



## Pragmatic Model for Integrating Complementary and Alternative Medicine in Primary Care Management of Chronic Musculoskeletal Pain

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### Abstract

**Background:** Integration of complementary and alternative medicine (CAM) into conventional care is driven by patients' needs for holistic care. This study aimed to develop a model for integration of CAM into primary healthcare in close collaboration with patients suffering from chronic musculoskeletal pain (CMP).

**Methods:** The study had a qualitative inductive approach following the principles of Grounded Theory, where data were collected and generated via several data sources and steps; individual and focus group interviews and meetings with patients, general practitioners (GPs), CAM practitioners, health insurers and other key informants.

**Results:** Consensus was reached on a model in which shared decision making was introduced to facilitate discussions on CAM between patients and GPs. Guided by evidence and best-practices, GPs refer patients to one of five selected and reimbursed CAM therapies (acupuncture, homeopathy, naturopathy, osteopathy or Tai Chi) and respective practitioner within their integrative network. CAM practitioners report treatment outcome back to the GP who follows-up on the patient for further evaluation.

**Conclusions:** In conclusion, it was feasible to develop a model for integration of CAM into primary healthcare management of CMP that was driven by patients' needs and obtained consensus of all stakeholders. The model is the first in the Netherlands to provide for integrative health services in primary care. It needs to be tested in a study setting before further implementation is recommended.

**Keywords:** Primary care; Complementary and alternative medicine; Integrative medicine; Chronic musculoskeletal pain

**Abbreviations:** CAM: Complementary and Alternative Medicine; CMP: Chronic Musculoskeletal Pain; GPs: General Practitioners; PPCG: Dutch Platform for Patients on Complementary Health Care; RET: Regional Expert Team

### Introduction

Chronic musculoskeletal pain (CMP) is the most frequently occurring pain complaint managed in primary healthcare [1]. It can range from local pain, as in the common CMP types such as low back pain and knee pain, to more general bodily pain in fibromyalgia [2]. Musculoskeletal pain is considered chronic if the pain is still present after three months [3]. The prevalence of CMP is reported to range from approximately 20% to 48% in the general population [1,4-7]. As CMP is a major burden for patients and often causes long-term absence from work, adequate management and treatment of CMP poses a major health challenge for general practitioners (GPs) [8-10]. Pharmacological therapies have been reported to provide inadequate long-term pain relief for CMP [11-13]. Therefore, guidelines generally recommend lifestyle interventions such as exercise. Although shown to be effective, life-style changes are very difficult to maintain [14,15].

The use of complementary and alternative medicine (CAM) among people with CMP has become increasingly popular. CAM is defined as a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine, such as acupuncture and homeopathy [16]. Estimates of CAM use in CMP patients differed between studies from on average 42 to 90% [17-23]. A previous Dutch study reported that 71% of patients with CMP had visited a CAM practitioner in either manual therapies, acupuncture, homeopathy, mind-body therapy or naturopathy [24].

Only a minority (30%) of those had actively communicated this CAM use with their GP. The majority of people with CMP surveyed in the study expressed their needs for a GP who inquires about CAM use and refers to CAM practitioners. As CAM is most commonly offered by practitioners in own private practices, rather than in conventional healthcare settings, no strategies, approaches nor models for integration of CAM into primary care exist in the Netherlands.

Several models for integration of CAM have been described [25]. In these models, the provision of conventional and CAM therapies varies from parallel practices, to consultative, collaborative, coordinated, multidisciplinary, interdisciplinary and totally integrated practices. Models for integrative primary care management of CMP, such as low back and neck pain, have been developed [26-29]. These models were designed according to the different health care delivery systems in the respective countries (UK, USA, Canada and Sweden) and are therefore not easily implemented in countries with other health care systems. More importantly, up till now, strategies on integration of CAM therapies largely rely on opinions and experiences of clinicians and researchers, rather than on criteria from the patient's perspective [26-

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Received March 17, 2016; Accepted May 14, 2016; Published May 21, 2016

**Citation:** Jong MC, Busch M, van de Vijver LPL, Jong M, Fritsma J, et al. (2016) Pragmatic Model for Integrating Complementary and Alternative Medicine in Primary Care Management of Chronic Musculoskeletal Pain. Primary Health Care 6: 224. doi:10.4172/2167-1079.1000224

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29]. Evaluation of such a model in practice has therefore demonstrated a mismatch between what patients wanted and what was estimated by the ones designing the model [26]. Nowadays, health care is evolving more and more toward a 'patient-centered model', in which patients become active participants and where care is designed to their individual needs and preferences [30]. It is therefore of great importance to actively involve patients and patients organizations into the development of models for integrative care.

The present study was initiated by the Dutch Platform for Patients on Complementary Health Care (PPCG). It aimed to develop a model for integration of CAM into primary care, in close collaboration with patients suffering from musculoskeletal pain. In order to enhance acceptability of the integrative model, key informants in primary care and CAM such as GPs, CAM practitioners, health insurance agencies and other health care associations were invited to participate in the study.

## Methods and Materials

### Study design and setting

This study was executed as phase 2 of a larger project, aimed to develop, implement and evaluate an integrative model for CMP in primary care and took place in the period May 2011- July 2012. Phase 1 of this project explored patient's perspectives towards integration of CAM [24]. The implementation and evaluation of the integrative model for CMP (Phase 3) was approved by the ethics committee (METOPP no: NL41527.028.12) and is expected to be finished by the end of 2015. The current study had a qualitative inductive approach, identical to the one previously used by others to successfully develop an integrative model for primary care [29,31]. In essence, this approach followed the principles of Grounded Theory in which experiences from participants provided the framework of explaining practice to further theory- and model development [32]. The study was conducted in primary care centers in the region of Amsterdam and in the region of Groningen. The project team performing the study consisted of one representative of a patient interest organization, one expert on CAM implementation and two senior researchers. The project team was supported by a Regional Expert Team (RET) as developed by Zorgbelang Groningen (regional patient interest organization). The RET consisted of six individual patients (one men, five women) who were experts by experience and able to communicate about their experiences. They all suffered from CMP for more than 5 years due to osteoarthritis, arthrosis, rheumatoid arthritis, fibromyalgia or a combination thereof. The project team was also supported by two GPs of primary care centers in Amsterdam.

### Study procedures and participants

In an inductive study approach, following the principles of Grounded Theory, data can be generated from a multitude of sources, such as for example interviews, observations, documents and more [32]. Investigative procedures therefore involved focus group and key informant interviews with the following participants: 1. Patients, 2. Patient organizations, 3. GPs, 4. CAM practitioners, 5. Other key informants such as health insurance companies and health service research institutes, and 6. Regional Expert Team.

Four focus group interviews were conducted with the aim to collect "high quality data in a social context where people could consider their own views in the context of the views of others" [33]. All focus groups lasted approximately 2 hours. Sessions were recorded and field-notes were taken. The first focus group (May 2011) was with ten patients suffering from CMP. The opening question asked for patients'

experiences with CAM use. Subsequently, four questions followed on which health effects patients had experienced from CAM, how they communicated CAM use with their GP, how they envisioned the role of their GP with respect to CAM and which hurdles they encountered upon CAM use. At the end of the focus group interview, patients were asked; if they had one minute, what would they communicate about their CAM use with their GP? The second focus group (December 2011) was with six GPs working in primary care centers in the region of Amsterdam. It addressed four open questions exploring the needs, knowledge, general requirements and existing network of GPs towards integration of CAM in primary care. The third focus group (March 2012) was composed of ten members of the PPCG. An open discussion was initiated on the question how to envision, from a patients' perspective, the collaboration and communication between patients, GPs and CAM practitioners. The fourth focus group (April 2012) was with nine CAM practitioners. They were all physician, and presented a selection of members of the Dutch physician association for Integrative Medicine (AVIG). The central question for the open discussion was similar to that in the third focus group, but now from the perspective of the CAM practitioner.

Eight face-to-face interviews with key informants were conducted between May 2011 and February 2012. The first interview was with the Netherlands Organization for Health Research and Development (ZonMw) with whom further key informants were identified. Other key informants included two major health insurance companies in the Netherlands (Menzis and Agis), the foundation of health insurance companies on healthcare innovation (Innovatiefonds Zorgverzekeraars), two institutes for applied health services research (NIVEL, TNO), the national organization for primary care (LVG) and the Federation of Patient and Consumer Organizations in the Netherlands (NPCF). An open-ended interview guide was developed on the basis of patient's perspectives of integrative primary care as previously published [24]. Key informants were invited to also bring own themes and comments into the interview. The interviews lasted for one hour. The regional expert team of patients (RET) were invited to share their experiences with CAM use and their perspectives on integrative primary care by email via written questions. Written answers from all RET members were returned to the project team via email.

### Data collection and analysis

Data collection and analysis was divided into two clearly distinct phases. In the first phase, field notes from individual and focus group interviews with key informants on their meaning and needs to enable a successful collaboration between providers were examined by two members of the project team by constant comparisons. Using these notes, a list of key themes and illustrative quotes was generated, categorized by key informant, providing the basis for a conceptual integrative model that was "grounded" in the perceptions and experiences of key informants. In the second phase, the generated themes and evolving conceptual integrative model were presented in confirmatory meetings to the RET, GPs, CAM practitioners and members of patient organizations (PPCG) for critique and refinement of the integrative model. Finalization of the integrative model was achieved in July 2012 by means of a consensus meeting in which the most important key informants were present: patients, GPs, CAM practitioners and Health Insurance Agencies.

## Results

### Development of the integrative model

After the first phase of data collection and analysis a set of themes

appeared from focus groups and key informant interviews on how to integrate CAM into primary care. In table 1, generated themes and illustrative quotes of patients are shown. The patient is very well aware of the fact that GPs and CAM practitioners work in *two distinct worlds*, clearly separated from each other by philosophy. Patients value the expertise of both of them, and do not expect GPs to learn how to practice CAM themselves or vice versa. Integration of CAM into primary care is envisaged by referrals of GPs to CAM practitioners and by facilitating *communication on CAM* between them. Patients do not *disclose CAM use* to their GPs because they think the GPs are not knowledgeable on this topic and/or they are afraid of the GPs disapproval. Furthermore, patients want to have access to *reliable information* on CAM therapies and CAM practitioners. Enough *time* to properly discuss health problems and CAM with the GP came up, as well as the importance of *reimbursement* of CAM therapies (Table 1).

A theme derived from GPs was the *evidence-base of CAM* therapies for CMP (Table 2). Possible referrals to CAM should be done on the basis of available evidence and safety for a certain condition. Furthermore, *experiential exposure to CAM* therapies was a theme as to better understand the thoughts and ideas behind CAM. Another

theme was *information and guidance* on which patients (related to health problems or diagnosis) can be referred to CAM practitioners. An additional theme generated through GP data was the *reliability and professional standard of CAM practitioners*. They should preferably be medical doctors as to not withhold patients from an active conventional treatment and refer patients back to the GP when needed.

A general theme brought up by CAM practitioners was that of *informing and guiding GPs* with respect to which patients could be referred to a CAM therapy (Table 3). Furthermore, *best CAM –practices* should be leading in the selection of CAM therapies in an integrative model. *CAM practitioner qualifications* was identified as a third theme as whether to select only medical doctors practicing CAM or also non-medical practitioners. Themes derived from other key informants were *cost-effectiveness of CAM* (health insurers) (Table 3). As CAM therapies are not covered by basic insurance, the question was raised whether cost-effectiveness of CAM integration could be expected. The theme of *gatekeeper* was brought up as to who has the general responsibility in the integrative model, the patient, the GP or the CAM practitioner. The theme of *shared decision making* was identified with respect to the importance of facilitating communication and referral to CAM between GPs and patients.

Themes	Quotes
<b>Patients</b>	
Two distinct worlds	"My GP does not have to practice a CAM therapy himself, he can better leave that to the CAM practitioner, he is already busy enough"
Communication on CAM	"If GPs dare to be open for other treatment options and talk about it with CAM practitioner, something essential can change in health care"
Disclosure of CAM use	"It is my experience that I am not been taken seriously if I tell my GP that I use CAM. I would like to get more understanding, now I only tell people in my direct environment from which I know that they are open to it"
Reliable information on CAM	"It is essential for my health problems that I have easy access to good and reliable information on CAM, for example a list of trustworthy CAM practitioners"
Time with GP	"I would like to have time with my GP to discuss which CAM treatment best fits me and what feels good for me to do, so that I can comply to it and can reach the results that we aim for"
Reimbursement of CAM	"I have used very expensive biologics that were reimbursed, while they did not work or gave side effects, but cheaper herbal medicines that are effective are not reimbursed"

**Table 1:** Themes and subsequent illustrative quotes derived from patients, patients organizations and RET interviews on how to integrate CAM into primary care.

Themes	Quotes
<b>General Practitioners</b>	
Evidence-base of CAM	"I very much would like to know which evidence there is for a CAM therapy, is it effective or inconclusive and how about safety?"
Experiential exposure to CAM	"How much information do you need on CAM in order to be able to refer? You have to know at least what it is about, to recognize it somehow, and to feel or experience for yourself as a GP what it is"
Information and guidance	"I would like to have information, simple facts sheets, as to which CAM therapy can be referred to, for which symptom and which result may be expected"
Reliability/professional standards CAM practitioners	"If I refer to a CAM practitioner that I know, that is OK, but if I do not know them, I have a preference that it is a medical doctor and member of a professional CAM organization"

**Table 2:** Themes and subsequent illustrative quotes from GPs on how to integrate CAM into primary care.

Themes	Quotes
<b>CAM practitioner</b>	
Informing and guiding GPs	"The GP should really know something about all CAM therapies in order to decide, on an individual basis, to which CAM therapy the patient should be referred to"
Best CAM practices	"I can treat arthritis of the knee and low back pain successfully with acupuncture, that is simple and straight forward"
CAM practitioner qualifications	"I wonder whether it is allowed by law for a general practitioner to share medical information in a referral letter to a CAM practitioner who is not a medical doctor"
<b>Other key informants</b>	
Cost-effectiveness CAM	"Referring patients to CAM might decrease the existing fear for enormous raises in costs, as giving people the choice what they really want, may be less expensive in the end"
Gatekeeper integrative model	"It remains the responsibility of the GP when he refers the patients to a CAM practitioner and those should to be trusted in which cases it is necessary to refer the patient back to the GP"
Shared decision making	"The relation between the professional and the patient should be central, different options should be discussed, taking into account the values and preferences of both"

**Table 3:** Themes and subsequent illustrative quotes from CAM practitioners other key informants on how to integrate CAM into primary care.

In the second phase of data collection more pragmatic questions and issues arose on how to refine and implement the integrative model: which CAM therapies should be selected as part of the integrative model? Should this be decided on best-practice experience, evidence, prevalence, patient's choice or therapies being recognized by health insurers? How many referrals to CAM therapies should be included and how many CAM treatment sessions per referral? Should the GP only refer to CAM practitioner or is self-use of CAM in the form of supplements and herbal supplements also advocated? How should the CAM practitioner provide feedback of his treatment to the GP? Is there enough time for shared decision making on CAM during a normal ten minute GP consultation? Furthermore, GPs wanted to make personal acquaintance with CAM practitioners as to build up an integrative collaborative network and GPs should initiate the discussion with the patient on CAM. This was felt to support the patients' feeling that the GP is taking their needs seriously. The questions and issues were discussed with all stakeholders as to prepare the documentation on which a decision for a model could be made. Consensus on the model was achieved in a final meeting with at least two or more representatives of the most important stakeholders: RET, GPs, CAM practitioners, PPCG and Health Insurers.

### Integrative model in practice

The model for integration of CAM in primary care management of CMP that was agreed upon is schematically depicted in Figure 1. It starts with group or individual meetings between GPs and selected CAM practitioners aimed to get acquainted with each other and to exchange views, expertise and experiences in the management of CMP. Those CMP patients that contact their GP, are invited for a first consultation of 20 minutes in which the GP inquires about previous CAM use and informs patients on possible referral to one of the five selected CAM therapies: acupuncture, homeopathy, naturopathy, osteopathy, Tai Chi. These CAM therapies represented the top 5 most used CAM therapies for CMP in the Netherlands [24]. The GP provides the patient with an information leaflet on the CAM therapies and a second consultation between the patient and the GP is scheduled for one week later. During the second consultation of 20 minutes, the GP and patient mutually

decide via the process of shared decision making whether or not to refer to one of the CAM therapies. This shared decision process includes discussion of the patients' health problems and history, CAM options, patients' preferences, values and expectations and pros/cons of CAM. The selection of a CAM therapy and individual CAM practitioner is guided by specifically developed tools for implementation (as described below). The GP writes a referral letter containing the necessary information to the CAM practitioner, which the patient hands over to the CAM practitioner upon the first consultation. The patient receives CAM treatment, of which full costs for maximum five CAM consultations are covered by the health insurance (and twelve classes for Tai Chi). The CAM practitioner sends a letter back to the GP on the treatment outcome of the patient and advice for follow up. The patient plans a third consult visit with his GP (2 x 10 min) to share the experiences and treatment outcome with CAM and discuss possible continuation and follow-up.

### Practical tools for implementation

From the second phase of data collection and analysis, it became apparent that there was also a need to develop practical tools for implementation of the model. To support optimal shared decision making, an information leaflet was developed for patients, describing in general what CAM is and more specifically each of the selected CAM therapies. For GPs, a schematic table was developed depicting the available evidence for each selected CAM therapy and respective CMP related health problem. Since for half of the CMP conditions no studies with the selected CAM therapies could be found in literature, it was decided after consensus with stakeholders to also investigate personal practice experience of CAM practitioners in treating CMP. Through the Dutch professional CAM associations, five CAM practitioners per CAM therapy were selected to rate their clinical experience with CMP conditions. Results on clinical experience were depicted in a print-out table for GPs. Furthermore, a social map of selected CAM practitioners was created with the aim to facilitate the GPs in referring their patients to specific CAM therapies. CAM practitioners were selected by the project team on the following criteria: 1. Member of a recognized professional CAM association, 2. More than five years of

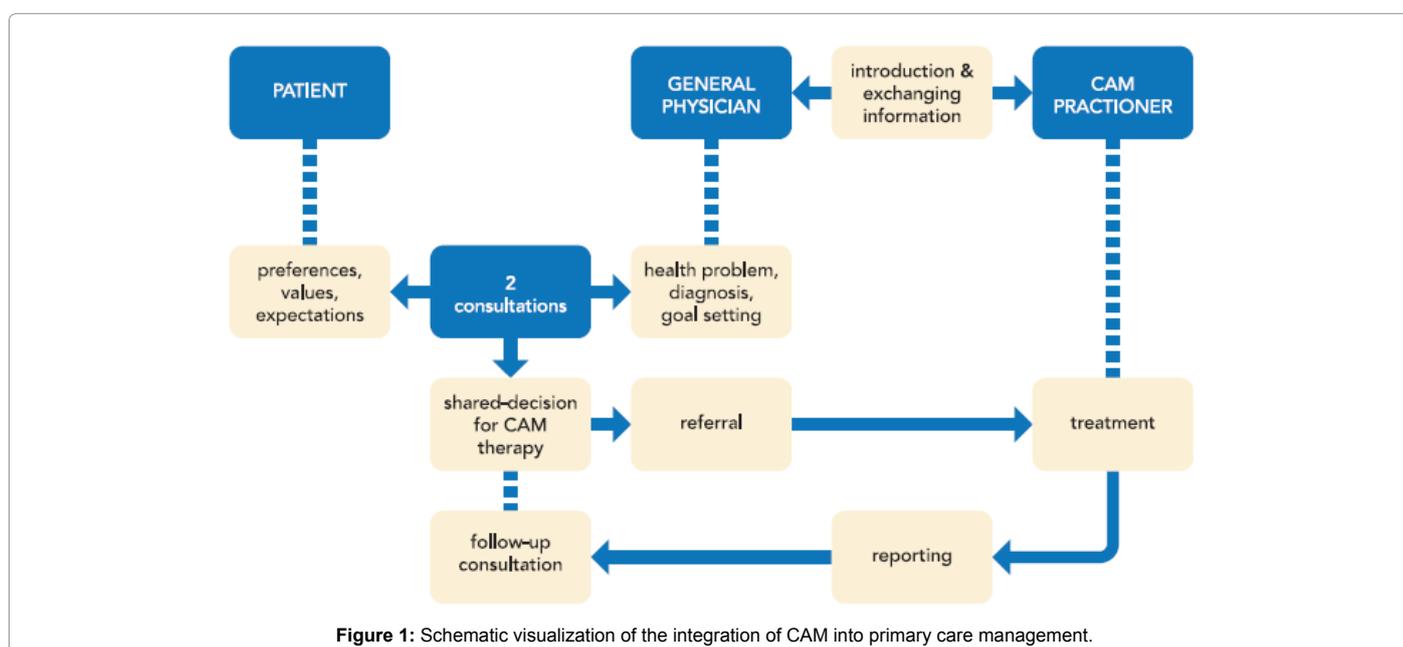


Figure 1: Schematic visualization of the integration of CAM into primary care management.

experience in practicing the specific CAM therapy, 3. At least more than two positive references from GPs in the area, 4. Private practice < 30 km from a GPs primary care center. At least two CAM practitioners for each CAM therapy per region (Amsterdam and Groningen) were selected. Selected CAM practitioners included both physicians and non-medical practitioners. The social map included photographs of each selected CAM practitioner, name and address of the practice and information on the specific expertise of the CAM practitioner. Last, two standardized concept letters were developed for GPs and CAM practitioners to use. A standardized referral letter that GPs could use to refer patients to CAM practitioners included patient information on the name, birth date, diagnosis, current (medical) treatment, reasons for referral and expected treatment outcomes. Another standardized letter for CAM practitioners was developed in order to report patients' therapy results back to the GP. It included information on name, birth date, diagnosis, description of treatment followed (how many times, no or yes medication), treatment outcome and advise for follow-up.

## Discussion

It is very promising that in the present study consensus was reached among patients, GPs, CAM practitioners and health insurers on how to integrate CAM into primary care. In the range of different integrative models as described by Boon et al. [25], the integrative model on which consensus was reached was somewhere between a consultative model (expert advice is given from one professional to another) and a collaborative model (professionals who normally practice independently from each other, share information concerning a particular patient). The added value of the presented integrative model to those previously published in literature, is that the current model was developed together with patients [26-29]. Their perspectives were in many cases leading as to decide on the final model. It was for example quite clear that patients saw no need for full integration of CAM, but wanted best of "both worlds": being taken seriously by GPs in their search for CAM and get the GPs referral to a reliable CAM practitioner. Guiding them to select a CAM therapy was expected to be a thorough process. Therefore, the concept of shared decision making was built into the integrative model. The structural elements of shared decision making were expected to facilitate discussing patients' health problems, expectations and preferences as well as the available evidence and pro/cons of CAM. Dutch GPs were already familiar with this concept since implementation of shared decision making in clinical practice is strongly promoted in the Netherlands [34,35]. Patients also wanted time to discuss CAM use and referral with their GP. It was quite obvious to all stakeholders that the standard ten minute consultation time of GPs was not sufficient. Although GPs preferred to implement the integrative model within the existing schedule of consultation times, consensus was reached with all parties to use 20 minutes (double consultation time) for CAM use discussions in a first consultation and another 20 minutes for CAM referral in a second consultation.

Reimbursement of CAM was another big issue for patients. In contrast to some other EU countries, costs for CAM therapies are not covered by standard health insurance in the Netherlands [36]. Dutch citizens have the possibility to pay for additional insurance that (partly) covers some CAM therapies, however, health insurers are not obliged to accept people that apply for additional insurance. At the time of developing the integrative model, a Dutch study was published that demonstrated cost-effectiveness of CAM therapies in primary care [37]. These findings supported the process to reach consensus on reimbursement of CAM therapies by the participating health insurer (Menzis). It was decided by all stakeholders to maximal

reimburse five CAM treatments (amounting to approximately €250 to €500). Questioned homeopaths, osteopaths and naturopaths shared the opinion that three to four treatments would suffice, whereas acupuncturists wished for more treatments (six to seven). A recent study in the Netherlands showed that chronic patients suffering from mitochondrial diseases spend up to €489 on CAM therapies per year out of the pocket [38]. Further studies are warranted to investigate what patients would be willing to pay themselves on CAM therapies and what should be reimbursed.

In the presented integrative model it was mutually decided that GPs could make referrals to CAM practitioners of both medical and non-medical background, a topic heavily debated. Many stakeholders are of the opinion that CAM practitioners with substantial medical knowledge, thus physicians practicing CAM, would fit better into integration initiatives as to facilitate communication with GPs [39]. Although more traditional forms of CAM, such as homeopathy and acupuncture are practiced by physicians in the Netherlands, most CAM therapies are practiced by non-medical or paramedical practitioners [40]. For patients in the present study it did not matter whether the practitioner was a physician or not, as long as the practitioner had good qualifications. GPs found it more important that the CAM practitioner worked within an ethical framework of a professional organization, with formal procedures for complaints, malpractice as to not withhold patients from effective conventional treatment. They also wanted to get personally acquainted with the CAM practitioner to build up a working relationship. It was decided that within the current integrative model, each physician should develop a list of trusted CAM practitioners in the area around his practice. This should be supported by facilitating meetings between them, as well as by a 'social map' of referral to CAM practitioners.

The integrative primary care model presented in this study also has its limitations. First of all, a qualitative inductive design was chosen, in line with the methods as published by others [29,31]. Although in essence, the methodological principles of Grounded Theory were followed, the integrative model might have been more "grounded" if the Grounded Theory research method would have been applied to the full extent. Another limitation of the present study is that with longer consultations times and reimbursement of CAM therapies, the integrative model operates to some extent outside the current context of conventional primary care. Primary care in the Netherlands is currently facing many changes, such as the introduction of multidisciplinary care groups for chronic patients [41,42]. Evaluation of the integrative model is therefore needed to adapt the model to better align with current changes in standard primary care. Since CAM practitioners work outside the realm of conventional medicine and therefore do not have access to the formal electronic patient registration system, it was not possible to directly document the prescription of CAM remedies into the registration system of the GP. Although feedback from the CAM practitioner to the GP is foreseen in the model through a written report, it would have been better for safety monitoring of possible interactions between conventional medication and CAM remedies to have this information during the process of treatment. Furthermore, all involved stakeholders unanimously decided that the GP should be the gatekeeper of the proposed integrative model as it seemed most appropriate with respect to promoting health and safety of the patient. Since nowadays the GP is overloaded with various tasks, it remains to be seen whether the GP is able to carry on another task as to monitor referrals and outcome of CAM therapy. Another limitation is that the CAM evidence tables and the social map of CAM practitioners, as developed for implementation of the model and being highly favored

by GP's and patients, need structural updating. It is advised that these tools are embedded in a national center for integrative care to guarantee high quality and updated information.

In conclusion, it was feasible to develop a model for integration of CAM into primary care management of CMP that was driven by patients' needs and obtained consensus of all other participating stakeholders. The model will support patients in disclosing CAM use to GPs and aid in building up an integrative collaborative network of GPs and CAM practitioners. As a next step, the effects of the proposed integrative model on improving CMP management need to be investigated.

### Acknowledgements

This study was financed by the PGO fund of the Dutch Ministry of Health, Welfare and Sports. All authors declare that they have no conflict of interest. We would like to thank the members of the RET and the PPCG for their valuable input. Jan Mehrtens and Ilonka Brugemann are acknowledged for giving their expert advice and assistance in developing the integrative model.

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**Citation:** Jong MC, Busch M, van de Vijver LPL, Jong M, Fritsma J, et al. (2016) Pragmatic Model for Integrating Complementary and Alternative Medicine in Primary Care Management of Chronic Musculoskeletal Pain. Primary Health Care 6: 224. doi:[10.4172/2167-1079.1000224](https://doi.org/10.4172/2167-1079.1000224)

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