First Steps in the Development of an Expertise-Based Anthroposophic Complex Intervention for Oncological Treatment in Primary Care: A Qualitative Study

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Abstract

Introduction: The aim of this study was to develop a prototype of an anthroposophic complex intervention (CI) for oncological patients in primary care. Methods: Standardized methods for the development of CIs were used. Qualitative data were collected among professionals (n = 44) working in 3 Dutch anthroposophic primary care centers. The following topics were discussed in interviews and panel discussions (n = 12): treatment phases, treatment dimensions, treatment goals, and content of the indicated treatments and therapies. In a multidisciplinary focus group (n = 23) completeness and comprehensibility of the CI, and integration in daily practice were addressed. Subsequently, the developed CI was tested on face validity (n = 21) and compared with conventional guidelines. Results: Professionals reached consensus about 4 oncological treatment phases, 4 anthroposophic treatment dimensions, and twelve general treatment goals. The following anthroposophic therapies were found to be suited for oncological patients in primary care: medication (eg, mistletoe preparations); nursing (eg, external embrocation); physiotherapy (eg, rhythmic massage); eurythmy therapy; dietetics; art therapy; and counseling. The content of each therapy must be tailored to the individual. Comparison with existing guidelines demonstrated added value and the ability to fit with conventional care. Discussion: Strengths of the developed CI prototype are its focus on primary care, its practical applicability, the use of validated research methods, and the check on face validity in 2 other Dutch anthroposophic primary care centers. Limitations are that no systematic literature review was done and patient experiences were not collected. Conclusions: An applicable prototype of an anthroposophic CI for oncological patients in primary care was developed. To complete the development of this CI, a systematic review of the literature is needed, feasibility should be tested, patient experiences need to be collected, and implementation should be initiated and monitored. Finally, development of a patient decision aid (PtDA) and a decision-making tool (DMT) are recommended.

Keywords
integrative oncology, complex intervention, complementary and integrative medicine, primary care, anthroposophic medicine

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Introduction

The burden of cancer on society is high and expected to rise worldwide, forcing decision makers to have a critical look on cancer care regulation. The annual costs for cancer care in the Netherlands have increased from €3.4 billion in 2007 to €4.8 billion in 2011, of which 9.8% was spent on medication, and is still growing.¹ This increase is partly the result

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of the introduction of new medical technology, new anti-cancer therapies, the extension of cancer care, and the aging population in the Netherlands.\textsuperscript{2} The aging population will lead to an expected growth of cancer patients to 900,000 in 2020 (of which 60% will be chronic), accounting for 4% of all healthcare costs in the Netherlands.\textsuperscript{3} Because the chronic cancer population is growing so rapidly, the Dutch Health Council, stimulates the role of (the less expensive) primary care in cancer treatment for several years already.\textsuperscript{3}

Many chronic patients suffer from the burden/symptoms of cancer itself, and from side-effects of oncological treatments (for example surgery, chemotherapy, radiotherapy, or hormonal therapy may cause discomfort such as cancer-related fatigue, nausea, and burns). Cancer-related fatigue is a particularly complex phenomenon, with cancer-related insomnia, cognitive dysfunctions, dysrhythmia, distress, and pain; all together leading to poor quality of life.\textsuperscript{4}

To deal with oncological symptoms and side effects, patients seek for additional treatments, such as complementary and integrative medicine (CIM). CIM therapies are used by a growing number of oncological patients.\textsuperscript{5,7} The use of CIM of the Dutch population (seeing or having seen a CIM healthcare provider at least once in their life) has increased from 15.7% in 2003,\textsuperscript{8} to an estimated 23% in 2016.\textsuperscript{9} However, Dutch conventional and integrative/complementary care givers do not cooperate on a structural basis yet, and CIM therapies are not included in oncological guidelines yet.\textsuperscript{10,11} Contrary to the Dutch situation in Germany this cooperation does exist,\textsuperscript{12,13} and better tuning between conventional care and CIM has proven to lead to more efficiency, higher patient satisfaction, higher quality of care and life, and higher cost-effectiveness of oncological care.\textsuperscript{5} This development fits in the worldwide rise of integrative medicine,\textsuperscript{14} the shift from cure to health promotion;\textsuperscript{15,16} and strengthens the need for integration of conventional care and CIM in all countries, as recommended by the WHO.\textsuperscript{17} In integrative oncology, conventional care and CIM are integrated in a patient-centered, safe, and effective approach.\textsuperscript{5} CIM approaches mostly aim at health promotion, quality of life, and self-regulation, rather than at treating the cancer itself.\textsuperscript{5,7} but there are indications that they may also contribute to that.\textsuperscript{18-24} Moreover research has shown that patients from Dutch primary care physicians who are additionally trained in CIM have lower healthcare costs, mainly caused by less hospitalization, and lower use of medication.\textsuperscript{25,26}

One of the most explicit examples of CIM in the Netherlands is anthroposophic medicine (AM).\textsuperscript{27-29} AM has a history of 100 years of integration of conventional medicine with anthroposophic diagnostics and treatments/therapies such as anthroposophic medication, external embrocation, rhythmic massage, eurythmy therapy, and anthroposophic art therapy.\textsuperscript{27,30} AM is a whole medical system approach, which means that the focus is on the patient in his or her whole complexity, including physical, mental, spiritual, and social factors. These are interconnected and need to be addressed in total and on multiple levels. These levels are captured in the so called anthroposophic “fourfold formative forces” of the human being: individual/ego level, inner/“astral” level, etheric level, and physical level.\textsuperscript{27,31} The repertoire of a “whole medical system” treatment is often multimodal and complex, and its application is often tailored to the individual patient.\textsuperscript{30} The effects of anthroposophic therapies (ie, anthroposophic medication, anthroposophic physiotherapy, eurythmy therapy, art therapy, anthroposophic coaching, anthroposophic dietetics, anthroposophic nursing) for cancer patients are promising.\textsuperscript{18,20-23,32-37} Treatment objectives of anthroposophic therapies are among others: cancer-related immunostimulation (eg, induction of apoptosis, inhibition of cell proliferation and angiogenesis of the tumor cells, as well as anti-inflammatory and immunomodulatory effects),\textsuperscript{38-40} increasing vitality of the patient,\textsuperscript{22} and supporting thermo-regulation (because patients often experience debilitating deficiencies in their ability to achieve thermal comfort, feeling excessively hot or cold under circumstances when others are comfortable).\textsuperscript{41} In Germany, there are certified cancer hospitals, where German cancer patients are treated with AM integrated oncological care.\textsuperscript{27,42,43} In the Netherlands no such hospitals exist, but there are 67 AM primary care physicians working in sixteen anthroposophic primary care centers. AM particularly stands for long-term practice based expertise and knowledge that has been generated for a long time.

The whole medical system approach of AM, with its complexity in characteristics of the intervention itself and the importance of specifying the individual components, can be regarded to as a “complex intervention” (CI).\textsuperscript{44} CI research contains 3 phases: “plan evaluation”, “process evaluation” and “product evaluation”. The aim of the plan evaluation phase is to develop the best theoretical intervention for a specific indication based on scientific and expert knowledge.\textsuperscript{45} This means that the best available evidence and appropriate theories are identified by means of consensus building among experts combined with information from literature on interventions, context, possible effects, safety, and any contextual issues. The process and outcomes are subsequently modeled in tentative theories. Modeling refers to defining and combining components of the intervention, delineating components, identifying possible interactions, and understanding how key components may relate to either surrogate endpoints or final outcomes. Finally it refers to the modeling of the multiple active components into a CI. In CIs, the function and process of the intervention should be standardized (for instance in terms of treatment phase and treatment goals), not the components themselves.

An advantage of anthroposophic treatments and therapies in particular, is their focus on individualization. Anthroposophic therapies are pre-eminently suited for providing tailored care
for each patient, which is specifically important in the chronic and terminal/palliative phase of diseases, and fits the current development of personalized medicine in general. Moreover, recent studies endorse the potential of anthroposophic therapies, when it comes to improving vitality, quality of life and enhancement of self-regulation in cancer patients. In 2017, a Dutch anthroposophic CI was developed and implemented successfully for patients with depressive disorders.

The aim of this study was to develop a prototype of an anthroposophic CI for oncological patients in primary care, based on expert knowledge, and to assess how the CI components relate to existing interventions in conventional care. Based on long-term expertise, this intervention can contribute to (re)organization of anthroposophic oncological primary care in the first place, and on the longer term to the development of integrative oncology in the Netherlands. The intervention is not meant as an alternative intervention, but is supposed to fit as an add-on treatment into the existing conventional guidelines and current practice for oncological patients in Dutch primary care.

Materials and Methods

Design of the Study

The qualitative study, consisting of semi-structured expert interviews, monodisciplinary panel discussions and a multidisciplinary focus group, was carried out in a Dutch anthroposophic primary care center (“therapeuticum”) in order to describe a prototype of an anthroposophic CI for oncological treatment in primary care. Additionally, face validity was tested in 2 other anthroposophic primary care centers. The developed CI was compared with existing conventional multidisciplinary oncological guidelines for primary care, to explore if and how the CI could complement these guidelines.

Recruitment and Selection of Professionals

Anthroposophic primary care centers in the Netherlands (n=24) were approached for participation in this study. Inclusion criteria for participation of a center were: a large number of different anthroposophic based therapies offered in the center (at least an anthroposophic family physician and 2 or more different anthroposophic therapies available), and expertise in oncological treatment. In a survey, the professionals working in eligible centers were asked to indicate their experience with oncological care (based on their working years in anthroposophic treatment: high, if more than 20 years; and number of oncological patients treated: high, if more than 100). The care center that turned out most eligible for this study included anthroposophic primary care physicians and the following anthroposophic therapists: dietitians, physiotherapists, eurythmy therapists, art therapists, psychologists, and nurses. Those who were judged as “highly experienced”, were invited to participate in the expert interviews, panel discussions and multidisciplinary focus group; the other professionals were only invited for the multidisciplinary focus group. See Table 1 for an overview of all included professionals and their level of oncological experience in primary care.

Expert Interviews and Monodisciplinary Panel Discussions

Anthroposophic primary care professionals (n=12), representing 6 anthroposophic professions, were first interviewed individually. The interviews were semi-structured and led by 1 researcher (AB) and a research assistant, and took approximately 60 minutes each. Subsequently, monodisciplinary panel discussions were held to reach consensus within professions represented by more than 1 interviewee. The panels consisted of primary care physicians (n=2), anthroposophic counselors (n=3), art therapists (n=2), and anthroposophic nurses (n=3). Of the 2 interviewed art therapists, 1 was a visual art therapist and the other a music therapist. Panel discussions were continued until saturation (no new information came up in the discussion) and consensus were reached. Interviews and panel discussions were held in the practice where participants worked. Interviews were recorded and summarized by AB, and after analysis the summaries were reviewed by another researcher (EBZ). Notes were taken during the panel discussions by AB and a research assistant.

For the interviews and panel discussions the interviewer made use of a topic list consisting of the following topics: “treatment phases”, “treatment dimensions”, “treatment goals”, and “content of complementary treatments/therapies”, just like in the study of Ponstein et al. Findings were summarized and structured by the “thematic coding” method by one researcher (AB) and a research assistant. Labels corresponded with the above-mentioned topics. Overviews were prepared and organized into a first draft of the CI.

Multidisciplinary Focus Group

Subsequently, this first draft of the intervention was presented to a multidisciplinary focus group, including the complete staff of the original primary care center interviewed (n=23). This group contained more experts of the disciplines interviewed before and in addition 2 anthroposophic dietitians and a speech/drama (art) therapist (Table 1). The focus group was on the location of the health care center where all participants worked. Basic questions raised in this focus group were: “do you understand the complex intervention?”, “is the overview of important elements complete?”, and “do you recognize the integration of included elements in your daily practice?”. The aim of this
A multidisciplinary focus group was to check correctness of the content of the draft version of the CI. The discussion was again continued until saturation (no new information came up in the discussion) and consensus were reached. Content and outcomes of the focus group were analyzed systematically by 1 researcher (AB). If necessary, alterations and additions were made and a final draft of the intervention was composed.

**Face Validity Check**

To optimize the quality of the intervention, the final draft was presented to the staff of 2 other anthroposophic primary care centers in the Netherlands (n=21), consisting of anthroposophic primary care physicians, anthroposophic counselors, anthroposophic physiotherapists, anthroposophic art therapists, anthroposophic nurses, anthroposophic dieticians, and a eurythmy therapist (see Table 1). The primary care centers were invited by phone to assess the draft CI on completeness and agreement with AM daily clinical practice, and to propose additions or alterations. All therapists working in the participating centers in the face-validity phase were asked by email to “precisely check the treatment dimensions in combination with the specific treatment” and to send written feedback on the original document back by email. The feedback was collected by AB, and if necessary, corrections were made and the CI was completed.

**Comparison with Conventional Guidelines**

Since the developed anthroposophic CI is meant as an addition to (and not as a substitute for) conventional care, the combination with existing conventional guidelines was investigated as well. Therefore, it was compared and linked to the oncological guidelines for conventional primary care in the Netherlands. Guidelines were searched on the website of the national association of Dutch primary care physicians (“Nederlands Huisartsen Genootschap”: NHG). The search, linking and comparison was performed by 1 researcher (EBZ), and discussed with another researcher (EBa).

**Results**

**Outcomes of Expert Interviews and Panel Discussions**

The included professionals (n=12) distinguished 4 phases in the process of anthroposophic oncological treatment in primary care: the acute phase, the treatment phase, the chronic phase, and the palliative/terminal phase. Based on their clinical expertise, they agreed that there are 4 main treatment dimensions: (1) balancing of the “fourfold formative forces” of the human being (individual/ego level, inner/“astral” level, etheric level, and physical level), (2) supporting autonomy and psychological processes, (3) treating side effects of conventional cancer treatment, and (4) creating a healing therapeutic environment (see Table 2 and Appendix 1).

Accordingly, consensus was reached on twelve general treatment goals (see Table 2 and Appendix 1) for anthroposophic oncological treatment in primary care, which can and must be tailored to each individual patient. Treatment goals focus on: (1) immune system, (2) vitality, (3) thermoregulation, (4) psychological processes, (5) coping, (6) self-regulation, (7) self-awareness, (8) fatigue, (9) nausea, (10) weight loss, (11) wound healing, and (12) professional relation.

The participating professionals agreed that the following treatments/therapies were suited for oncological patients in primary care: anthroposophic medication (eg, mistletoe

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**Table 1. Overview of Professionals that Contributed to the Prototype of an Expertise-Based Anthroposophic Oncological Complex Intervention.**

| Health profession | Level of oncological experience in anthroposophic primary care |
|-------------------|---------------------------------------------------------------|
| Expert interviews and monodisciplinary panel discussions (n=12) | |
| Primary care physician** | High* (n) General (n) |
| Psychologist/counselor** | 2 3 |
| Physiotherapist** | 1 |
| Nurse** | 3 |
| Eurythmy therapist | 1 |
| Art therapist** | 2*** |
| Multidisciplinary focus group (n=23) | |
| Primary care physician** | 2 1 |
| Psychologist/counselor** | 3 3 |
| Physiotherapist** | 1 3 |
| Nurse** | 3 |
| Eurythmy therapist | 1 |
| Art therapist** | 2*** 1**** |
| Dietician** | 2 |
| Face validity check (n=21) | |
| Primary care physician** | 4 |
| Psychologist/counselor** | 3 |
| Physiotherapist** | 5 |
| Nurse** | 4 |
| Eurythmy therapist | 1 |
| Art therapist** | 2 |
| Dietician** | 2 |

*High if >20 years of working years and/or having seen >100 oncological patients; general if <20 years or having seen <100 oncological patients.

**Anthroposophic.

***One visual art therapist and one music therapist.

****Speech/drama therapist.
preparations), anthroposophic nursing (eg, external embrocation), anthroposophic physiotherapy (eg, rhythmic massage or fever baths), eurythmy therapy, anthroposophic dietetics, anthroposophic art therapy, and anthroposophic counseling (Table 2 and Appendix 1). With regard to oncologic patients, these therapies focus on curative health promotion in 2 ways. First, these therapies improve, among others, vitality, and enhance self-regulation, which is generally important for patients.28 In a disease-specific way specific therapies, like for example mistletoe therapy, strengthen and support the self-healing abilities of the organism. The AM health promotion treatments can be applied in the acute, treatment, chronic, and palliative phases of treatment (see Appendix 1).

Outcomes of Multidisciplinary Focus Group

After completing modeling the CI, it was presented in a user-friendly overview (Appendix 1). In this table primary care physicians and therapists can see in what phase, and for which treatment goal, specific oncological anthroposophic therapies are suited and effective as judged by experts. Professionals (n = 23) agreed on the suggested treatment goals and therapies per treatment phase. However, they emphasized the fact that the content of each therapy in each phase must be tailored to the individual patient, depending on the complexity and unicity of the patient, including the type of cancer and personal treatment goals. Another important outcome of the multidisciplinary focus group was the importance of dissemination and application in practice of the intervention after publication. Furthermore, developing a patient decision aid (PtDA) and a decision-making tool (DMT) for care professionals was recommended. Finally, the fact that not all anthroposophic therapies are (fully) covered by insurance was brought up. This puts a financial burden on patients and might keep them from starting or continuing anthroposophic therapies. This might result in the fact that therapy cannot be applied optimally, and the effects will also be suboptimal.

Face Validity of the Complex Intervention

After presenting the final draft of the CI to two other primary care centers, some treatments were removed from the treatment phase. The reason for this was that some therapies seemed too energy-consuming according to the professionals, since the patient needs all of his/her energy for (recovering from) the treatments in this phase. After removing these items, the primary care centers confirmed that the CI was complete and reflected their daily clinical practice with oncological patients.

Similarities, Differences and Ability to Fit with Existing Guidelines

Two Dutch oncological guidelines for primary care physicians were identified. One focuses on oncological care in general,17 and the other on breast cancer in particular.16 The developed anthroposophic CI has both similarities and differences with these guidelines (Table 3). Similarities are that the existing guidelines and the anthroposophic CI include the same professions and similar therapies (eg, physiotherapy, dietetics, psychological care, but not for example music or art therapy), and that they both focus on treating discomfort and promoting a healthy lifestyle.

A difference for anthroposophic primary care physicians is that they also can prescribe anthroposophic treatments alongside conventional medicine. The anthroposophic CI

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**Table 2. Components of Anthroposophic Oncological Complex Intervention for Primary Care.**

| Anthroposophic oncological treatment phases | Anthroposophic oncological treatment dimensions | General focus of anthroposophic oncological treatment goals* | Anthroposophic oncological treatments and therapies |
|-------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|------------------------------------------------|
| Acute Treatment                           | Balancing of the “fourfold formative forces” of the human being** | Immune system                                           | Medication***                                        |
| Chronic Treatment                         | Supporting autonomy and psychological processes | Thermoregulation                                         | External embrocation                                  |
| Palliative/terminal                        | Creating a healing therapeutic environment    | Psychological processes                                   | Physiotherapy/rhythmic massage***                    |
|                                           | Treating side effects of conventional cancer treatment | Vitality                                                  | Eurythmy therapy                                     |
|                                           |                                               | Coping                                                    | Art therapy (visual, music, speech/drama)***         |
|                                           |                                               | Self-awareness                                           | Consult with psychologist***                         |
|                                           |                                               | Self-regulation                                          | Consult with practice nurse***                       |
|                                           |                                               | Professional relation                                     | Home visit of district nurse***                      |
|                                           |                                               |                                                           | Consult with dietician***                            |

*General treatment goals should be tailored to each individual patient.
**Individual/ego level, inner/“astral” level, etheric level, and physical level.
***Anthroposophic.
Table 3. Comparison of the Developed Anthroposophic Oncological Complex Intervention with Conventional Dutch Guidelines for Oncological Treatment in Primary Care.

| Included disciplines | Developed anthroposophic oncological complex intervention | NHG-standpoint oncological care in general practice NHG\(^{17}\) | NHG-standard breast cancer De Bock et al\(^{16}\) |
|----------------------|----------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------|
| Primary care physician | x | x | x |
| Physiotherapist | x | x | |
| Eurythmy therapist | x | | |
| Dietitian | x | | x |
| Psychologist | x | | x |
| Art therapist | x | | |
| Practice nurse | x | x | |
| Medical specialist | x | x | x |
| Company doctor | x | | |
| District nurse | x | x | |
| Hospice | x | x | |
| Rehabilitation center | x | x | |
| Treatment phases | | | |
| Prevention/screening | x | x | |
| Diagnosis | x | x | x |
| Acute | x | | |
| Treatment | x | x | x |
| Chronic | x | | |
| Palliative/terminal | x | x | x |
| Aftercare | x | x | |
| Focus of treatment goals | | | |
| Strengthening the immune system | x | | |
| Increasing vitality | x | | |
| Thermoregulation | x | | |
| Psychological processes | x | x | x |
| Coping | x | | |
| Illness perceptions | | | x |
| Self-regulation/involvement | x | x | x |
| Self-awareness | x | | |
| Fatigue | x | | x |
| Nausea | x | | |
| Weight/nutrition | x | x | x |
| Wound healing | x | | |
| Professional relation | x | | |
| Creating a healthy environment/lifestyle | x | x | |
| Comorbidities | x | x | |
| Discomfort/pain | x | x | x |
| Rehabilitation/return to work | x | x | |
| Sexual functioning | x | | |
| Lymphedema | x | | |
| Shoulder complaints | x | | |
| Interventions/therapies | | | |
| Medication | x* | x | |
| External embrocation | x | | |
| Patient education | | x | |
| Physiotherapy | x* | | |
| Eurythmy therapy | x | | |
| Dietetics | x* | | x |
| Art therapy | x | | |
| Counseling | x* | x | |
| Cognitive behavioral therapy | | x | |
| Consult with practice nurse | x* | | |
| Home visit of district nurse | x* | | |

NHG, Dutch association of primary care physicians.

*Anthroposophic.
includes for example anthroposophic art therapy, external embrocation, and eurythmy therapy, which could all be helpful when conventional care is not able to fulfill the patient’s unique needs (anymore) or when patients want these types of treatment, based on their values and/or preferences. Secondly, conventional guidelines describe screening and diagnostics additional to the phases in the developed anthroposophic complex intervention. This is not covered by the CI because anthroposophic family physicians always work primarily with the Dutch national guidelines for family physicians (NHG-standards). Contrary, the chronic phase is named specifically in the CI, and not in the current guidelines. However, the conventional guidelines do refer to rehabilitation centers, hospices, and hospital care, whereas the anthroposophic intervention does not. A final difference is that anthroposophic physiotherapeutic treatments, compared to conventional oncological physiotherapy, include rhythmic massage and fever baths, instead of lymph drainage and exercise programs. Finally, and not surprising, the anthroposophic treatment dimensions (“balancing of the ‘fourfold formative forces’ of the human being”, “supporting autonomy and psychological processes”, “treating side effects of conventional cancer treatment”, and “creating a healing environment”) are particular for the anthroposophic intervention.

Discussion

A qualitative study was executed to develop a prototype of an anthroposophic CI for oncological treatment in Dutch primary, care based on consensus building among experts. Expertise of AM professionals was collected and consensus on the components and structure of the CI was reached in a consensus process. The developed intervention consists of 4 treatment phases, 4 treatment dimensions, twelve general treatment goals and 9 different possible anthroposophic treatments and therapies (anthroposophic medication, external embrocation, anthroposophic physiotherapy, eurythmy therapy, art therapy, anthroposophic coaching, anthroposophic dietetics, anthroposophic practice nursing, and anthroposophic home nursing), which according to professionals seem suited and effective for treating oncological patients in primary care. Face validity was checked positively, and comparison with existing guidelines demonstrated added value and the ability to integrate the anthroposophic CI with conventional care.

There are several strengths of this study. First of all, the fact that it is focused on primary care, since most research in the field on integrative oncology focuses on hospital care. Furthermore, its practice-oriented character is a strength, making it directly applicable in anthroposophic primary care centers. Looking at methodological quality, a strength is that validated qualitative research methods, as prescribed by the Consolidated Criteria for Reporting Qualitative Research (COREQ), were applied. For instance, the panel discussions and focus group were continued until saturation (no new information came up in the discussion) was reached and a face validity check was done, which both enhance validity of this study. With regard to reliability, all expert interviews and panel discussions being led by the same researcher is a strength of this study.

However, there are some methodological limitations of this study too. First, no systematic literature review on evidence of safety and effectiveness of AM therapies for cancer was done, and patient experiences with the CI were not collected systematically. This leads to the principle of triangulation, as prescribed by the COREQ, not being guaranteed, and to the pillars “research evidence” and “patient values” of Evidence Based Practice (EBP) not being covered in this study. It has to be mentioned however, that the main reason of not having done a proper patient pilot yet, was a lack of energy and low vitality of patients in the treatment phase, which complicated response and ethical justification in this phase. Looking at the important role physicians play in primary care, only 2 physicians being included in the interviews and the panel discussion is quite a small number. Moreover, only 1 anthroposophic physiotherapist and 1 eurythmy therapist were included in the interviews and the focus group, which makes these disciplines not being represented very well. All 3 art therapists that participated in the study represented a different specialization (visual art, music, and speech/drama), which means that they were actually all a single representative of their sub specialization. However, with the face validity check physicians and therapists from 2 other care centers also agreed with the content of the developed CI. With regard to reliability, the fact that almost all data-analyses were executed by one and the same researcher (due to financial and time-related limitations of the project) seems the most important methodological issue. Methodological guidelines strongly recommend to always have 2 independent researchers analyzing the data in qualitative research. Therefore, in further research this should be done.

In this study, components of anthroposophic oncological CI were defined, combined, and delineated and the intervention was compared with existing guidelines. However, to complete the “plan evaluation” phase of CI research a systematic literature review on the scientific knowledge with regard to the effects and safety of oncological anthroposophic treatments is needed. After finalizing the CI in the plan evaluation, a feasibility (to address remaining uncertainties) and/or a pilot study (to test the effectiveness of the CI in a small group) should be executed.

The substantive value of this prototype of an anthroposophic CI is, that it contains (anthroposophic) therapies not described in existing guidelines yet. Furthermore, this anthroposophic CI puts explicit focus on the terminal/palliative phase and the chronic phase, which in 2020 60% of all
cancer patients in the Netherlands will be in,3 and which is not specifically described in current guidelines. This is even more valuable, since there is evidence that patients who make use of complementary therapies may have lower healthcare costs25,26,54 and better quality of life.5,7

Comparison with existing guidelines furthermore demonstrated similarities and added value, which should make it easy for primary care physicians to integrate the conventional guidelines and the anthroposophic (add-on) CI. On the other hand, there are also differences (eg, the absence of a screening and a diagnostic phase in our CI), that point out the relevance of using the anthroposophic CI not as a substitute, but as an addition to the conventional guidelines, just as it is meant to.

This prototype of an expertise-based CI can serve as a first step into (re)organizing integrative oncology in Dutch primary care. It can make caregivers and patients aware of available anthroposophic therapies that are suited for cancer patients. Anthroposophic primary care physicians could already use it when referring oncological patients to other professionals in their practice, and anthroposophic therapists could use it to see which kind of treatment goals one could focus on in the different phases of cancer. However, a financial burden from anthroposophic therapies is put on patients. Not all therapies are (fully) covered by insurance yet, which might keep patients from starting or continuing anthroposophic therapies. This is something that anthroposophic professional associations should discuss with insurers, and they should try to get this on the agenda of national policymakers.

Further development of this CI, and development of a patient decision aid (PtDA) and a decision-making tool (DMT) that allows patients and professionals to have easy access to data about indication, effectiveness and safety of anthroposophic therapies and access to anthroposophic primary care facilities is recommended.

Conclusion

In this study, components of an applicable anthroposophic oncological CI were defined, combined, and delineated, and the intervention was compared with existing guidelines. The determined set of anthroposophic interventions complies with existing Dutch oncological guidelines for primary care, complements these guidelines as it contains further therapies that are not yet described and importantly, puts explicit focus on the palliative and chronic phase of oncological patients, which has not been specifically described in the existing guidelines. However, to complete development of the CI, a systematic review on the scientific knowledge with regard to effects and safety of oncological anthroposophic treatments is needed, feasibility of the CI should be tested, patient experiences need to be collected, and finally the implementation phase should be initiated.

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Supplemental Material

Supplemental material for this article is available online.

References

1. Gommer A, Poos M. Hoeveel zorg gebruiken mensen met kanker en wat zijn de kosten. National Institute for Public Health and the Environment (RIVM), 2014.
2. van Dijk EF, Coşkuntürk M, Zuur AT, et al. Willingness to accept chemotherapy and attitudes towards costs of cancer treatment; A multisite survey study in the Netherlands. Neth J Med. 2016;74(7):292-300.
3. Knottnerus J, Wijffels J. Nazorg bij kanker: de rol van de eerstelijns. KWF Kankerbestrijding, 2011.
4. Ahmad SS, Reinius MA, Hatcher HM, Ajithkumar TV. Anticancer chemotherapy in teenagers and young adults: managing long term side effects. BMJ. 2016;354:i4567.
5. Cramer H, Cohen L, Dobos G, Witt CM. Integrative oncology: best of both worlds-theoretical, practical, and research issues. Evid Based Complement Alternat Med. 2013;2013:383142.
6. Schad F, Axtner J, Happe A, et al. Network Oncology (NO)–a clinical cancer register for health services research and the evaluation of integrative therapeutic interventions in anthroposophic medicine. Forsch Komplementmed. 2013;20(5):353-60.
7. Christina J, Abigail W, Cuthbertson LA. Nurses’ knowledge and attitudes toward complementary therapies for cancer: a review of the literature. Asia Pac J Oncol Nurs. 2016;3(3):241-251.
8. Van Dijk P. Omvang alternatieve geneeswijzen in Nederland. TIG Jaarboek 2005–2006. 2005.
9. Schors W, Brabers A, Hoefman R, et al. Reguliere arts vaak op de hoogte van alternatieve behandeling. 2016.
10. De Bock H, Beusmans I, Hinlooopen J, et al. NHG-Standaard Diagnostiek van Mammacarcinoom. NHG-Standaarden 2009. Springer; 2009. p. 606-23.
11. NHG. NHG-standpunt Oncologische zorg in de huisartspraktijk. 2014.
12. Hübner J, Höflken K. Integrative onkologie. Der Onkologe. 2017;23(3):164-166.
13. Matthes H, Schad F. Der onkologische Patient im Spannungsfeld zwischen wissenschaftlichem Standard und praktischer Individualisierung in der Onkologie. Der Onkologe. 2019;25(1):102-108.
14. Kessler C, Michalsen A. The role of whole medical systems in global medicine. Forsch Komplementmed. 2012;19(2):65-66.
15. Huber M, Knottnerus JA, Green L, et al. How should we define health? BMJ. 2011;343:d4163.
16. Baars EW. Evidence-Based Curative Health Promotion: A Systems Biology-Oriented Treatment of Seasonal Allergic Rhinitis with Citrus/Cydonia Comp. 246 pages. Thesis, Wageningen University, Wageningen, the Netherlands; 2011.
17. Who W. WHO Traditional Medicine Strategy 2014–2023. World Health Organization. 2013.
18. Kröz M, Kienle GS, Feder G, Kaveri S, Rosenzweig S. Mistletoe: from basic research to clinical outcomes in cancer and other indications. Evid Based Complement Alternat Med. 2014;2014:987527.
19. Büssing A. Induction of apoptosis by the mistletoe lectins: A review on the mechanisms of cytotoxicity mediated by Viscum album L. Apoptosis 1996;1:25-32.
20. Kienle GS, Glockmann A, Schink M, Kiene H. Viscum album L. extracts in breast and gynaecological cancers: a systematic review of clinical and preclinical research. J Exp Clin Cancer Res. 2009;28(1):79.
21. Kienle GS, Grugel R, Kiene H. Safety of higher dosages of Viscum album L. in animals and humans–systematic review of immune changes and safety parameters. BMC Complement Altern Med. 2011;11:72.
22. Kienle GS, Kiene H. Review article: influence of Viscum album L. (European mistletoe) extracts on quality of life in cancer patients: a systematic review of controlled clinical studies. Integr Cancer Ther. 2010;9(2):142-157.
23. Tröger W, Galun D, Reif M, Schumann A, Stanković N, Milićević M. Viscum album L (European mistletoe) extracts on quality of life in cancer patients: a systematic review of clinical and preclinical research. J Exp Clin Cancer Res. 2013;32:18.
24. Horneber MA, Bueschel G, Huber R, Linde K, Rostock M. Mistletoe therapy in oncology. Cochrane Database Syst Rev. 2008;2008(2):CD003297.
25. Baars EW, Kooreman P. A 6-year comparative economic evaluation of healthcare costs and mortality rates of Dutch patients from conventional and CAM GPs. BMJ Open. 2014;4(8):e005332.
26. Kooreman P, Baars EW. Patients whose GP knows complementary medicine tend to have lower costs and live longer. Eur J Health Econ. 2012;13(6):769-776.
27. Kienle GS, Albionico HU, Baars E, Hamre HJ, Zimmermann P, Kiene H. Anthroposophic medicine: an integrative medical system originating in europe. Glob Adv Health Med. 2013;2(6):20-31.
28. Baars EW, Koster EB, Verhoef J. The contribution of anthroposophic medicine to self-management: an exploration of concepts, evidence, and patient perspectives. Complement Med Res. 2017;24(4):225-231.
29. Péraud M, Mittring N, Schweiger D, Kummer C, Witt CM. MERGING conventional and complementary medicine in a clinic department - a theoretical model and practical recommendations. BMC Complement Altern Med. 2015;15:172.
30. Baars EW, Hamre HJ. Whole medical systems versus the system of conventional biomedicine: a critical, narrative review of similarities, differences, and factors that promote the integration process. Evid Based Complement Alternat Med. 2017;2017:4904930.
31. Heusser P. Anthroposophy and Science: An Introduction. Peter Lang, 2016.
32. Geue K, Goethe H, Buttstaedt M, Kleiner E, Richter D, Singer S. An overview of art therapy interventions for cancer patients and the results of research. Complement Ther Med. 2010;18(3-4):160-170.
33. Bozuk H, Ozcan K, Erdogan C, Mutlu H, Demir M, Coskun S. A comparative study of art therapy in cancer patients receiving chemotherapy and improvement in quality of life by watercolor painting. Complement Ther Med. 2017;30:67-72.
34. Heusser P, Braun SB, Ziegler R, et al. Palliative in-patient cancer treatment in an anthroposophic hospital: I. Treatment patterns and compliance with anthroposophic medicine. Forsch Komplementmed. 2006;13(2):94-100.
35. Läengler A, Spix C, Edelhäuser F, et al. Anthroposophic medicine in paediatric oncology in Germany: results of a population-based retrospective parental survey. Pediatr Blood Cancer. 2010;55(6):1111-1117.
36. Seifert GJ. Integrative Medizin in der Pädiatrischen Onkologie. Freie Universität Berlin; 2014.
37. Kröz M, Reif M, Glinz A, et al. CRF-2 study group. Impact of a combined multimodal-aerobic and multimodal intervention compared to standard aerobic treatment in breast cancer survivors with chronic cancer-related fatigue - results of a three-armed pragmatic trial in a comprehensive cohort design. BMC Cancer. 2017;17(1):166.
38. Steinborn C, Klemd AM, Sanchez-Campillo AS, et al. Viscum album L. extracts and their application in oncology]. Postepy Hig Med Dosw. 2014;68:1216-1224.
39. Orange M, Reuter U, Hobohm U. Coley’s lessons remembered: augmenting mistletoe therapy. Integr Cancer Ther. 2016;15(4):502-511.
40. Wrotek S, Skawiński R, Kozak W. Immunostymulujące właściwości preparatów pozyskiwanych z jemioły i ich zastosowanie w onkologii [Immunostimulatory properties of mistletoe extracts and their application in oncology]. Postepy Hig Med Dosw. 2014;68:1216-1224.
41. Steele ML, Axtner J, Happe A, Kröz M, Matthes H, Schad F. Adverse drug reactions and expected effects to therapy with subcutaneous mistletoe extracts (viscum album L.) in cancer patients. Evid Based Complement Alternat Med. 2014;2014:724258.
42. Schad F, Thronicke A, Merkle A, et al. Implementation of an integrative oncological concept in the daily care of a German certified breast cancer center. Complement Med Res. 2018;25(2):85-91.
43. Thronicke A, Oei SL, Merkle A, et al. Integrative cancer care in a certified cancer centre of a German anthroposophic hospital. *Complement Ther Med.* 2018;40:151-157.
44. Craig P, Dieppe P, Macintyre S, et al. Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ.* 2008;337:a1655.
45. Swanborn PG. *Evalueren: Boom Koninklijke Uitgevers*; 2004.
46. Hamre HJ, Witt CM, Glockmann A, Ziegler R, Willich SN, Kienes H. Rhythmical massage therapy in chronic disease: a 4-year prospective cohort study. *J Altern Complement Med.* 2007;13(6):635-642.
47. Laengler A, Seiler R, Buessing A, et al. P04. 47. Parents’ satisfaction in a department of integrative pediatric oncology: a ten year experience. *BMC Complement Altern Med.* 2012;12(1):P317.
48. Laengler A, Seiler R, Zuzak T, et al. P02. 10. 10-year experience from an integrative pediatric oncology centre: a retrospective analysis. *BMC Complement Altern Med.* 2012;12(S1):P66.
49. Ponstein AS, Zwart CA, van Gerven M, Baars EW. The development of an anthroposophic, whole medical system, healthcare program for patients with depressive disorders. *J Altern Complement Med.* 2017;23(12):941-948.
50. Baarda DB, van der Hulst M, De Goede M. Basisboek interview: Noordhoff Uitgevers; 2017.
51. Werthmann PG, Huber R, Kienle GS. Durable clinical remission of a skull metastasis under intralesional Viscom album extract therapy: Case report. *Head Neck.* 2018;40(7):E77-E81.
52. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item check-list for interviews and focus groups. *Int J Qual Health Care.* 2007;19(6):349-357.
53. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn’t. *BMJ.* 1996;312(7023):71-72.
54. Herman PM, Poindexter BL, Witt CM, Eisenberg DM. Are complementary therapies and integrative care cost-effective? A systematic review of economic evaluations. *BMJ Open.* 2012;2(5):e001046.