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Use of complementary and alternative medicine among breast cancer patients in Hungary: A descriptive study

Andrea Sárváry[a,*], Attila Sárváry[b]

[a] Department of Psychology, Faculty of Health, University of Debrecen, Faculty of Health, University of Debrecen, 4400, Nyíregyháza, Sóstói u. 2-4, Hungary
[b] Department of Nursing Science, Faculty of Health, University of Debrecen, Faculty of Health, University of Debrecen, 4400, Nyíregyháza, Sóstói u. 2-4., Hungary

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ABSTRACT

Background and purpose: This study aimed to explore the prevalence of the use of complementary and alternative medicine (CAM) before diagnosis and during oncology therapy, and reveal the disclosure of CAM use among Hungarian breast cancer patients.
Materials and methods: In a cross-sectional survey a self-administered questionnaire was used covering patients' demographics, oncology-related variables and various aspects of CAM use. Data were collected from 135 patients. Data analysis included descriptive analysis and Chi-square tests.
Results: The prevalence of CAM use was 52.6% before diagnosis while it was 84.4% during therapy. The most commonly used CAM practices before diagnosis and during therapy were vitamins/minerals (37%, 60%, respectively) and herbs (31.9%, 78.5%, respectively). The frequency of CAM use before diagnosis was higher among more educated patients ($p < 0.001$) and those living in cities ($p = 0.001$) while during therapy it was higher among patients with higher income ($p = 0.020$). Over 40% of the patients informed their physician about each CAM practice they used.
Conclusion: Besides conventional medicine, CAM practices are also regarded as an important part of therapy by cancer patients. The higher frequency of CAM use during therapy and the relatively modest disclosure towards physicians indicate a greater need for patients' education regarding CAM practices.

1. Background

Complementary and alternative medicine (CAM) is a group of diverse medical and health care systems, practices, and products 'that are not typically part of conventional medical care or that may have origins outside of usual Western practice' [1]. CAM practices are considered 'complementary' when used together with conventional medicine and 'alternative' when used in place of conventional medicine [1]. The National Center for Complementary and Integrative Health (NCCIH) now classifies CAM practices into three main categories: natural products (e.g. vitamins and minerals, herbs and probiotics, mainly sold as dietary supplements); mind and body practices (e.g. massage, chiropractic, yoga, acupuncture, meditation and relaxation techniques); and other complementary health approaches (e.g. Traditional Chinese Medicine or Ayurveda) [1].

CAM practices are commonly used not only among the general population, but also among patients suffering from chronic illnesses [2,3]. Some types of cancer result in remission only, therefore a substantial frequency of patients seek and use some form of CAM therapies. Over the last decade, a great number of studies have investigated the use of CAM among cancer patients in Europe and in other parts of the world [3–9]. Data showed a wide variety of CAM use by cancer patients based on cancer type and country. Molassiotis et al. (2005) carried out a survey that included 14 European countries and found that the average of Cam use was 35.9%, with a range of 14.8% in Greece to 73.1% in Italy [3]. The prevalence of CAM use among patients with colorectal cancer was 32%, with a range of 25%–80% while it was 44.7% for breast cancer sufferers [3,10]. The majority of studies reported a high rate of CAM use (approximately 75%) among breast cancer patients compared to patients of other cancer types [10–14], while other studies have reported 40% [9,15].

The majority of breast cancer patients use nutritional/dietary supplements, vitamins/minerals and herbs [5,15–17]. The reasons why women use CAM were quite different. The primary reason for CAM use is that it helps them recover and heal; improves their health, boosts their immune system, and reduces the side effects of conventional treatments [5,11,17,18].

Information about CAM use among patients in Hungary is very

* Corresponding author. Faculty of Health, University of Debrecen, 4400, Nyíregyháza, Sóstói u. 2-4, Hungary.
E-mail addresses: sarvary.andrea@foh.unideb.hu (A. Sárváry), sarvary.attila@foh.unideb.hu (A. Sárváry).

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limited. We have very limited data about CAM use among patients in Hungary. Only one article, investigating herbal use among surgery patients, has been published. In the peri-operative period, 7.2% of the patients used some herbs [19]. No publications conducted in Hungary about CAM use by cancer patients is available.

The aims of this study were (1) to investigate and compare the use of CAM among breast cancer patients before diagnosis and during oncologic therapy (2) to explore patients' knowledge of and reasons for CAM use (3) to identify who had recommended CAM use (4) to examine the patients' disclosure of CAM use towards physicians and (5) to obtain the opinion of physicians about the use of CAM by patients. These variables were analyzed with respect to education, monthly household income and place of residence.

2. Materials and methods

2.1. Study questionnaire

The design was a cross-sectional survey using self-administered questionnaires. In order to ensure comparability of results similar to a Europe-wide survey [3] the same main and subcategories of CAM practices were used: biological-based therapies (vitamins/minerals, herbs or dietary supplements); alternative medical systems (e.g. Traditional Chinese Medicine or Ayurveda); mind-body interventions (e.g. meditation); manipulation and body-based methods (e.g. massage, chiropractic); and energy therapies (e.g. magnets) [7,9]. A research team developed a final list that included some special CAM practices used by Hungarian cancer patients (e.g. deuterium-depleted water; AVEMAR – containing wheat germ extract; Culevit – containing vitamins, amino acids, minerals; Béres drops – containing minerals). The respondents were given the opportunity to add their own CAM practices that had not been included on the list.

The term complementary and alternative medicine was defined in the questionnaire as follows: a group of diverse medical and health care systems, practices and products that are not generally considered part of conventional medicine, are not taught in medical universities, are not used in hospitals and are not integrated into the dominant health care system [1,20].

The data collection tool was a self-administered questionnaire containing 16 close-ended questions as follows:

1. Demographics: age, marital status, educational level, monthly household income, place of residence;
2. Oncology-related variables: date of the diagnosis, previously applied and currently applied therapy;
3. Various aspects of CAM use:
   - CAM use 12 months before diagnosis and during radiation therapy or chemotherapy (Patients were asked to respond using with 'yes' or 'no' with reference to different CAM practices.);
   - reasons for and recommendations to CAM use (Patients were asked to indicate reasons for and recommendations to CAM use with 'yes' or 'no'.);
   - disclosure about CAM use towards the physician (Patients were asked to respond using with 'yes' or 'no' regarding their own disclosure about CAM use towards the physician.);
   - physician's opinion about CAM use (Patients were asked to respond using 'yes' or 'no' regarding their physician's opinion about CAM use);
   - knowledge and assessment of dangerousness of CAM (Patients were asked to present their knowledge about CAM practices used by them on a 4-point scale ('none', 'very little', 'some', 'a lot'), and to assess the dangerousness of practices on a 7-point Likert-type scale ranging from 1 (completely harmless) to 7 (completely dangerous).

The questionnaire was pre-tested with10 breast cancer patients for content, language clarity, ease of use, and time required to complete the questionnaire. Modifications were made to improve clarity and make it easier to answer.

2.2. Sample and sample method

The study was conducted at the Oncoradiology Department of András Jósa Teaching Hospital in Nyíregyháza between June 1 and September 30, 2017. Inclusion criteria were: adult patient with a diagnosis of breast cancer; having received or receiving radiation or chemotherapy at the time of the study; able to understand the questions; not having any condition making completion of the questionnaire inappropriate or burdensome and willing to participate. No written consent form was required, and completion the questionnaire implied that patients volunteered for the study.

Participation was voluntary and anonymous. After receiving information about the study and agreeing to participate in it, the questionnaire was handed out to the patients. Patients completed the questionnaire while they were waiting to be seen by their physician or during therapy. After completion, the patients handed the questionnaire to the head nurse.

2.3. Statistical analysis

Data were evaluated using Statistical Package for Social Sciences (SPSS) software program (Version 22.0). Descriptive statistics were calculated with all variables to summarize the data. In order to analyze patients' assessment of CAM practices used by them, the values of 1–4 (from 'completely harmless' to 'natural') and 5–7 (from 'dangerous a little' to 'totally dangerous') on the Likert scale were grouped together. Simple cross-tabulations, Chi-square tests (Pearson) and Fisher's exact test were used to determine if there were differences in CAM use based upon age, education, monthly household income and residence. A p-value < 0.05 was considered as statistically significant.

2.4. Ethical approval

Ethical approval was obtained by the Medical Research Ethics Committee of András Jósa Teaching Hospital (Number: 24KK/2018).

3. Results

From the 151 eligible female patients with breast cancer in the study, 135 (89.4%) completed the questionnaire. Some of the patients (16, 10.6%) elected to not participate in the study. Mean age was 53.8 years (26–78 years, standard deviation: 12.15). The majority of the patients (116, 85.9%) were diagnosed between 2012 and 2017, and the others (17, 12.6%) were diagnosed prior to 2012. Over 60% of the patients received radiation or chemotherapy during the survey and 37.1% were being seen in follow-up medical appointments. See Table 1 for more details.

3.1. Patients' CAM use before diagnosis and during oncology treatment

Table 2 shows the prevalence of use of different CAM practices before diagnosis and during oncology therapy. The frequency of CAM use was 52.6% before diagnosis, and it increased to 84.4% during therapy. Patients used 24 different CAM practices before diagnosis. The most commonly applied category of CAM practices was biological-based therapies (69, 51.1%) followed by mind-body interventions (8, 5.9%), and manipulative and body-based methods (7, 5.2%). Among the biological-based therapies, the most frequently use were vitamins/minerals (50, 37.0%), and herbs (43, 31.9%) with beetroot (28, 20.7%) and garlic (19, 14.1%) the most preferred. During therapy 26 CAM practices were used the most common was biological-based therapies (114, 84.4%) followed by mind-body interventions (26, 19.3%). Among

Table 1
Patients' sociodemographic characteristics.

	N (%)
Date of diagnosis	
Between 2012 and 2017	116 (85.9)
Before 2012	17 (12.6)
Unknown	2 (1.5)
Therapy	
Currently receiving radiation therapy	22 (16.3)
Currently receiving chemotherapy	62 (45.9)
Previously received radiation or chemotherapy, currently involved in follow-up medical check-ups and receiving drug therapy	41 (30.4)
Previously received radiation or chemotherapy, currently involved in follow-up medical appointments but not receiving any therapy	9 (6.7)
Unknown	1 (0.7)
Educational level	
Primary education (elementary school)	24 (17.8)
Vocational school	22 (16.3)
Secondary education (high school)	44 (32.6)
Tertiary	43 (31.9)
Unknown	2 (1.5)
Place of residence	
City	49 (36.3)
Town	39 (28.9)
Village	45 (33.3)
Unknown	2 (1.5)
Marital status	
Single	4 (3.0)
Married/in a relationship	90 (66.7)
Separated/divorced/widowed	38 (28.1)
Unknown	2 (1.5)
Monthly household income	
< 310 €	34 (25.2)
310- 620 €	44 (32.6)
> 620€	37 (27.4)
Unknown	20 (14.8)

the biological-based therapies, the most often applied CAM practices were herbs (106, 78.5%), followed by vitamins/minerals (81, 60.0%) and dietary supplements (76, 56.3%). The most favored of the herbs were beetroot (82, 60.7%), garlic (33, 24.4%), ginger (33, 24.4%), 'medicinal mushrooms' (28, 20.7%), green tea (25, 18.5%) and aloe vera (23, 17.0%). Table 2 shows the frequency of using other CAM practices before diagnosis and during therapy.

3.2. Relationship between CAM use and sociodemographic characteristics

Significant differences were found in CAM use before diagnosis, based on the groups' educational levels (Table 3) and place of residence (Table 4). Before diagnosis, the frequency of CAM use was significantly higher among patients who completed secondary (32, 72.7%) or tertiary (27, 62.8%) education compared to those who did not have secondary education (11, 23.9%) ($p < 0.001$).

Before diagnosis, the frequency of CAM use was significantly higher among patients living in cities (36, 73.5%) compared to those living in towns (18, 46.2%) or villages (16, 35.6%) ($p = 0.001$).

A significant difference was found in CAM use during oncology therapy as far as monthly household income was concerned (Table 5). The frequency of using CAM during therapy was significantly lower among patients with low income (23, 67.6%) compared to those with medium (40, 90.9%) or high (33, 89.2%) income ($p = 0.020$).

3.3. Reasons for CAM use

The reasons for using CAM during oncology therapy were to improve the patients' immune systems (71, 52.6%), maintain their health (status) (65, 48.1%), reduce therapy side effects (38, 28.1%), avoid the recurrence of breast cancer (18, 13.3%), improve the impact of oncology treatment (9, 6.7%), relieve pain (5, 3.7%) and strengthen positive thinking (1, 0.7%).

Table 2
The frequency of patients' CAM use before diagnosis and during oncology treatment.

	CAM use N (%)	
CAM practices	12 months before diagnosis N = 135	during radiation or chemotherapy N = 135
Biological-based therapies (total)	**69 (51.1)**	**114 (84.4)**
vitamins/minerals	50 (37.0)	81 (60.0)
herbs (total)	43 (31.9)	106 (78.5)
beetroot, beetroot products	28 (20.7)	82 (60.7)
garlic, garlic preparations	19 (14.1)	33 (24.4)
'medicinal mushrooms'	7 (5.2)	28 (20.7)
curcuma	6 (4.4)	10 (7.4)
ginger	11 (8.1)	33 (24.4)
green tea	15 (11.1)	25 (18.5)
aloe vera	4 (3.0)	23 (17.0)
others (e.g. nettle, calendura, gingko, pomegranate, sea buckthorn)	0	17 (12.6)
dietary supplements (total)	14 (10.4)	76 (56.3)
deuterium-depleted water	0	10 (7.4)
AVEMAR	1 (0.7)	14 (10.4)
Culevit	3 (2.2)	21 (15.6)
Béres drops	9 (6.7)	48 (35.6)
Flavin7	1 (0.7)	11 (8.1)
Q10 coenzyme	1 (0.7)	2 (1.5)
others (e.g. antioxidants, fish oil, omega-3 fatty acids supplements)	1 (0.7)	18 (13.3)
Mind-body interventions (total)	**8 (5.9)**	**26 (19.3)**
meditation	5 (3.7)	12 (8.9)
relaxation	4 (3.0)	17 (12.6)
Mind Control[a]	2 (1.5)	6 (4.4)
art therapy	2 (1.5)	4 (3.3)
yoga	4 (3.0)	8 (5.9)
hypnotherapy	0	0
others (Simonton method[b])	0	1 (0.7)
Manipulative and body-based methods (total)	**7 (5.2)**	**1 (0.7)**
massage	7 (5.2)	1 (0.7)
others (chiropractic)	1 (0.7)	0
Alternative medical systems (total)	**2 (1.5)**	**4 (3.0)**
acupuncture	2 (1.5)	1 (0.7)
homeopathy	0	3 (2.2)
Traditional Chinese Medicine	0	0
Ayurveda	0	0
Energy therapies (total)	**2 (1.5)**	**6 (4.4)**
magnets	1 (0.7)	1 (0.7)
Reiki[c]	1 (0.7)	4 (3.0)
Pránanadi[d]	0	1 (0.7)
CAM use total	71 (52.6)	114 (84.4)

[a] Mind Control as a relaxation technique claims to increase an individual's abilities through relaxation and development of higher brain functions.
[b] Simonton method is a combination of mind-body modalities: cognitive-behavioural elements, relaxation exercises, guided imagery and meditation.
[c] Reiki method uses simple hands-on, no-touch, and visualization techniques, with the goal of improving the flow of life energy in a person.
[d] Prananadi is a compound Sanskrit word made up of the words "prana" (wind, life-giving energy) and "nadi" (channel). This Tibetan method uses hands-on, no-touch techniques to maintain or improve both physical and emotional health.

3.4. Recommendation to CAM use

The use of CAM practices were recommended for patients mainly by family/friends (70, 51.9%), followed by fellow patients (36, 26.7%), treating physician (35, 25.9%), mass media (27, 20.0%), general practitioner (20, 14.8%), pharmacists (19 (14.1%), nurses (10, 7.4%), surgeon (3, 2.2%) and product manager (3, 2.2%).

Table 3
Relationship between CAM use and educational level.

CAM use	Lower than secondary education N = 46 (%)	Secondary education N = 44 (%)	Tertiary N = 43 (%)	Total N = 133 (%)	p-value
Before diagnosis					
Yes	11 (23.9)	32 (72.7)	27 (62.8)	70 (52.6)	< 0.001
No	35 (76.1)	12 (27.3)	16 (37.2)	63 (47.4)	
During oncologic therapy[a]					
Yes	35 (76.1)	40 (90.9)	37 (86.0)	112 (84.2)	0.441
No	11 (23.9)	4 (9.1)	6 (14.0)	21 (15.8)	

[a] Fisher's exact test (cell sizes < 5).

Table 4
Relationship between CAM use and place of residence.

CAM use	Place of residence				
	City N = 49 (%)	Town N = 39 (%)	Village N = 45 (%)	Total N = 133 (%)	p-value
Before diagnosis					
Yes	36 (73.5)	18 (46.2)	16 (35.6)	70 (52.6)	0.001
No	13 (26.5)	21 (53.8)	29 (64.4)	63 (47.4)	
During oncology therapy[a]					
Yes	44 (89.8)	34 (87.2)	34 (76.5)	112 (84.2)	0.162
No	5 (10.2)	5 (12.8)	11 (24.4)	21 (15.8)	

[a] Fisher's exact test (cell sizes < 5).

Table 5
Relationship between CAM use and monthly household income.

CAM use	Monthly household income				
	Low (< 310 €) N = 34 (%)	Medium (310–620 €) N = 44 (%)	High (> 620 €) N = 37 (%)	Total N = 115 (%)	p-value
Before diagnosis					
Yes	15 (44.1)	23 (52.3)	25 (67.6)	63 (54.8)	0.128
No	19 (55.9)	21 (47.7)	12 (32.4)	52 (45.2)	
During oncology therapy[a]					
Yes	23 (67.6)	40 (90.9)	33 (89.2)	96 (83.5)	0.020
No	11 (32.4)	4 (9.1)	4 (10.8)	19 (16.5)	

[a] Fisher's exact test (cell sizes < 5).

3.5. Patients' knowledge about CAM they used

The majority of patients believed that they knew 'something' (57, 42.2%) or 'a lot' (26, 19.3%) about CAM they had chosen to use. Others reported that their knowledge was 'very little' (26, 19.3%) or 'none' (6, 4.4%). Most patients stated that the CAM practices they used were not dangerous (105, 77.8%) and a very low percent believed that such practices could have been dangerous (7, 5.2%).

3.6. Disclosure of CAM and physician's opinion about CAM use

Over 40% of the patients informed their physician about each CAM practice they used (60, 44.4%). Approximately one-fourth of the patients informed their physician about certain types of CAM practices (32, 23.7%) while others did not inform their physician about their CAM use (22, 16.3%). Over one-third of the treating physicians supported their patients' CAM use regarding each practice (51, 37.8%) and approximately one-fourth of them did support some forms of CAM use only (29, 21.5%). A minority of physicians did not have opinion about this issue (10, 7.4%) while some of them opposed to their patients' CAM use regarding each of the practices (3, 2.2%).

4. Discussion

The present study evaluated the use of CAM practices among breast cancer patients at an oncoradiology department of a Hungarian hospital. The frequency of CAM use was 52.6% before cancer diagnosis and increased to 84.4% during oncology therapy. A similar European-wide survey found that CAM use was lower before cancer diagnosis and increased by a minimum of 30% after diagnosis and current use stabilized at a little higher rate than before diagnosis [3]. Some studies reported approximately 75% CAM use among breast cancer patients [12,14,21],while the studies published in the last years found nearly 40% [7,15,22]. One reason for the high frequency of CAM use in our study might be that only women participated in the survey and most of the previous studies reported a higher rate of CAM use among women [4,7,23,24]. However, some studies did not confirm this result.[8,25]Another reason might be that in our study CAM practices were recommended for patients by treating physicians or other health professionals at a high rate.

This study found the most commonly applied CAM category was biological-based therapies before cancer diagnosis (51.1%) and during therapy (84.4%). From before diagnosis to during therapy, the use of vitamins/minerals increased by 23% (37%–60%), herbs increased by 46.6% (31.9%–78.5%) and dietary supplements increased by 45.9% (10.4%–56.3%). Other studies also reported herbs [3,6,7,9,10,18,26,27], vitamins/minerals [3,6,8,18,26] and nutritional supplements [7,8] as the most commonly used practices among patients with various diagnoses. The use of beetroot increased from 20.7% (before diagnosis) to 60.7% (during therapy). A survey carried out in Trinidad found beetroot was the second most popular functional food (32.9%) consumed by breast cancer patients [28] and another study confirmed the cytotoxic effect of beetroot on different types of cancer cells [29].

In our study, the frequency of using mind-body interventions was 5.9% before diagnosis and 19.3% during therapy. Our results are in agree with reports from some European countries [3,8], although others found 68.7% in Trinidad and Tobago [9], and 40.8% in Malaysia [7] among patients with various cancer diagnoses. Nevertheless, the increase in using mind-body interventions from before diagnosis to during therapy suggests these practices may help patients cope with emotional distress.

Similarly to a previous Hungarian study, we also found a higher frequency of CAM use among more highly educated patients before diagnosis [19]. Although some studies did not confirm this higher prevalence among highly educated patients [4,25], our result is in agreement with reports by other authors [3,6–8,11,23,24,30,31]. Similarly to others, this study revealed a higher frequency of CAM use during therapy among patients with higher income [7,25,31]. Interestingly, a Turkish survey reported that CAM use was particularly more widespread among patients with low income [24]. With regard to residence, the present study revealed more widespread CAM use before diagnosis among patients living in cities. The reason for this might be that many more CAM practices are offered and readily available in cities than in towns in Hungary. Several studies reported a connection between aging and CAM use [6,9,23,31]. However, similarly to some other studies [8,24], our results did not support this conclusion.

This study revealed that during ongoing oncology therapy, patients relied on CAM because they wanted to improve their immune systems (52.6%) or maintain their health status (48.1%). Similar results were found by other authors that patients' motives for CAM use during therapy were primarily to improve their immune systems [7], body's ability, physical well-being [3,24], and to fight cancer [3,4]. Moreover, our study revealed that 28.1% of the patients used CAM during oncology therapy in order to reduce the side effects of treatment. This was consistent with a study form Germany (25.7%) but it was found lower (19.1%) in Turkey [3,24]. Compared to the 23.4% of German and 19.1% of Turkish patients who assume CAM practices improve the

impact of therapy, this same reason was mentioned by 6.7% of the Hungarian patients [3,24].

In our study, 25.9% of the patients reported that CAM use was recommended by their treating physicians and 38.5% of them stated that it was proposed by other health professionals (general practitioner: 14.7%, pharmacist: 14.1%, nurse: 7.4%, and surgeon: 2.2%). Kessel et al. (2016) reported a higher frequency of recommendation of CAM use by treating physicians (48.2%; 50% before and during therapy, respectively) or oncologists (3.5%; 23.1% before and during therapy, respectively) [8]. However, Bahall (2017) reported that 20.9% of breast cancer patients obtained information about CAM use from in-hospital health personnel, and the health personnel outside hospital settings was the least influential factor (1.5%) [9]. Moreover, in our study CAM use was recommended primarily by family/friends (51.9%) and fellow patients (26.7%). Some researchers found that family/friends were an even more common source of information and recommendations about CAM among patients [4,7,9], but Kessel et al. (2016) revealed a lower rate (34.6%) during therapy [8]. As a source of information a higher rate of patients was found (43.8%) [9] by Bahall (2017) while a much lower rate of cancer survivors (2.2%) [7] was found by Farooqui et al. (2016). In our study, mass media was found to be a more common source of knowledge about CAM (20%), compared to the results by other authors [7,9]. The reason for this result might be that advertising dietary supplements for cancer patients in the mass media has been a long-established practice in Hungary. However, recommendations for CAM use by the family, friends or media may not be informative enough because a given CAM practice may be effective for one patient but ineffective for another, even if they have the same symptoms [32]. This may also lead to the patients' lack of knowledge regarding harmful interactions of CAM with conventional therapies [33–35].

In our study, 44.4% of the patients informed their physician about all the CAM practices they used, 23.7% of them about some of the practices and 16.3% provided no information. A reason for this result might be that 77.8% of the patients did not consider the used CAM practices dangerous. A previous Hungarian study found a 25% disclosure-rate among patients undergoing elective surgery [19]. Although some studies reported approximately 40% [7,35] or even double rates [36,37] of disclosure, others [8,9] found a high non-disclosure rate of CAM towards physicians. The importance of disclosure is that certain CAM practices, chemotherapy and/or radiation might counteract each other's effects [34,35,38–40]. However, non-disclosure may result in vital information required for oncology therapy being lost and consequently a less effectivement management of the disease [7,8]. This might corroborate our results that 37.8% of the physicians supported each and 21.5% supported some CAM practices.

5. Study limitations

There are two major limitations. Firstly, the study was conducted in just one hospital in Hungary therefore our results cannot be generalized to the whole of cancer patients' population. Secondly, the answers from a self-administered questionnaire might be influenced by social desirability.

6. Conclusion

The prevalence of CAM use among breast cancer patients increased by approximately 30% from before diagnosis to during therapy. Besides conventional medicine, CAM practices are regarded as an important part of therapy by cancer patients. The high rate of using vitamins/minerals (60%) and herbs (78.5%) during therapy, the relatively high rate of non-disclosure (16.3%) or partial disclosure (23.7%) about CAM use to physicians, and the high participation of non-health professionals (80.8%) and media (20%) in recommending the use of CAM, all indicate a greater need for patients' education regarding CAM practices and their potential interaction with oncological treatment. As for our future research, an expanded version of this questionnaire will be used in other oncological centers in Hungary.

Declarations of interest

None.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ctcp.2019.02.013.

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