Integrative Cancer Therapies
Volume 20: 1–10

DOI: 10.1177/15347354211004730
journals.sagepub.com/home/ict
SAGE

Integrative Oncology: An International Perspective from Six Countries

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Abstract

In June 2019, a meeting was held in Paris in which experts from different countries (Israel, Spain, Belgium, Italy, USA, and France) met to discuss a selection of topics in integrative oncology (IO). The objectives were to draw on the delegates' experience and expertise to begin an international collaboration, sharing details of differing existing models and discussing future perspectives to help define and guide practice in IO and define unmet needs. This report presents a summary of the meeting's main presentations, and also reports on the experts' responses to a questionnaire examining different aspects of IO service delivery, infrastructure, and utilization.

Keywords

Cancer care, Health care, Homeopathy, Integrative Oncology, Complementary Medicine, Supportive care

Submitted February 11, 2021; revised February 11, 2021; accepted February 23, 2021

Introduction

Cancer development and clinical progression is influenced by a broad range of factors, encompassing genetics, and epigenetics, as well as external environmental factors, diet, and lifestyle, each of which influences the tumor microenvironment.[1] Addressing these requires a holistic approach to cancer care which includes a healthier lifestyle (diet and exercise) along with personalized cancer treatment approaches and tailored supportive care therapies.[2] Integrative care is well-fitted to this holistic approach. Integrative oncology (IO) can be defined as patient-centered, evidence-based cancer care that uses mind and body practices, natural products, and lifestyle modifications from different traditions alongside conventional cancer treatments.[3] Its adoption into routine clinical care of cancer patients is an important development in current oncology practice.[3]

On June 24, 2019 a meeting was convened at the Rafael Institute in Paris at which experts from 6 different countries (Israel, Spain, Belgium, Italy, USA, France) met to discuss a selection of topics in IO. The meeting was chaired by Dr Alain Toledano. The meeting's objectives were to draw on the delegates' experience and expertise to begin an international collaboration, sharing details of differing existing models and discussing future perspectives on use of complementary/integrative medicine (CIM) therapies in cancer care, to help define and guide practice in IO and define unmet needs. Experts presented an overview of aspects of IO care in their countries; Santosh Rao (United States), Jean-Lionel Bagot (France), Elio Rossi (Italy), Ingrid Theunissen (Belgium), Moshe Frenkel (Israel), and Gualberto Díaz-Sáez (Spain). These presentations had no pre-defined format, comprising material considered informative to a broader audience who may be unfamiliar with the status of IO in their respective countries.

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This was followed by an open roundtable discussion among the experts on the challenges and perspectives in the current IO landscape. In addition, each expert then completed a structured questionnaire designed to assess key characteristics of IO in their respective countries, from which strengths of current practices can be identified, along with potential challenges that may exist in achieving wider global implementation of integrative cancer care.

This report provides a summary of these presentations, results from the survey, and a perspective on the subsequent discussions.

Country Perspectives

United States

Data indicates that a majority of cancer patients use some form of CIM with use increasing recent years,[4,5] although this is not always disclosed to their physicians. However, some confusion exists regarding the role of CIM alongside conventional care, including drug-herb interactions and potential impact on compliance with conventional care. The wealth of information available to patients on a large range of alternative (or non-conventional) medicinal products, many of which exist in a largely unregulated environment, is vast and complex. As such, a fuller understanding of the role of IO by all healthcare professionals (HCPs) involved in cancer patient care, and of the supporting evidence, is of some importance in guiding clinicians (and advising patients) on possible therapies.[6]

A wide range of professional guidelines with recommendations on the use of CIM in cancer care is available, some in the context of specific cancers for example, breast and lung cancers.[7-10] Such recommendations are evidence-based, although the quality of evidence is often limited, which in turn places some limitations on what can be recommended. For some therapies the evidence is generally well regarded, for example the use of acupuncture to alleviate chemotherapy induced nausea and vomiting and also hot flashes associated with breast cancer hormonal therapy, while massage can reduce pain and anxiety.[8] Exercise is associated with improved survival in a range of cancers (e.g., breast, colon, breast cancer).[11] Stress management via many relaxation techniques such as meditation, yoga, biofeedback, and improved sleep is also recommended.[8] This facilitates wider adoption in CIM practice. For others for example, use of a homeopathic medicine to alleviate hot flashes, the evidence, supportive[12] is more limited, and use may be influenced by physician and patient experience and acceptance. Evidence-based medicine has a hierarchal approach to grading quality of evidence, ranging from expert opinion, then case reports, cohort studies, with randomized controlled trials (RCTs) and then systematic review and meta-analysis of RCTs graded highest. While such an approach is ideal, conducting RCTs may not always be practical or feasible, or indeed the best way to evaluate complementary therapies when outcomes may be subjective.[13] The "whole systems research" (WSR) approach, often evaluating multimodal CIM therapies and their impact on often self-reported patient outcomes, offers a pragmatic alternative to conventional clinical study design for CIM therapies.[14]

In the US, herbal and homeopathic products are subject to different regulatory requirements. Herbal supplements are categorized as dietary supplements by the FDA, where manufacturing standards are regulated but approval based upon efficacy and safety is not necessary. As such, benefits and side effects of herbal supplements are not subject to typical FDA oversight, and potential herb-drug interactions may exist. Dosing aspects may also confuse patients. Patient discussion with their physician can be helpful in reducing uncertainty, as can discussion between IO care experts and physicians in reducing physician concerns about any potential herb-drug interactions.[15] In contrast, homeopathic medicines are regulated by the FDA in accordance with the Food, Drug and Cosmetic Act and more recent compliance guidelines, and subject to more defined safety and efficacy processes.[16,17] Reimbursement of CIM therapies in the US is a challenging environment, and varies nationally. Cost-effectiveness analyses are limited, and studies demonstrating cost savings are required to support changes to existing systems. Differences in reimbursement pathways can arise depending upon the status and license held by of healthcare provider.

In most leading comprehensive cancer centers, a typical IO consult takes a multidisciplinary approach beginning with complete medical history, current status and then assessment of the patient's lifestyle, mood and mental/emotional state, and sleep patterns, any spiritual concerns, and current use of complementary therapies including supplements. An IO care plan is then developed and proposed to the principal treating physician; while individual clinicians make their own strategic decisions on what CIM modalities to include (based in part on the level of supportive evidence), the IO team can provide advice and education, often based on personal experience, when concerns remain about CIM recommendations. Commonly used therapies include acupuncture, yoga, exercise regimens, and meditation techniques, and the prudent use of natural supplements (e.g., turmeric, melatonin, vitamin D3).

France

In France, CIM is used by up to 60% of cancer patients during their treatment. A national Cancer Plan (2003-2007) allocated some of its measures and funding to provide cancer patients with holistic support, beyond technical protocols, through the development of complementary and palliative care; this plan was then subsequently renewed for

2009–2013 and 2014–2019. While use and choice of specific therapies can vary across the country, homeopathy is the most common: 30% of cancer patients use it.[18] The principal reason for use is to reduce the side effects of cancer treatments.[18-21] There are 15 cancer centers across France offering homeopathy within IO care, provided either by homeopathic practitioners with oncology training or oncologists with homeopathic training.

The International Homeopathic Society for Supportive Care in Oncology (IHSSCO; shisso-info.com) was established in 2016, to facilitate and develop practice, teaching, research and promotion of homeopathic therapy in IO care.[22] Treatment recommendations developed by expert consensus have been published for use of homeopathy to alleviate symptoms before, during and following primary treatment (surgery, chemotherapy, radiotherapy, and targeted/hormonal therapy) and as palliative care; at each stage, patients can benefit from an individualized homeopathic consultation.[23] Homeopathic treatments are often given for symptoms less responsive to conventional care (e.g., fatigue, hot flashes, musculoskeletal pain, emotional disorders) and these IHSSCO recommendations are based on the best available evidence.[24-30] Much is derived from observational studies and personal experience; however, supportive data from a pragmatic RCT exists for the benefits of homeopathy in management of adverse effects of chemotherapy, immunotherapy, and hormonal therapy.[28]

IO is gradually getting established in France through a range of initiatives. These include the development of "*Les Centres Ressource*" (www.federation-ressource.org), where at present there are now 7 centers across France providing individualised IO programs using a range of CIM therapies. These services are provided free at the point of delivery, funded by a mixture of insurance contributions and charitable donations. Conventional cancer therapies are not available within these centers; such treatment is provided elsewhere via the oncologists responsible for their care. To date, over 800 patients have received IO care through these centers.

A milestone for the development of IO in France has been the opening near Paris in 2018 of the Institut Rafaël (www.institut-rafael.fr).[31] This facility allows oncologists, medical specialists, and other HCPs to work together within the same center, to offer and deliver coordinated personalised supportive care, during and after their principal cancer treatments. Available CIM therapies include adapted physical activity, acupuncture, homeopathy, nutrition, psychological support, onco-esthetics, mind-body therapies, and art and drama therapy. These are provided at no cost to the patient, with costs supported by private funding and charitable donations to the Institute. To date, in the first 18 months, supportive IO care has been provided to 1366 patients (comprising a total of 11 630 individual treatment sessions).[31]

In December 2019 the first Outpatient Integrative Health Department opened in Strasbourg in the Clinique Toussaint, St Vincent Hospital group (www.ghsv.org). This provides a one-day IO program for cancer patients where, following an evaluation by the coordinating physician, a wide range of CIM therapies are available: homeopathy, physiotherapy, nutrition advice, acupuncture, auriculotherapy, psychological support, mind-body therapies, aromatherapy, and esthetic cancer support. Care is provided within the outpatient department and free of any patient costs. An additional recent milestone was the first IO congress held at the Andrée Dutreix Institute in Dunkirk in November 2019.

Italy

Data from a survey of European IO centers indicates that while acupuncture is the most commonly provided CIM therapy, offered in 55.1% of centers, homeopathy (40.4%), herbal medicines (38.3%), and traditional Chinese medicine (36.2%) are also frequently used.[32] Some variation exists across countries; for example, in Italy, the 3 principal therapies provided in public IO and palliative care centers are acupuncture (73.7%), homeopathy (36.8%), and herbal medicine (26.3%), with CIM provided chiefly to alleviate adverse responses to radiation and chemotherapy (in particular nausea and vomiting) and symptomatic relief of pain and fatigue, iatrogenic menopause, and mood disturbance.[32]

The number of IO centers continues to expand across Europe. In Italy, substantial experience in IO exists in Tuscany, with close collaboration between oncologists and IO experts since 2009,[33] but also in some other towns as the hospital of Merano (Bolzano), Torino, Milano, Bologna, Correggio (Reggio Emilia), Roma, Ortona (Chieti), and very recently Modena. In Tuscany, development of an operating model for integration of CIM therapies, including homeopathy, within the broader oncology care across public health services has led to establishment of publicly funded IO clinics in all of the major cities in the region, serving as an important element of multidisciplinary cancer care.[33-35] To date the greatest experience is in breast cancer, although colon and lung cancer patients, as well as those with prostate and gynecological cancers also receive integrative care. The latest milestone is the publication of regional guidelines on breast cancer (a Diagnostic-Therapeutic Care Pathway), which includes numerous indications on the use of CIM.[36] In addition, a network of public IO clinics is being set up under the aegis of the Tuscany Regional Center for Integrative Medicine (https://www.regione.toscana.it/-/notiziario-regionale-delle-medicine-complementari) to guarantee patients with cancer uniform access to supportive CIM therapies throughout the region in order to improve the quality of life and develop a multidisciplinary approach to therapy.[33] Financial support of 1 million Euros to fund research in IO projects has also been

made available by the regional healthcare authority. This has fostered a wide range of clinical research on the benefits of IO care. A retrospective, observational study in 357 patients with a diverse range of cancer types found that homeopathy and other CIM therapies led to significant improvements in a range of cancer and cancer treatment-related symptoms (nausea and vomiting, hot flashes, pain, and arthralgias) as well as reducing insomnia, anxiety, and depression.[37] Another observational study on 204 patients with breast cancer also found significant reductions in adverse effects due to systemic anticancer therapy following treatment with CIM (principally homeopathy), with substantial reduction in radiodermatitis observed when homeopathy is given as a preventive agent during radiotherapy.[38]

Belgium

In Belgium, conventional supportive cancer care includes psychological support, pain management, and more recently, physical activity. Use of CIM in IO care in Belgium is evolving. Until recently, most cancer patients who seek CIM therapies consult CIM practioners outside the hospital, and rarely communicate about it with their oncologist. Although CIM therapies are widely used by cancer patients, and some are partially covered by health insurance, at present these are not yet integrated into routine cancer care.

The Belgian Society of Medical Oncology (www.bsmo.be) has established a "Supportive Task Force" working to assess CIM offered within oncology services across the country. The first CIM treatments organized in the hospital setting were funded by associations/charities and consisted mainly of therapeutic massages and skincare. This model has evolved, with the creation of "support houses" affiliated with major cancer centers offering a wide range of CIM activities for cancer patients at all stages of their disease including palliative care (at low cost as most CIM practitioners act on a voluntary basis). Individual support houses have subsequently congregated under the aegis of a supportive organization, the Majin foundation (www.majinfoundation.org) to provide a more uniform standard of IO care.

Another model of IO care delivery is based on individual initiatives by trained CIM practitioners, where in addition to their routine clinical commitments, physicians organize, and deliver CIM care within their institution. In the Delta Hospital in Brussels, there has been a formal IO consultation as part of care delivered by a gynecologist trained in CIM within the breast cancer clinic since 2018. Participation in multidisciplinary oncology care and receiving IO consultation referrals from fellow oncologists is increasing, along with active involvement in patient workshops where patients can be introduced to the full range of available CIM therapies. These activities receive widespread support and communication within the institution's oncology care network, and external financial support for specific clinical activities, including evaluation of integrative care to enhance adherence to endocrine therapy in breast cancer.

Israel

Use of CIM in the conventional medical setting has been advancing at great strides throughout Israel, where these therapies are offered across different hospital specialties (oncology, psychiatry, surgery, cardiology, and others) throughout the country, with community care services also available. Therapies are widely accessible, with herbal and homeopathic medicines available through pharmacies and in health food stores. A positive attitude by HCPs toward integrative care exists across most medical disciplines, with HCP referrals to IO practitioners steadily increasing over the past 20 years.[39]

IO care is available in 10 oncology centers spread across the country. Data from a national survey indicates that in all of these centers, use of IO care is focused on improving patients' quality of life, within the context of supportive and/or palliative care.[39] Patients receive CIM treatments at different stages of their disease and treatment, including during active chemotherapy and radiation therapy, as well as before and after surgery. IO services following the completion of chemotherapy/radiation therapies and during the convalescence phase are also provided. Most IO centers provide treatment to patients with solid tumors, with only 2 treating patients with hematological malignancies. Only one of the participating centers reported that they were also providing CIM to family members, while 2 centers also provide to the HCPs and other staff delivering care.[39] Service delivery is multidisciplinary, involving nutritionists, pharmacists, physiotherapy, acupuncture and mind and body practitioners, touch therapy specialists, and holistic focused nurses and physicians.[39] Referrals may involve patients considering or actively using CIM and direct requests from oncologists and other members in the healthcare team, such as nurses and social workers, who feel that patients would actively benefit from integrative care.

Establishing such services begins with active education of HCPs on the role and benefits of integrative care and the supporting clinical evidence.[8,40] Evaluating individual patients' clinical needs is paramount; this begins with symptom assessment (e.g., pain, fatigue, mood disturbance) using appropriate tools such as the Edmonton Symptom Assessment System (ESAS). Addressing patients concerns can be measured using tools such as the Measure Yourself Concerns and Well-being (MYCaW) scale.[40] From this, the IO care program can be individualized and tailored to each patient. Clinical decision making is guided by the scientific evidence for benefit in different clinical situations.[8]

Spain

CIM is frequently used in Spain. The national "Healthcare Barometer" published by the CIS (Center for Sociologic Investigations of the Ministry of Presidency) in February 2018 listed the use of 20 non-conventional therapies in the previous 12 months; the most popular being therapeutic

massage (20%) botanicals (17%), meditation (10%), homeopathy (10%), yoga, Reiki, and osteopathy (9.5% each), then hypnotherapy (2%).[41] While there are no specific national surveys on the use of CIM in cancer patients, data from smaller surveys indicates reasonably frequent use. In a pan-European survey of cancer patients reported in 2005 by Molassiotis et al, the use of CIM was reported by 34/115 Spanish participants (29.8%), most frequently herbal preparations.[42] A hospital-based study in Catalonia from 2007 identified the use of complementary therapies in 66% of patients: one-third of which were "mind-body" techniques, one-third were herbal/botanical based preparations, while the remainder included homeopathy and manual therapies.[43] In a more recent study from Navarra in cancer patients receiving chemotherapy in ambulatory care, use of CIM was reported by 102/316 patients (32.3%).[44] Of these, the great majority took oral preparations; botanicals/herbs (66%), natural remedies (38.5%), vitamins/minerals (35.2%), and homeopathic medications (17.6%). In addition, 36.3% patients receiving CIM practiced a range of manipulation or "mind-body" interventions; most commonly were yoga, reiki, acupuncture, and relaxation exercises. Most of these patients (81.4%) began using CIM therapies after cancer diagnosis, with a median duration of use of 4.5 months (range, 0-180 months); approximately 65% of CIM users perceived some kind of improvement with its use.[44]

At present in Spain, CIM therapies are available in the private sector, and only some are covered by health insurance, while provision within the public health system is limited. As such, most CIM provided as IO services are fully paid for by the patient. Delivery is mostly in parallel with conventional care; few hospitals have an integrative medicine unit or CIM service. Those that do so are chiefly in larger cities including Madrid and Barcelona, where some services are available (e.g., acupuncture for pain relief, or homeopathy for alleviation of chemotherapy adverse effects, and meditation/yoga groups) although delivery is not systematic. Access to IO services is usually at the request of patients. In those centers providing IO care, patients are initially evaluated by the consultant who then advises on available IO therapies appropriate to their disease and planned oncology treatment. Frequently patients are seeking for specific CIM therapies, rather than multidisciplinary, coordinated, truly integrative advice. It should be recognized that providing IO services has been hindered or curtailed due to pressure from anti-CIM lobbies; indeed, there remains increasing public hostility toward CIM within Spain.[45]

The principal professional organization advocating CIM is the Spanish Society for Integrative Medicine and Health (SESMI; www.sesmi.es) which also has an IO workgroup, which has recently published a textbook of IO for HCPs.[46] Postgraduate education in CIM is available in Spain, where SESMI has also developed a Masters program on integrative medicine for HCPs, with a module on IO.

Meeting Round-Table Discussion

Following these presentations, the experts then convened to discuss the presentations and also a general discussion of topics covering the IO landscape in their respective countries, spanning available CIM therapies used in IO care and the supportive infrastructure in terms of supportive organizations, funding and reimbursement, training and education, and models of delivery, and service utilization. Due to meeting logistics, individual perspectives of these areas would then be formally documented in a subsequent descriptive survey, where each of the experts from the six different countries provided their personal responses to the questions asked about use of CIM and the status of IO in their respective countries. Key observations from the round table discussion were the following:

IO service availability and delivery. Implementation of IO in routine cancer care continues to evolve, although this is at different stages in different countries. Availability, HCP awareness and patient access is high in Israel, where IO care is well-integrated within the provision of other cancer services. Elsewhere, IO availability is heterogeneous in most other countries, and integration of IO services are usually delivered in parallel with other cancer services, and integration generally low. In Italy, available services are well-established in the Lombardy region, although awareness and services are expanding in other regions. In the US and in France, IO is typically offered through select hospitals or private centers, while in Spain and Belgium, the framework for IO remains relatively immature.

There does not seem to be a single "ideal" model for the provision of IO services. Successful provision involves matching the clinical need with available expertise and resources within the available financial infrastructure to achieve the best local, regional or national solution. In reality, several models may provide this.

Funding challenges. Public funding is patchy in most countries, and services are often provided through charitable endeavours and volunteer services (e.g., as seen in France and Belgium). While clearly supportive of the aim of increasing IO access and delivery, this can impede integration with conventional cancer care. From the patient perspective, CIM therapies are not necessarily covered by reimbursement systems, and this remains a barrier to oncology care and greater adoption of IO. Across most countries the broad picture is that only some private health insurance companies cover packages of some supportive care for *some* patients.

Evidence base. One of the main difficulties faced by IO practitioners is the relative lack of high-quality research to inform and perhaps positively influence greater acceptance by the wider medical community. However, objective assessment of those outcome benefits associated with "wellbeing" that may

Table 1. Characteristics of Integrative Oncology Care in Different Settings.

Characteristic	United States	Italy	France	Spain	Belgium	Israel
National/regional utilization data	Limited	Yes; national and regional	Yes; national and regional	Regional	No	Yes; national and regional
Delivery model (parallel or integrated)	Variable across country and center; parallel more common	Variable across country and centers; parallel	Variable across country and centers; mainly parallel but integrated delivery is increasing	Variable across country and centers; mostly parallel	Few centers; mostly parallel	Variable across country and center; integrated services are common
Dedicated integrated therapy centers	Yes; increasing	Yes; increasing	Yes; increasing	Yes	No	Yes
National society/ recommendations	Yes	Yes	Yes	Yes; International guidance also used	No; follows other national and international guidance	Yes; International guidance also used
Academic training	Included in academic curriculum. Postgraduate courses/diplomas available	Postgraduate courses/diplomas available	Included in academic curriculum. Postgraduate courses/diplomas available	Forms a component of some postgraduate courses	Included in academic curriculum.	Included in academic curriculum. Postgraduate courses/diplomas available
Collaboration with other international networks	Yes	Yes	Yes	Yes	Yes	Yes
Patient reimbursement for integrative therapies	Variable; full reimbursement for some; partial reimbursement for acupuncture; out of pocket costs for botanicals and homeopathy	Variable; reimbursement in some regions (Tuscany) for most therapies; none elsewhere	Variable; complete reimbursement for acupuncture and homeopathy (until 2021), some out of pocket costs for botanicals and supplements	No	No	Variable; partial reimbursement for some therapies; some out of pocket costs for botanicals and homeopathy
Service delivery	Physician-led; some therapies delivered by relevant trained HCP	Physician-led; some therapies delivered by relevant trained HCP	Physician-led; some therapies delivered by relevant trained HCP	Physician- led; some therapies delivered by relevant trained HCP	Physician-led; some therapies delivered by relevant trained HCP	Physician-led; some therapies delivered by relevant trained HCP
Most frequently used modality (in order of use/ preference)	• Supplements • Nutrition • Physical therapy • Psychological support • Mind & body • Manual therapy • Acupuncture • Botanicals • Homeopathy	• Psychological support • Acupuncture • Nutrition • Botanicals • Supplements • Homeopathy • Physical therapy • Mind & body • Manual therapy	• Homeopathy • Physical therapy • Supplements • Nutrition • Acupuncture • Botanicals • Psychological support • Mind and body • Manual therapy	• Mind and body • Botanicals • Nutrition • Homeopathy • Acupuncture • Supplements • Physical therapy • Psychological support • Manual therapy	• Psychological support • Nutrition • Supplements • Homeopathy • Physical therapy • Acupuncture • Botanicals • Mind and body • Manual therapy	• Supplements • Nutrition • Psychological support/ mind & body • Manual therapy • Life style changes • Acupuncture • Botanicals • Homeopathy
Most frequently requested modality (in order of use/preference)	• Supplements • Physical therapy • Psychological support • Mind & body • Acupuncture • Nutrition • Manual therapy • Botanicals • Homeopathy	• Psychological support • Nutrition • Acupuncture • Homeopathy • Botanicals • Supplements • Physical therapy • Mind & body • Manual therapy	• Homeopathy • Nutrition • Supplements • Mind & body • Physical therapy • Botanicals • Manual therapy • Acupuncture • Psychological support	• Botanicals • Nutrition • Supplements • Mind & body • Homeopathy • Acupuncture • Psychological support • Physical therapy • Manual therapy	• Nutrition • Psychological support • Homeopathy • Supplements • Physical therapy • Acupuncture • Botanicals • Mind & body • Manual therapy	• Supplements / nutrition • Manual therapy • Psychological support • Mind & body • Acupuncture • Life style changes • Botanicals • Homeopathy

be achieved with CIM therapies is often difficult. In addition, such therapies are often delivered along with conventional treatments, which makes identifying the benefit of specific elements of IO care per se a challenge. There remains a need for more appropriate methodological approaches to evaluate the benefit of CIM therapies, in particular as the existing evidence base does not necessarily include the most commonly used (and useful) interventions and indications. Data generated from patients receiving integrative IO care provides a valuable resource for analysis, as evident from the outcomes reported from Italian centers described earlier.[37,38] Pragmatic studies and whole systems research methods may also help develop the evidence base for CIM inn IO.[14,28]

Expert Survey

A descriptive survey was developed based upon a set of questions on IO services and supporting framework, and sent to the expert presenters, all of whom supplied responses. Note that as this survey was restricted only to the experts, who are also authors, formal ethical approval was not required. The survey is available in Appendix 1. Key findings from this survey are presented in Table 1.

The responses reiterate some of what was discussed during the meeting, namely that IO service delivery, its integration with conventional cancer care and funding is highly heterogenous across countries. In all countries IO care is delivered in line with available national or International recommendations, although the breadth and scope of these varies substantially and may not cover the full range of available CIMs. There is variation in established teaching and postgraduate training. For example, in the US, inclusion in academic curricula is advanced, and reasonably widespread. In other countries, most IO educational activities are through postgraduate courses, although usually only as part of a broader program on CIMs and their use in integrative care.

Differences also exist in the patient and physician preferences for the type of CIM used. Dietary advice and psychological support are rated highly by most meeting participants and reflect their views on patient preferences. Ranking of other specific CIMs showed no distinct pattern. Some CIMs that were ranked highly in certain countries were infrequently requested or used in other countries; for example, homeopathy was a strong preference in France (and to some extent Spain and Belgium) but infrequently used or requested in the US and Israel.

Discussion

Use of CIM in IO continues to evolve in response to often unmet needs and where patients' expectations have shifted from principally that of survival to a broader concern for their quality of life during and after conventional and often curative cancer treatment.[47,48] Awareness of the availability and benefits of IO by HCPs and also by the broader patient population who may benefit from CIMs as part of their routine cancer care varies greatly between countries, and as does its availability and implementation. While this is apparent from the content and discussion held during the present meeting, this view is commonly reported by others, where cross-sectional studies and systematic landscape analyses of IO services and supporting infrastructure have formally reported on such heterogeneity in IO delivery models across different countries.[47,49] Greater adoption could be supported by greater demonstration of economic benefits of IO care provision, and recommendations that this should be evaluated using the same principles that apply to conventional care therapies have been made.[50] Successful provision of IO services involves matching the clinical need with available expertise and resources within the available financial infrastructure to achieve the best local, regional or national solution. In reality, several models may provide this.

The reasons for the different patterns of IO care and their evolution in different countries (as well as at a more local level) we have described and discussed are multifactorial and may be influenced by social and cultural nuances. One benefit of this is that the differences allow a descriptive benchmarking of models and experiences which, moving forward, may help and guide further development of our own IO initiatives and practices, and we hope may inform a wider audience. Our own working group has already started to benefit from this initial collaboration, and we look forward to expansion and further collaboration with other IO specialists. Future meetings are planned where we hope to evaluate progress and continued challenges in delivering IO care and addressing existing unmet needs.

Study Appendix

Survey Questionnaire

1. **Current landscape of supportive care/IO in your country**
   - (a). Are there national studies about the request of supportive care and IO from patients?
   - (b) Which type of supportive cares are mainly available for cancer patients in your country?
   - (c) Are the existing programs delivered in parallel of conventional care, or fully integrated?
   - (d) Are there dedicated integrative centers? (if yes, how many, format)
   - (e) What is the current main "model" in terms of process/coordination of integrative care in these centers?
   - (f) Is any integrative model currently being evaluated?
   - g) Are there any international partnerships/networks?

2. **Are there specific organizations, networks, scientific societies, syndicates etc to support IO in your country?**
   (a) Are there some recommendations/institutional guidelines?
3. **What is the situation in terms of healthcare system coverage/reimbursement, solidarity, insurance coverage for patients with cancer? (regarding conventional medicine, supportive care, complementary medicine).**
4. **What is the current situation regarding training in IO for healthcare professionals in your country? Is IO included in any Academic programs, taught at university other public/ private programs delivering official credits for example, (CME)?**
5. **Would you have any suggestion for possible funding of such programs in your country such as pharmaceutical or supplement industries, CAM schools, health institutions, Research Foundation, private clinics etc or any "out of the box" suggestions?**
6. **Regarding the following specific IO areas, could you describe in more details their current use in your country as per the below table:**

Therapy	Estimation of the use. Rate answers ranging from 1 (very rare) to 5 (very often)	Request by patients. Rate answers ranging from 1 (not popular) to 5 (very popular)	Prescription and delivery (physicians, other HCPs, others)	Reimbursement by the state / insurance coverage, yes/no
Mind-body therapies				
Homeopathy				
Acupuncture				
Botanical therapies				
Nutrition				
Supplements				
Physical therapy (adapted)				
Psychological support				
Manual therapy (osteopathy, chiropracty)				

7. **Is there any other practice very specific to your country/culture widely used and not mentioned above?**

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The expert authors received no remuneration for the participation in the project or the development of this article. The meeting at the Rafael Institute in which the first part of the article is based, the publication process and the article processing charge were supported by Boiron.

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