



Impact of complementary and alternative medicine offerings on cancer patients' emotional health and ability to self-manage health conditions

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ABSTRACT

Objectives: This descriptive study investigated how cancer patient characteristics and utilization of CAM resources, services, and activities at a regional cancer center were associated with patients' understanding of their health needs, emotional health, and their ability to self-manage their condition.

Design: Cross-sectional questionnaire. Sixty-one patients completed a mailed 17-item paper and pencil survey about their sociodemographics, use of CAM offerings, barriers, and perceived benefits.

Setting: Mail-based survey completed by cancer patients in a southern state.

Main outcome measures: As a result of participating in the center's cancer support services, patients indicated if: (1) they had a better understanding of their health needs; (2) their emotional health has improved; and (3) they take better care of themselves when they are at home and in the community.

Results: Participants reported using 0.93 (± 1.20) CAM activities (e.g., yoga), 0.62 (± 0.71) resources (e.g., the library), and 1.62 (± 1.34) services (e.g., monthly support groups), although also reported experiencing 0.74 (± 0.81) barriers (e.g., transportation) to accessing these offerings. Perceived benefits were interrelated, where those perceiving CAM offerings to improve their understanding of their health needs also perceived improved emotional health ($\chi^2 = 27.93$, $P < 0.001$) and better self-care ($\chi^2 = 30.90$, $P < 0.001$).

Conclusions: Greater utilization of CAM offerings was also associated with greater perceived benefits. These results highlight the benefits of CAM therapies for cancer patients' well-being. Integration of CAM therapies in standard cancer care should be encouraged to complement cancer treatment.

1. Introduction

In 2018, an estimated 1.73 million new cases of cancer are projected to occur, adding to the 14.5 million total cases in the United States.¹ At some point in their lifetime, 39% of Americans, most of whom are over the age of 55, will be diagnosed with cancer.² Billions of dollars are allotted for cancer research in the United States each year, funding clinical innovations that aim to screen, treat, and potentially cure cancer.² While these clinical practices have increased the general survival rate among those diagnosed with cancer, many individuals seek complementary and alternative medicine (CAM) to cope with side and late effects of treatment.³

The National Center for Complementary and Alternative Medicine (NCCAM) defines CAM as a group of diverse medical and health care

systems, practices, and products that tend not to be considered part of conventional medical care.⁴ NCCAM classifies CAM into five broad categories of holistic practices: whole medical systems (i.e., Ayurveda, homeopathy, naturopathy), mind-body-medicine (i.e. meditation, prayer, yoga), biologically based therapies (i.e. herbs, special diets), manipulative and body-based (i.e., chiropractic, osteopathy, massage) and energy healing (i.e., reiki).⁵

CAM use among cancer patients and survivors is high, and has appeared to be increasing in specific populations such as breast cancer survivors.⁶ Population-based studies have demonstrated that cancer survivors are more likely to use CAM than the general population without cancer.⁵ Many cancer survivors turn to CAM therapies, in addition to their conventional treatment, to deal with health issues such as recurring pain, insomnia, and ongoing psychological distress.⁵

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Many cancer centers across the U.S. provide CAM offerings in their facilities, including activities, resources, and services, to help mediate the side effects of treatment and improve the well-being of their patients.⁷ According to the 2007 National Health Interview Survey (NHIS), 65% of respondents who had ever been diagnosed with cancer used some type of CAM offering, as compared to 53% of respondents who had not been diagnosed.⁸ Those who had been diagnosed with cancer were more likely than others to have used CAM offerings for general wellness, immune enhancement, and pain management.⁷ The World Health Organization advocates for CAM because it adds to the multidimensional approach to cancer treatment and general health services.⁸ Patients tend to seek out CAM offerings based on their personal experiences and perceptions.⁹ The main reasons patients use CAM offerings is to improve their overall health condition, boost their immune system, and increase their energy levels.¹⁰

Research surrounding these holistic practices has focused on the potential benefits they can have on the quality of life among individuals living with cancer. For example, reiki, a type of guided meditation and energy therapy that focuses on improving spirituality and interacting with the electromagnetic fields around an individual's body, has been found to reduce a cancer patient's pain, anxiety, and stress, while increasing overall comfort and wellbeing.^{11,12} Additionally, Tai Chi and yoga, both of which are increasingly being used by adults with cancer, has been shown to significantly lower stress, promote positive mood, and increase the perception of better overall health.^{12,13} Physical activity is also important in controlling fatigue, stress, and energy levels among individuals diagnosed with cancer.¹⁴ Other therapies like massage, healing touch therapy, painting and music therapy, as well as acupuncture have been shown to improve the general wellbeing among those with cancer.^{12,13}

Previous research has focused on understanding the benefits of CAM, why it is used, and patient perceptions of CAM.^{5,8,9} The purpose of this descriptive study, conducted at a regional cancer center in central Georgia, is to examine the role of cancer patient characteristics and the utilization of the CAM activities, resources, and services on cancer patients' understanding of health needs, emotional health, and their ability to self-manage their condition.

2. Materials and methods

2.1. Participants and procedures

Data for this study were collected from patients at the Loran Smith Center for Cancer Support (LSCCS), a non-profit organization nested within the Piedmont Athens Regional Medical Center, which provides information, education, and spiritual and emotional support to cancer patients.¹⁵ Services are designed to provide emotional and spiritual support along a continuum of care, which includes the diagnostic, treatment, and post-treatment stages.¹⁵ These services are offered free of charge to patients. LSCCS is completely funded by donations to the Piedmont Athens Regional Foundation,¹⁶ and serves anyone affected by cancer within a 17-county service area in Georgia, regardless of their primary place of treatment. The LSCCS is staffed by licensed clinical social workers, oncology nurses, certified yoga instructors, licensed dietitians, therapists, and an outreach coordinator.

For this study, a random selection process was used to create a list of potential participants for a paper and pencil survey. Using the LSCCS database, every fifth record was selected to create a list of 220 individuals representing patients who accessed cancer support services at least once between January 2011 and June 2015. Participants were initially contacted via telephone to recruit them to participate in the mail-based survey. Voicemails were left for those with answering machines in the event they did not answer the telephone. An information sheet and instrument were mailed to all participants. Participation was voluntary, and no incentives were offered for participation.

The survey instrument consisted of 17 items using Likert-type scale

and yes/no formats. The survey instrument contained items pertaining to participants' sociodemographics, satisfaction with services utilized, barriers to accessing services, and health-related items. A total of 61 completed surveys were received (response rate of 27.3%). Ethical approval for this study was given through the Institutional Review Board at The University of Georgia (#00002947).

2.2. Measures

2.2.1. Dependent variables

Three perceived benefits from using the center's offerings served as the primary dependent variables for this study. First, participants were asked to respond to the following statement, "I have a better understanding of my health needs as a result of participating in Center cancer support services." Second, participants were asked to respond to the following statement, "My emotional health has improved as a result of participating in Center cancer support services." Finally, participants were asked to respond to the following statement, "I take better care of myself when I am at home and in the community, as a result of my participation in Center cancer support services." Response choices for each dependent variable were scored using a 5-point Likert-type scale ranging from "strongly disagree" to "strongly agree." Based on the frequency distribution for all three dependent variables, response choices were collapsed to form three response categories: "disagree/neutral," "agree," and "strongly agree."

2.2.2. Offerings used by participants

Participants were asked to indicate the CAM offerings (i.e., cancer support services) they ever used at the Center from a list of 15 offerings. Based on the nature of the offering's structure and contents, three offering categories were created: activities, resources, and services. See [Table 1](#) for a detailed description of each offering and the category in which it was placed. For analyses, each offering was examined separately as a categorical variable (i.e., endorsed or not endorsed). Then, the total number of offerings endorsed were summed and compared as a continuous variable (possible range from 0 to 15 offerings). Then, the same procedure was used to compare the number of activities (possible range from 0 to 5 activities), resources (possible range from 0 to 3 resources), and services (possible range from 0 to 7 services) used by the participants.

2.2.3. Barriers to accessing center offerings

Participants were asked to indicate barriers to utilizing Center cancer support services from a list of 7 barriers. Participants were asked, "Are there any barriers that have made it difficult and/or impossible for you to attend Center cancer support services? Please check all that apply." For analyses, each barrier was examined separately as a categorical variable (i.e., endorsed or not endorsed). Then, the total number of barriers endorsed were summed and compared as a continuous variable (none of the participants endorsed two of the barriers, thus making the possible range from 0 to 5 barriers).

2.2.4. Participant characteristics

Participant characteristics examined included age group (i.e., age 50 or younger, age 51–59, age 60–64, age 65–69, and age 70 or older), sex, and race (white, African American, and Asian/Pacific Islander).

2.3. Statistical analyses

All analyses for this descriptive study were performed using SPSS (version 22). Frequencies and descriptive statistics were calculated for all study variables of interest, which were then compared by participants' age group and sex. Chi square tests were used to compare frequency distributions for categorical variables. Independent sample t-tests and one-way ANOVA were used to compare means for continuous and count variables. Then, study variables were compared by the three

Table 1
Description and classifications of offerings.

Offering	Description	Classification
Yoga	Learn a combination of movements and poses, breathing techniques and deep relaxation, yoga will help reduce stress and anxiety, combat depression, improve sleep, and minimize side effects of treatment.	Activity
Tai Chi	A practice based on the ancient Chinese method of working on self-healing thru the use of breath and gentle, easy movement. Increase energy and improve stress response.	Activity
Guided Relaxation	Learn new methods of relaxation and renewal for your mind, body, and spirit.	Activity
Writing Group	Guided use of the written word to allow safe release of emotions, reduce stress, and communicate what is hard to put into words.	Activity
Painting Group	Guided use of paint to allow safe release of emotions, reduce stress, and communicate what is hard to put into words.	Activity
Healing Garden	Outdoor garden with paved walkways and a labyrinth, that offers a space for reflection, meditation, and walking.	Resource
Library	Includes a collection of books, available for 3-week checkout. The collection includes literature related to cancer, nutrition and wellness, integrative medicine, and bereavement.	Resource
Wig Service	Offers education and information about wigs, turbans, and wraps.	Resource
Reiki	Individual sessions that focus on the energy system of the body to promote relaxation, reduce stress, and minimize side-effects.	Service
Healing Touch	Individual sessions that focus on the energy system of the body to promote relaxation, reduce stress, and minimize side-effects.	Service
Monthly Support Group	Confidential settings to meet with others to share information, resources, and experiences.	Service
General Support Group (Love & Laughter)	Lunch and Learn format (with open discussion) to meet with others to share information, resources, and experiences. Guest speakers include medical professionals, pastors, integrative medicine practitioners, etc.	Service
Individual and/or family counseling	Service available to individuals and families to address issues related to stress, anxiety, treatment decisions, and family communication.	Service
Grief Workshop	Group support for grieving children, adolescents, and adults.	Service
Grief Counseling	Individual support for grieving children, adolescents, and adults.	Service

dependent variables. Again, chi square tests were used to compare frequency distributions for categorical variables. One-way ANOVA were used to compare means for continuous and count variables. Statistical significance for tests was $P < 0.05$.

3. Results

Table 2 displays participant characteristics, offerings used, barriers to accessing offerings, and benefits from utilizing center offerings, which were compared by participants' age and sex. Over 70% of participants were between the ages of 51 and 69 years, with 14.8% age 50 and younger and 14.8% age 70 and older. The majority of participants were female (77.0%) and white (93.4%). Generally, on average, participants engaged in 3.18 (± 2.65) center-offered activities, resources, and/or services. On average, participants reported utilizing 0.93 (± 1.20) activities. The most commonly utilized activities included yoga (39.3%), guided relaxation (16.4%), Tai Chi (14.8%), and painting group (13.1%). On average, participants reported utilizing 0.62 (± 0.71) resources. The most commonly utilized resource was the library (26.6%). On average, participants reported utilizing 1.62 (± 1.34) services. The most commonly utilized services included monthly support group (39.3%), general support group (39.3%), and individual and/or family counseling (36.1%). On average, participants reported 0.74 (± 0.81) barriers to accessing activities, resources, and/or services at the cancer center. The most commonly reported barriers to accessing center offerings were timing/schedules (36.1%), health status (18.0%), and transportation (9.8%).

When asked if activities, resources, and/or services attended at the cancer center improved understanding about health needs, 45.9% strongly agreed the offerings improved their understanding, 31.1% agreed the offerings improved their understanding, and 23.0% of participants disagreed or were neutral about whether the offerings improved their understanding. When asked if activities, resources, and/or services attended at the cancer center improved emotional health, 45.9% strongly agreed the offerings improved their emotional health, 34.4% agreed the offerings improved their emotional health, and 19.7% of participants disagreed or were neutral about whether the offerings improved their emotional health. When asked if center offerings helped with self-care behaviors, 41.0% agreed the offerings helped with self-care, 34.4% of participants disagreed or were neutral about whether the offerings helped with self-care, and 24.6% strongly agreed the offerings helped with self-care.

Table 2 also compares participant characteristics, offerings used, barriers to accessing offerings, and perceived benefits from utilizing center offerings by participant age groups. The majority of participants utilizing center offerings were female (77.0%), and a larger proportion of females were represented across age groups, except for a larger proportion of males representing the 70+ age group ($\chi^2 = 9.72$, $P = 0.045$). Of the 19.7% of participants who reported using the Healing Garden, a significantly larger proportion of those were aged 65 to 69 years and significantly smaller proportions of those were aged 59 and younger ($\chi^2 = 12.16$, $P = 0.016$). A significantly larger proportion of those aged 60–64 years disagreed or were neutral about offerings improving understanding of their health needs, a larger proportion of those aged 50 and younger and 65–69 years agreed that offerings improving understanding of their health needs, and a larger proportion of those aged 51–59 years and 70 and older strongly agreed that offerings improving understanding of their health needs ($\chi^2 = 19.56$, $P = 0.012$). Other than the distribution of age groups, no other significant differences were identified when compared by participants' sex.

Table 3 separately compares participant characteristics, offerings used, and barriers to accessing offerings by the three perceived benefits from utilizing center offerings. Generally, the three perceived benefits from utilizing center offerings were interrelated. A significantly greater proportion of those who perceived center offerings improved understanding about their health needs also perceived center offerings improved their emotional health ($\chi^2 = 27.93$, $P < 0.001$) and also helped with their self-care behaviors ($\chi^2 = 30.90$, $P < 0.001$). A significant greater proportion of those who perceived center offerings improved their emotional health also perceived that offerings helped with their self-care behaviors ($\chi^2 = 44.97$, $P < 0.001$).

On average, participants who utilized more center offerings ($f = 3.81$, $P = 0.028$) and more services ($f = 4.59$, $P = 0.014$) reported improved understanding of their health needs. A significant proportion of those who attended Reiki treatments perceived center offerings improved understanding of their health needs ($\chi^2 = 6.25$, $P = 0.044$).

On average, participants who utilized more center offerings ($f = 4.36$, $P = 0.017$), more activities ($f = 4.38$, $P = 0.017$), and more services ($f = 3.77$, $P = 0.029$) reported improved emotional health. A significant proportion of those who attended the Painting Group ($\chi^2 = 6.57$, $P = 0.037$) and the Healing Garden ($\chi^2 = 6.08$, $P = 0.048$) perceived center offerings to improve their emotional health.

Table 2
Participant characteristics, services used, and barriers to services by age and sex.

	Total (n = 61)	Age					χ ² or f P		Sex		χ ² or t P	
		≤50 (n = 9)	51–59 (n = 14)	60–64 (n = 15)	65–69 (n = 14)	70+ (n = 9)	Male (n = 14)	Female (n = 47)				
Age										9.72	0.045	
50 years and under	14.8%	–	–	–	–	–		14.3%	14.9%			
51–59 years	23.0%	–	–	–	–	–		0.0%	29.8%			
60–64 years	24.6%	–	–	–	–	–		28.6%	23.4%			
65–69 years	23.0%	–	–	–	–	–		21.4%	23.4%			
70+ years	14.8%	–	–	–	–	–		35.7%	8.5%			
Sex							9.72	0.045		–	–	
Male	23.0%	22.2%	0.0%	26.7%	21.4%	55.6%			–			
Female	77.0%	77.8%	100.0%	73.3%	78.6%	44.4%			–			
Race							7.95	0.438		0.48	0.786	
White	93.4%	88.9%	100.0%	93.3%	92.9%	88.9%			92.9%	93.6%		
African American	4.9%	0.0%	0.0%	6.7%	7.1%	11.1%			7.1%	4.3%		
Asian / Pacific Islander	1.6%	11.1%	0.0%	0.0%	0.0%	0.0%			0.0%	2.1%		
Number of Overall Activities, Resources, and Services	3.18 (± 2.65)	2.67 (± 1.50)	3.07 (± 2.64)	2.47 (± 1.64)	4.14 (± 3.42)	3.56 (± 3.50)	0.86	0.493	3.14 (± 2.45)	3.19 (± 2.73)	0.00	0.953
Number of Activities (range 0–5)	0.93 (± 1.20)	0.67 (± 1.00)	0.71 (± 1.38)	0.87 (± 0.74)	1.50 (± 1.40)	0.78 (± 1.30)	1.07	0.380	0.86 (± 1.10)	0.96 (± 1.23)	0.08	0.785
Yoga	39.3%	33.3%	28.6%	46.7%	50.0%	33.3%	1.96	0.744	42.9%	38.3%	0.09	0.759
Tai Chi	14.8%	0.0%	7.1%	13.3%	35.7%	11.1%	7.21	0.125	14.3%	14.9%	0.00	0.955
Guided Relaxation	16.4%	11.1%	21.4%	0.0%	28.6%	22.2%	5.12	0.275	14.3%	17.0%	0.06	0.808
Writing Group	9.8%	11.1%	7.1%	13.3%	14.3%	0.0%	1.63	0.803	7.1%	10.6%	0.15	0.700
Painting Group	13.1%	11.1%	7.1%	13.3%	21.4%	11.1%	1.35	0.853	7.1%	14.9%	0.57	0.451
Number of Resources (range 0–3)	0.62 (± 0.71)	0.33 (± 0.50)	0.57 (± 0.65)	0.53 (± 0.64)	0.93 (± 0.83)	0.67 (± 0.87)	1.12	0.359	0.57 (± 0.76)	0.64 (± 0.70)	0.09	0.760
Healing Garden	19.7%	0.0%	7.1%	13.3%	50.0%	22.2%	12.16	0.016	28.6%	17.0%	0.91	0.340
Library	24.6%	33.3%	14.3%	26.7%	21.4%	33.3%	1.65	0.799	21.4%	25.5%	0.10	0.754
Wig Service	18.0%	0.0%	35.7%	13.3%	21.4%	11.1%	5.57	0.234	7.1%	21.3%	1.46	0.227
Number of Services (range 0–7)	1.62 (± 1.34)	1.67 (± 0.71)	1.79 (± 1.05)	1.07 (± 1.16)	1.71 (± 1.77)	2.11 (± 1.69)	1.01	0.410	1.71 (± 1.44)	1.60 (± 1.33)	0.08	0.775
Reiki	16.4%	11.1%	21.4%	6.7%	28.6%	11.1%	3.18	0.529	14.3%	17.0%	0.06	0.808
Healing Touch	19.7%	11.1%	35.7%	6.7%	21.4%	22.2%	4.37	0.359	21.4%	19.1%	0.04	0.851
Monthly Support Group	39.3%	44.4%	42.9%	26.7%	28.6%	66.7%	4.68	0.322	57.1%	34.0%	2.41	0.120
General Support Group (Love & Laughter)	39.3%	44.4%	28.6%	26.7%	50.0%	55.6%	3.45	0.486	42.9%	38.3%	0.09	0.759
Individual and/or family counseling	36.1%	44.4%	42.9%	26.7%	35.7%	33.3%	1.16	0.885	28.6%	38.3%	0.44	0.506
Grief Workshop	9.8%	0.0%	7.1%	13.3%	7.1%	22.2%	2.98	0.562	7.1%	10.6%	0.15	0.700
Grief Counseling	1.6%	11.1%	0.0%	0.0%	0.0%	0.0%	5.87	0.209	0.0%	2.1%	0.30	0.582
Number of Barriers (range 0–5)	0.74 (± 0.81)	1.00 (± 1.00)	0.79 (± 0.89)	0.67 (± 0.62)	0.64 (± 0.93)	0.67 (± 0.71)	0.32	0.861	0.64 (± 0.84)	0.77 (± 0.81)	0.24	0.624
Fear	3.3%	0.0%	7.1%	0.0%	7.1%	0.0%	2.44	0.656	0.0%	4.3%	0.62	0.433
Anxiety	6.6%	11.1%	7.1%	0.0%	14.3%	0.0%	3.36	0.499	0.0%	8.5%	1.28	0.259
Time/Schedule Conflicts	36.1%	66.7%	28.6%	26.7%	28.6%	44.4%	5.19	0.269	35.7%	36.2%	0.00	0.975
Transportation	9.8%	11.1%	7.1%	13.3%	0.0%	22.2%	3.42	0.490	14.3%	8.5%	0.41	0.524
Health Condition	18.0%	11.1%	28.6%	26.7%	14.3%	0.0%	4.21	0.378	14.3%	19.1%	0.17	0.678
Childcare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	–	–	0.0%	0.0%	–	–
Caretaking	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	–	–	0.0%	0.0%	–	–
Improved Understanding of Health Needs							19.56	0.012			3.28	0.194
Disagree/Neutral	23.0%	22.2%	7.1%	53.3%	14.3%	11.1%			21.4%	23.4%		
Agree	31.1%	55.6%	28.6%	13.3%	50.0%	11.1%			50.0%	25.5%		
Strongly Agree	45.9%	22.2%	64.3%	33.3%	35.7%	77.8%			28.6%	51.1%		
Improved Emotional Health							6.75	0.564			0.07	0.964
Disagree/Neutral	19.7%	22.2%	21.4%	33.3%	7.1%	11.1%			21.4%	19.1%		
Agree	34.4%	44.4%	42.9%	13.3%	42.9%	33.3%			35.7%	34.0%		
Strongly Agree	45.9%	33.3%	35.7%	53.3%	50.0%	55.6%			42.9%	46.8%		
Helped with Self-Care							5.26	0.729			0.10	0.952
Disagree/Neutral	34.4%	44.4%	21.4%	46.7%	28.6%	33.3%			35.7%	34.0%		
Agree	41.0%	44.4%	50.0%	20.0%	50.0%	44.4%			42.9%	40.4%		
Strongly Agree	24.6%	11.1%	28.6%	33.3%	21.4%	22.2%			21.4%	25.5%		

A significantly larger proportion of African American participants strongly agreed that center offerings helped with their self-care behaviors ($\chi^2 = 11.52$, $P = 0.021$). A significantly larger proportion of those who attended yoga ($\chi^2 = 9.95$, $P = 0.007$) and the Guided

Relaxation classes ($\chi^2 = 6.72$, $P = 0.035$) perceived center offerings helped with self-care behaviors. On average, participants who reported more barriers to utilizing center offerings perceived center offerings helped with their self-care behaviors ($f = 5.02$, $P = 0.010$). A

Table 3 Participant characteristics, services used, and barriers to improvements in understanding health needs, emotional health, and self-care.

	Improved Understand of Health Needs				Improved Emotional Health				Helped with Self-Care					
	Total (n = 61)	Disagree/Neutral (n = 14)	Agree (n = 19)	Strongly Agree (n = 28)	χ^2 or f P	Disagree/Neutral (n = 12)	Agree (n = 21)	Strongly Agree (n = 28)	χ^2 or f P	Disagree/Neutral (n = 14)	Agree (n = 19)	Strongly Agree (n = 28)	χ^2 or f P	
Age					19.56	0.012			6.75	0.564			5.26	0.729
50 years and under	14.8%	14.3%	26.3%	7.1%		16.7%	19.0%	10.7%		19.0%	16.0%	6.7%		
51–59 years	23.0%	7.1%	21.1%	32.1%		25.0%	28.6%	17.9%		14.3%	28.0%	26.7%		
60–64 years	24.6%	57.1%	10.5%	17.9%		41.7%	9.5%	28.6%		33.3%	12.0%	33.3%		
65–69 years	23.0%	14.3%	36.8%	17.9%		8.3%	28.6%	25.0%		19.0%	28.0%	20.0%		
70+ years	14.8%	7.1%	5.3%	25.0%		8.3%	14.3%	17.9%		14.3%	16.0%	13.3%		
Sex					3.28	0.194			0.07	0.964			0.10	0.952
Male	23.0%	21.4%	36.8%	14.3%		25.0%	23.8%	21.4%		23.8%	24.0%	20.0%		
Female	77.0%	78.6%	63.2%	85.7%		75.0%	76.2%	78.6%		76.2%	76.0%	80.0%		
Race					4.89	0.299			7.77	0.100			11.52	0.021
White	93.4%	85.7%	100.0%	92.9%		91.7%	100.0%	89.3%		95.2%	100.0%	80.0%		
African American	4.9%	7.1%	0.0%	7.1%		0.0%	0.0%	10.7%		0.0%	0.0%	20.0%		
Asian / Pacific Islander	1.6%	7.1%	0.0%	0.0%		8.3%	0.0%	0.0%		4.8%	0.0%	0.0%		
Number of Overall Activities, Resources, and Services	3.18 (± 2.65)	1.86 (± 1.17)	2.84 (± 2.22)	4.07 (± 3.14)	3.81	0.028	1.50 (± 0.80)	3.00 (± 2.07)	4.04 (± 3.18)	4.36	0.017	3.40 (± 3.00)	1.25	0.295
Number of Activities (range 0–5)	0.93 (± 1.20)	0.43 (± 0.51)	0.95 (± 1.08)	1.18 (± 1.44)	1.89	0.160	0.25 (± 0.45)	0.76 (± 1.04)	1.36 (± 1.37)	4.38	0.017	1.12 (± 1.36)	1.50	0.231
Yoga	39.3%	35.7%	36.8%	42.9%	0.27	0.873	25.0%	33.3%	50.0%	2.69	0.261	32.0%	9.95	0.007
Tai Chi	14.8%	7.1%	10.5%	21.4%	1.91	0.385	0.0%	9.5%	25.0%	4.87	0.088	16.0%	0.06	0.971
Guided Relaxation	16.4%	0.0%	21.1%	21.4%	3.56	0.168	0.0%	19.0%	21.4%	2.98	0.226	28.0%	6.72	0.035
Writing Group	9.8%	0.0%	15.8%	10.7%	2.31	0.315	0.0%	9.5%	14.3%	1.94	0.380	16.0%	2.71	0.258
Painting Group	13.1%	0.0%	10.5%	21.4%	3.92	0.141	0.0%	4.8%	25.0%	6.57	0.037	20.0%	1.83	0.402
Number of Resources (range 0–3)	0.62 (± 0.71)	0.43 (± 0.51)	0.58 (± 0.69)	0.75 (± 0.80)	1.01	0.372	0.50 (± 0.52)	0.57 (± 0.68)	0.71 (± 0.81)	0.46	0.635	0.68 (± 0.75)	0.70	0.500
Healing Garden	19.7%	0.0%	26.3%	25.0%	4.46	0.107	0.0%	14.3%	32.1%	6.08	0.048	28.0%	4.52	0.105
Library	24.6%	21.4%	15.8%	32.1%	1.73	0.400	16.7%	19.0%	32.1%	1.62	0.446	24.0%	0.97	0.615
Wig Service	18.0%	21.4%	15.8%	17.9%	0.17	0.916	33.3%	23.8%	7.1%	4.62	0.099	16.0%	0.77	0.681
Number of Services (range 0–7)	1.62 (± 1.34)	1.00 (± 1.11)	1.32 (± 1.06)	2.14 (± 1.46)	4.59	0.014	0.75 (± 0.62)	1.67 (± 1.11)	1.96 (± 1.57)	3.77	0.029	1.60 (± 1.35)	0.62	0.544
Reiki	16.4%	0.0%	10.5%	28.6%	6.25	0.044	0.0%	19.0%	21.4%	2.98	0.226	20.0%	1.10	0.576
Healing Touch	19.7%	14.3%	10.5%	28.6%	2.67	0.264	0.0%	23.8%	25.0%	3.67	0.160	33.3%	3.14	0.208
Monthly Support Group	39.3%	28.6%	42.1%	42.9%	0.89	0.642	33.3%	33.3%	46.4%	1.09	0.580	40.0%	1.17	0.557
General Support Group (Love & Laughter)	39.3%	21.4%	36.8%	50.0%	3.27	0.195	16.7%	47.6%	42.9%	3.33	0.189	40.0%	0.02	0.990
Individual and/or family counseling	36.1%	28.6%	26.3%	46.4%	2.43	0.297	16.7%	38.1%	42.9%	2.56	0.279	36.0%	1.24	0.537
Grief Workshop	9.8%	7.1%	0.0%	17.9%	4.22	0.121	0.0%	4.8%	17.9%	3.95	0.139	13.3%	0.95	0.622
Grief Counseling	1.6%	0.0%	5.3%	0.0%	2.25	0.325	8.3%	0.0%	0.0%	4.15	0.125	0.0%	1.94	0.380
Number of Barriers (range 0–5)	0.74 (± 0.81)	0.571 (± 0.65)	0.59 (± 0.77)	0.93 (± 0.90)	1.44	0.245	0.33 (± 0.49)	0.76 (± 0.77)	0.89 (± 0.92)	2.07	0.136	0.64 (± 0.76)	5.02	0.010
Fear	3.3%	0.0%	0.0%	7.1%	2.44	0.296	0.0%	0.0%	7.1%	2.44	0.296	4.0%	1.30	0.523
Anxiety	6.6%	7.1%	0.0%	10.7%	2.13	0.345	0.0%	4.8%	10.7%	1.74	0.418	4.0%	1.50	0.472
Time/Schedule Conflicts	36.1%	35.7%	36.8%	35.7%	0.01	0.996	25.0%	42.9%	35.7%	1.06	0.589	33.3%	0.98	0.613
Transportation	9.8%	7.1%	10.5%	10.7%	0.15	0.928	8.3%	9.5%	10.7%	0.06	0.972	12.0%	0.95	0.600
Health Condition	18.0%	7.1%	10.5%	28.6%	3.95	0.139	0.0%	19.0%	25.0%	3.57	0.167	12.0%	11.44	0.003
Childcare	0.0%	0.0%	0.0%	0.0%	–	–	0.0%	0.0%	0.0%	–	–	0.0%	–	–
Caretaking	0.0%	0.0%	0.0%	0.0%	–	–	0.0%	0.0%	0.0%	–	–	0.0%	–	–

(continued on next page)

Table 3 (continued)

	Improved Understanding of Health Needs				Improved Emotional Health				Helped with Self-Care							
	Total (n = 61)	Disagree/Neutral (n = 14)	Agree (n = 19)	Strongly Agree (n = 28)	χ^2 or f	P	Disagree/Neutral (n = 12)	Agree (n = 21)	Strongly Agree (n = 28)	χ^2 or f	P	Disagree/Neutral (n = 14)	Agree (n = 19)	Strongly Agree (n = 28)	χ^2 or f	P
Improved Understanding of Health Needs																
Disagree/Neutral	23.0%	-	-	-	-	-	66.7%	9.5%	14.3%	27.93	< 0.001	57.1%	0.0%	13.3%	30.90	< 0.001
Agree	31.1%	-	-	-	-	33.3%	52.4%	14.3%	14.3%	-	-	19.0%	52.0%	6.7%	-	-
Strongly Agree	45.9%	-	-	-	-	0.0%	38.1%	71.4%	71.4%	-	-	23.8%	48.0%	80.0%	-	-
Improved Emotional Health																
Disagree/Neutral	19.7%	57.10%	21.10%	0.00%	27.93	< 0.001	-	-	-	-	-	52.40%	4.00%	0.00%	44.968	< 0.001
Agree	34.4%	14.30%	57.90%	28.60%	-	-	-	-	-	-	-	19.00%	68.00%	0.00%	-	-
Strongly Agree	45.9%	28.60%	21.10%	71.40%	-	-	-	-	-	-	-	28.60%	28.00%	100.00%	-	-
Helped with Self-Care																
Disagree/Neutral	34.4%	85.7%	26.3%	14.3%	30.90	< 0.001	91.7%	19.0%	21.4%	44.97	< 0.001	-	-	-	-	-
Agree	41.0%	0.0%	68.4%	42.9%	-	-	8.3%	81.0%	25.0%	-	-	-	-	-	-	-
Strongly Agree	24.6%	14.3%	5.3%	42.9%	-	-	0.0%	0.0%	53.6%	-	-	-	-	-	-	-

significantly larger proportion of those who reported health status as a barrier also perceived that center offerings helped with their self-care behaviors ($\chi^2 = 11.44, P = 0.003$).

4. Conclusions

This study examined how the utilization of diverse CAM offerings at a local cancer center influenced patients' understanding of health needs, emotional health, and ability to self-manage their condition. Consistent with other literature,^{5,10} multiple CAM strategies are utilized. On average, study participants used more than three CAM offerings, which illustrates some level of engagement in CAM practices among cancer patients and survivors in the Georgia area. The available offerings were categorized into services, activities, and resources, with more participants being drawn to services than activities and resources.

Similar to other research findings,^{10,12,13} participants perceived benefits from utilizing the offerings at the cancer center. Large proportions of those who reported getting benefits in one outcome (e.g., understanding health needs) also reported benefits in the other outcomes (e.g., emotional health). This supports the role and value of these services for cancer patients, survivors, and their families. Seemingly, there was a 'dose response' for overall offerings, activities, and services utilized in terms of improved understanding of health needs and emotional health. This was particularly the case in painting, reiki, and the use of the healing garden. While CAM use can help patients feel in control, Kang et al¹⁷ recognized that despite using these alternative therapies, patients' stress, mood, and quality of life may still significantly decline over the course of the cancer treatment. This suggests the need to further explore the benefits and disadvantages of CAM use over an extended period of time.¹⁷ In terms of self-care, only yoga and guided relaxation appeared to help with self-care. Previous studies indicated that activities with a mindfulness component, such as yoga, can be transferrable to other aspects of a patient's life.¹¹⁻¹³

By improving understanding, emotional health, and self-awareness, CAM offerings highlight the role and importance of integrative medicine in cancer treatment regimens. Mental and emotional distress is among one of the most common and potentially harmful side effects of a cancer diagnosis.¹⁸ Integrative medicine provides a platform for education-driven approaches to treatment, and when coordinated with skill-building offerings, could have a bigger impact on health outcomes and overall wellbeing. By hosting CAM offerings in traditional hospital settings, patients are given the opportunity to participate with limited inconvenience and the potential for greater satisfaction with their treatment. The benefits of these services support the possible expansion of CAM offerings to address additional health issues such as diabetes¹⁹ and HIV/AIDS.²⁰ This may require stronger community-based partnerships, such as for the Chronic Disease Self-Management Program (CDSMP), which can significantly impact the physical and mental health among those living with chronic conditions.^{21,22}

As with other studies,²³ participants also reported barriers to accessing offerings at the cancer center. The main identified barriers were time and scheduling conflicts, transportation, and health condition. Offerings that aimed to improve self-management and care were perceived to have the most barriers. Other researchers have also acknowledged time and transportation as barriers for cancer patients and those suffering from other chronic illnesses.^{24,25} However, participants who reported having more barriers to using these offerings also reported higher perceptions that offerings improved self-care. This may indicate that patients who went to an offering, but had difficulty doing so, recognized the value of these offerings. Addressing these barriers to services (such as providing offerings in the evenings and on weekends) may help improve participation.

This descriptive study had several limitations. The study has a small sample size of only 61 patients, which limits our ability to generalize to larger cancer patient populations. Additionally, data were not available to examine the representativeness of the study population to the

broader cancer population at the Cancer Center. These data were only collected in one service area in one state, which also indicates challenges when generalizing to other settings and populations. Due to the study aims, all of the participants included in the analyses had cancer and were using the offerings provided by the cancer center. This presents a form of self-selection bias, which could cause the results to only represent the specific group of individuals who participated. The potential for inflated client satisfaction is another limitation of this study. All participants used one or more offerings to be included in the study, and on average, participants reported using multiple offerings. This may inherently bias the reported satisfaction levels because these individuals seemingly enjoyed the services, thus they utilized more than one. Further, all possible barriers to using the offerings at the cancer center may not have been included in the services. For example, the study instrument did not examine cost-related barriers or provider expectations and interactions. Therefore, it is unknown whether the types of patients utilizing these center offerings were similar to other patients experiencing other types of barriers, and the general endorsement of such offerings by the treating oncologists.

The results of this research indicate that many cancer patients are interested in using a range of CAM therapies to complement their cancer treatments. Using more offerings also appeared to have multiplicative benefits on the patient's physical, psychological, and spiritual wellbeing.

Considering its benefits in improving patients' understanding of their health needs, emotional health, and self-care behaviors, evidence-based and safe complementary therapies should be integrated with standard of care for cancer therapy and cancer survivorship. Promoting CAM therapies can help treat the whole patient, rather than just the cancer.

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