Prevalence and Predictors for Nonuse of Complementary Medicine among Breast and Gynecological Cancer Patients

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Keywords

Complementary/alternative medicine · Integrative medicine · Breast cancer · Gynecological cancer

Abstract

Background: Complementary and alternative medicine (CAM) use is common among cancer patients. Data indicated that CAM use correlates with younger age, higher education levels, higher income, and less physician consultations. However, non-CAM use and predictors for non-CAM use are less clear among breast and gynecological cancer patients.

Objectives: The purpose of this study was to determine the prevalence of non-CAM use and to investigate factors that might influence non-CAM use. **Methods:** The survey was conducted in breast cancer patients from January to May 2013 and in gynecological cancer patients from January to May 2014 with 2 pseudoanonymous questionnaires: one for CAM users (109 questions) and one for non-CAM users (85 questions). The survey was conducted via a telephone interview with 333 patients. Eligible participants were women with breast cancer ($n = 285$) and gynecological cancer ($n = 291$) who had undergone surgery at the Department of Gynecology and Obstetrics at the Technical University Munich, Germany, in the years 2012 (breast cancer) and 2011–2013 (gynecological cancer). Descriptive statistics were generated to determine patterns of non-CAM use. Univariable analysis was used to detect patient characteristics associated with noninterest in the different CAM therapies. **Results:** A

total of 333 of 576 patients participated in the survey (58%). Fifty-eight percent ($n = 192/333$) were diagnosed with breast cancer and 42% ($n = 141/333$) with gynecological cancer. The overall prevalence of non-CAM use was 42% ($n = 139/333$). Eighty-one percent ($n = 112/139$) of the non-CAM users stated to have received no recommendation for CAM use, although 53% ($n = 73/139$) would have liked to receive information from their physician. As reasons for the nonuse of CAM therapies, 76% ($n = 106/139$) nonusers declared that they did not believe CAM use was necessary since the conventional therapy was considered sufficient, 44% ($n = 61/139$) reported a lack of information, 31% ($n = 43/139$) a fear of fraud, and 22% ($n = 31/139$) a fear of interactions and side effects of CAM. Sixty-eight percent ($n = 95/139$) of the patients stated that they would resort to CAM if the disease progressed while only 27% ($n = 37/139$) would still not use any CAM with progression of disease. Five percent ($7/139$) did not give any information regarding possible future CAM use with disease progression. Seventy-three percent ($n = 102/139$) would both welcome more physicians with qualifications in complementary medicine and supported an integration of CAM into our health care system. Furthermore, statistically significant correlations between patients' sociodemographic characteristics and their nonuse of complementary therapies were identified. **Conclusions:** Our data demonstrate a high overall interest in CAM even in non-CAM

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users. Health care professionals should be aware of this in order to be able to better address patients' needs. It is necessary to explore the use of CAM with cancer patients, educate them about potentially beneficial therapies even in the light of the limited available evidence, and work towards an integrated model of health care. Therefore, we implemented a counseling service as an outpatient program (ZIGG) for integrative medicine concepts and evidence-based complementary treatments to discuss integrative health approaches proactively with cancer patients in our cancer center in 2013.

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Introduction

Complementary and alternative medicine (CAM) use is common among cancer patients [1–8]. The National Center for Complementary and Integrative Health (NCCIH) classified CAM treatments into 2 subgroups: “natural products” (dietary supplements like herbs, vitamins, minerals, and probiotics) and “mind and body practices” (yoga, chiropractic and osteopathic manipulation, meditation, and massage therapy, for example). However, some approaches may not fit into either of these groups, for example, homoeopathy, Ayurveda, or traditional Chinese medicine.

A European survey conducted by Molassiotis et al. [6] demonstrated CAM use in the EU in about 35.9% of the total cancer patient population. Several studies have shown that the use of CAM is especially common in patients with breast or gynecological cancer with a CAM use prevalence up to 90% [2, 6, 7, 9, 10]. In a survey on patients during radiotherapy, 90% of breast cancer patients and 42% of patients with lung cancer reported CAM and supplement use [11].

The reasons for CAM use vary considerably and include strengthening of the immune system and body, reducing side effects of conventional medicine, fighting cancer, detoxifying, reducing symptoms of psychological distress, and being congruent with the patients' beliefs [1, 5, 8, 12, 13].

In 2017, a cross-sectional study including 350 cancer patients found that the majority of CAM users (89.8%) considered CAM helpful, and only 10.2% stated that they had not perceived any benefits [12]. Fasching et al. [14] showed that CAM users stated an overall deterioration in their health status less frequently (35.1%) than nonusers (50.1%), and that CAM use resulted in improved family conditions (6%) in comparison with nonusers (2%). A study in 205 breast/gynecological cancer patients presenting gastrointestinal impairments showed reduced use of nonopioid analgesics in patients participating in an integrative care program [15].

Table 1. Reasons for nonparticipation in the study

Reasons for nonparticipation	n (%)
Not reached by phone	84 (35)
Refusal to participate	69 (28)
Passed away by the time of the interview	57 (23)
Communication difficulties	27 (11)
Insufficiently completed questionnaire	6 (2)
Total	243

Various studies found that the use of complementary therapies correlates with a younger age, higher education level, higher income, less physician consultation, and absence of metastases at the time of diagnosis [2, 7, 16–18]. The use of CAM is also positively associated with confidence in CAM and the use of CAM in the past [5, 7, 12, 16, 18]. Even though multiple studies have closely studied CAM use and its predictors, non-CAM use among breast and gynecological cancer patients is largely unexamined [17]. Hence, the primary purpose of this study was to assess the prevalence and predictors for the nonuse of complementary medicine in patients with breast cancer or gynecological cancer. We sought to examine reasons for non-CAM use in order to gain additional information in this particular population group. This information will enable health care providers to better address patient needs.

Materials and Methods

Over a period of 3 months, from January to May 2013 (breast cancer) and January to May 2014 (gynecological cancer), the survey was conducted via telephone interviews with a structured pseudoanonymous questionnaire at the Department of Gynecology and Obstetrics, Technical University of Munich (TUM). All patients were contacted by phone prior to the interview to explain the objective of the study and its pseudoanonymous nature. If the patients agreed to participate, a date was arranged to conduct the interview. Patients who were not sure were called again at a later point in time. Due to the size of the questionnaire, patients were asked to provide a time slot of at least 60 min to allow for a detailed interview with room for clarifications and a calm atmosphere.

Study Population

The telephone interview was conducted with women who had undergone surgery at our hospital because of breast or gynecological cancer. Inclusion criteria for participation were age above 18 years, command of the German language, and the mental capacity to understand the questionnaire. In total, 333 of 576 patients participated in the study (Table 1).

Questionnaire

The survey questionnaire, developed in the German language, comprised a total of 111 items.

1. Disease situation (metastases, recurrence, and cancer treatment)

Table 2. Characteristics of users and nonusers of complementary and alternative medicine (CAM)

	Users, <i>n</i> (%)			Nonusers, <i>n</i> (%)			<i>p</i> value
	breast cancer (<i>n</i> = 110)	gynecological cancer (<i>n</i> = 84)	total (<i>n</i> = 194)	breast cancer (<i>n</i> = 82)	gynecological cancer (<i>n</i> = 57)	total (<i>n</i> = 139)	
Age (mean ± SD), years	52.7±11.5	56.2±11.5	54.2±11.6	60.7±11.7	63.8±10.9	61.9±11.45	<0.001
Marital status							0.72
Married/partnership	69 (63)	63 (75)	132 (68)	61 (74)	31 (54)	92 (66)	
Unmarried	41 (37)	21 (25)	62 (32)	21 (26)	26 (46)	47 (34)	
Employment							<0.001
Employed	72 (65)	49 (58)	121 (62)	40 (49)	19 (33)	59 (42)	
Unemployed	11 (10)	9 (11)	20 (10)	3 (4)	2 (4)	5 (4)	
Retired	27 (25)	26 (31)	53 (27)	39 (48)	36 (63)	75 (54)	
Education							<0.001
No graduation/≤9 school years	20 (18)	12 (14)	32 (16)	29 (35)	25 (44)	54 (59)	
10 school years	40 (36)	30 (36)	70 (36)	26 (32)	15 (26)	41 (29)	
>10 school years	50 (45)	42 (50)	92 (47)	27 (33)	17 (30)	44 (32)	
Religious/spiritual beliefs ¹	86 (78)	70 (83)	156 (82)	57 (70)	40 (70)	97 (70)	0.02
Previous CAM use ²	81 (74)	73 (87)	154 (79)	33 (40)	30 (58)	66 (48)	<0.001

¹ Question was not answered by 3 CAM users and 2 non-CAM users.

² Question was not answered by 1 non-CAM user.

Fig. 1. Reasons for the nonuse of CAM therapies.

- Assessment of sociodemographic factors including age, education level, marital status, employment, and body mass index
- Assessment of personal opinions regarding CAM
- Health behaviors, lifestyle factors, nutritional habits, and physical activity

Statistical Analysis

Means ± SD were used to describe the distribution of quantitative data. Absolute and relative frequencies were used to present qualitative data. Hypothesis testing by *t* tests and χ^2 tests was conducted to detect associations between non-CAM use and patients' sociodemographic characteristics and health behaviors. Our approach towards data analysis was exploratory without a specific a priori hypothesis to prove. Hypothesis testing was, therefore, conducted on two-sided 5% significance levels. Data management and statistical analyses were performed using Excel and the statistical software IBM SPSS Statistics (version 22; IBM Corp., Armonk, NY, USA).

Results

A total of 333 of 576 patients participated in the survey (58%), of which 58% (*n* = 192/333) had breast cancer and 42% (*n* = 141/333) gynecological cancer. The overall prevalence of non-CAM use was 42% (*n* = 139/333).

Reasons for nonuse of CAM are shown in Figure 1. Eighty-one percent (*n* = 112/139) of the non-CAM users stated to have received no recommendation for CAM use. Fifty-three percent (*n* = 73/139) would have liked to receive information about CAM therapies. As a reason for nonuse, 76% (*n* = 106/139) declared that they had not believed CAM use to be necessary because they considered their conventional therapy to be sufficient, 44% (*n* = 61/139) because of a lack of information, 31%

Table 3. Lifestyle factors before and changes after cancer diagnosis in users and nonusers of complementary and alternative medicine

	Users, <i>n</i> (%)			Nonusers, <i>n</i> (%)			<i>p</i> value
	breast cancer (<i>n</i> = 110)	gynecological cancer (<i>n</i> = 84)	total (<i>n</i> = 194)	breast cancer (<i>n</i> = 82)	gynecological cancer (<i>n</i> = 57)	total (<i>n</i> = 139)	
Smoking	13 (12)	2 (2)	15 (8)	15 (18)	5 (9)	20 (14)	0.05
Alcohol consumption, daily	14 (13)	14 (17)	28 (14)	12 (15)	6 (11)	18 (13)	0.069
Vegetable consumption							<0.001
≥3 portions/day	55 (50)	31 (37)	86 (44)	26 (32)	10 (18)	36 (26)	
<3 portions/day	55 (50)	53 (63)	108 (56)	56 (68)	47 (82)	103 (74)	
Fish consumption							0.28
≥1–2 times/week	71 (65)	48 (57)	119 (61)	52 (63)	25 (44)	77 (55)	
<1 time/week	39 (35)	36 (43)	75 (39)	30 (57)	32 (56)	62 (45)	
Meat consumption							0.32
Daily	39 (35)	22 (26)	61 (31)	26 (32)	25 (44)	51 (37)	
Not daily	71 (65)	62 (74)	133 (69)	56 (68)	32 (56)	88 (63)	
Soft drink consumption							0.41
Daily	11 (10)	6 (7)	17 (9)	13 (16)	3 (5)	16 (12)	
Not daily	99 (90)	78 (93)	177 (91)	69 (84)	54 (95)	123 (88)	
Sweets consumption							0.41
Daily	45 (41)	32 (38)	77 (40)	36 (44)	13 (23)	49 (35)	
Not daily	65 (59)	52 (62)	117 (60)	46 (56)	44 (77)	90 (65)	
Physical activity							0.58
Daily/3–4 times/week	10 (9)	14 (17)	24 (12)	6 (7)	9 (16)	15 (11)	
≥1–2 times/week	62 (56)	46 (55)	108 (56)	43 (52)	29 (51)	72 (52)	
Never/sometimes	38 (35)	24 (29)	62 (32)	33 (40)	19 (33)	52 (37)	
Increase in physical activity since diagnosis	45 (41)	27 (32)	72 (37)	27 (33)	11 (19)	38 (27)	0.11
Improved nutrition since diagnosis	69 (63)	64 (76)	133 (69)	36 (44)	28 (49)	64 (46)	<0.001

(*n* = 43/139) out of fear of fraud, and 22% (*n* = 31/139) out of fear of interactions and side effects of CAM. Sixty-eight percent (*n* = 95/139) of the patients stated that they would resort to CAM if the disease progressed while only 27% (*n* = 37/139) would still not use any CAM with disease progression. Seventy-three percent (*n* = 102/139) would both welcome more physicians with qualifications in complementary medicine and supported integration of CAM into our health care system (Fig. 1).

Characteristics of non-CAM and CAM users are listed in Tables 2 and 3. Non-CAM users were significantly older (61.9 vs. 54.2 years, *p* < 0.001) than CAM users, had a lower level of education (*p* < 0.001), were less religious (*p* = 0.02), and had used CAM less frequently prior to their cancer diagnosis (*p* = 0.0001). Non-CAM users had an unhealthier lifestyle than CAM users. They smoked significantly more often (*p* = 0.05) and ate less vegetables per day (*p* < 0.001). Even after the diagnosis of cancer, CAM nonusers were significantly less likely to improve their nutrition habits than CAM users (*p* < 0.001). Minor differences were seen in relation to alcohol consumption and physical activity (Table 2).

Discussion/Conclusion

In this study, 333 patients with breast or gynecological cancer were surveyed about their reasons to use or not use CAM during their cancer therapy. One hundred and thirty-nine women did not use CAM and were, therefore, included in the study population. To the best of our knowledge, no previous studies have assessed the nondemand for complementary therapeutic approaches among women with breast or gynecological cancer.

The results of the present study suggest that even patients who do not use any CAM prior to or during their cancer diagnosis have a high overall interest in CAM. Eighty-one percent of the non-CAM users stated that they received no recommendation for CAM use, and 44% identified a lack of information as the main reason for not using CAM therapies. Fifty-three percent of the patients would have liked to receive information regarding the application of complementary therapies. The high interest and general openness toward CAM can also be illustrated by the fact that 68% of the non-CAM users would consider using CAM with disease progression, and only 27% completely excluded future CAM use. Furthermore, the majority of non-CAM users (73%)

would welcome more physicians with qualifications in complementary medicine and an integration of CAM therapies into the German health care system. These findings suggest that non-CAM users are overall very open to complementary medicine and that physicians need to openly address CAM in order to allow informed decision about the use or nonuse of complementary medicine.

A more open discussion would also help to directly address other worries the patients might have regarding CAM. Thirty-one percent of patients stated that they feared fraud, and 22% were worried that CAM might interact with their conventional therapies. These worries are not unfounded as CAM therapies contain active ingredients which can cause complications, such as an increased risk of postoperative bleeding, liver damage, and interactions with chemo- and radiotherapy [19–21]. Additionally, the distribution of CAM and information regarding complementary therapies are not strictly regulated, which can lead to misinformation and fraud. Mollasiotis et al. [22] examined the quality of information regarding the use of CAM in cancer patients on the basis of 43 webpages. They found that most of the webpages had shortcomings in quality and safety in the presented information. Seven percent even completely dissuaded from undergoing a conventional cancer treatment [22]. Such misinformation might confuse patients and lead them to misunderstand the limitations of complementary medicine. A recent study by Johnson et al. [23] compared adherence to conventional cancer treatments in cancer patients who used or did not use complementary therapies. The study found that CAM use was associated with higher refusal rates of surgery, chemotherapy, radiotherapy, and hormone therapy. Furthermore, the use of complementary therapies was associated with a poorer 5-year overall survival, which was probably mediated by the higher refusal of conventional cancer therapies [23]. These findings underline the importance of informing patients early and professionally about the use and limitations of complementary medicine through physicians.

The examination of various characteristics showed that non-CAM users had a lower level of education and were significantly older than CAM users. These findings are consistent with previous studies [5, 6]. Older patients and patients with a low level of education are more likely to not have the means to search for other therapies to cope with the disease and treatment side effects. Our data also suggest that religious patients are more interested in CAM therapies since they might seek more integrative/holistic approaches. Kang et al. [24] showed that CAM use was highly prevalent in women with breast cancer throughout the cancer treatment. Prayer was the most common CAM; it had the highest satisfaction rates.

Prayer and meditation were predominantly used to gain a feeling of control. Patients seem to consider CAM as supplementary to standard medical methods and as a way to avoid passiveness and to cope with feelings of hopelessness [8]. Women who had never used CAM before their cancer diagnosis also used CAM statistically less after their cancer diagnosis. This finding is consistent with studies which found that women with previous CAM use were significantly more likely to use CAM for cancer treatment [25, 26].

Our data showed that non-CAM users had an unhealthier lifestyle than CAM users. They smoked significantly more often ($p = 0.05$) and ate less vegetables per day ($p < 0.001$). Even after the cancer diagnosis, CAM nonusers were significantly less likely to improve their nutrition habits compared to CAM users ($p < 0.001$). Only minor differences were seen in relation to alcohol consumption and physical activity. Karlik et al. [27] were able to show a strong association between CAM use and lifestyle therapies and probably identified a population with commitment to overall health.

Our data demonstrate a high overall interest in CAM even in non-CAM users. Health care professionals should be aware of this in order to be able to better address their patients' needs. It is necessary to explore the use of CAM with our cancer patients, educate them about potentially beneficial therapies even in the light of the limited available evidence, and work towards an integrated model of health care. Therefore, we implemented a counseling service for integrative medicine concepts and evidence-based complementary treatments in an outpatient program (ZIGG) in our cancer center in 2013 to discuss integrative health approaches proactively with cancer patients.

Statement of Ethics

The final version was approved by the TUM Ethics Committee (project Nos. 3/15 and 4/15). A preliminary statement before the beginning of the interview informed the patients about the voluntary and pseudoanonymous nature of the study as well as its purpose. Respondents were not offered any incentive for study participation.

Disclosure Statement

The authors have no conflicts of interest to declare.

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Author Contributions

D.P.: conceptualization, project administration, supervision, formal analysis, writing (original draft, review, and editing); C.W.:

conceptualization, data curation, formal analysis, writing (review and editing), and visualization; A.H.: formal analysis and methodology; M.K.: conceptualization, methodology, and supervision; C.B.: writing (review and editing); and K.K.: data curation.

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