoughts and feelings related to the situation they talked about.

____ 9. Asks the man what he learned he did or said that helped her feel supported during the situation.

____ 10. Asks the man what, if anything, he learned that he wants to do in the future.

NEW IN-SESSION WORK

____ 11. Reads through text introducing 3 strategies for focusing on being a couple and creating times together as a couple, unrelated to the breast cancer.

____ 12. Asks man to choose which two strategies he would like to spend some time talking about now, in preparation for using them.

____ 13. Takes man through worksheet for strategy #4: *Appreciating Her*.

____ 14. Takes man through instruction sheet for strategy #5: *Using Touch*.

____ 15. Takes man through worksheet for strategy #6: *Taking a Vacation from the Breast Cancer* .

ASSIGNING HOMEWORK

____ 16. Invites the man to think about a plan for using the two strategies with his wife.

____ 17. Asks the man if there are additional pieces he'd like to include.

____ 18. Invites man to think about when he might create this special time for the two of them.

____ 19. Asks the man to think of what might get in the way of carrying out his plan.

____ 20 Reviews homework pages with man.

Helping Her Heal -GHANA

Criteria for Audiotape Review

Reviewer:_____________________ Session Date: _______________

Date Reviewed: ________________ Interventionist: ______________

<u>SESSION 5</u>: Putting the Pieces Together

Directions for scoring: In the space before each item, mark: **2** if behavior is present; **1** if behavior partially present (behavior is ineffective or misleading); **0** if behavior is absent or misinformation is given, and **NA** if not applicable.

CHECKING IN:

____ 1. Asks the man about his success in finding time to unwind.

____ 2. Encourages man to continue to take time to unwind during his day.

____ 3. Asks man if he was able to use the two strategies.

____ 4. Invites the man to share what his wife's/partner's response was to the first strategy used..

____ 5. Asks the man to talk about what seemed to make the strategy successful.

____ 6. Invites the man to talk about his wife's/partner's response to the second strategy.

____ 7. Invites man to talk about what seemed to make this strategy successful

____ 8. Asks the man what he can take away from this for his future use.

____ 9. Asks the man to talk about what strategies in the program he wants to make a regular part of his life.

____ 10. Invites the man to talk about what using the strategies he's identified will do for him.

____ 11 Invites the man to talk about one strategy he'd like to be a part of his life as he goes forward.

____ 12. Invites the man to talk about using the strategy in the future.

____ 13. Invites man to talk about what, if anything, he gained from participating in the program.

____ 14. Invites the man to talk about what he did not get from the program that he wanted.

NEW IN-SESSION WORK

____ 15. Instructs the man in completing the in-session exercise: *Putting the Pieces Together*.

____ 16. Invites the man to read aloud his written responses.

____ 17. Asks the man how it feels to see the work he's accomplished

____ 18. Applauds the man for all the work he has done.

____ 19. Reminds the man not to share program materials with others.

Appendix C

Interview Guide for Exit Interview with Spouses

Question No	Question
1.	Overall, what would you like to say about the program?
2.	What did you like about the program?
3.	What did you not like about the program?
4.	In what ways, if any, does the program apply or not apply to you?

Chapter 5. Conclusion

Breast cancer is the leading cancer in Ghana accounting for 34.1% of cancer in women (Sung et al., 2021). Women with breast cancer are cared for by their spouses during diagnosis, treatment, and recovery. Caregiving puts strain and burden on spouses (Gabriel et al., 2019; Rha et al., 2015), who also suffer from anxiety and depression and have trouble communicating with their wives about breast cancer (Bamgboje-Ayodele et al., 2021; Congard et al., 2019; Janda et al., 2017). Thus, there is a need for an intervention to help spouse caregivers cope better with their wives' breast cancer. The lack of resources in low and middle-income countries such as Ghana stalls the development of EBIs tailored to the needs of the population. The overall purpose of this dissertation was to advance the science of spousal caregiving by culturally adapting HHH, an educational counseling intervention for spouse caregivers of women with breast cancer in Ghana. This aim was achieved through three studies.

In chapter 2, a three-phase method together with the eight domains (language, person, metaphors, content, concept, goals, methods, and context) of the EVF were employed to culturally adapt the HHH. The first phase involved expert consultation with the developer of the HHH. The student investigator initially made some modifications to the intervention manuals based on her experience working with couples dealing with breast cancer and her cultural background as a Ghanaian. In the second phase, a single occasion in-depth interview was used to elicit feedback from breast cancer nurses with over five years working experience with couples dealing with breast cancer and four spouses whose wives had Stage I, II or III breast cancer. Nurse and spouse participants found the intervention to be applicable and understandable in the Ghanaian context. A nurse explained the text was basic and was easily understood, and a spouse said he understood most of the text, assignments, and the tasks. However, some self-care

strategies in the intervention were removed, added, and modified. Some phrases were also modified or changed to make them more comprehensible to spouses.

In chapter 3, a field-test was carried out to determine if the content of the adapted draft HHH-Ghana reflects the feedback from participants in Study 1 and to ascertain the appropriateness of the draft HHH-Ghana. The draft HHH-Ghana was given to participants who participated in Study 1 and were given one week to review, after which individual interviews were conducted with the participants. All participants said the draft intervention reflected their feedback. One of the spouses was happy that “writing a letter to his wife” had been changed to verbally appreciating his wife. Participants also found the adapted HHH-Ghana relevant and understandable when a nurse said the adapted version is more African. Another nurse said it was relevant because it will enable spouses to share their experiences and problems.

In chapter 4, a pilot study was conducted to assess the feasibility and short-term impact of the adapted final HHH-Ghana. A single group pre-post design was employed. The sample was 14 spouse caregivers whose wives had Stage I, II or III breast cancer and could read and speak English. The variables of interest were measured with standardized instruments, STAI-Y, CES-D, MIS, CASE and Spouse Skills Checklist and tested with the Wilcoxon Signed Ranked Test. There were statistically significant improvements in anxiety, depressed mood, spouse self-efficacy, and spouse skills. The MIS which measured communication within the couple did not record significant findings although spouse caregivers reported in exit interviews they communicate better now after participating in the study. In conclusion the use of the 3-phase approach, EVF, field test and pilot study were successful in culturally adapting and showing the impact of the HHH-Ghana. Results from these three studies have advanced the science in cultural adaptations and has unearthed a new area of inquiry in nursing science in Ghana.

Implications for Nursing Science

This dissertation breaks into an area of research and services that have gone undetected and unexamined in Ghana and elsewhere. It provides preliminary data for a larger scale and more rigorous clinical trial. The enrolment rate in Study 3 was low therefore future studies must develop methods to obtain higher enrollment of eligible spouses. Future studies with increased sample size that is representative and diverse in larger scale pilot study/implementation that is directly responsive to the national health needs of women and their spouse caregivers in Ghana is warranted. A larger pilot study can be achieved by training two clinical nurses to deliver the intervention. Future studies to assess the validity and acceptability of study measures for target population are also needed in culturally adapting the measures. Results have advanced the science of cultural adaptation and have provided a foundation for cultural adaptation studies with other EBIs and frameworks. The eligibility criteria on spouse caregivers being able to speak and read English excluded some potential participants, therefore, future studies should explore converting intervention manuals into audio visuals in English and one of the widely spoken local Ghanaian language.

Implications for Nursing Practice

Findings from this dissertation studies will inform stakeholders and policy makers in Ghana in caring for this underserved population of spouse caregivers of women with breast cancer. Inclusion of specialized care for spouse caregivers will ensure holistic nursing care for patients with breast cancer. If the HHH-Ghana is adopted, breast cancer nurses can acquire new skills through training on the use of the intervention. These skills will enable nurses provide tailored care to couples dealing with breast cancer and improve the health outcomes of spouse caregivers.

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