Attitude of employees of a university clinic to complementary and alternative medicine in oncology

A. Trimborn1, B. Senf2, K. Muenstedt3, J. Buentzel4, O. Micke5, R. Muecke6, F. J. Prott7, S. Wicker8 & J. Huebner1*, on behalf of Working group Prevention and Integrative Oncology (PRIO) of the German Cancer Society

1Dr. Senckenberg Chronomedical Institute; 2Department of Psychooncology, J.W. Goethe University, Frankfurt/Main; 3Department of Gynecology and Obstetrics, University Clinic, Gießen; 4Department of Head and Neck Diseases, Municipal Hospital, Nordhausen; 5Department of Radiooncology, St. Franziskus Hospital, Bielefeld; 6Department of Radiotherapy and Radiation Oncology, Ruhr University Bochum, Bochum; 7RNS Praxisgemeinschaft Radiodiagnostik, Westbadien; 8Occupational Health Service, University Clinic, Frankfurt/Main, Germany

Received 30 October 2012; revised 10 February 2013 & 1 June 2013; accepted 2 July 2013

Background: Cancer patients often use complementary and alternative medicine (CAM), yet discussion with the oncologist is often missing and oncologists lack knowledge in CAM.

Patients and methods: In order to learn more about the attitude of professionals in oncology toward CAM, a survey was conducted on employees of a German university clinic using a structured questionnaire.

Results: In total, 547 employees took part in the survey. One-third would definitely use CAM on cancer patients. Female employees are more interested in CAM than males (80% versus 20%; P = 0.001); physicians are less interested than nurses (57% versus 72%; P = 0.008). 2.5% of physicians and 9% of nurses are convinced that CAM is as effective as conventional therapy in cancer. Fifty-two percent of physicians and 12% of nurses agree that adverse effects due to CAM may be possible. Seventy-three percent did not consider themselves adequately informed on CAM for their professional work.

Conclusions: As a substantial part of participants would use CAM on cancer patients and most are interested in but not trained on this topic, there is a need for training of professionals from different professions working in oncology.

Key words: complementary medicine, alternative medicine, cancer, attitude of professionals

Introduction

Cancer patients are highly interested in complementary and alternative medicine (CAM). Yet, neither term is clearly defined. The National Center for CAM (NCCAM), defines CAM as “a group of different medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine[1]”. A widespread interpretation is that “complementary” describes treatments from naturopathy and other sources that are used additionally to conventional medicine. “Alternative” medicine is used in place of conventional treatment. For the combination of complementary and conventional medicine, the term “Integrative Medicine” is used. In our survey and this article, we use the term CAM as it is used in German language, where both terms “complementary” and “alternative” are used both interchangeably and without differentiation by patients and professionals.

Different authors report that 10%–80% of cancer patients use CAM (Molassiotis et al. [2], Eschiti [3], Velicer and Ulrich [4] and Naing et al. [5]). Data from Germany confirm these numbers (Huber et al. [6], Nagel et al. [7], Schoenekaes et al. [8]). In a recent survey, 40%–90% of patients with cancer use CAM (Micke et al. [9]). The CAMs most often used are supplements and mistletoe.

The primary sources of information on CAM are the relatives and friends of patients. The physician is seldom asked (Eng et al. [10]). However, in Germany, the most common source for therapeutic recommendations on CAM are physicians (Muenstedt et al. [11]). Most patients do not inform their oncologists about the CAM methods they use (Robinson and McGrail [12], Saxe et al. [13]). In most German cancer centers, counseling on CAM is not an integrated part of therapy. Very few university hospitals have a department on naturopathy offering counseling on CAM to cancer patients. Both counseling and CAM therapies are not reimbursed by statutory health service, but some health insurance companies have special programs offering CAM treatments.

Despite growing number of courses and seminars, a qualified training which provides evidence as well as skills in communication about CAM is missing. A survey conducted by Muenstedt et al. [14] reported that both physicians and medical students lack confidence because of missing knowledge.

In 2009, a focus area “Complementary Oncology” was established at the Comprehensive Cancer Center of the J. W. Goethe University, Frankfurt/Main. The integration of a...
counseling facility on CAM depends greatly upon mutual acceptance.

The aim of the present study was to conduct a survey among employees in order to learn about their attitudes toward CAM in general and in oncology. These insights will provide valuable clues on how to facilitate the integration of CAM in different cancer institutions.

methods

population

For half a year (from January to June 2012), all employees visiting the occupational health service of the university hospital were asked to take part in the survey. At the time of the survey, the university clinic employed 1156 physicians and scientists, 1455 nurses and service team workers, 954 employees in medical technology and 658 employees in administration. The percentage of women was 60%.

Participation in the survey was voluntary and anonymous.

questionnaire

The questionnaire included several sections (Supplementary Material, available at Annals of Oncology online):

(i) Personal data (gender, age, profession, medical specialty (if applicable) and affected family members);
(ii) interest in complementary medicine and willingness to use CAM
   a) in general
   b) on patients with cancer;
(iii) list of reasons for and against using CAM in oncology (Richardson and Masse [15], Thanner [16]).

The ethical committee of the university hospital is not responsible for anonymous surveys on employees. Yet, we had discussed general aspects of these surveys with the committee. We discussed this survey with the staff council, which is in charge of the rights of the employees. The staff council approved and consented to the questionnaire.

An explanation pointing out the aims of the study, and the fact that participation in the survey was both voluntary and anonymous was given in the introduction of the questionnaire; participants cannot be identified from the material presented. A statement was included that all participants who completed the questionnaire consented to taking part in the survey. The survey was acknowledged by the board of directors.

statistics

Analysis of frequencies and cross tables with chi-square tests for univariate analyses was carried out using IBM SPSS Statistics 20.

results

Overall, 547 employees took part in the survey (13% of all employees), 75% were females (n = 410) and 25% were males (n = 137). Regarding professional categories, 33% (n = 180) were nurses, 22% (n = 120) were physicians and 21% (n = 114) were staff in research. Fifty-five percent (n = 301) quoted that they had a family member or close friend with cancer, 45% (n = 246) did not.

Altogether, 66% (n = 361) are interested in CAM in general. Female employees are significantly more frequently interested in CAM than males (80% versus 20%; \( P = 0.001 \)); physicians are significantly less interested in CAM than nurses (57% versus 72%; \( P = 0.008 \)) (Figure 1). There was no significant difference between male and female physicians or nurses.

The agreement with different reasoning in favor of or against using CAM in cancer patients is shown in Table 1.

Gender has a strong impact on attitudes toward CAM. Male participants are more skeptical toward CAM. They significantly more often do not recommend CAM because scientific data are missing (12% versus 4%; \( P = 0.004 \)). They more frequently take into consideration side effects of CAM (42% versus 19%; \( P < 0.001 \)) and agree with the notion that CAM can reduce patients’ compliance with conventional medicine (39% versus 24%; \( P = 0.001 \)).

Employees who are interested in CAM more frequently agree that these methods can reduce side-effects (66% versus 45%; \( P < 0.001 \)), and may help patients to better cope with their disease (77% versus 65%; \( P = 0.003 \)) and are in accordance with patients’ desire for “soft” therapy (50% versus 28%; \( P < 0.001 \)). In contrast, they are less frequently afraid of adverse effects of CAM (21% versus 33%; \( P = 0.006 \)). Furthermore, they less often believe that patients may be less compliant with conventional therapy because of using CAM (24% versus 36%; \( P = 0.004 \)).

Employees with personal contact to a cancer patient believe significantly more often that CAM can alleviate side-effects (64% versus 54%; \( P = 0.019 \)). They are more often aware of possible side-effects due to CAM (29% versus 20%; \( P = 0.021 \)). Physicians with a relative or friend affected by cancer agree more frequently to CAM helping to cope (\( P = 0.054 \)). The attitudes of nurses did not correlate with affection in the family.

Whereas only 2.5% of physicians stated that CAM are as effective as conventional therapy, 9% of nurses are convinced of this (\( P = 0.029 \)). Physicians more often believe that CAM help patients cope with their illness (80% versus 68%; \( P = 0.027 \)). Overall, 52% of physicians and 12% of nurses agreed that CAM may have adverse effects (\( P < 0.001 \)). Physicians were also more aware of side-effects of CAM (37% versus 18%; \( P = 0.001 \)). In our analysis, we did not find any difference between male and female physicians. In contrast, female nurses more often agreed to the idea that although CAM may not help patients it will also not do any harm (\( P = 0.007 \)).

Only 20% of all participants did consider themselves adequately informed about CAM, 73% did not (23% of physicians and 15% of
Female employees were less satisfied with their knowledge than males (adequate knowledge in 20% versus 29%; \( P = 0.035 \)). Those who are interested in CAM more often state that they are not adequately trained on CAM (adequate knowledge in 18% versus 29%; \( P = 0.006 \)). (Figure 2)

One-third of participants would use CAM on cancer patients, only 4% definitely not (no influence of gender). There was no significant difference between physicians and nurses. Those interested in CAM more seldom stated that they never would treat a cancer patient with CAM (1% versus 10%; \( P < 0.001 \)).

Considering a patient with advanced cancer without conventional therapeutic option, 42% definitely would use CAM, 29% would do so only if the patient would ask for it, 27% do not know or did not answer the question and only 2% would deny it.

discussion

To the best of our knowledge this is the first survey regarding attitudes of employees of a university hospital toward CAM in oncology. Two-thirds of all employees are interested in CAM. This is mainly due to the very high interest of females (80%), whereas only one-fifth of males are interested. Accordingly males are more skeptical with respect to positive effects of CAM. Nurses are more interested than physicians. While half of physicians are aware of possible adverse events due to CAM, only a minority of nurses is.

Less than 5% of participants stated that they never would use CAM on a patient with cancer, while one-third would do so without a doubt. In the case of a patient with advanced cancer without conventional therapeutic option, two-third would use CAM and only 2% would deny it. In contrast, participants rated their own knowledge on CAM as low—less than a quarter of physicians and even less nurses think themselves adequately informed.

The fact that female employees are more often interested in CAM than males is in line with the greater interest of female patients (Downer et al. [17], Heese et al. [18], Richardson et al. [19], Miller et al. [20]). The explanations provided most often for this fact in the literature are in the higher interest of females in all topics regarding health and their higher willingness to care for themselves. Another (additional) explanation is their higher preparedness to accept a holistic approach to the human being and accordingly to illness, accepting mind–body–soul approaches more easily. A female predominance in the group of physicians and nurses could not be found. Explanations for this fact could not be derived from the data. It is conceivable that those professionals who are in closest contact with patients are aware of patients' needs, so that individual differences due to gender and other personal characteristics may not be of importance.

The two statements on effects of CAM most often agreed upon by the participants of our survey are “Maybe these methods alleviate side effects” (54%) and “These methods help patients cope with their disease” (66%). These statements are in accordance with patients' reports on perceived benefit from CAM (Eng [10], Davidson [21], Hann [22], Molassiotis [2], Verhoef [23]). Thus far, professionals and patients consent to the same possible benefits of CAM.

Also in line with patients' estimates (Eschiti [3]), only a small number of professionals are aware of the risks of CAM.

From the point of view of the oncologist, CAM is a particularly sensitive issue, since there are reasonable doubts regarding the safety of many of the medicinal products and treatments. Genuine side-effects and, above all, interactions may

Table 1. Agreement with arguments for or against complementary and alternative medicine (CAM)

<table>
<thead>
<tr>
<th>Arguments for and against CAM</th>
<th>Percentage of employees who agreed (%)</th>
<th>Percentage of female employees who agreed (%)</th>
<th>Percentage of male employees who agreed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>These methods are as effective as conventional medicine</td>
<td>5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>These methods perhaps are not effective but they do not do harm neither</td>
<td>35</td>
<td>39</td>
<td>36</td>
</tr>
<tr>
<td>Maybe these methods alleviate side effects</td>
<td>54</td>
<td>61</td>
<td>54</td>
</tr>
<tr>
<td>These methods help patients cope with their disease</td>
<td>66</td>
<td>75</td>
<td>67</td>
</tr>
<tr>
<td>These methods meets with patients desire for “soft” therapies</td>
<td>39</td>
<td>42</td>
<td>44</td>
</tr>
<tr>
<td>As science has only few facts on these methods I do not recommend them</td>
<td>6</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>These methods can also do harm</td>
<td>23</td>
<td>19</td>
<td>42</td>
</tr>
<tr>
<td>These methods can make the patient less compliant with conventional therapy</td>
<td>25</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>This is a topic which can harm my career, therefore I do not recommend it</td>
<td>1</td>
<td>0.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Figure 2. Self-assessment of knowledge about complementary and alternative medicine (CAM).
threaten success of conventional therapy. In summary, in our
survey a high interest in CAM and a high willingness to use
CAM combined with a low awareness of risks and lack of
knowledge on the topic were found. These data are in
accordance with those from the literature (Frenkel et al. [24],
Muenstedt et al. [14]). Moreover, reliable information is difficult
to find even for physicians accustomed to evidence-based
research on information (Boddy and Ernst [25]).

On the other hand, one of the most important problems
patients looking for information on CAM face is that
communication on CAM is hampered for several reasons.
Physicians are mostly uninformed about CAM or at least
patients do not think them to be informed (Richardson and
Masse [15], Robinson and McGrail [12], Saxe et al. [13]).

To the best of our knowledge, no study before has pointed to
the significant differences in the attitudes of physicians and
nurses in this context. This issue is thought to be worth of
further consideration and study. This difference could be due to
nurses being less acquainted with the evidence-based approach
of modern medicine and its implications for daily practice. We
have to consider whether they—according to their work—focus
more on the individual patient and accept positive individual
effects “felt” by the patient as positive outcome parameters
without need for statistical evaluation. This would be in line
with a more holistic approach putting the individual into the
center of care. Whatever the reason is, in daily practice this
difference could be meaningful and have a strong influence on
the cooperation between the two groups of professionals.

This lack of questions and answers to some of our findings is
one of the drawbacks of our study. In order to proceed with the
topic, more research is necessary and we will continue our work
with more advanced surveys based on our first data. Another
limitation of our study is the small percentage of the total
employees which took part in the study (13%) and the setting of a
visit at the occupational health service. The question is, whether
this group is representative at all. In fact, we are not able to prove
this. Comparing the population taking part in our survey with data
from the hospital, we had 75% female participants while the
university hospital employs 60% women. The proportion of
physicians and scientists to the study population is 43%. In the
university clinic it is 27%. Considering nurses, they represent 33%
of our study population and 35% of employees.

Most employees come for a routine visit on a regular basis or
for vaccinations (seasonal as well as others). Thus, we do not
have a high number of individuals in our survey visiting the
occupational health service because of (serious) illnesses, which
might make them more inclined to consider patients attitudes
and accept CAM as healthy employees do. One might also
discuss that only those interested in the topic at all would
consent to fill in the questionnaire—a problem arising with all
surveys conducted in this manner.

In Germany, some cancer centers try to deal with the
growing number of patients using CAM by cooperating with a
professional for naturopathy. To our mind, this “integration”
(also called “Integrative Medicine”) must be considered
carefully as using CAM can have strong influences on patients’
outcome in oncology as has been briefly discussed above. If
counseling on CAM is provided by professionals not profoundly
familiar with cancer therapies this may lead to essential risks.

Advice on CAM treatments must be given taking into
consideration conventional treatment as can only be done by
the oncologist. Integrative Oncology may be introduced into
cancer care by training oncologists and other professionals as
nurses on the topic as part of continuous medical education.


disclosure

The authors have declared no conflicts of interest.

references

page2 (01 June 2013, date last accessed).
3. Eschiti VS. Lesson from comparison of CAM use by women with female-specific
cancers to others: it’s time to focus on interaction risks with CAM therapies.
4. Velicer CM, Ulrich CM. Vitamin and mineral supplement use among US adults after
in a phase 1 clinical trials program: the MD Anderson Cancer Center Experience.
6. Huber R, Koch D, Beiser I et al. Experience and attitudes towards CAM—a survey
of internal and psychosomatic patients in a German university hospital. Alter Ther
7. Nagel G, Hoyer H, Kaltenkamp D. Use of complementary and alternative medicine
by patients with breast cancer: observations from a healthcare survey. Support
8. Schöneika K, Mickle O, Muecke R et al. Use of complementary/alternative
therapy methods by patients with breast cancer. Forsch Komplementarmed Klass
9. Mickle O, Buntzel J, Kisters K et al. Complementary and alternative medicine in
lung cancer patients: a neglected phenomenon? Front Radiat Ther Oncol 2010;
42: 198–205.
and alternative medicine use in men recently diagnosed with prostate cancer.
11. Muenstedt K, Entezami A, Walterp Bo et al. The attitudes of physicians and
oncologists towards conventional cancer therapies (ICT). Eur J Cancer 2000; 36:
2090–2095.
13. Saxe GA, Madlensky L, Keasy S et al. Disclosure to physicians of CAM use by
breast cancer patients: findings from the women’s healthy eating and living study.
Integr Cancer Ther 2008; 7: 122–127.
medicine: comparison of current knowledge, attitudes and interest among German
medical students and doctors. Evidence-Based Complement and Alternative
15. Richardson MA, Masse LC. Discrepant views of oncologists and cancer patients on
16. Thanner M. Geld oder Glaube? Warum Schulmediziner alternative Heilverfahren
therapies by cancer patients receiving conventional treatment. BMJ 1994; 309:
86–89.
19. Richardson MA, Sanders T, Palmer JL et al. Complementary/alternative medicine
use in a comprehensive cancer center and the implications for oncology. J Clin
Dietary intake of acrylamide and pancreatic cancer risk in the European Prospective Investigation into Cancer and Nutrition (EPIC) cohort


1Unit of Nutrition, Environment and Cancer, Cancer Epidemiology Research Program, Catalan Institute of Oncology (ICO-IDIBELL), Barcelona, Spain; 2Dietary Exposure Assessment Group, International Agency for Research on Cancer, Lyon, France; 3Department of Public Health and Clinical Medicine, Nutritional Research, Umeå University, Umeå, Sweden; 4Nutritional Epidemiology Group, International Agency for Research on Cancer, Lyon, France; 5Inserm, Centre for research in Epidemiology and Population Health (CESP), Nutrition, Hormones and Women’s Health team, Villejuif, France; 6Paris-Sud University, Villejuif, France; 7Molecular and Nutritional Epidemiology Unit, Cancer Research and Prevention Institute—ISPO, Florence, Italy; 8Department of Preventive and Predictive Medicine, Nutritional Epidemiology Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy; 9Department of Cancer Registry and Histopathology Unit, ‘Civile’—M.P. Azzarelli Hospital, Ascoli Piceno, Italy; 10Department of Medicine Clinica e Chirurgia, Federico II University of Naples, Naples, Italy; 11Centre for Environment and Health, School of Public Health, Imperial College London, London, UK; 12Human Genetics Foundation (HuGeF), Turin, Italy; 13Public Health and Participation Directorate, Health and Health Care Services Council, Asturias; 14Navarr Public Health Institute, Pamplona; 15CIBER Epidemiology and Public Health CIBERESP; 16Department of Health of the Regional Government of the Basque Country, Public Health Division of Gipuzkoa, BIODonostia Research Institute, San Sebastian; 17Department of Epidemiology, Murcia Regional Health Council, Murcia; 18Department of Health and Social Sciences, University of Murcia, Murcia; 19Andalusian School of Public Health, Granada, Spain; 20Cancer Epidemiology Unit, Nuffield Department of Clinical Medicine, University of Oxford, Oxford, UK; 21Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK; 22MRIC Epidemiology Unit, Institute of Metabolic Science, Addenbrooke’s Hospital, Cambridge, UK; 23Julius Center for Health Sciences and Primary Care, University Medical Center, Utrecht, The Netherlands; 24Department of Epidemiology & Biostatistics, School of Public Health, Imperial College London, London, UK; 25WHO Collaborating Center for Food and Nutrition Policies, Department of Hygiene, Epidemiology and Medical Statistics, University of Athens Medical School, Athens, Greece; 26Helinck Health Foundation, Athens, Greece; 27Department of Epidemiology, Harvard School of Public Health, Boston, USA; 28Bureau of Epidemiologic Research, Academy of Athens, Athens, Greece; 29German Institute of Human Nutrition, Potsdam-Rehbrueck, Nutritional Epidemiology Division of Cancer Epidemiology, German Cancer Research Center (DKFZ), Heidelberg, Germany; 30Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden; 31The Medical Biobank at Umeå University, Umeå; 32Departments of Surgical and Perioperative Sciences, Surgery and Public Health, Clinical Medicine, Nutrition Research, Umeå University, Umeå; 33Department of Clinical Sciences, Diabetes and Cardiovascular Disease, Genetic Epidemiology, Lund University, Clinical Research Centre, Malmö; 34Department of Clinical Sciences, Nutrition Epidemiology, Lund University, Malmö, Sweden; 35Department of Epidemiology and Social Medicine, Department of Public Health, Aarhus University, Aarhus; 36Danish Cancer Society Research Centre, Institute of Cancer Epidemiology, Diet, Cancer and Health, Copenhagen, Denmark; 37Department of Community Medicine, Faculty of Health Sciences, University of Tromsø, Tromsø, Norway; 38Department of Medical Epidemiology and Biostatistics, Karolinska Institute, Stockholm, Sweden; 39Public Health Association, Public Health Research Center, Helsinki, Finland; 40National Institute for Public Health and the Environment (RIVM), Bilthoven; 41Department of Gastroenterology and Hepatology, University Medical Centre, Utrecht, The Netherlands

Received 30 April 2013; revised 27 May 2013; accepted 28 May 2013

Background: In 1994, acrylamide (AA) was classified as a probable human carcinogen by the International Agency for Research on Cancer. In 2002, AA was discovered at relatively high concentrations in some starchy, plant-based foods cooked at high temperatures.

© The Author 2013. Published by Oxford University Press on behalf of the European Society for Medical Oncology. All rights reserved. For permissions, please email: journals.permissions@oup.com.

†Both the authors contributed equally.