Implementation of an Integrative Oncological Concept in the Daily Care of a German Certified Breast Cancer Center

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Keywords

Breast cancer center · Health services research · Integrative oncology · *Viscum album* L. · Anthroposophic medicine

Summary

Background: In recent decades the concept of integrative medicine has attracted growing interest in patients and professionals. At the Gemeinschaftskrankenhaus Havelhöhe (GKH), a hospital specialized in anthroposophical medicine, a breast cancer center (BCC) has been successfully certified for more than 5 years. The objective of the present study was to analyze how integrative strategies were implemented in the daily care of primary breast cancer patients. **Methods:** Clinical, demographic, and follow-up data as well as information on non-pharmacological interventions were analyzed. In addition, BCC quality measures were compared with data of the National Breast Cancer Benchmarking Report 2016. **Results:** Between 2011 and 2016, 741 primary breast cancer patients (median age 57.4 years) were treated at the GKH BCC. 91.5% of the patients showed Union for International Cancer Control (UICC) stage 0, I, II, or III and 8.2% were in UICC stage IV. 97% of the patients underwent surgery, 53% radiation, 38% had hormone therapy, and 25% received cytostatic drugs. 96% of the patients received non-pharmacological interventions and 32% received *Viscum album* L. therapy. Follow-up was performed in up to 93% of the patients 2 years after first diagnosis. Compared to nationwide benchmarking BCCs, the GKH BCC met the requirements in central items. **Conclusions:** The results of the present study show that integrative therapies offered by the concept of anthroposophical medicine can be implemented in the daily care and treatment of a certified BCC. However, as national guidelines on integrative concepts in oncology are missing, further studies are needed for a systematic evaluation of integrative treatment and care concepts in this field.

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Schlüsselwörter

Brustkrebszentrum · Versorgungsforschung · Integrative Onkologie · *Viscum album* L. · Anthroposophische Medizin

Zusammenfassung

Hintergrund: In den letzten Jahrzehnten findet das Konzept der integrativen Medizin wachsendes Interesse bei Patienten und Experten im Gesundheitswesen. Am Gemeinschaftskrankenhaus Havelhöhe (GKH), eine Klinik für anthroposophische Medizin, ist seit mehr als 5 Jahren ein zertifiziertes Brustkrebszentrum (BCC) etabliert. Ziel der vorliegenden Studie war es, die Umsetzung integrativer Behandlungskonzepte in der täglichen Krankenhausversorgung primärer Brustkrebspatienten eines zertifizierten BCC darzustellen. **Methoden:** Klinische und demographische Daten sowie Informationen zur Nachsorge und zu nichtpharmakologischen Anwendungen wurden analysiert. Zusätzlich wurden Kennzahlen des BCC mit Auswertungen des nationalen Jahresberichtes 2016 zertifizierter BCC verglichen. **Ergebnisse:** Im Zeitraum 2011–2016 wurden 741 primäre Brustkrebspatienten (medianes Alter bei Diagnosestellung 57,4 Jahre) am GKH BCC behandelt. 91,5% der Patienten wiesen Tumoren der Union for International Cancer Control (UICC)-Stadien 0, I, II oder III auf und 8,2% der Patienten hatten Tumoren im Stadium IV. 97% der Patienten wurden operiert, 53% erhielten eine Bestrahlung, 38% der Patienten wurden antihormonell und 25% zytostatisch behandelt. 96% der Patienten erhielten nichtpharmakologische Anwendungen und 32% eine Therapie mit *Viscum album* L. Für bis zu 93% der Patienten konnten 2 Jahre nach Diagnosestellung Nachbeobachtungsdaten erhoben werden. Im nationalen Vergleich zu zertifizierten BCC erfüllte das GKH BCC die zentralen Anforderungen. **Schlussfolgerungen:** Die Ergebnisse der vorliegenden Studie zeigen, dass die im Rahmen der anthroposophischen Medizin angebotenen integrativen Therapien in die tägliche Krankenhausversorgung eines zertifizierten BCC implementiert werden können. Aufgrund fehlender nationaler Leitlinien zu integrativen Ansätzen in der Onkologie bedarf es weiterer Studien zur systematischen Evaluation integrativer Therapieverfahren und Versorgungskonzepte.

Introduction

In recent decades the concept of integrative medicine (IM) has attracted growing interest in patients and professionals, both scientists and practitioners [1–4]. The Education Working Group of the Consortium of Academic Health Centers for Integrative Medicine (CAHCIM) indicates IM ‘as an approach to the practice of medicine that makes use of the best-available evidence, taking into account the whole person (body, mind, and spirit), including all aspects of lifestyle’ [5]. Reasons for the use and need of integrative treatment options in oncology have been described previously and include cure or prolongation of life, symptom relief from cancer and its treatment, boost of immunological functions, enhancement of physical, emotional, and or spiritual well-being, as well as maintenance of control over cancer and its treatment [6–13]. Further reasons might be the perception that IM is more natural and beneficial and will cause no harm; dissatisfaction with conventional treatment alone; and congruency between the patients’ philosophical values and the paradigms proposed by IM treatment [2, 14, 15].

Anthroposophical medicine as an IM system is based on scientific standards and guidelines of conventional medicine but integrates a range of treatment options like naturopathy remedies and non-pharmacological interventions (NPIs), including mindfulness-orientated movement therapies (e.g., eurythmy therapy), mind-body procedures, art therapies, and nursing interventions [9, 16–20]. The aim is to promote the physical and psychological salutogenic powers and resources of the patient, to improve the health-related quality of life (HRQL) and to support social and spiritual needs. A special focus is set on coping strategies, shared decision-making, and the patients’ individual health aims.

The German ‘National Cancer Plan’ was established between the years 2008 and 2010 [21], implementing certified organ and cancer centers (CCs). CCs are specialized departments with guideline-oriented high-standard procedures; they comprise at least 3 organ-specific centers, demanding widespread structural and professional expertise [21–23]. The Gemeinschaftskrankenhaus Havelhöhe (GKH) as a general hospital and certified CC offers primary and secondary care and patient-centered anthroposophical medicine for oncological patients. The Department of Gynecology and Obstetrics at the GKH has been successfully certified as a breast cancer center (BCC) since 2012. BCCs have to meet specified requirements based on an approved quality management system. Diagnostic procedures and treatment have to be in accordance with the guidelines of the German Cancer Society (Deutsche Krebsgesellschaft, DKG), the German Cancer Aid (Deutsche Krebshilfe, DKH), and the Working Group of Scientific Medical Societies (Arbeitsgemeinschaft der wissenschaftlichen medizinischen Fachgesellschaften, AWMF). Psycho-oncological and social support must be offered and continuous medical and scientific training of the staff is mandatory. The central organization is the weekly interdisciplinary tumor board involving experts from all relevant oncological disciplines for consented treatment recommendations. Patients must be followed up at 6-month intervals to gain complete documentation of the treatment history. National benchmarking data analyses are regularly published by the DKG [23].

Table 1. Baseline characteristics of the primary breast cancer patients

Characteristic	Value
Number of cases, total, n (%)	768 (100) ^a
Right breast, n (%)	373 (48.6)
Left breast, n (%)	395 (51.4)
Left and right breast, n (%)	27 (3.5)
Number of patients, total, n (%)	741 (100)
Age, years, median (IQR)	57.4 (49.3–69.9)
Gender, male, n (%)	2 (0.3)
UICC stage ^b , n (%)	
0	64 (8.6)
I	266 (35.9)
II	253 (34.1)
III	95 (12.8)
IV	61 (8.2)
NA	2 (0.3)

^aPrimary breast cancer cases (N = 768) in 741 patients at the day of first diagnosis.

^bAt the day of first diagnosis.

IQR = Interquartile range; UICC = Union for International Cancer Control; NA = not available.

In the present study, we evaluated therapy data of breast cancer patients (C50, D05 diagnosis) who were primarily diagnosed and treated in the certified BCC of the GKH, and analyzed how integrative strategies were implemented. First comparisons of quality measures and outcome items between our BCC and nationwide benchmarking BCCs are shown.

Methods

Subject Population

Primary breast cancer cases were denoted according to the German certifier OnkoZert:

- Time point of count is the time of primary diagnosis
- Patients and not hospital stays or surgeries
- Each breast is counted as a primary case
- Ductal carcinoma in situ (DCIS) cases are counted as primary cases
- Cases count only for 1 center
- Breast carcinomas of men and primary M1 patients are also counted as primary cases
- Histological report must be available
- Planning of therapy (interdisciplinary tumor board) and therapy realization is accomplished by the BCC (primary therapy)

According to the certification guidelines, the number of primary cases is not necessarily equal to the number of primary patients since more than 1 primary breast cancer case can be attributed to 1 primary breast cancer patient.

Data Source and Assessment

Clinical and demographic data were retrieved from the local hospital database. Documented TNM (tumor/node/metastasis) stages or metastases were queried with their according date and translated into Union for International Cancer Control (UICC) stages according to the 7th edition of the ‘TNM Classification of Malignant Tumours’ [24]. The disease stage was described according to UICC staging. Conventional therapies including chemotherapy, surgery, or radiation were queried with their according date. Surgical interventions were coded according to the German procedure classification 2013 [25]. Time frame and applied pharmaceuticals of systemic therapies including chemotherapy,

Table 2. NPIs applied in the primary breast cancer patients (N = 712) between January 2011 and June 2016

Non-pharmacological intervention (NPI)	Patients, n (%)
All NPIs	712 (100)
Art therapies	562 (78.9)
Breathing therapy	6 (0.8)
Education/training including dietary training	564 (79.2)
Massages including organ embrocations and lymph drainage	695 (97.6)
Movement therapies including eurythmy therapy, physiotherapy	639 (89.7)
Nursing interventions including compresses, embrocations, and therapeutic baths	622 (87.4)
Psycho-oncological support	679 (95.4)

targeted therapy, and mistletoe (*Viscum album* L. = VA) therapy were documented. Detailed information on the amount and time of NPIs per patient was obtained. Numbers of contacted patients and of visits during follow-up were retrieved from the surveillance and study center. Continuous variables were described as median with interquartile range (IQR); categorical variables were summarized as frequencies and percentages. Data distributions were validated with graphical inspections by box plot, QQ (quantile-quantile) plot, and histograms and were arithmetically examined by skewness. Descriptive analysis was used to perform comparisons between BCC and benchmarking centers.

Comparison with Nationwide Cancer Standards

Various quality measures (2011–2015) from the GKH BCC were compared with data of the Breast Cancer Benchmarking Report 2016, covering quality measures from the years 2011–2014 from 275 certified nationwide BCCs in Germany (n = 52,965 patients) [23]. Comparisons between BCC and benchmarking data were descriptively evaluated. The quota for compliance is set each year by the DKG and the DKH.

Results

Between January 1, 2011 and June 30, 2016, 897 breast cancer patients were treated at the BCC of the GKH. Among them were 741 primary breast cancer patients representing 768 primary breast cancer cases (table 1). Two patients were male. The median age was 57.4 years (IQR = 49.3–69.9 years). In 395 cases (51.4% of the primary cases), the left, and in 373 cases (48.6% of the primary cases), the right breast was affected. 27 patients (3.5% of the primary cases) had bilateral cancer. 91.5% of the patients showed UICC stage 0, I, II, or III, and 8.2% had metastasis at first diagnosis (UICC stage IV). In 0.3% of the patients, staging was not completed at database closure. 46 patients (6.2%) had secondary cancer diagnoses in their medical records, revealing gastrointestinal (26.1%), gynecological (19.6%), and skin tumors (17.4%) as the most common neoplasms.

The clinical management of the GKH BCC involves the processes of registration, consultations, hospital admission, inpatient stay, and dismissal of the patient according to the S3 guideline for the ‘diagnosis, therapy and follow-up of mamma carcinoma’ [26] and is briefly described hereafter. After first contact, the patient will be informed within 24 h on their appointment with the BCC. During the first and second appointments with the patient in the BCC, the responsible physician thoroughly evaluates the patient’s medical history, discusses with them their personal expectations and emotional status, checks existing medical documents, arranges first appointments with relevant specialists (e.g. oncologists, psycho-on-

cologists) and discusses medical standard and add-on treatment options with the patient. In addition, the patient will be registered for the upcoming interdisciplinary weekly tumor board conference, which engages a gynecological breast surgeon, a plastic surgeon, a radiologist, a medical oncologist, and radiation therapists. Optionally, a psycho-oncological professional and a nursing specialist are part of the conference. The patient also has the chance to participate in the tumor board, as the GKH actively supports shared decision-making. The tumor board panel releases a joint recommendation for the therapy of the patient. At the patient’s hospital admission, nursing and medical anamnesis as well as a physical examination, blood retrieval for laboratory assessments, an electrocardiogram (for patients > 40 years), a chest X-ray scan (for patients with sentinel lymph node labeling), and a pre-anesthesia consultation (for patients receiving surgery) are performed. The patient will also be informed on post-treatment and follow-up surveillance procedures. Furthermore, appointments with social services, psycho-oncological professionals, and NPI therapists are arranged at day 1 of hospital admission. NPIs include art therapy (music, painting, and modeling), breathing therapy, rhythmical massages, nursing interventions (e.g. compresses, embrocations, and therapeutic bathes), movement therapy (eurythmy therapy and physiotherapy), and educational programs and dietary training (table 2). During the hospital stay, the patient receives standard therapies in conjunction with integrative ones. Personalized add-on therapies are listed on a structured weekly plan, which is handed out to the patient. Analogous to complex treatments in palliative care (national OPS code 8–982 (German surgical operation and procedure classification)), chronic pain (OPS code 8–918), and natural medicine (OPS code 8–975.2) where specific minimal criteria must be obeyed, an additional payment for integrative anthroposophical complex treatments (national OPS code 8–975.3) is granted by health insurance companies if at least 30 therapeutic units are documented for the patient within 1 hospital stay [27]. In a weekly inter-professional patient conference, the therapeutic interventions of each patient are discussed among physicians, nurses, and therapists. Personal consultations between physician and patient, lasting on average more than 30 min, are regularly held during the hospital stay and include a biographical dialogue, explanation of findings, and/or information on the utilization of integrative therapies. The above-described processes are documented in the CC and BCC quality management manual (Handbuch Onkologisches Zentrum Havelhöhe), which is updated annually (last version, June 2016).

Table 3. Surgical interventions in the primary breast cancer patients (N = 741) at the first hospital stay

Surgical intervention	OPS number	Interventions, n (%)	Patients, n (%)
All	5-87*, 5-88	857 (100)	722 (100)
Partial excision of the tumor without axillary lymphadenectomy	5-870	649 (75.7)	569 (78.8)
Partial excision of the tumor with axillary lymphadenectomy	5-871	32 (3.7)	32 (4.4)
Mastectomy without axillary lymphadenectomy	5-872	135 (15.8)	128 (17.7)
Mastectomy with axillary lymphadenectomy	5-873	13 (1.5)	13 (1.8)
Subcutaneous mastectomy and other skin-preserving mastectomies	5-877	10 (1.2)	9 (1.2)
Other excisions or resections	5-879	1 (0.1)	1 (0.1)
Incision of the tumor	5-881	6 (0.7)	6 (0.8)
Other plastic surgeries of the breast	5-886	3 (0.4)	3 (0.4)
Other surgeries of the breast	5-889	2 (0.2)	2 (0.3)
Lymph node excision, total	5-401*, 5-407*	64 (100)	62 (100)

OPS = German surgical operation and procedure classification.
Some of the procedures were simultaneously or subsequently performed in one and the same patient; therefore, they do not add up to 100%.

The following results reflect the number of patients that received guideline-oriented standard therapies and/or additive integrative therapies comprising VA therapy and non-pharmacological interventions. Of 741 primary breast cancer patients, 722 patients (96.8%) underwent breast surgery, mainly breast-preserving partial excision of the mamma or tissue destruction without axillary lymph node dissection (table 3). A total of 396 (53.4%) patients received radiation (table 4). In 383 of these patients (96% of the patients with radiation), the primary tumor region was radiated, while in 58 patients (14.6%), lymph node metastases, and in 17 patients (4.3%), distant metastases were radiated.

Of 741 primary breast cancer patients, 280 (37.7%) received hormone therapy, 63 (8.5%) received a targeted or immune-modulating therapy, and 31 (4.2%) received bisphosphonates (table 4). 188 (25.3%) of the primary breast cancer patients received cytostatic drugs. 123 of these (65.4%) received cyclophosphamide, 113 epirubicin (60.1%), and 87 paclitaxel (46.3%; data not shown). The most frequently applied systemic cytostatic drug combinations were cyclophosphamide/epirubicin (n = 113, 60.1%), 5-fluorouracil/cyclophosphamide/epirubicin (n = 17, 9.0%), and cyclophosphamide/doxorubicin (n = 9, 4.8%; data not shown). 741 patients had 1 hospital stay, 247 of them (33.3%) 2 stays, 63 (8.5%) 3 stays, 29 (3.9%) 4 stays, and 24 (3.2%) more than 5 hospital stays. The average time the patient spent in hospital was, in median, 7 days during the first hospital stay.

One-third of the patients received VA therapy (n = 238, 32.1%; table 4). While most patients received VA therapy subcutaneously (n = 204, 85.7%), 68 (28.6%) also received off-label use intravenous VA application (data not shown).

712 of 741 primary breast cancer patients (96.1%) received multimodal NPIs (table 2). 707 patients (99.3% of the patients who received NPIs) had at least 2 NPIs. The median number of applied NPIs was 12, with an IQR of 9–14 NPIs (data not shown). 595 patients (83.6% of the patients who received NPIs) had between 5 and 15 various NPIs (median number of NPIs 11, IQR = 2–39 NPIs). The most frequent NPIs were massage (97.6%), psycho-oncological

Table 4. Radiation and anti-neoplastic treatments in the primary breast cancer patients during the study period

Treatment	n (% ^a)
Radiation	396 (53.4)
Primary tumor	383 (51.7)
Metastatic lymph nodes	58 (7.8)
Distant metastases	17 (2.3)
Anti-neoplastic treatment	
Hormone therapy	280 (37.8)
Cytostatic drugs	188 (25.3)
Targeted or immune-modulating therapy	63 (8.5)
Bisphosphonates	31 (4.2)
VA therapy	238 (32.1)

^aAs percent of N = 741 primary breast cancer patients.
VA = *Viscum album* L.

support (95.4%; e.g., psycho-education, psychotherapy, crisis intervention), movement therapies (89.7%; eurythmy therapy, physiotherapy), and nursing interventions (87.4%; e.g., compresses, embrocation, therapeutic baths; table 2).

Follow-up of patients was performed in 95.8% of all primary breast cancer patients 6 months after primary diagnosis (i.e., 100% compliance in patients contacted at day 0), in 94.4% of all primary patients 1 year after primary diagnosis (i.e., 98.6% compliance in patients contacted at 6 months), and in 93.1% of all primary patients 2 years after primary diagnosis (i.e., 97.1% compliance in patients contacted at 1 year).

To gain a first impression of the nationwide performance of the GKH BCC, a comparison between appropriate quality measures of the GKH BCC and nationwide benchmarking BCCs was conducted (table 5). Data were retrieved from the annual benchmarking report 2016, which summarizes the nationwide quality measures from 275 certified BCCs and 52,965 patients in Germany [23]. All requirements set by the DKG and DKH were met, except for the item ‘determination of nodal status in invasive breast cancer

Table 5. Comparison of the quality measures^a

Quality measure	GKH BCC: Median ^b , %	Benchmark: Median ^c , %	Required quota ^d , %
Postoperative case discussion	100	100	≥ 95
Pre-therapeutic case discussion	88	54.1	no specifications
Psycho-oncological support	93	69.0	no specifications
Social service consultation	80	88.3	no specifications
Patients enrolled in studies	49	14.1	≥ 5
Breast-preserving surgery in the pT1 stage	95	84.5	70–90
Determination of the nodal status in invasive breast cancer patients	94	97.8	≥ 95
Sentinel lymph node removal at pN0	83	95.2	≥ 80
Revision surgeries	2	2.8	≤ 5
Postoperative wound infections	0.45	1.4	no specifications

^aQuality measures of the BCC GKH compared to those of the 275 nationwide BCCs (N = 52,965 patients) as published in the Breast Cancer Benchmarking Report 2016.

^bGKH: 2011–2015.

^cBenchmarking report: 2011–2015.

^dQuota set by the German Cancer Association (DKG) and the German Cancer Aid (DKH).

BCC = Breast cancer center; GKH = Gemeinschaftskrankenhaus Havelhöhe.

patients', which was just short of meeting the requirements (1% below the quota). The quotas of pre-therapeutic case discussion (33.9% difference), psycho-oncological support (24% difference), patients enrolled in studies (34.9% difference), and breast-preserving surgery in the pT1 stage (10.5% difference) were above the nationwide benchmarking average. The quota of social service consultation (8.3% difference) was below the benchmarking level; however, no quota was specified for this item by the DKG and DKH. In 'sentinel lymph node removal', the GKH BCC was also below the benchmarking average. However, the median of the past 5 years (83%) was above the required quota (> 80%). Furthermore, the median for this item in 2015 at the BCC was 89.3%, indicating a trend towards increment in this quality item. In the item 'patients enrolled in study' the GKH BCC was 44% above the required quota and 35% above the benchmarking level. In 'revision surgeries' (0.8% difference) and 'post-surgical wound infections' (1.05% difference), the BCC GKH was below the benchmarking average, indicating high-quality management. In 'post-surgical case discussion', the BCC GKH had reached 100%, equal to the level of the benchmarking BCCs.

Discussion

The 'National Cancer Plan' in Germany highlights basic fields in cancer treatment: development of early detection of cancer, provision of quality assurance systems, development of clinical structures securing efficient cancer treatment, and empowerment of patient orientation [21]. The GKH as a certified CC contributes to key elements of the National Cancer Plan and additionally applies integrative therapies within a patient-centered context. In our BCC, 741 primary breast cancer patients were discussed between January 2011 and June 2016 in the weekly interdisciplinary tumor board. Conventional therapies (e.g., surgery, chemotherapy, hor-

mone therapy, and radiation) were recommended and applied regularly in accordance with the national S3 treatment guidelines. In addition, as shown by our data, integrative therapies play a significant role in the therapeutic concept and in the daily care of the BCC.

Breast cancer patients show a high need for psychological attendance [28]. In our cohort, 94% of the patients had psycho-oncological support. It is well accepted and part of the national cancer program to emphasize the importance of psycho-oncological interventions and communication in cancer care. Therefore, it was integrated as a requirement in BCC audits [29]. In contrast to the widespread requirements and practical use, there are generally very low numbers of statements and recommendations on supportive or psychosocial therapies and integrative therapies in the German oncological guidelines [30]. It has been shown in prospective studies that emotional functioning, including less anxiety, stress, and depression, has a positive influence on the overall survival in patients with metastasized breast cancer [31, 32]. In a randomized study in patients with gastrointestinal tumors and psychotherapeutic support after primary surgery, a benefit in terms of long-term survival was described [33]. In lung cancer, a concept of early palliative care, which included periodical talks with a professional, Temel et al. [34] showed a prolongation of overall survival and an improvement in HRQL. For breast cancer patients and for patients with other cancer entities, it was shown that the HRQL is prognostic for and predictive of survival [31, 32, 35–37]. Psychological support as part of palliative care has become an indispensable factor in palliative cancer treatment [38] and, recently, effective transfer and optimization of communications skills were shown [39].

Our patients were 6.6 years younger than the German average [40]. It is well known that women of a younger age are more interested in complementary therapies as part of IM [3, 41]. In our center, a high percentage of patients underwent nursing interventions like embrocation, massage, and compresses, which play a

major role as therapeutic instruments in anthroposophical nursing [18, 19]. Besides psycho-oncological support and massages as the most frequent NPIs in the primary breast cancer patients in the present study, movement therapies including eurythmy therapy and physiotherapy are very often applied. Overall, almost every in-patient received at least 2 NPIs (99%) and the majority (78%) had between 5 and 15 NPIs. The different distributions of therapies are influenced by the therapeutic concept, the individualized indication, by the patient's cooperation and expectation, and by different available resources.

The comparison of the outcome measures between our BCC and the nationwide benchmarking report shows good results while the annual formal requirements were met in all central items during the past 5 years. The items presented here reflect key quality measures from the specification catalogue of the DKG and DKH, which were in the focus during the certifications and annual re-audits procedures. In order to retain a first picture within the landscape of certified BCCs, they provide aspects in which the GKH BCC performed well or better than the required quota (e.g., psycho-oncological support, breast-preserving surgeries) and outcome items in which our BCC will need to improve (e.g., social services, sentinel lymph node removal at pN0).

Integrative oncology has been developed over decades and is established in US American academic structures and leading cancer centers [9, 42]. Even evidence-based clinical practice guidelines for integrative oncology were defined [10]. Although there are growing efforts in research on anthroposophical clinical concepts, the systematic evaluation of anthroposophical-integrative oncology is in an early stage. Therefore, we established a surveillance and study center to evaluate the patients' needs and outcomes. We document good compliance, with contact being maintained with over 93% of the patients even after 2 years of follow-up. Since 2012, we have been collecting HRQL data using psychometric instruments after discharge. Preliminary results of our group have shown positive ef-

fects on the HRQL, including emotional and social functioning in primary breast cancer patients treated within an anthroposophical-integrative concept [43]. This is in line with a prospective, multicenter trial with 105 non-metastasized breast cancer patients, where a 10-week multimodal program including psycho-education, eurythmy, and painting therapy significantly reduced fatigue/disturbed sleep, showing superiority over aerobic training in an exploratory analysis [44]. International studies indicate a high interest in IM of breast cancer patients. In the future, conventional outcome parameters may be more complemented with patient-orientated outcome measures.

Conclusions

The results of the present study reveal a high use of integrative therapies in the treatment of primary breast cancer patients and their successful integration into the clinical practice of a certified BCC. The GKH BCC performs well in central items of quality measures compared to the nationwide benchmarking BCCs in Germany. Patient adherence seems to be strong, and further evaluation of patient-reported outcome data is to be expected in the following years.

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Disclosure Statement

The authors declare no competing interests.

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