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The Correlation Between Being Informed On Complementary and Alternative Medicine and Its Reported Use Among Cancer Patients In Yogyakarta

Article Info

Online : <http://journal.umy.ac.id/index.php/ijnp>
ISSN : 2548 4249 (Print)
: 2548 592X (Online)
DOI : 10.18196/ijnp.v5i1.9558

Article History

Received : 13 August 2020
Revised : 18 February 2021
Accepted : 18 February 2021

Abstract

Background: Previous studies have indicated that the majority of cancer patients have used self-selected Complementary and Alternative Medicine to relieve disease-related symptoms and treatment-related adverse effects untreated by conventional treatment to improve the quality of life. Unfortunately, studies on Complementary and Alternative Medicine use among cancer patients, especially in Yogyakarta, the city with the highest cancer prevalence in Indonesia, are still limited.

Objective: This present study aims to identify the correlation between being informed on Complementary and Alternative Medicine and its reported use among cancer patients.

Methods: This study was a descriptive correlational study on 75 consenting cancer patients. The respondents were selected using a purposive sampling technique. Data about their Complementary and Alternative Medicine use were collected by administered questionnaires and analyzed using descriptive statistics and bivariate analysis.

Results: 25.3% of respondents had used Complementary and Alternative Medicine. Being informed on Complementary and Alternative Medicine and its reported use among cancer patients were significantly correlated ($r=0.331$; $p=0.002$).

Conclusion: Complementary and Alternative Medicine use among cancer patients was still limited. Health providers need to discuss Complementary and Alternative Medicine use with their patients openly.

Keywords: Cancer; Complementary And Alternative Medicine; Information; Palliative Care

INTRODUCTION

Cancer is categorized as one of the non-communicable diseases, with its prevalence reaching 1.8% per 1,000 population in Indonesia. The highest cancer prevalence in Indonesia has occurred in the Yogyakarta Special Region, reaching 4.9% per 1,000 population for all ages ([Ministry of Health Republic Indonesia, 2018](#)).

Cancer patients could experience physical and psychological problems while undergoing treatment

for their illness in the hospital ([American Cancer Society, 2017](#); [Dy & Apostol, 2010](#); [Effendy et al., 2014](#)). The most common physical symptoms are fatigue, pain, sleep disturbance, nausea, vomiting, and decreased immune function. Also, the psychological symptoms are anxiety, depression, fear of the illness's severity, fear of going through disease examination, fear of having repeated relapse of the illness, and death ([Effendy et al., 2014](#)).

Complementary and Alternative Medicine (CAM) emerges as one of the options favored by cancer patients at a different stage of the diagnosis and treatment, ranging from 30% to 50% of patients during adjuvant chemotherapy or radiotherapy, perioperative, and palliative phases ([Ben-Arye et al., 2014](#); [Shin et al., 2012](#)). CAM is a various system, practice, and medical and health product commonly understood as non-conventional treatment ([National Center for Complementary and Alternative Medicine, 2011](#)). Cancer patients use CAM because it is easy and affordable, with no side effects, and their belief in the positive effects of CAM ([Almasdy et al., 2018](#)).

The use of CAM is based on the patients' sociodemographics, the clinical characteristics of the cancer patients, cultural factors, and the patients' coping patterns associated with the disease. As many as 25.5% of 2.661 respondents were reported using CAM ([Shin et al., 2012](#)). High income, metastasis, longer diagnosed time, low trust in the hospital, low satisfaction, and a higher need for information were related significantly to the use of CAM ([Shin et al., 2012](#)). Other studies also discussed that younger age, being in a stable relationship, a normal BMI ([Paepke et al., 2020](#)), and a higher educational level were predictors of the use of CAM ([Gentry-Maharaj et al., 2017](#); [Paepke et al., 2020](#)).

Correlation between knowledge about CAM and its use, whether being used with or without the accompaniment of conventional treatment, becomes significant to be identified because cancer patients are often faced with more complex psychological and physiological situations compared to other non-communicable diseases ([Shin et al., 2012](#)). In Indonesia, especially Yogyakarta, to date, almost no nationwide studies have reported CAM use. Data obtained from Padang, Indonesia, reported that 65% of patients had used CAM ([Almasdy et al., 2018](#)). Nurses also play an essential role in exploring the use of CAM and improving the cancer patients' understanding of CAM in terms of its procedure and the reason for its use. This present study aims to identify the correlation between the experience of getting information about CAM and its use among cancer patients.

METHODS

Setting and population

This study was a descriptive correlative study using a cross-sectional approach. Data were collected from oncological and surgical outpatient wards at one of the general hospitals in the Special Region of Yogyakarta from July to August 2019 and selected using purposive technique sampling. Analyses included adults (older than 18 years) with all types of cancer who have had surgery and or were undergoing chemotherapy or radiotherapy treatment and willing to consent to participate in this study, excluding patients who suddenly experienced the emergency status. The cancer patients who met inclusion and exclusion criteria were identified through the medical record. After being identified as respondent candidates, they were fully informed about the study's purpose and signed the informed consent. A total of 75 consenting patients formed our final sample. They completed the questionnaires assisted by the researchers and two research assistants.

Measure

A questionnaire survey was designed to collect data about CAM use and demographic characteristics (age, gender, education, health insurance, marital status, the number of symptoms, stage of cancer, metastasis, and the experience of getting information about CAM). We defined CAM based on the widely established NCCAM taxonomy ([National Center for Complementary and Alternative Medicine, 2011](#)). The specific CAMs questioned in this study were herbs and vitamin supplements; spiritual healing or therapy; massage; relaxation technique, imagery, or yoga; lifestyle diets, music therapy; acupuncture or acupressure; hypnosis; and an open question about the other kinds of CAM. A positive response to at least one question in the questionnaire determined the respondent's classification as a CAM user. In contrast, a negative response to all questionnaire items led to the respondent's classification as a non-user. The number of symptoms was measured using the Edmonton Symptom Assessment System (ESAS) ([Watanabe et al., 2012](#)) and categorized into a dichotomous variable (less than five symptoms and more than five symptoms).

Statistical analyses

First, we determined the prevalence of total age, gender, education, health insurance, marital status, the number of symptoms, stage of cancer, metastasis, the experience of getting information about CAM, and CAM use using descriptive analysis. Next, we used the contingency coefficient test to identify the correlation between being informed about CAM and its reported use with $p < 0.05$ indicating significance. All statistical analyzes were performed using the Statistical Package for the Social Sciences (SPSS) version 16 ([SPSS Inc., 2007](#)).

Ethical consideration

The Health Research Ethics Committee, Faculty of Health, Universitas Jenderal Achmad Yani Yogyakarta, approved this study (Number: Skep/068/KEPK/V/2019). All the patients gave their written informed consent to participate in this study.

RESULTS

General characteristic of cancer patients

Most of the respondents were between 40 to 60 years old (53.3%), women (81.3%), married (85.3%), educational background varied between Elementary School and Senior High School levels, only 1.4% and 98.7% of them owned health insurance. Meanwhile, based on the characteristics of the illness, from 75 cancer patients being the respondents, most of them experienced less than five symptoms (58.7%), categorized into stage III of cancer (42.7%), had no metastasis (54.7%), and had never received any information about CAM (96.0%). The characteristics of the respondents are summarized in Table 1.

CAM use

The majority of the respondents did not use CAM, totaling 56 respondents (74.7%). CAM use among cancer patients is displayed in Table 2.

The most frequent types of CAM used by the respondent were herbs and vitamin supplements (12 respondents), followed by acupuncture/acupressure (six respondents). The remaining were massage, spiritual healing or therapy, relaxation technique, imagery or yoga, physiotherapy, music therapy, and lifestyle diets. In this case, eight respondents used more than one kind of CAM. The combinations of CAM they used were herbs and vitamin supplements with

acupuncture, massage, music therapy, or spiritual therapy. The types of CAM used by 19 respondents are listed in Figure 1.

Correlation between being informed on CAM and its reported use

There was a significant correlation between being informed on CAM and its reported use among cancer patients. The bivariate analysis was demonstrated in Table 3.

DISCUSSION

In this study, 19 cancer patients (25.3%) used CAM. Several research studies have suggested the use of CAM ([Berretta et al., 2017](#); [John et al., 2016](#); [Klafke et al., 2012](#); [Pihlak et al., 2014](#); [Shin et al. 2012](#)). This result is in line with the study by [Shin et al. \(2012\)](#) conducted on 2,661 cancer patients in Korea, in which 25.5 % of respondents used CAM. The low use of CAM was also seen in Israel in a study conducted by [Ben-Arye et al. \(2014\)](#), in which from 313 cancer patients, 39.6% of them used CAM. This number is still considered low compared to the use of CAM in Australia (61.5%) ([Klafke et al., 2012](#)) and in the United States (79%) ([John et al., 2016](#)).

The high number of patients who did not use CAM may be due to the unclear description and efficacy of CAM since 96% of respondents in this study were not informed about CAM. In this study, 25.3% of CAM users utilized this treatment based on the information obtained from health care providers and mostly obtained information from friends and neighbors through word-of-mouth information exchange. This result assertion follows the study conducted by [Almasdy et al. \(2018\)](#), stating that the information about CAM was not from health care providers but friends or family (70.91%). Meanwhile, only 5.45% of the patients obtained information from healthcare providers ([Almasdy et al., 2018](#)).

Herbs and vitamin supplements were the most used type of CAM by the respondents; the number was 63.16 % from 19 respondents. This result is in line with a study conducted by [Ezeome & Anarado \(2007\)](#) in Nigeria, showing that, from 160 respondents who participated in the study, 51.9% of them used herbs intended for treatment. A study by [Field et al. \(2009\)](#) also presented similar data, in which 54.4% out of 892 women with breast cancer in Australia and New Zealand used CAM in the form

of supplements or vitamins. The use of herbs has also been confirmed as the most used CAM (92.72%) in a study by [Almasdy et al. \(2018\)](#) in Padang, Indonesia, conducted on 85 breast cancer patients.

Herbs and vitamin supplements became the most used CAM due to their availability in the market and the easy access in obtaining them for people living in either rural or urban areas ([Almasdy et al., 2018](#); [Frenkel et al., 2013](#)). Compared to other types of CAM, the use of herbs has increased in number because of their popularity and the cultural factors related to the use of natural products ([Almasdy et al., 2018](#)). Another factor was its low price due to the patients' belief that natural products were safe for the body ([Almasdy et al., 2018](#)). The patients' belief was the main reason for the CAM use because there were four phases of the CAM use decision-making process. The first phase was fitting with the cultural belief lifestyle before seeking information and clarification about CAM, evaluating the effectiveness of the CAM use, and balancing the cost and benefit ([Chiu et al., 2006](#)).

The patients used herbs and vitamin supplements to reduce the side effects of chemotherapy, organ toxicity, stimulate the immune system, or prevent further growth and relapse of cancer ([Frenkel et al., 2013](#)). However, herbs and vitamin supplements were often consumed without recommendation and supervision from health care providers. As a result, misunderstandings related to the use of herbs and vitamin supplements between health care providers and patients emerge, in which this type of CAM has been considered as an unreliable treatment ([Frenkel et al., 2013](#)).

There was a significant correlation between knowledge about CAM indicated by their experience of obtaining information about CAM and CAM use among cancer patients ($r=0.331$; $p=0.002$). The majority of the patients using CAM have not possessed any experience in given information on the use of CAM; the number was 16 respondents (84.2%). Only three respondents obtained information about the use of CAM from healthcare providers and used CAM. The case is different in the study by [Dogu et al. \(2014\)](#). It was conducted on 494 cancer patients in Turkey, in which 78.6% of patients had obtained information related to CAM from

health care providers. The rest of them gained information from friends and family ([Dogu et al., 2014](#)). Information related to the use of CAM is an attempt to empower the patients to perform self-care management. A small number of patients rejected the information related to CAM, fearing that this additional option might be interfering with their decision to select the ongoing treatment ([Evans et al., 2007](#)).

Health care providers should discuss CAM openly with patients. Patients must report CAM use they perform alongside the convention treatment to prevent misunderstanding between the health care providers and them regarding CAM use.

This study has limitations, namely the sample size supposed to be higher. This condition was due to the limited number of cancer patients in the study area. This study also did not provide the health care providers' knowledge about CAM that needed to be explored as the factors affecting CAM use. However, this study provided the essential data and had a low level of missing data indicating the fit analyses.

CONCLUSION

This research outcome has generated new perspectives on CAM use by cancer patients. The few cancer patients informed about CAM have resulted in a limited effect on the use of CAM. CAM must be freely shared with patients by health care professionals. To avoid confusion between the health care providers and the patients about CAM use, the patients must disclose the use of CAM they carry out alongside convention therapy. Further research needs to explore the awareness of CAM by health care professionals to enrich the data on factors affecting CAM use in cancer patients.

ACKNOWLEDGMENTS

The authors gratefully acknowledge Universitas Jenderal Achmad Yani Yogyakarta for the funding and the respondents in this study.

AUTHORS' CONTRIBUTION

The authors, Ike Wuri Winahyu Sari (I.W.W.S) and Dwi Kartika Rukmi (D.K.R), made a substantial contribution to the conception and design of the study. I.W.W.S conceived the study, participated in its design and coordination, collected the data, participated in the statistical analyses, and drafted the manuscript. D.K.R participated in the design and coordination of the study and helped draft the manuscript. Both authors read and approved the final manuscript.

CONFLICT OF INTEREST

None.

REFERENCES

- Almasdy, D., Eptiyeni, E., Khamri, D., & Kurniasih, N. (2018). Use of Complementary and Alternative Medicine (CAM) among Breast Cancer Patients in a Public Hospital in Padang, Indonesia. *Journal of Young Pharmacists*, 10(2), Suppl: 2145-s147. <https://doi.org/10.5530/jyp.2018.2s.30>
- American Cancer Society (ACS). (2017). *Sign and Symptom of Cancer* [online]. <https://www.cancer.org/cancer/cancer-basics/signs-and-symptoms-of-cancer.html> . [Accessed 23 January 2019].
- Ben-Arye, E., Massalha, E., Bar-Sela, G., Silbermann, M., Agbarya, A., Saad, B., et al. (2014). Stepping from traditional to integrative medicine: perspectives of Israeli-Arab patients on complementary medicine's role in cancer care. *Annals of Oncology*; 25(2), 476-480. <https://doi.org/10.1093/annonc/mdt554>
- Berretta, M., Pepa, C. D., Tralongo, P., Fulvi, A., Martellotta, F., Lleshi, A., et al. (2017). Use of Complementary and Alternative Medicine (CAM) in cancer patients: An Italian multicenter survey. *Oncotarget*, 8(15), 24401-24414. <https://doi.org/10.18632/oncotarget.14224>
- Chiu, L., Balneaves, L., Barroetavena, M. C., Doll, R., & Leis, A. (2006). Use of complementary and alternative medicine by Chinese individuals living with cancer in British Columbia. *Journal of Complementary and Integrative Medicine*; 3(1). <https://doi.org/10.2202/1553-3840.1037>
- Dogu, G. G., Kargi, A., Tanriverdi, O., Yaren, A., Demiray, G., Taskoylu, B.Y., Ergin, A. (2014). Complementary/alternative medicine experience in cancer patients: a questionnaire-based survey. *International Journal of Hematology and Oncology*, 1(24), 45-53. <https://doi.org/10.4999/uhod.12008>
- Dy, S, M., & Apostol, C.C. (2010). Evidence-based approaches to other symptoms in advanced cancer. *Cancer Journal*; 16: 507–513. <https://doi.org/10.1097/PPO.0b013e3181f45877>
- Effendy, C., Vissers, K., Osse, B. H. P., Tejawinata, S., Vernooij-Dassen, M., Engels, Y. (2014). Comparison of Problems and Unmet Needs of Patients with Advanced Cancer in a European Country and an Asian Country. *Pain Practice*; 15(5): 433-40. <https://doi.org/0.1111/papr.12196>
- Evans, M., Shaw, A., Thompson, E.A., Falk, S., Turton, P., Thompson, T., & Sharp, D. (2007). Decisions to use complementary and alternative medicine (CAM) by male cancer patients: information-seeking roles and types of evidence used. *BMC Complementary and Alternative Medicine*. 7(25). <https://doi.org/10.1186/1472-6882-7-25>
- Ezeome, E, R., & Anarado, A, N. (2007). Use of complementary and alternative medicine by cancer patients at the University of Nigeria Teaching Hospital Enugu Nigeria. *BMC Complementary and Alternative Medicine*. 7(28). <https://doi.org/10.1186/1472-6882-7-28>
- Field, K, M., Jenkins, M, A., Friedlancer, M, L., McKinley, J, M., Price, M.A., Weidman, P., et al. (2009). Predictors of the use of complementary and alternative medicine (CAM) by woman at high risk for breast cancer. *European Journal of Cancer*; 45(4), 551-560. <https://doi.org/10.1016/j.ejca.2008.09.023>
- Frenkel, M., Abrams, D. I., Ladas, E. J., Deng, G., Hardy, M., Capodice, J. L., et al. (2013). Integrating Dietary Supplements Into Cancer Care. *Integrative Cancer Therapies*, 12(5), 369–384. <https://doi.org/10.1177/1534735412473642>

- Gentry-Maharaj, A., Karpinskyj, C., Glazer, C., Burnell, M., Bailey, K., Apostolidou, S., et al. (2017). Prevalence and predictors of complementary and alternative medicine/non-pharmacological interventions use for menopausal symptoms within the UK Collaborative Trial of Ovarian Cancer Screening. *Climacteric*, 20(3), 1–8.
<https://doi.org/10.1080/13697137.2017.1301919>
- John, G. M., Hershman, D. L., Falci, L., Shi, Z., Tsai, W.-Y., & Greenlee, H. (2016). Complementary and alternative medicine use among US cancer survivors. *Journal of Cancer Survivorship*, 10(5), 850–864.
<https://doi.org/10.1007/s11764-016-0530-y>
- Klafke, N., Elliott, J. A., Wittert, G. A., & Olver, I. N. (2012). Prevalence and predictors of complementary and alternative medicine (CAM) use by men in Australian cancer outpatients services. *Annals of Oncology*, 23(6), 1571-1578.
<https://doi.org/10.1093/annonc/mdr521>
- Ministry of Health of Republic Indonesia. (2018). *Hasil utama Riset Kesehatan Dasar (RISKESDAS) 2018* [Main results of Basic Health Research (RISKESDAS) 2018]. Jakarta: Kementerian Kesehatan Badan Penelitian dan Pengembangan Kesehatan.
- National Center for Complementary and Alternative Medicine (NCCAM). (2011). *What is complementary and alternative medicine?*. November 2018.
<http://nccam.nih.gov/health/whatisacam/>. [Accessed 23 February 2019].
- Paepke, D., Wiedeck, C., Hapfelmeier, A., Kiechle, M., Brambs, C. (2020) Frequency and Predictors for the Use of Complementary Medicine among Gynecological Cancer Patients. *Journal of Alternative Complementary & Integrative Medicine* 6: 133.
<https://doi.org/10.1016/j.ejca.2008.09.023>
- Pihlak, R., Liivand, R., Trelin, O., Neissar, H., Peterson, I., Kivistik, S., et al. (2014). Complementary medicine use among cancer patients receiving radiotherapy and chemotherapy: methods, sources of information and the need for counseling. *European Journal of Cancer Care*, 23(2), 249–254.
<https://doi.org/10.1111/ecc.12132>
- Shin, J. Y., Kim S. Y., Park, B., Park, J. H., Choi, J. Y., Seo, H. G., et al. (2012). Predictors of complementary and alternative medicine use in cancer care: results of nationwide multicenter survey in Korea. *Evidence-Based Complementary and Alternative Medicine*. Vol 2012.
<https://doi.org/10.1155/2012/212386>
- SPSS Inc. (2007). *SPSS for Windows, Version 16.0*. Chicago, SPSS Inc. Available at https://www.uni-muenster.de/imperia/md/content/ziv/service/software/spss/handbuecher/englisch/spss_brief_guide_16.0.pdf. [Accessed February 2019]
- Watanabe, S. M., Nekolaichuk, C. L., Beaumont, C. (2012). The Edmonton Symptom Assessment System, a proposed tool for distress screening in cancer patients: development and refinement. *Psychooncology*, 21(9), 977-85.
<https://doi.org/10.1002/pon.199>

Table 1. General characteristics of cancer patients (n=75)

Characteristics	n (%)
Ages	
<40 years old	8 (10.7)
40-60 years old	40 (53.3)
>60 years old	27 (36.0)
Gender	
Female	61 (81.3)
Male	14 (18.7)
Marital status	
Single	2 (2.7)
Widow/widower	9 (12.0)
Married	64 (85.3)
Education	
Illiterate	3 (4.0)
Elementary school	25 (33.3)
Junior high school	11 (14.7)
Senior high school	26 (34.7)
College	10 (13.3)
Health insurance	
No	1 (1.3)
Yes	74 (98.7)
The number of symptoms	
<5 symptoms	44 (58.7)
>=5 symptoms	31 (41.3)
Cancer stage	
Stage I	16 (21.3)
Stage II	23 (30.7)
Stage III	32 (42.7)
Stage IV	4 (5.3)
Metastasis	
No	41 (54.7)
Yes	34 (45.3)
Being informed about CAM	
No	72 (96.0)
Yes	3 (4.0)

Table 2. CAM use among cancer patients (n=75)

Characteristic	n (%)
CAM use	
Nonusers	56 (74.7)
CAM users	19 (25.3)

Table 3. Correlation between being informed on CAM and its reported use (n=75)

Variable		Being informed on CAM		Coefficient contingency (r)	p-value
		Not getting information about CAM	Getting information about CAM		
CAM use	Non- users	56	0	0.331	0.002*
	CAM users	16	3		

* $p < 0.05$ indicates significant

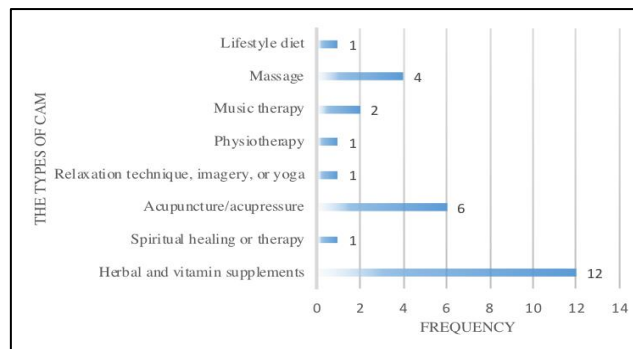


Figure 1. Types of CAM