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Peer Connect for African American breast cancer survivors and caregivers: a train-the-trainer approach for peer support

Marlyn Allicock, PhD, MPH,[1] Lindsey Haynes-Maslow, PhD, MHA,[2] La-Shell Johnson, MA,[3] William R. Carpenter, PhD, MHA,[4] Anissa I. Vines, MS, PhD,[4] Denise G. Belle, MPH,[5] Ray Phillips,[6] Michele W. Cherry, MPA[6]

[1]School of Public Health, Department of Health Promotion and Behavioral Sciences,
The University of Texas, 5323 Harry Hines, V8.112, Dallas, TX 75390-9128, USA

[2]Department of Youth, Family, and Community Sciences College of Agriculture and Life Sciences,
North Carolina State University,
Raleigh, NC 27695, USA

[3]Center for Health Promotion and Disease Prevention,
University of North Carolina at Chapel Hill, Chapel Hill, USA

[4]University of North Carolina at Chapel Hill, Chapel Hill, USA

[5]Rural Health Group, Inc, 500 Jackson St, Roanoke Rapids, NC 27870, USA

[6]Vidant Edgecombe Hospital, 111 Hospital Dr a, Tarboro, NC 27886, USA

Correspondence to: Allicock
Marlyn.A.Allicock@uth.tmc.edu

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Abstract

Racial disparities in breast cancer survivorship are a major concern nationally. How survivors cope with cancer and reframe their lives is a critical part of survivorship. Community-academic research partnerships may facilitate access to much-needed psychosocial support for African American survivors and caregivers in rural areas, but drivers of successful intervention implementation are not well understood. The purpose of this study was to describe the training and evaluation of Community Coaches and Guides (i.e., peer supporters) using the *Peer Connect* program for African American breast cancer survivors and caregivers. Community engagement strategies were used to implement the training component of *Peer Connect*, an evidence-based program grounded in the Diffusion of Innovation Theory utilizing motivational interviewing techniques (MI) and a "train-the-trainer" model. Quantitative and qualitative methods examined implementation outcomes of feasibility, MI fidelity, and acceptability—precursor outcomes that must be achieved before examining intervention impact vis-à-vis changes in support care. Training was feasible to implement and replicable by the trained Community Coaches. Beyond feasibility and replicability, success was modest regarding MI fidelity. Benefits (e.g., serving as role models and having safe sources of support) and lessons learned (e.g., need for additional quality control) were identified as both facilitators and barriers to implementation and as factors that could impact the effectiveness of community-engaged programs to improve survivorship outcomes. *Peer Connect*, like other programs that employ community-engagement strategies, holds promise to meet the psychosocial support needs of diverse rural cancer survivor populations.

Keywords

Cancer survivors, Caregivers, Peer support, African American, Breast cancer, Community engagement, Training

Implications

Practice:: Community-based organizations are able to use evidence-based strategies to implement peer support training in the community.

Policy: Health promotion outreach for healthy survivorship in non-clinical settings can reach rural, underserved groups.

Research: Future studies should continue to elucidate the factors and resources needed for community organizations to implement and maintain healthy survivorship programs.
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Background

In the past decade, the Affordable Care Act (ACA) and the economic recession have contributed to accelerated healthcare industry restructuring, financial reform, and an atmosphere of uncertainty, all of which have put substantial pressures on healthcare delivery systems [1, 2]. Thus, healthcare organizations are looking to reduce costs and improve quality and efficiency, instead of expanding programs and staff to meet growing healthcare needs of an aging population. Due to advances in cancer early detection and treatment, the population of cancer survivors continues to grow [3, 4]and poses a set of specific and unique healthcare needs.

In North Carolina, as in the rest of the USA, cancer is one of the leading causes of death, and racial disparities in cancer care and outcomes remain a substantial problem [5]. While cancer mortality remains a problem, surviving a diagnosis of cancer and primary treatment brings about its own challenges. For all cancer patients, coping with a cancer diagnosis, successfully navigating the continuum of care, and managing life post-treatment has an impact on emotional distress [6, 7], depression [8], and long-term psychological adjustment [9–11]. Breast cancer survivors have unique healthcare needs resulting both from the cancer experience and adverse effects from cancer treatments. In addition to physical and psychological effects from diagnosis and treatment, breast cancer survivors are at increased risk for recurrence, and the development of other co-morbid diseases such as type 2 diabetes, heart disease, and osteoporosis [12]. These challenges are made all the more complex when racial inequities in cancer care and outcomes are considered. Breast cancer survival inequities persist for African American women, who experience only 79% 5-year survival rates compared to 91% for white women [13]. Compared to white survivors, African American breast cancer survivors are more likely to die from comorbid conditions [14, 15], and be disproportionally diagnosed with triple negative breast cancer which is associated with the highest risk of recurrence [15].

Coping with a cancer diagnosis not only affects the survivors but also their caregivers. The literature suggests that the cancer survivor's needs may include psychosocial support, financial assistance for healthcare, and information about cancer remission [16, 17], while cancer caregivers may benefit from positive relationships with family members, assistance with practical needs, and good communication with healthcare providers [18, 19]. The unique needs of African American cancer survivors and caregivers have been documented [20, 21], but persistent cancer disparities suggest that these needs go unmet. Therefore, initiatives addressing the psychosocial needs of African American survivors and caregivers are warranted.

Peer support interventions have been an effective health promotion strategy particularly with underserved, minority populations [22–24]. Peers can successfully reach survivors and caregivers to help facilitate a range of healthcare and psychosocial needs. Peer support can be leveraged to provide information, advocacy, and practical, emotional, and spiritual support [22]. Individuals who provide peer support are often described as "natural helpers" [24, 25] who have innate skills and compassion that are then enhanced by training [24]. Peer support may be delivered through one's social networks (e.g., lay health advisors, promotoras, or community health workers in community settings) or through patient navigation approaches used in healthcare settings [26]. Peer support has been effective for many disease conditions [27–35] including cancer [36–39]. However, the literature is limited regarding African American breast cancer survivors and caregivers and the use of peer support. To address this gap in interventions on psychosocial support using peers for cancer survivorship, we adopted *Peer Connect*, a community-based intervention, to facilitate meeting the psychosocial needs of African American cancer survivors and caregivers.

Grounded in the context of Innovation Diffusion Theory [40], we implemented and evaluated *Peer Connect,* a peer support program that employs Motivational Interviewing (MI) [41], using a train-the-trainer model to meet the psychosocial needs of a population of African American cancer survivors and caregivers.

Peer Connect overview

Peer Connect [37, 42] is a patient-centered, evidence-based program developed as part of the University of North Carolina (UNC) at Chapel Hill's LIVESTRONG Survivorship Center of Excellence (http://carolinawell.org/connecting.do) to help survivors cope with their cancer diagnosis, treatment, and life after treatment [43]. The program connects post-treatment volunteer cancer survivors and caregivers (Guides) with those currently experiencing cancer-related issues and needing support (Partners). Cancer survivors and caregivers who wish to be Guides to other survivors or caregivers are trained using the *Peer Connect* DVD and manual-based training program and matched to Partners. The focus is patient centered: listening, reflecting, and avoiding unsolicited advice. *Peer Connect* trains volunteer Guides in MI communication skills: asking open-ended questions, reflective listening, building motivation (importance, confidence, and values clarification), moving toward change (overcoming barriers and matching resources with participant interests), summarizing, and goal setting. The program DVD serves as the primary training tool to teach the MI skills. Accompanying the DVD is the Guide manual that follows along with the DVD training and includes program description, roles and responsibilities, evaluation tools, and additional resources for program implementation. The program includes several modules specific to the needs of cancer survivors identified in LIVESTRONG's 2010 survey (e.g., dealing with fear of recurrence) [43]. In addition to the Guide manual, a Coordinator's manual provides detailed guidance to aid in program implementation. Guide and Partner pairings are based on participant type (survivor or caregiver), gender, and race when possible. All conversations between Guides and Partners are initiated over the telephone, but may be extended to in-person conversations depending on feasibility and/or desirability. The number and length of conversations is determined by each pair, but Guides are encouraged to provide a minimum of two conversations. Support continues for as long as the Partner feels it is beneficial. For this study, we collaborated with two community organizations in rural North Carolina to disseminate the program to African American breast cancer survivors and caregivers. Investigators first trained Community Coaches–these were African American breast cancer survivors and caregivers–who were already involved in a volunteer role with both partner organizations in their cancer outreach programs. This paper describes the use of a train-the-trainer model to train Community Coaches and Guides as part of *Peer Connect.*

Grounded in the context of the Diffusion of Innovation Theory [40], we describe our pilot study of how the *Peer Connect* training component was implemented and evaluated with emphasis on the feasibility and fidelity with which peers can be trained to use MI and program acceptability.

Methods

The *Peer Connect* training: train-the-trainer model

We used a train-the-trainer model (Fig. 1) to disseminate the program, to build/expand expertise in MI, peer counseling, and cancer support services within partner organizations, and to encourage program

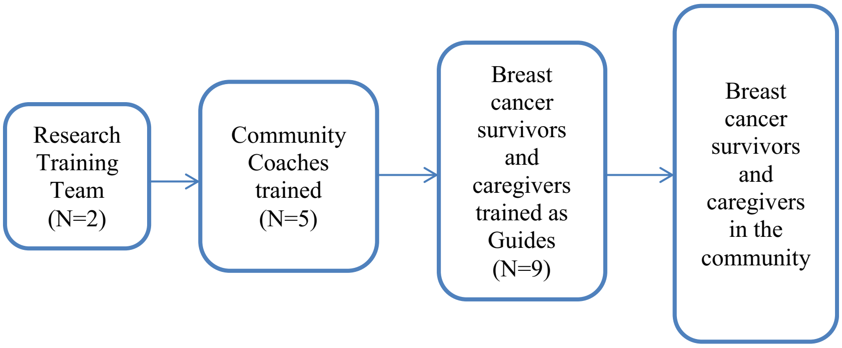

Fig. 1 | **Train-the-trainer model**

sustainability once the research concluded. The overall goal was to intensively train a small group of women ("Community Coaches") in the community who would then become peer supporters providing support and who could train larger numbers of people through subsequent trainings and implement the full *Peer Connect* support program to connect Guides with Partners. The training was done by two research staff (MA and LJ) previously trained by the Motivational Interviewing Network of Trainers (http://www.motivationalinterviewing.org/about_mint) and with significant experience training both professional and lay-audiences to use MI. These Community Coaches lived in the local community and could better connect to breast cancer survivors and caregivers than outside researchers, and this new training knowledge could add to the local capacity to better enhance cancer outreach services. Community Coaches completed a 3-day training delivered by study investigators. Following the training of the Community Coaches, partner organizations were responsible for recruiting and training Guides. They used flyers, word-of-mouth, emails to existing cancer-related listservs to recruit African American breast cancer survivors and caregivers to be trained as Guides for their respective peer support programs. Guides who signed up to be trained by Community Coaches attended the 3-day training workshop and signed on to attend monthly 90-min supplemental sessions (Guide Gatherings) for 6 months to reinforce MI skills, gain additional practice, and problem-solve issues in addressing Partner needs, and also agreed to participate as a Guide for a year. Community Coaches were also expected to attend Guide Gatherings and serve for 1 year.

Eligibility criteria for Community Coaches and Guides stipulated that they be over 18 years old, English-speaking, and either a breast cancer survivor (at least one year post-treatment) or experience in caregiving for someone diagnosed with cancer. Financial incentives ($100/day for each training day) were provided to Community Coaches and Guides at training completion. Consent was obtained on the first training day. All study procedures were approved by the Institutional Review Board at the University of North Carolina at Chapel Hill.

Research partnership

This research was conducted through the Carolina Community Network (CCN) for Reducing Cancer Health Disparities at the University of North Carolina at Chapel Hill. The CCN is a National Cancer Institute-funded health equity center dedicated to eliminating cancer-related disparities among African Americans in North Carolina [44, 45]. The CCN Community Outreach Program included a breast cancer community cluster and a group of community-based organizations/agencies who shared the goals of breast cancer prevention and survivorship. Two of the partnering organizations agreed to partner with the *Peer Connect* project. We used a community-based participatory research approach [46, 47] to merge the expertise of academics and the two CCN community partners to disseminate *Peer Connect*. The investigators had expertise in MI, peer support, and cancer prevention and control. The community institutions were long-standing partners that were in a rural 5-county region targeted by the CCN and included a community health center and a rural hospital. High breast cancer mortality rates were prominent in the counties served by the organizations. Four of the five intervention counties had mortality rates higher than that of the state (range 23.8–29.8/100,000 compared to 21.6/100,000) [48]. The hospital already had an Oncology Patient Navigation program with two community breast cancer survivor volunteers but wanted to provide more structured training to volunteers and saw the *Peer Connect* program as an opportunity to do so. The second organization, a community health center, added the peer support component to their community-based outreach program arm to bolster their cancer survivorship support services. These organizations had the infrastructure, community networks, and expertise in delivering cancer support programs.

As part of strengthening our community-academic partnership and to advance the adoption and successful implementation of *Peer Connect*, we engaged in a collaborative half-day planning process to develop a plan of action and to address potential challenges prior to the program's implementation. Additionally, we had monthly calls and regular email communications with community partners to provide guidance, problem-solve, and address any needs.

Intervention diffusion–The Diffusion of Innovation Theory provides a useful framework because it characterizes how an innovation is communicated among members of a social system [40]. This framework has been used widely to study many kinds of healthcare innovations and their communication and implementation through healthcare systems [49, 50]. Relevant to this study, communication reflects both the information regarding the new idea as well the uncertainty surrounding this new idea. The information exists and varies along a spectrum of innovation diffusion stages including initial knowledge acquisition, the use of the information to persuade other members of the social system to adopt or not adopt, the decision to adopt the innovation, the implementation of the innovation, and confirmation of the innovation adoption decision, wherein the benefits of the innovation are evaluated and the innovation becomes more fully integrated into that social system's norms. For this study, *Peer Connect* is perceived of as the innovation, and we evaluate its implementation through the University partnership which is perceived of as the social system. By assessing feasibility, fidelity, and acceptability of a previously tested program in a new setting, we gain insight into the prospective success of implementation and the program's capacity for replicating positive impacts.

Training content

The *Peer Connect* training is delivered primarily using DVD and manuals and is described in greater detail elsewhere [42]. Table 1 provides a description of training content. Briefly, the 3-day DVD-based training in MI-based communication skills including asking open questions, reflective listening, building motivation, moving toward change, and goal setting to help Partners problem solve regarding their specific issue. Participants practiced approaches for communicating with and supporting Partners' needs using individual, dyadic, and group reflective exercises, discussion and shared problem-solving, interactive skill sessions, and writing exercises. The training also included maintaining confidentiality and boundaries of providing peer support. Of note, the training did not have a specific behavioral focus, e.g., getting more physical activity, communicating to a health provider about fear of cancer recurrence. Based on our formative research with African American breast cancer survivors and caregivers [21], the main need for support services was psychosocial. Therefore, the program's intent was to be able to meet Partners "where they are" with whatever issue they brought to the Guides. As such, MI's patient-centered focus serves as an appropriate communication tool for helping Guides to support Partners.

Table 1 | *Peer Connect* training session components

Training session	Topics [a]
Day 1	Introduction/program overview How *Peer Connect* works Providing support and maintaining confidentiality DVD Part I: Communication skills: Open questions Reflective listening and use of affirmations
Day 2	Review of day 1 Building motivation: values, importance, and confidence Summarizing Using the skills in a full conversation
Day 3	Review of day 2 DVD Part II: A first conversation with partners Sharing resources and other information Making a referral for counseling Handling requests for medical/other advice Setting up the next call and continuing the partnership Next steps for program implementation: Train-the-trainer model discussion Participant recruitment Program logistics

[a] Teaching materials provided in manuals, handouts, and role plays were included in each session

Measures—training evaluation

We focused on three indicators of program implementation (Table 2): (1) the feasibility of training Community Coaches and Guides to use MI skills [51], (2) extent to which they achieved fidelity to MI techniques, and (3) acceptability of the training. These implementation outcomes are necessary precursors to achieve before attempting to affect changes in coping behaviors for cancer survivorship. If a program is not implemented well, it will not be effective in the desired outcomes [51].

Training feasibility–Feasibility is the extent to which the training can be successfully administered: (1) from researchers to Community Coaches and (2) from Community Coaches to Guides. We documented trainee attendance, engagement, training duration, adherence to training protocol, content difficulties, and any logistical issues to assess feasibility and for quality improvement.

MI fidelity–The fidelity in learning MI skills [50] by Coaches and Guides in training was assessed using the Motivational Interviewing Treatment Integrity (MITI) Scale 3.1.1 [52]. Both Community Coaches and Guides completed a practice phone counseling conversation via telephone with a research team member 1 week after the conclusion of their training. A member of the research team role-played as a breast cancer survivor or caregiver. Calls were on average 15–20-min long to simulate a realistic scenario with a potential Partner regarding psychosocial support. All practice conversations were tape-recorded and Community Coaches and Guides received immediate verbal

Table 2 | Training evaluation

Domain assessed	Evaluation tools used	Metrics
Feasibility: extent to which the training can be successfully conducted for and by peers.	Staff observation of training	• Trainee attendance and engagement, amount of content delivered, training duration, content difficulties, and any logistical issues
Fidelity**:** degree to which trainees learned motivational interviewing techniques	Motivational Interviewing Treatment Integrity Code (MITI)-version 3.1.	• MITI Global ratings and behavioral counts
	Responses to 2 written scenarios	• Rated "yes/no" to indicate MI appropriateness
Acceptability**:** perception among trainees that the training was satisfactory for achieving program goals	Training debriefing	• Satisfaction with content, training length, clarity of the content, knowledge gained
	Pre-and posttest	• Perceived self-efficacy (confidence) to use MI skills
	Posttest	• To what extent do you feel this training will help you in your role as a peer counselor? [0 = not at all to 10 = very much] • I enjoyed learning about providing peer support. [strongly agree to strongly disagree] • I learned valuable communication techniques. [strongly agree to strongly disagree]

feedback from the research team member. Two research team members coded the tapes using the MITI scale and their scores averaged. The MITI scale focuses on two domains of MI skills: (1) global ratings and (2) behavioral counts. Global ratings include two components: one to capture counselor empathy (i.e., the extent to which the interviewer understands and/or makes an effort to grasp the Partner's perspective) and the second for spirit (i.e., the overall competence of the interviewer in using evocation, collaboration, and autonomy) [52] each rated from 1 to 5, with higher scores indicating higher success. The second domain, behavioral counts, tallies four specific counselor (trainee) MI-consistent behaviors: (1) reflection to question ratio; (2) percent open-ended questions; (3) percent complex questions; and (4) percentage MI adherent or non-adherent statements. The MITI tool includes recommended proficiency and competency thresholds to use for each dimension. We used the beginning proficiency guidelines to assess participants' skill levels.

Second, to gauge short-term learning and to assess participants' abilities to achieve an "MI spirit" (i.e., the way of being with a partner that communicates compassion, acceptance, partnership, and respect), we adapted a two-item measure previously used to gauge MI skill acquisition and capture the underlying spirit of MI [41, 53]. Both Community Guides and Coaches responded in writing to two fictitious scenarios regarding a potential, topic-relevant conversation. For example, "During a conversation, your Partner says, 'I feel like I have no support even though I am lucky to have family and friends around me.' How would you respond?" Scenario two: You ask: "On a scale of 0 to 10, with 10 being very important and 0 not at all important, how important is it for you to manage your stress?" Partner's response: "I would say a 6." What do you say next? MI-consistent responses could include, for example, a reflection to scenario one and using the importance and confidence rulers in scenario two. Responses were scored as "yes/no" to indicate MI appropriateness. This was completed on day 1 (pretest) and on day 3 (posttest).

Training acceptability–Acceptability is the perception among Coaches and Guides that training was satisfactory in terms of content, utility, their confidence to perform/deliver the intervention as intended, and at the targeted complexity level. To assess acceptability we used three approaches. First, at pre- and posttest, to evaluate the utility of the training, we assessed trainees' perceived self-efficacy (0 = not all–10 = very much) to use the MI skills. Second, at posttest, we inquired about usefulness of the training to help in the role as peer counselor (0 = not all–10 = very much); enjoyment of the training and whether the content was beneficial (both used a 5-point Likert scale: strongly agree to strongly disagree). Finally, we conducted a facilitated discussion (debriefing) on day 3 that allowed participants to provide feedback regarding the training format and content, their perceptions of their readiness to use MI, and any training needs they felt had gone unmet. This semi-structured debriefing included nine questions, was audio recorded and transcribed to produce an accurate summary about participants' evaluation of the training.

Results

Demographics

Community coaches—A total of five female participants served as Community Coaches (see Table 3). All were African American with an average age of 63 and most were married ($n = 4$) with a college degree or higher ($n = 4$). Three coaches worked full-time, while the others were retired. Among the four participants that reported the number of years since their diagnosis, the average was 13 years with a minimum of 5 and a maximum of 19.

Guides—A total of 10 female participants were recruited. One participant did not finish the training, resulting in a 90% completion rate. The final study sample included 1 American Indian/Alaskan Native and 8 African American women. Ages ranged from 28 to 72 years, with an average age of 56 years (see Table 3). Among the 9 participants, 4 were cancer survivors, 5 were cancer caregivers, and 7 were both. Among cancer survivors, 3 had breast cancer and 1 did not report her cancer type. Years since cancer diagnosis ranged from 1 to 7, with an average of 5 years. Among cancer caregivers, 3 out of 7 women had been previously diagnosed with cancer and on average participants had served as a caregiver for 4.35 years. A majority were married ($n = 4$), completed some college education ($n = 6$), were employed full-time ($n = 4$), and rated their health "pretty good" or "very good" ($n = 9$). None of the participants had previously served as a peer mentor and only three had previously received MI training.

Training feasibility—All five Community Coaches completed the training as delivered by the research team. One noted challenge was Community Coaches relied heavily on advice giving initially but improved such that they used other strategies (e.g., asking open questions) by day 3. Three of the five Community Coaches then conducted the training for 9 Guides recruited. One Community Coach was unable to attend the first day's training session. Days 2 and 3 were facilitated by all three Community Coaches. They had some difficulty providing examples of reflections beyond what was provided in the manual. By the end of the Day 2 training, the Community Coaches seemed more comfortable and confident in their delivery of the training information. Community Coaches were very adherent to most of the protocols except for some of the group activities. For both the Reflections and Using Values lessons, some of the group activities were shortened and skipped due to the lack of time. Based on the number of timed session breaks, DVD interactive sessions, activities, and homework exercises, protocol adherence was roughly 85%.

Fidelity assessment—To assess fidelity to the communication skills taught and to provide a practical measure of MI practice, average scores for each of the dimensions of MITI coding [52] were calculated for all Community Coaches and Guides (see Table 4). Of the five Community Coaches, four had Global clinician ratings that showed competence; none met the criteria for reflections to questions ratio or open questions; all displayed competency in MI adherent behaviors. Of the nine Guides, five met the criteria for competency for the global clinician ratings; none met the criteria for reflections to questions ratio; four were at least proficient in using open questions; and two scored at competency for MI-adherent behaviors. We do not report on percent complex reflections here, as the training focused on the use of simple reflections.

At pre-test, one Community Coach and two Guides provided an MI-appropriate response (e.g., used reflections and/or asked open questions) to either scenario posed. At posttest, all Community Coaches and seven of the nine Guides provided an MI-appropriate response to the first scenario, and all Guides provided an appropriate response to the subsequent scenario.

Acceptability evaluation via debriefing—In general, both Community Coaches and Guides felt that the training provided concrete skills to help them communicate more effectively with potential Partners, was empowering, and training sequence of skills flowed well. One Community Coach said, "Being able to learn how to summarize and reflect back made it easy for me to help the person solve their own problems." Both groups responded that using open questions and summarizing were the most challenging communication skills. Overwhelming, all agreed that the amount of time allotted for training and learning modules were appropriate. However, to feel more confident with using the new communication skills, they needed more practice time built in. Trainees all agreed that "The training manual is a good tool to have to refer to after being trained."

Community Coaches and Guides enlisted in the program for altruistic reasons primarily to offer support and guidance to other survivors and caregivers. As such, most stated that learning how to communicate effectively and/or knowing what to say to survivors was the most important knowledge gained.

Perceived self-efficacy to use the MI skills was rated on a 10-point scale. Mean self-efficacy for Community Coaches at pre-test was 5.29 (SD = 1.75) and at posttest was 7.4 (SD = 1.5) and for Guides was 6.11 (SD = 2.13) at pre-test and at posttest was 9.11 (SD = 0.7).

Posttest responses regarding trainees' perceptions about the extent the training would help them in their role to serve as a peer counselor was highly favorable. Mean score was 9.8 (SD = 0.4) on a scale of 0–10 (0 being not at all and 10 being very much) for Community Coaches and 9.6 (SD = 0.5) for Guides. Most cited learning to ask open-ended questions was a skill that would enhance their communication with a Partner and help to build rapport and trust.

Discussion

In the context of limited healthcare resources, especially in rural communities, and with a growing cancer survivor population, evidence-based programs that can extend support services and improve survivorship

Table 3 | Demographic characteristics of *Peer Connect* community coaches and guides

Characteristics	Community guides ($N = 9$)			Community coaches ($N = 5$)	
	Caregiver only number (%)	Survivor only number (%)	Both caregiver and survivor number (%)	Caregiver only number (%)	Survivor only number (%)
N	5	1	3	1	4
Age (mean, SD)	55.4 (16.5)	51 (6.4)	60.7 (5.1)	55 (0.0)	60 (4.9)
Gender					
Female	5 (100.0)	1 (100.0)	3 (100.0	1 (100.0)	4 (100.0)
Male	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Race					
African American	5 (100.0)	0 (0.0)	3 (100.0)	1 (100.0)	4 (100.0)
American Indian/Alaskan Native	0 (0.)	1 (100.0)	0 (0.0)		
Cancer type					
Breast	–	1 (100.0)	2 (66.6)	–	4 (100.0)
Did not report	–	0 (0.0)	1 (33.3)		
Cancer stage at diagnosis					
Stage 1	–	0 (0.0)	3 (100.)	–	2 (50.)
Stage 2	–	0 (0.0)	0 (0.0)	–	1 (25.0)
Stage 3	–	1 (100.0)	0 (100.0)	–	0 (0.0)
Did not report	–	0 (0.0)	0 (0.0)	–	1 (25.0)
Cancer treatment					
Radiation	–	1 (100.0)	3 (100.0)	–	2 (50.0)
Surgery	–	1 (100.0)	2 (66.6)	–	4 (100.0)
Chemotherapy	–	1 (100.0)	2 (66.6)	–	3 (75.0)
Years since cancer diagnosis (mean, SD)	–	1 (0.0)	6.3 (1.2)		
Years of caregiving (mean, SD)	6.6 (5.6)	–	1.3 (1.5)	1 (100.0)	–
Marital status					
Married	3 (60.0)	1 (100.0)	1 (33.3)	1(100.0	3 (75.0)
Divorced	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Widowed	2 (40.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Single	0 (0.)	0 (0.0)	2 (66.6)	0 (0.0)	1 (25.0)
Education					
Some college	3 (60.0)	1 (100.0)	2 (66.6)	0 (0.0)	1 (25.0)
College graduate	1 (20.0)	0 (0.0)	1 (33.3)	0 (0.0)	3 (50.0)
More than college	1 (20.0)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)
Employment status					
Full-time	2 (40.0)	1 (100.0)	1 (33.3)	1 (100.0)	2 (50.0)

Part-time	2 (40.0)	0 (0.0)	1 (33.3)	0 (0.0)	0 (0.0)
Retired	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (50.0)
Unemployed	1 (20.0)	0 (0.0)	1 (33.3)	0 (0.0)	0 (0.0)
Other	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Household income					
Less than $30,000	1 (20.0)	1 (100.0)	2 (66.6)	0 (0.0)	1 (25.0)
$30,000–$49,000	2 (40.0)	0 (0.0)	1 (33.3)	1 (100.0)	3 (75.0)
Greater than $50,000	1 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Did not report	1 (20.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

outcomes are needed. Using a community-academic partnership model, we evaluated in a pilot study whether the *Peer Connect* program could be disseminated with fidelity using a train-the-trainer approach. Specifically, we were interested in assessing whether the training could be replicated by community members and fidelity to the MI skills training could be achieved. In doing so, the study found that a train-the-trainer model can be used to implement *Peer Connect* in rural areas, which can provide necessary support to cancer survivors in under-resourced communities.

It was feasible both to deliver the training to Community Coaches and, in turn, for the Coaches to train Guides. Both groups deemed the training as important and that it provided critical skills they would need to support other breast cancer survivors and caregivers. However, we saw modest success related to fidelity to MI skills. There were improvements in certain micro-level skills such as asking open-ended questions while other skills such as reflective listening proved challenging for both Coaches and Guides to master during training. Asking open-ended questions and understanding the overall empathetic nature of being patient-centered appeared to be some of the most readily accessible components of the training. Learning MI is a process that requires ongoing training to become second nature. Learning specific skills can be taught in a relatively short time, but there can be challenges with maintaining skill levels in MI over time [41, 42]. We only evaluated MI skills during the training but future programs should consider evaluation at multiple time points to assess fidelity and quantify additional training needs. Additional technical assistance may be needed to bolster training outcomes at the point of dissemination to the community institutions. Because this program is designed with a local partner organization leading program implementation, it is possible to have ongoing trainings (beyond the monthly Guide Gatherings) to improve and maintain communication skills of Guides and Coaches. However, academic-community partnerships would need to determine who should be responsible for program maintenance. Further, the feasibility with which the Community Coaches were able to conduct the training themselves after receiving a 3-day training was possible due in part to the program's design. Program manuals and the DVDs were designed to serve as trainer to provide uniform, consistent information. This format also allows for the training to be facilitated by anyone with minimal MI skills using the Coordinator's guide.

This evaluation of the *Peer Connect* training of Community Coaches and Guides and relevant literature [54, 55] highlight several benefits of the train-the-trainer model. First, having community members who have firsthand knowledge of their community and can inform the training by providing contextual examples related to the topic being taught. They also have shared experiences with which community Guides and intended program participants can relate to and insight on how best to adapt the program to

Table 4 | Mean scores achieved by community coaches and guides on the MITI 3.1

	MITI beginning proficiency threshold	Community coaches ($N = 5$) mean SD (range)	Guides ($N = 8$) mean SD (range)	Number of community coaches at beginning proficiency ($N = 5$)	Number of guides at beginning proficiency ($N = 8$)
DOMAIN 1: Global ratings					
Global clinician ratings	Mean 3.5	4.0 0.94 2.15–4.3	3.7 0.89 2–4.3	4	5
Reflection to question ratio	1	0.53 0.24 0.25–0.84	0.27 0.10 0.11–0.38	0	0
Percentage open questions	50%	38.7 6.9 29.1–45.5	53.6 20.5 29–94	0	4
Percentage MI adherent	90%	83.24 37.4 16.2–100	44.11 35.30 0–91.5	4	1

their community. Second, driven by the need to pay it forward, women who volunteered for this program, in addition to giving back, felt the training would allow them to be positive role models in the community and to provide support to other women facing survivorship issues. Thirdly, trainees believed they had safe sources of support because they had a previous relationship with the community organization that was credible and the program aimed to serve women who looked like them, i.e., African American.

Critical consideration for evidence-based programs diffused into communities is maintaining program fidelity and achieving good fit between the program and community-based organization. Preserving acceptable levels of fidelity to the original program along with adapting the program to ensure fit with local needs and resources are known challenges for evidence-based community programs [56, 57]. Given the modest success for learning the MI skills, more technical support for Community Coaches is needed. For example, Community Coaches could conduct a "mock" training and get feedback and additional training tips from the research team prior to the actual kick-off. This study gives insight to the initial training only and not program implementation and maintenance. Future research is needed to understand to what extent program implementation is conducted with fidelity, factors, and resources needed to ensure that the program is delivered as intended. While community organizations are free to adapt programs and implement based on their own needs and resources, we have yet to study these aspects as it relates to healthy survivorship programs in real-world settings. For example, beyond the quality and quantity of training delivered, attention must also be paid to the selection of Guides, degree of program delivered, and how and whether cancer survivors and caregivers coming for support get their needs met. There is a need for additional quality control measures to be considered as they can either be facilitators or barriers to implementation, and impact the effectiveness of community-engaged programs to improve survivorship outcomes.

This study has some limitations and challenges that are worth noting. First, this pilot study enlisted a small number of trainees that represent a convenience sample. However, trainees reflected organizational needs and capacity to take on this program to serve their community's needs. Because organizational needs and capacity drive the pace of the program, program implementation is dependent on that agency's leadership. For example, scheduling the Guide training had to be shuffled/delayed to accommodate competing organizational scheduling. When communities are responsible for full program implementation, one of the tensions at the point of program dissemination is the need to ensure that program aspects are feasible to implement while maintaining program validity. Assessment of organizational capacity is key to ensuring successful implementation. To help address this tension, we built in formal monthly program support calls to assist community partners with any program issues or feedback as needed. Taking a community-based participatory research approach is a strength for addressing cancer health disparities especially in rural communities. Scaling up programs that entail community-academic relationships require a careful attention to partnership expertise, resources, and roles and responsibilities in ensuring successful integration of research and practice knowledge. Such a model integrates research and practice knowledge to help drive evidence-based research into practice to impact lives.

Dissemination of evidence-based programs to communities is a critical step needed to improve cancer outcomes and eliminate health disparities. Community engagement strategies can be a precursor/link to helping community organizations to adapt programs to meet the needs of their own populations and settings. We showed that by using a train-the-trainer approach, local organizations can equip community members with tools to deal with cancer survivorship needs. Future research is needed to further explore how community-engaged strategies inform implementation of the evidence-based program for effectiveness.

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Compliance with ethical standards

The authors would like to thank the research participants and community partners for their involvement.:

Conflict of interest: The authors declare that they have no conflicts of interest.

Statement of human rights:

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1975 Helsinki declaration and its later amendments or comparable ethical standards.

Statement on the welfare of animals: This article does not contain any studies with animals performed by any of the authors.
Informed consent was obtained by all individual participants included in the study (University of North Carolina at Chapel Hill, IRB #12-1941.

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