The Roadmap for European CAM Research

A pan-European research network for Complementary and Alternative Medicine (CAM)

Final Report of CAMbrella Work Package 4 (leader: George Lewith)

CAM use in Europe – The patients' perspective. Part I: A systematic literature review of CAM prevalence in the EU

Susan Eardley, Felicity L Bishop, Philip Prescott, Francesco Cardini, Benno Brinkhaus, Koldo Santos-Rey, Jorge Vas, Klaus von Ammon, Gabriella Hegyi, Simona Dragan, Bernhard Uehleke, Vinjar Fønnebø, George Lewith

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Final Report of CAMbrella Work Package 4 (leader: George Lewith)

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CAMbrella – A pan-European research network for Complementary and Alternative Medicine (CAM)
The goal of this collaboration project was to look into the present situation of CAM in Europe in all its relevant aspects and to create a sustained network of researchers in the field that can assist and carry through scientific endeavours in the future. Research into CAM – like any research in health issues – must be appropriate for the health care needs of EU citizens, and acceptable to the European institutions as well as to national research funders and health care providers. It was CAMbrella's intention to enable meaningful, reliable comparative research and communication within Europe and to create a sustainable structure and policy.

The CAMbrella network consists of academic research groups which do not advocate specific treatments. The specific objectives were

- To develop a consensus-based terminology widely accepted in Europe to describe CAM interventions
- To create a knowledge base that facilitates our understanding of patient demand for CAM and its prevalence
- To review the current legal status and policies governing CAM provision in the EU
- To explore the needs and attitudes of EU citizens with respect to CAM
- To develop an EU network involving centres of research excellence for collaborative research.

Based on this information, the project created a roadmap for research in CAM in Europe. The roadmap sums up and streamlines the findings of the whole project in one document that aims to outline the most important features of consistent CAM research at European level.

For other reports of the CAMbrella project which are also available on https://phaidra.univie.ac.at/ see the additional information on the description data (meta-data) of this report.

Acknowledgements

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Preface

According to the Description of Work of the CAMbrella project Work Package 4 on “CAM use – the patients’ perspective” encompassed the following tasks:

- Task 4.1: To address the prevalence of CAM use in Europe: We will take into account regional and national variations, and create a summary of current information about prevalence of CAM use and its trajectory.
- Task 4.2: To identify the major conditions treated with CAM: Based on existing literature as well as suggesting future research strategy to overcome relevant "evidence gaps" we will identify the major conditions treated with CAM. To explore the reasons why patients choose CAM: The survey material and existing databases will need to be systematically reviewed in order to answer this question.
- Task 4.3: To identify a standardised questionnaire for CAM use in at least three European languages that will provide a consistent, EU approach to a central, widespread limited range of CAM.

The report of Work Package 4 was split into two parts I (present report) and II: The present **part I** describes the objectives, methodology and findings regarding “A systematic literature review of CAM prevalence in the 27 EU member states and 12 associated countries”.
The report on a consensus-based and piloted questionnaire to assess the prevalence of CAM use in Europe (see task 4.3 above) is presented in terms of **part II** of the WP4 report (also available on Phaidra).

Table of content

Executive Summary

Objective

The use of CAM is increasing and we need to understand the issues surrounding the availability of CAM and its safe provision to EU citizens. We aimed to systematically review the literature to assess the prevalence of CAM use, the conditions it is used for, the reasons people use CAM and the quality of the research and reporting.

Methods

We searched the electronic data bases and grey literature for general population surveys of CAM use and extracted data according to the WP4 extraction protocol. Forest plots of the prevalence data demonstrated substantial heterogeneity of studies, we were unable to pool the data in a meta-analysis and therefore our report is produced as a narrative and based on descriptive statistics.

Results

We included 87 studies in our review. The quality of reporting was poor. The prevalence of CAM use varied widely across countries (0.3% to 86%) with homoeopathy being the most commonly reported CAM. Insufficient data meant we were unable to determine which sectors of the population use CAM although in common with other studies our data suggest that women are the main CAM users, dissatisfaction with conventional are is a common reason for CAM use and musculoskeletal problems are the conditions for which CAM is most popular.

Conclusion

The picture of CAM prevalence across the EU member states remains unclear due to the heterogeneity of studies and poor quality of reporting. We suggest improvements for future studies including consistent definitions of CAM for the EU, a core set of CAM's with country specific variations and the use of a valid and standardised reporting strategy to enhance accuracy of report and data pooling.

1. Introduction

The European Information Centre for Complementary & Alternative Medicine (EICCAM) suggest that more than 100 million EU citizens are regular users of CAM, largely for the treatment of chronic conditions [1]. As such CAM is an important issue for patients, health care providers, health care funders and researchers. A superficial view of the literature suggests that data across countries is inconsistent and therefore it may be difficult to compare statistics across EU member states. There seems to be a lack of standardised terminology between countries and in some EU states, it would appear that data may not be available. We aim to create a systematic and rigorous summary of the current information available about CAM use and its prevalence as well as its developmental trajectory as far as patient use is concerned and to suggest what future research might be valuable within this specific context (tasks 4.1 and 4.2).

Background

The use of CAM has increased considerably in Western Countries over the last 25 years and this has been well documented in the US and to some extent in the UK and Germany with the consequent epidemiological, economic and political importance for public health [2-6]. The use of specific CAM interventions such as acupuncture (Traditional Chinese Medicine), homeopathy, herbal medicine, massage, reflexology and Reiki healing has increased exponentially in Western industrialized nations countries over the last 25 years [2;4;6]. The WHO Centre for Health Development published a global atlas of traditional, complementary and alternative medicine by a text and map volume [7]. The authors concluded that for the European region CAM is highly prevalent, but were unable to draw a clear picture of CAM use across the whole EU as the evidence available had been drawn from just a few EU member states. We are aware that CAM is mainly used in addition to conventional care for many chronic and some acute health conditions as well as for maintaining health. For example, more than half of all breast cancer patients use some form of CAM as well as up to 90% of people with benign conditions such as arthritis [8]. CAM is often used as a mechanism for 'trading off' the use of conventional prescription drugs with over the counter medicine (OTC) in chronic disease, through consultations with both registered and non-registered practitioners and is practiced widely by both doctors and non-medically qualified individuals within the EU. We have repeatedly identified that large numbers of patients are seeking complementary medicine when they are ill; for instance approximately half of patients with some common cancers such as breast and prostate seek CAM during their cancer journey. Based on surveys in both the UK and Germany it would also appear that between 10 and 20% of the total population use CAM each year [4;5].

There is an urgent need to address this area across the whole EU so that we can develop an understanding of the medical and economic issues surrounding CAM, its availability and its

safe and legitimate provision to EU citizens. We understand that one of the many major drawbacks of existing nationwide surveys on CAM use may be that they do not allow reliable comparisons between EU member states. This is because they appear to use different definitions with respect to CAM and the associated treatment methods. As a consequence we will investigate this systematically and if appropriate, suggest that agreement in this field is essential across the EU so we can develop an understanding of what EU citizens are doing with respect to CAM and how we should develop health policies in this area.

Objectives

The objectives of Work Package 4 are to systematically review the literature to answer the following research questions:

- Address the prevalence of CAM use in Europe from (normally cross-sectional) population-based studies
- Which CAM's are used and for which conditions?
- Explore the reasons why patients choose CAM
- What is the quality of the data and quality of reporting?

2. Methods

2.1 Literature search

Following the previously designed CAMbrella systematic review literature search protocol (Version 1.5), and using the NCCAM definition of CAM [9], studies were identified by searching the following electronic databases. Ovid MEDLINE (R) (1948-09/10), Cochrane Library (1989-09/10), CINAHL (1989-09/10), EMBASE (1980-09/10), PsychINFO including PsychARTICLES (1989-09/10), Web of Science (1989-09/10), AMED (1985-09/10), CISCOM (1989-09/10). No limits were applied for language and foreign papers were translated where possible. Limits were applied for date (01 January 1989 to 31 December 2009) and 'human studies'. The last search was run on 29 September 2010.

We used the following search terms as per the WP4 review protocol to search all the above databases: access, access barriers, access trends, acupuncture, alternative, alternative medicine*, alternative therap*, attitude, to health, ayurveda, barriers, belief*, biofield, biofield therap*, chiropractic, choice, complementary, complementary medicine, complementary therap*, complementary therapies, consumer, consumer choice, consumer health information, data collection, demand, dietary , supplements, epidemiology, Europe, expectation*, frequency, healing, health care quality, access and evaluation, health care surveys, health knowledge, attitudes, practice, health services needs and demand, health services research, health surveys, herbal medicine, homeopathy, homoeopathy, incidence,

inclination, inhabitant*, integrative, integrative medicine*, integrative therap*, interviews as topic, Israel, knowledge, knowledge inclination, manipulation chiropractic, manipulation osteopathic, manipulation spinal, massage, medicine, medicine*, medicine ayurvedic, medicine chinese traditional, meditation, mind-body, mind-body therap*, motivation, naturopathy, needs assessment, nutrition assessment, nutrition surveys, occurrence of, opinion, osteopathic medicine, osteopathy, outlook, patient acceptance of health care, pervasiveness, point, point of view, popularity, population, predominance, prevalence, questionnaire, questionnaires, reason*, records as topic, reflexology, registration, registries, reiki, relaxation therapy, resident*, spiritual, spiritual healing, spiritual therapies, survey, therap*, therapeutic touch, trends, turkey, unconventional, unconventional medicine*, unconventional therap*, utilisation, view, yoga. The full electronic search strategy for the OVID MEDLINE database is provided in the appendix (Appendix 1).

In addition we hand searched the reference lists of included studies and requested further potentially relevant publications from the personal files of CAMbrella project members and other CAM experts. We also conducted citation searches for all included studies and searched the reference lists of previously published reviews. A protocol for searching the grey literature was developed and integrated into the search strategy. This protocol involved contacting CAM umbrella and registration bodies for information regarding CAM use, contacting CAM experts and searching the electronic grey literature base OPEN SIGLE for any relevant studies.

2.2 Literature inclusion criteria

To be included in the review the studies had to meet the following criteria

1. Design:

a. Population-based study AND
b. Cohort study OR
c. Cross-sectional study

2. Participants:

Those receiving CAM therapies broadly consistent with the NCCAM definition

a. In any EU 39 country
b. All ages
c. Assessment of at least one socio-demographic variable

3. Languages:

a. any EU39 language

4. Outcome:

Reports the prevalence of use in the general population of either

a. CAM in general or
b. One or more specific CAM modalities

2.3 Literature exclusion criteria

a. Non-peer-reviewed journal
b. Non-cross-sectional or non-cohort studies
c. Editorial, letter, theses, dissertations, case study, congress abstracts
d. Unpublished and on-going trials
e. Presentation as abstract only
f. No abstract
g. Double publication found in different databases
h. Focus exclusively on CAM use in disease-specific populations (e.g. cancer)

2.4 Selection of studies

The electronic database Reference Manager 12 was used to maintain the search results. One reviewer checked all the hits of the literature search and excluded clearly irrelevant articles based on title and abstract i.e. those not at all related to the prevalence of CAM use. The number of excluded articles was recorded but specific reasons for exclusion were not recorded beyond 'clearly irrelevant'. The titles, abstracts and (if necessary) full text copies of all the remaining articles were then assessed independently for eligibility by two reviewers using a specially designed eligibility flow chart according to the WP4 data extraction protocol (figure 1). Publications were excluded on agreement between the two reviewers (articles excluded at this stage of the prevalence review could have been appropriate for inclusion by other Work Packages so this database was circulated to other CAMbrella Work Packages 3, 5 and 7). Reasons for excluding each article were recorded in the database according to the exclusion criteria listed above. Disagreements were documented and resolved by discussion and inter-rater agreement was calculated by Cohen's kappa. We aimed to reach a strength of agreement of at least kappa = 0.70 (where <0.20=poor, 0.21 to 0.4=fair, 0.41 to 0.6= moderate, 0.61 to 0.8=good and 0.81 to 1.0=very good [10]. Full text copies of all eligible papers were then obtained and translated into English as necessary. This database was also made available to Work Packages 3, 5 and 7.

2.5 Data extraction process

Following the pre-designed WP4 extraction variables document (Appendix 2), an Excel spread sheet was created and data was extracted from each included paper and entered into individual worksheets of the spread sheet. The abstract, text and tables of each included paper were examined individually by one reviewer in order to detect all the relevant available information on CAM prevalence, types of CAM's, socio demographic data, reasons for use and conditions treated. The data was arranged in individual worksheets by type for example socio demographic information was recorded in one data sheet whilst types of

CAM's were reported in a separate sheet to enhance data handling. If a paper reported separately for different groups (i.e. children/adults, men/women etc) the variables were extracted for each group. Extra columns were created during the data extraction process to capture individual paper differences for example when a paper reported a CAM not previously reported in studies already examined, a new column was inserted to record this data. The data was entered numerically for numbers/percent of users or as direct quotes for example, how CAM had been defined to the participants was recorded by direct quote. The number/percent of users of individual CAMs or groups of CAM's was extracted where possible either directly from the paper or by calculating from figures given. Two reviewers independently extracted overall CAM prevalence data for all the included studies. Inter-examiner reliability was calculated by Cohen's kappa. Disagreements were documented and resolved by discussion

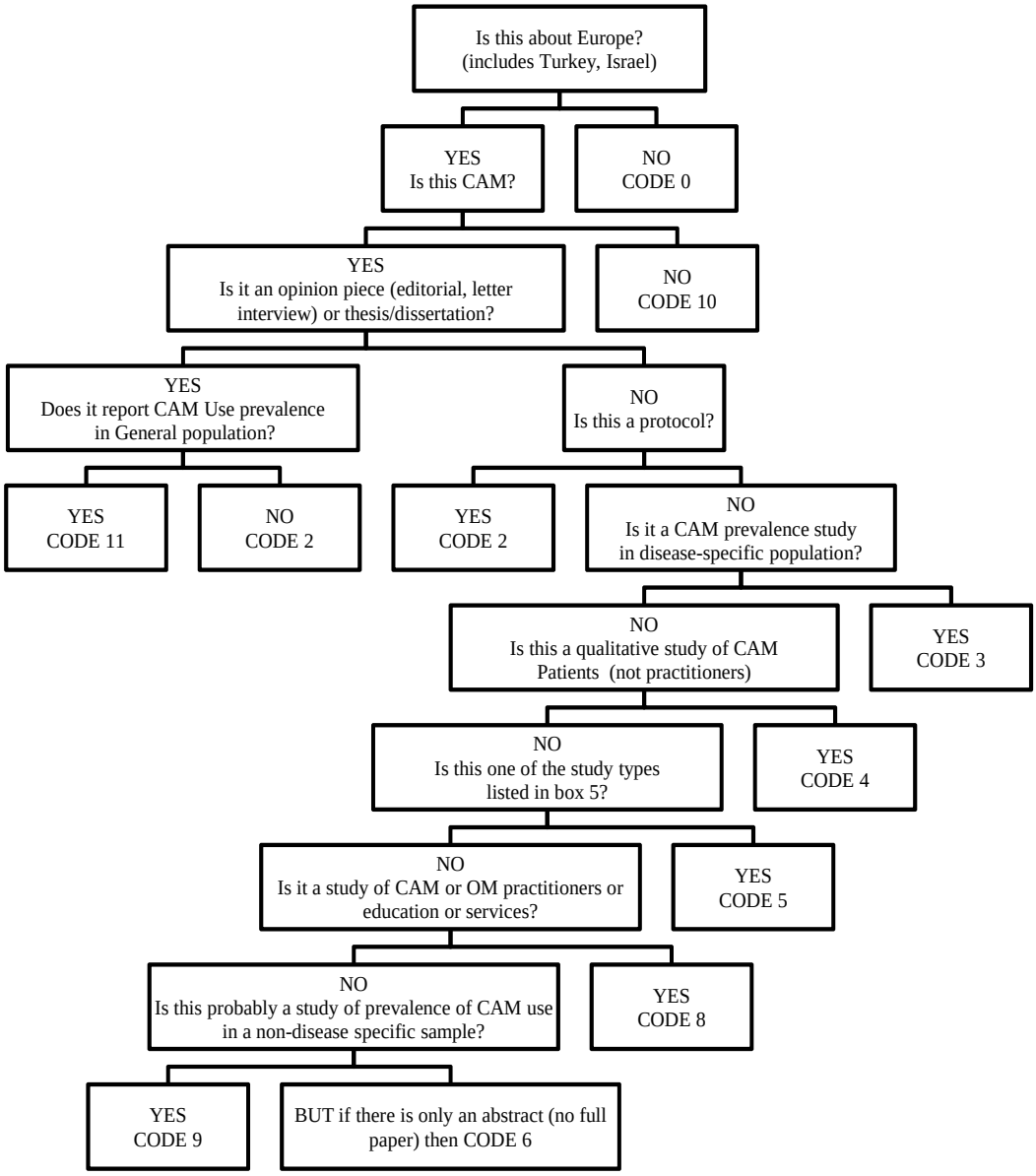
2.6 Quality assessment

We used a pre-existing quality assessment tool that was based on the STROBE statement checklist for observational studies [11] plus one item addressing conflict of interest which had been used in previous evaluations of CAM prevalence [12]. To evaluate quality, the data was examined for a catalogue of 16 questions organised in 4 domains (Appendix 3). The questions were weighted for importance for overall quality by the assignment of points with 16.5 points being the maximum score. Scores were then transformed into percentage points. Aspects of methodological and reporting quality were assessed by two reviewers independently; the second reviewer assessed a subsample of approximately 20% of the studies. Inter-rater agreement for study quality was calculated by Cohen's kappa with a target of at least kappa = 0.70 agreement (good [10]). If agreement on this subsample was low (< 0.70) the second reviewer would assess the remaining 80% of studies. Disagreements were documented and resolved by discussion.

2.7 Methods of analysis

We aimed to use standard descriptive statistics and Forest plots to depict prevalence rates of overall CAM use and of the more widely recognised CAM modalities. We aimed to perform Cochran's test for heterogeneity before a meta-analysis to combine the information from the different studies and to list the prevalence's for the main CAM techniques together with their associated conditions and reasons for use.

Figure 1. Flow chart of study eligibility criteria



Code 5 Study Types
Review/case study
Pharmacology
Mechanism of action
Effectiveness/efficacy
Cost effectiveness
Geography/history
Political/legal
Ethnobotanical survey
Attitudes to CAM (not practitioners' attitudes)

3. Results

We followed the PRISMA statement guidelines for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions [13].

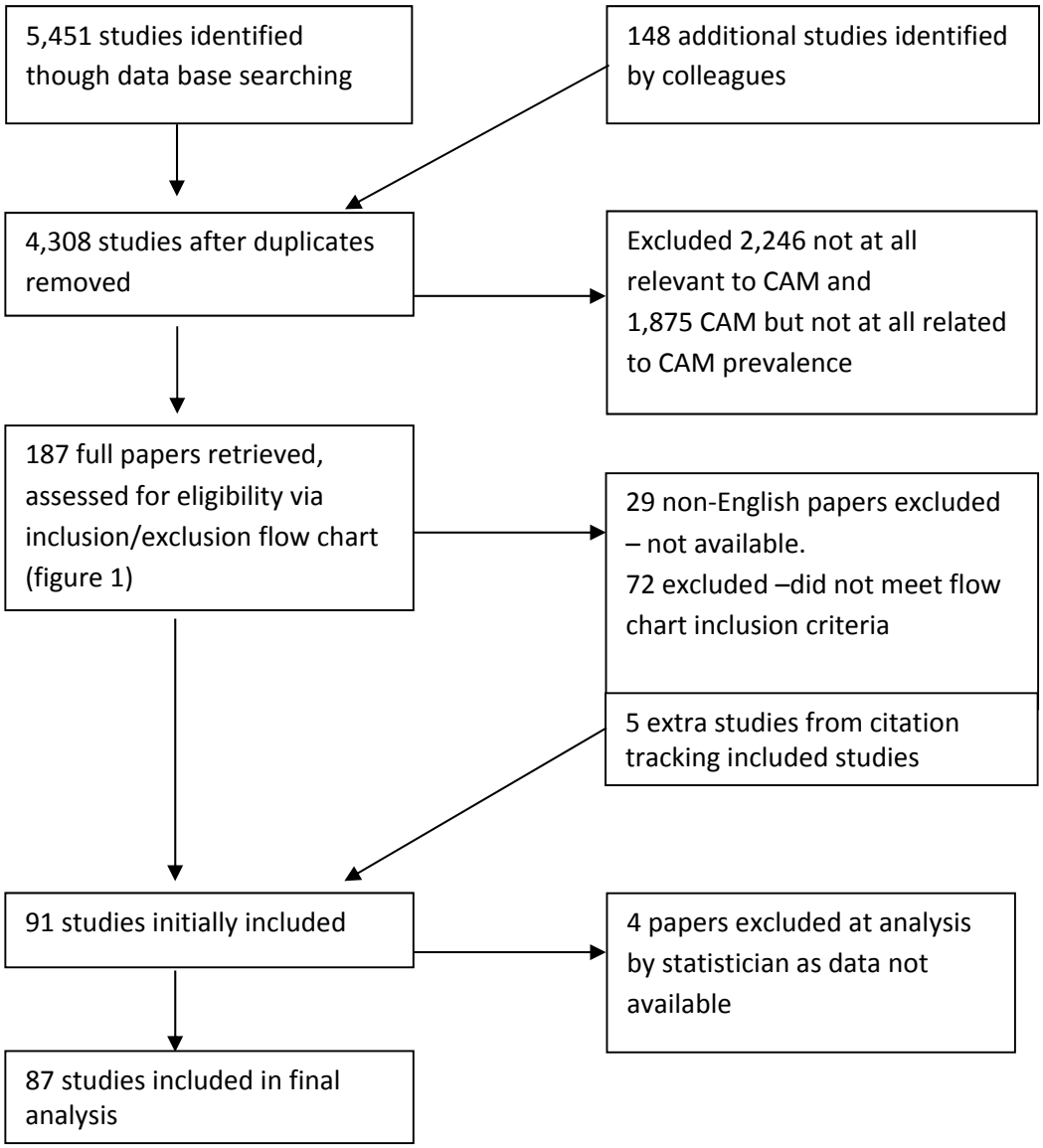
3.1 Study selection and characteristics

The initial electronic searches produced 5,451 studies and CAM experts identified a further 148 studies. After the removal of duplicates 4,308 studies remained. One reviewer examined the studies by title and abstract and excluded 2,246 studies as not at all relevant to CAM and 1,875 studies not at all related to CAM prevalence. We identified 187 papers potentially reporting the prevalence of CAM use, retrieved full papers of these studies and assessed them for eligibility via a specially designed flow chart to correspond with WP4 literature review inclusion and exclusion criteria (figure 1). We excluded 72 studies as they did not meet the inclusion criteria as detailed in figure 1 and noted reasons for exclusion in our database. A further 29 studies were not available to us. After citation tracking the remaining papers, we included an extra 5 studies. Disagreements were resolved by discussion and inter-rater reliability for study inclusion was good (Cohen's kappa 0.70 [10]). On data extraction 4 studies were excluded due to data not being available. 87 studies that reported the prevalence of CAM use were included in the final analysis. The flow of information through the systematic review is reported in figure 2.

Of the included studies, 22 originated in the UK [14-35], 15 from Germany [4;36-49], 12 from Israel [50-60], 9 from Sweden [61-69], 7 from Norway [70-76], 4 from Italy [77-80], 4 from Finland [81-84], 3 from Switzerland [85-87], 2 from Turkey [88;89], 2 from Spain [90;91] and 1 each from Slovenia [92], Portugal [93], Ireland/France [94], Denmark [95], The Netherlands [96], Norway/Denmark/Sweden [97] and Poland [98]. A total of 78 studies were in English, 4 in German [4;37;43;46], 2 in Spanish [90;91] and 1 each in Polish [98], Italian [79] and Hebrew [50]. We failed to discover any new studies for inclusion from the grey literature database or through any official CAM organisation.

The main characteristics of the included studies are summarised in Appendix 4.

Figure 2. Flow of information through the different phases of the systematic review



3.2 Data extraction process

The data was recorded in 17 excel worksheets by type e.g. socio-demographic, specific CAM's, ingested products etc. as previously mentioned. The main characteristics of the included studies (study reference, country/language, sample size, age and gender of participants, recall period risk assessment, study design, mode of administration of data collection and CAM methods recorded) are reported in the appendix (Appendix 4).

As there was a wide variety of time periods of use reported across the included papers, individual CAM us 'at any time' was then recorded in a separate worksheet i.e. 'acupuncture use at any time'. Finally, because some CAM's were reported as one of a group of CAM's

rather than being individually specified and some papers reported the use of CAM as a general term without specifying which CAMs were being measured, we created a further worksheet to record the use of 'any CAM ever' making a total of 19 worksheets.

The time taken to review and extract the data from each paper varied from less than 1 hour to more than 6 hours depending on the amount of data available, whether extra columns had to be created to record different variables from previously examined studies, the readability of the text and whether or not the relevant information had to be calculated from the figures given in the abstract, text or tables.

Once the first reviewer had inputted the data from all the included papers, a second reviewer assessed 20% of these studies for the quality criteria and inter-rater agreement was good (kappa = 0.8). A third reviewer extracted overall CAM use for each included study and agreement was 96.5% therefore performing kappa for inter-rater agreement on overall CAM use was not deemed necessary.

3.3 Quality of report

We used a pre-existing quality-assessment tool (QAT) developed from the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement[12] that had been used in previous publications. The full QAT criteria may be found in the appendix (Appendix 3) but in summary the areas of assessment were:

1. the study methodology - including recall bias, piloting of data gathering questionnaire, description of efforts to address potential sources of bias, adjustment for potential confounders
2. Sampling - including report of response rate and a representative sampling strategy
3. Participant characteristics- health status, age, gender, income, condition treated, reasons for use
4. CAM use – defined to respondents, assessed in relation to medical illness

Overall, reporting quality was mixed and total QAT scores ranged from 15.2 – 78.8% (median = 48.5%). We suggest that studies scoring less than 50% would have low quality and studies scoring 60% and over would probably have reasonable quality. Table 1 reports the number of studies in each percentage range.

Table 1. The number of studies in QAT score percentage ranges

Percentage ranges	Frequency of studies	Study No.	Frequency < 50% QAT score
11 – 20%	1	71	44 studies
21 – 30%	9	14,49,51,65,66,79,82,85	
31 – 40%	11	9,19,28,32,34,46,46,50,60,86,90	
41 – 50%	24	1,6,8,21,24,10,17,20,29,31,35,39,40,42,52,58,59,67, 68,74,77,78,80,89	
			Frequency > 50% QAT score
51-60%	20	3,2,16,22,30,33,48,45,43,47,53,56,61,64,69,72,73,81,83,87	43 studies
61-70%	16	4,11,18,13,24,26,27,37,38,41,55,57,54,63,70,84	
71-80%	9	5,7,12,15,25,44,62,76,88	

Study No. 8, 1 refer to one paper [94]. Study No. 3, 48, 54 refer to one paper [97]

CAM was clearly **defined** to the survey participants in 58 papers (67%) [4;18;19;21;25-30;37;39;41;42;44;45;50-53;55-57;59;61-63;66-68;70-75;77-83;88-90;94-96;99 32-34;48;49;69;84;91] for example by giving a list of specific CAM's or a lay explanation such as *'complementary and alternative medicines are any treatments, self-help techniques or remedies which are not normally provided by doctors and other healthcare professionals in the NHS. Many different therapies and remedies are available such as acupuncture, aromatherapy, chiropractic, herbalism, homeopathy, hypnotherapy, osteopathy, reflexology, psychotherapy and homeopathic remedies (like Arnica, Chamomilla), flower essences (like Rescue remedy, Bach flower essences), aromatherapy oils, herbal medicine (like St Johns Wort, Echinacea, Valerian) and nutritional supplements (like Vitamin C, Cod liver oil, Evening primrose oil, Glucosamine'* [21]. However it was not clear whether participants had been offered a definition of CAM in 29 papers (32%) [14-17;20;22-24;31;35;36;38;40;43;46;47;54;58;60;64;76;85-87;92;93;97;98;100] thus some data may have been incorrectly reported if participants had misunderstood what was meant by CAM. An academic definition of CAM separate from the study participants' definition such as the NCCAM definition [9] *'a group of diverse medical and health care systems, practices and products that are not generally considered part of conventional medicine'* then identified by five groups of interventions '*whole-medical systems (e.g. Ayuerveda), mind-body medicine (e.g. meditation), biologically based practices (e.g. dietary supplements) manipulative and body-based practices (e.g. chiropractic), and energy medicine (e.g. Reiki)* was reported in only 15 studies (17%) [4;38;46;50-53;58;62;69;78-80;88;97 4;38;46;50-53;58;62;78-80;84;88;97] thus it may not have been clear to some readers exactly what was being measured as CAM.

A representative **sampling strategy** was reported in 59 (68%) papers [17-24;28;29;31-33;35-37;39-42;44;47-49;51;55;58;64;67-70;72;74;75;78;80-82;84-87;89;90;92;94;97;99;100 4;15;26;38;43;46;79;96;98] i.e. an attempt was made to achieve a sample of participants that represented the larger population from which they were drawn. An important weakness we identified was that the use of a **piloted**

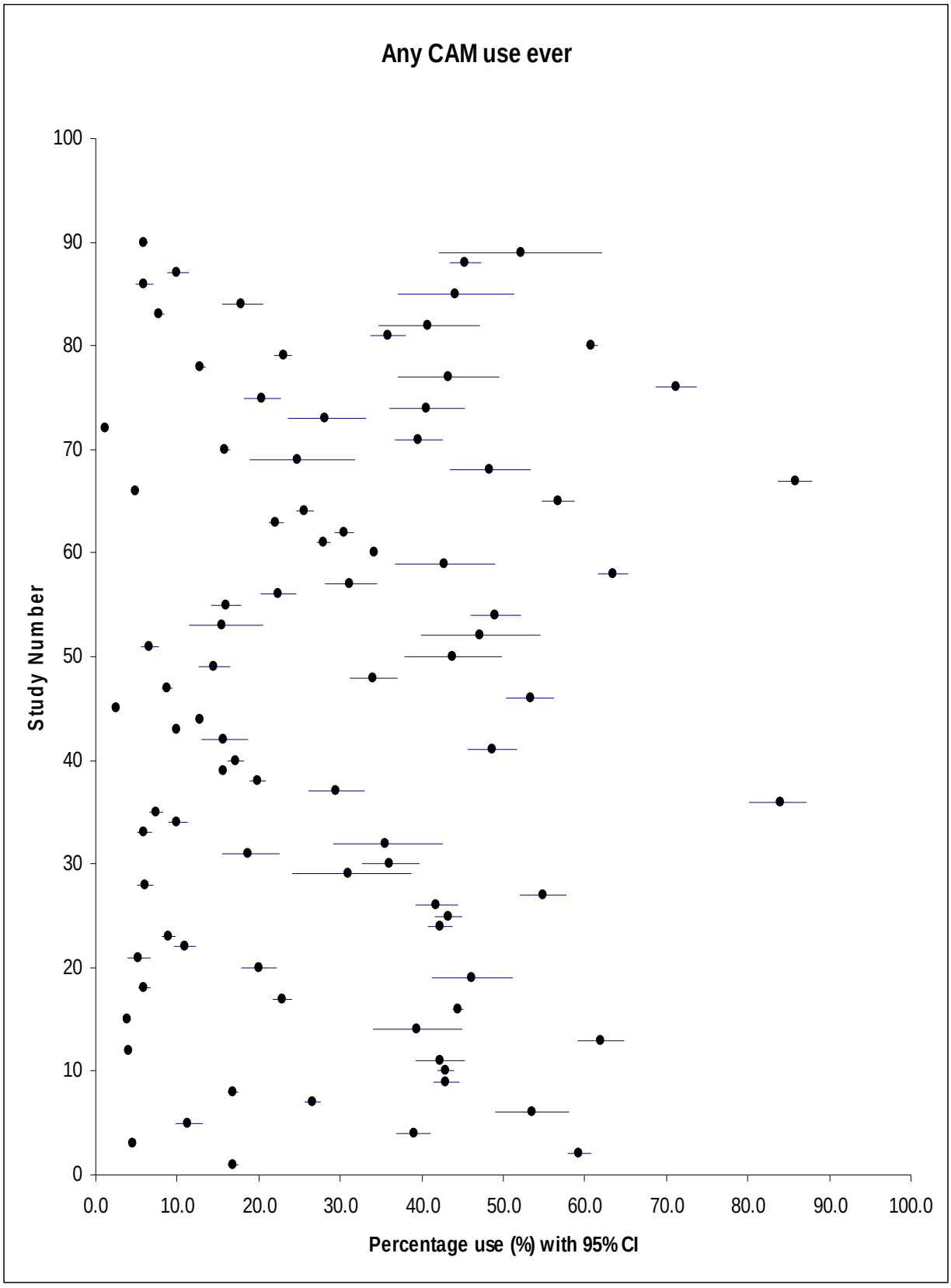
questionnaire to measure CAM prevalence was reported in only 25 (29%) studies [14;16-19;21;29;33;34;42;43;50-53;55;58;61;62;69;74;79;81;89;91] thus the validity of the remaining potentially unpiloted measuring tools must be questioned and therefore the data in 71% of studies is possibly inaccurate. Only half the papers (50%) [4;14;19;21;23;25;29;32-34;38;39;41;42;44;48;50-54;60-64;66;68-75;79;81;85;87;91;95-97;100] reported efforts taken to address potential sources of **bias** such as non-response or information bias and overall 69 (79%) studies [14;16;18-23;27-29;31-35;50-56;58-64;66;70-75;77;78;80;85-89;92;93;97;99;100 4;15;25;30;37;38;40-42;44;48;57;79;81;82;84;90;91;94] were subject to either high or some risk of recall bias (recalling CAM use over a period of more than 12 months or with no specified recall period). Similarly only 45% of studies [4;14;15;22;23;25;26;38;39;41;44;50;51;53-55;57;58;60-64;66;68-70;72-75;79-81;84;85;87;94;97] reported any **adjustment for potential confounders** in statistical analysis (ANCOVA, multiple regression, odds ratio).

In summary, the main methodological weaknesses identified were: the lack of a definition of CAM to participants completing the surveys, lack of reporting of pilot studies of tools to measure CAM use, data collection strategies that were subject to recall bias and CAM use measured as a group of therapies rather than individually specified CAM's.

3.4 Prevalence of CAM use

The main Forest plot (figure 3) demonstrates clearly that the data in relation to CAM use in the EU states for which we had data was very heterogeneous and therefore Cochran's test for heterogeneity which we had planned to perform was determined to be both unnecessary and irrelevant. Due to the heterogeneity of the data in the included studies we were unable to pool the data in a meta-analysis and therefore the results are presented as a narrative.

Figure 3. Prevalence of any CAM use at any time. CI=confidence interval.



As study data had been collected over a wide variety of time periods, using different definitions of CAM, use of '***any CAM at any time'*** was determined to be the **only** reasonable and valuable method of describing the summary data. Overall, the prevalence of use of any type of CAM at any time was reported as being between 0.3% - 86% (median 29%, average 30%, mode 10%) but sample sizes varied greatly from small studies of 92 participants [34] to total population surveys of 57,717,200 [80] (median 1785). Furthermore, CAM was not defined consistently between studies making a conclusion about the true prevalence of use difficult. Methods of measuring CAM use may not have been validated in some of the studies due to potentially un-piloted measuring tools and in a manner similarly inconsistent to the definitions, of CAM use, CAM was measured over a variety of time periods e.g. '*in the last 24 hours'* to *'ever used'* in unpiloted questionnaires adding significant further challenges to pooling the data from included studies.

3.5 Prevalence of CAM use by country

Included studies from individual countries where we had prevalence data demonstrated a similar pattern of heterogeneous prevalence rates, sample sizes, definitions and time periods over which CAM use had been measured. Studies from the UK reported between 6 – 71% prevalence, Germany 4.6 – 62%, Turkey 48-86%, Switzerland 5 – 57%, Sweden 5 – 64%, Norway 9-53%, Denmark 45-59%, Italy 16-84%, Israel 5 – 43%, Finland 11-43%, Spain 15-47%. The included studies did not report data consistently enough to perform a more formal statistical analysis.

3.6 Types of CAM's reported

The results of the top five reported therapies from countries where we had data are reported in table 2.

Herbal medicine, the most reported CAM was variously categorised as *medical herbalism, herbal medicine, herbs, herbal products, herbal therapies, herbal remedies, herbal teas, phytotherapy*, and some specific herbs were reported by name e.g. Ginkgo Biloba, Ginseng and St Johns Wort. Overall, 31 papers [4;18;19;21;23;29;31-34;38;41;42;44;51-53;55;61-63;69;77-80;88-90;95;96] reported the use of *herbal medicine* under one of the preceding terms however a further 5 studies [17;22;56;81;91] reported the use of *herbs* as one method in a group of possible CAM therapies patients might have used therefore we were unable to calculate prevalence for it separately from these papers. Herbal medicine could have varied from '*no use at all'* to *'all participants using'* in these papers. Herbal medicine was not well defined and it is not clear if all the mentioned products could realistically be classified as such e.g. lemon peel and parsley which are used as culinary ingredients in many countries. Similarly herbal medicine could have been included in other therapies such as naturopathy, folk medicine or TCM.

Prevalence rates varied from 5.9 to 48.3% with numbers of users from 1 – 27,704,256 in sample sizes of 341 to 57,717,200. We were unable to calculate the overall prevalence rate for *herbal medicine* by either country or across the EU and were unable to differentiate between practitioner (doctor) based prescriptions and OTC purchases.

The use of *homoeopathy* as a separate CAM was reported in 25 studies [4;17-19;21;29;33-35;38-40;44;51;54-56;58;59;73;74;79;80;97;99]. Prevalence rates across countries were reported between 2 to 27% with numbers of users recorded as between 3 to 4,732,810 and sample sizes ranging from 341 to 57,717,200. However, a further five studies [32;70;72;87;91] reported *homoeopathy* as part of a *group of CAM's* therefore we were unable to calculate prevalence for it separately from these papers and include it in overall prevalence figures. Participants were given a list of CAM's of which one was homeopathy and asked whether they had used any one or more of these therapies over particular time periods but not specifically which ones. *Homoeopathy* use could therefore have varied from '*no use at all'* to *'all participants using'* in these papers. It was not possible to ascertain how much *homeopathic* use was practitioner prescribed or a patient initiated OTC purchase due a lack of detail in the individual reports. We were therefore unable to calculate the overall prevalence rate for *homoeopathy* by either country or across the EU and were unable to differentiate between practitioner (doctor) based prescriptions and OTC purchases.

Chiropractic, the third most frequently reported CAM was reported in 17 studies [4;18;19;21;29;32;33;40;44;51;54;55;59;74;75;97;99] with 1 further study [58] reporting the use of '*chiropractic or osteopathy*'. Four other papers [17;22;56;62] reported *chiropractic* as one of a possible group of CAM's (similarly to homeopathy and herbal medicine) and it could also have been included in a group of therapies described as '*manual treatments'* or '*manipulative treatments'* although it was not specified as such. Including these other treatment names, *chiropractic* could have been reported in a further 2 studies [79;80] making a total of 24 studies with prevalence rates from 0.4 to 20.8% and user numbers between 5 to 4,040,204 in sample sizes of between 152 and 57,717,200. We were unable to calculate the overall prevalence rate for *chiropractic* by either country or across the EU.

Table 2. The top 5 most commonly reported therapies

Therapy	Prevalence across countries	Reported singly Country & Study No	Reported in a group Study No	Possibly included in Study No
Herbal Medicine	5.9 – 48.3%	Denmark 2 Finland 5 Germany 11, 13, 15, 16, 18 Israel 24, 25, 26, 30 Italy 36, 37, 38, 39, Netherlands 40 Spain 52 Sweden 55, 56, 57, 63 Turkey 67, 68 UK 73, 74, 76, 78, 80, 86, 88, 89	5, 31, 53, 66, 73, 77	3, 14, 28, 44, 7, 14, 21, 27, 29, 31, 33, 35, 41, 42, 47, 50, 51, 54, 65, 66, 71, 75
Homoeopathy	2 – 27%	Denmark 3 Finland 4,7, Germany 12,18,13 Italy 37, 38, 39 Norway 41,48,44,45,43 Spain 53 Sweden 54,62 UK73,74,75,76,82,83,84,88,87,9	55, 66, 77, 87, 96	7, 11, 14, 21 26 27, 29, 30, 31, 33, 35, 41, 47, 50, 51, 54, 57, 65, 66, 67, 71, 75, 84
Chiropractic	0.4 - 28.8%	Finland 4 Germany 13, 18, Italy Norway 43, 44, 48, Sweden 54, 55 UK 73,74, 75, 76, 82, 83, 84, 88, 87,	31, 38, 43, 55, 77	7, 11, 14, 21 26 27, 29, 30, 31, 33, 35, 37, 39, 41, 42, 47, 50, 51, 54, 57, 65, 66, 67, 71, 72, 75, 84
Acupuncture	0.44 – 23%	Denmark Finland, Germany 13 Israel 27, 29, 30 Italy, Norway 42, Sweden Turkey, UK 69, 73, 74, 76, 84, 87	39, 43, 36, 54, 55, 66, 77, 87	11, 14, 18, 28, 44, 7, 14, 21 26 27, 30, 31, 33, 35, 37, 41, 42, 47, 50, 54, 57, 65, 66, 67, 71, 75, 84
Reflexology	0.4 – 21%	Denmark Finland, Israel 28, 29, 31, 34 Norway, Sweden 54 UK 73, 74, 76, 84, 87, 88	41	11, 14, 18, 28, 44, 7, 14, 21 26 27, 30, 31, 33, 35, 37, 41,42, 47, 50, 54, 57, 65, 66, 67, 71, 75,84

Acupuncture was the fourth most reported CAM (14 studies) [4;14;18;19;21;29;32;33;40;52;54;55;71;80] if papers reporting the acupuncture related *TCM and Shiatsu* were included however, acupuncture was not well defined and therefore it is not possible to state whether TCM and Shiatsu can realistically be classified with acupuncture. Prevalence rates across countries were reported between 0.44 to 23% with numbers of users recorded between 4 to 1,673,799 and sample sizes ranging from 310 to 57,717,200. However, 8 further studies [17;22;32;56;62;70;74;87] reported the use of *acupuncture* as part of groups of CAM's which participants could have used thereby it was not possible to calculate its use separately in these studies. As with *homoeopathy,* participants were given a list of CAM's of which one was *acupuncture* and asked whether they had used any one or more of these therapies over particular time periods but not specifically which ones. *Acupuncture* use could therefore have varied from '*no use at all'* to *'all participants using'* in these papers. We were therefore unable to calculate the overall prevalence rate for *acupuncture* by either country or across the EU.

Reflexology was the fifth most frequently reported CAM with 11 studies [18;19;21;29;32;33;54;56;59;97;99] reporting it as a separate CAM and 1 other study [17] reporting it as part of a group of therapies. Prevalence rates varied from 0.4 to 21% with user numbers from 10 to 3,505 in sample sizes ranging from 341 to 15,465. We were therefore unable to calculate the overall prevalence rate for *reflexology* by either country or across the EU.

All the above 5 most commonly described therapies could also have been reported in papers which didn't specify individual CAM's but described them more generally as '*alternative therapies or alternative medicines or complementary therapies or complementary medicines'* or where patients were asked if they had used any CAM treatment '*other than'* a number of pre-specified CAM's from a list. This further confounded our ability to produce any meaningful conclusions from the data derived from the included studies.

Of other complementary therapies, *Hypnotherapy* [18;19;21;27;29;32;33;79;97] and *Aromatherapy* [18;19;21;27;29;32;33;54;88] were both reported in 9 studies where separate figures were given for their use but also in 3 other papers [17;22;56] as groups of CAM's. All *other therapies* were reported separately in 24 papers [4;18;19;21;27;29;32;33;37;40;44;52-56;58;59;74;78;80;88;97;99] but also as part of groups of CAM's in 14 papers [29;37;40;44;55;56;58;62;71;74;80;87;97;99] where individual numbers were not available. Therapies *'other than' acupuncture, chiropractic, homeopathy, herbal medicine, osteopathy, aromatherapy, reflexology* were reported in 29 papers [16;19-21;27-29;32-34;38;47;50;52;54;55;58-60;75;78-80;84;86;88;92;93;97] but it was not stated what these other therapies were so we were effectively unable to use this data in the report. With respect to the use of *nutritional supplements* as CAM, the use of calcium tablets was reported in 9 studies [4;34;46;49;77;81;83;85;94] with 28 papers [21;24;34;36;37;42;45;46;49;52;53;63;64;66-68;71;76;77;81;83;85;91;94-96;98;100] reporting the use of all other dietary supplements, *vitamins and minerals, fish oils, glucosamine and other products* very heterogeneously in groups, singly or combinations of supplements.

It is of great importance to note that it was not possible to distinguish whether *dietary supplements, vitamins and minerals, homeopathic or herbal remedies* were bought over the counter (OTC) or prescribed at consultations with practitioners for all the studies except one[33] due to the data collection or reporting methods in the studies describing the prevalence of products.

In summary, it was not possible to perform a meta-analysis to reliably determine the prevalence of CAM in general or any specific CAM across the EU member states due to the quality of report, the variable definitions of CAM and fundamental methodological flaws within the reports as well as the heterogeneity of the studies.

3.7 Most reported CAM therapies

Of the 14 (36%) out of 39 countries for which we had some general population data, *homeopathy* use was reported by name in 8 countries (Denmark, Finland, Germany, Italy, Norway, Spain, Sweden, UK), *chiropractic* in 6 countries (Finland, Germany, Italy, Norway, Sweden, UK) *herbal medicines* in 9 countries (Denmark, Finland, Germany, Israel, Italy, Spain, Sweden, Turkey, UK) *acupuncture* in 9 countries (Denmark, Finland, Germany, Israel, Italy, Norway, Sweden, Turkey, UK) *reflexology* in 6 countries (UK, Sweden, Norway, Denmark, Finland, Israel) and *massage* (the sixth most reported CAM) in 8 countries (Denmark, Finland, Germany, Israel, Norway, Sweden, Turkey, UK)) (table 2).
We were unable to locate any general population data on CAM use for 25 (64%) EU member states based on our study inclusion criteria.

3.8 The differences in types of CAM reported across EU member states

There were a number of CAM's reported by only some of the EU countries for which we had data namely *Anthroposophic Medicine* and *Naprapathy* (Sweden, Denmark and Germany). *Homeopathy* was reported by every country except the following 5 countries: - France, The Netherlands, Poland, Portugal and Slovenia. However this involved only 1 paper from each of these countries, 2 of which [92;93] categorised CAM use as 'any *alternative treatments'* or '*alternative medicines*' without specifying individual therapies and the other papers were data on *dietary supplement* use only. Therefore we cannot be certain about the prevalence of *homoeopathy* in these specific countries from our data. '*Folk' or* '*Traditional medicine'* was only reported in papers from Israel and Spain with '*Healing*' (described variously as *spiritual healing, faith healing, laying on of hands* etc) reported in Denmark, Finland, Israel, Norway, Turkey and the UK. There was no one CAM reported in all the included papers and with no data at all from 25 countries it was not possible to determine a CAM method common to all EU member states from the data. However, from the data that was available

to us it was possible to determine the top 5 most commonly reported therapies as previously described in table 2.

3.9 Conditions for which CAM is used

The medical conditions for which CAM is used are reported in table 3 (see also Appendix 5). Only 8 papers (10%) [21;29;44;56;59;63;71;78] discussed CAM use for specific named medical conditions such as arthritis or migraine therefore we cannot say with any certainty exactly what diseases people present with to CAM practitioners in the EU member states. No one medical condition was reported in all the 8 papers. Musculoskeletal problems, the most reported condition was mentioned in 5 studies [21;29;33;56;71] as detailed in table 2 and 4 studies [29;56;59;62] reported respiratory problems. Back pain, urinary tract infection, ENT, allergy and psychological/mental/psychiatric disorders were reported by 3 studies each. Six studies (7%) described more general conditions for which CAM is used e.g. non-specified pain (3 studies), coughs and colds (2), improvement of general health (2), preventative medicine (1), smoking (2), digestion (3), quality of life (1), cuts and bruises (1), irritability and stress management (3). It was not possible to derive any real conclusions about what medical conditions are treated with CAM in the EU due to the small number of included studies that described this data and therefore also not possible to ascertain which specific CAM's are commonly used for particular medical conditions.

Table 3. Medical conditions for which CAM treatment is sought

Medical condition	Studies No's reporting	total
Musculoskeletal problems	31, 42, 76, 84, 88	5
Respiratory	31, 34, 55, 84	4
Urinary tract infection	18, 34, 83, 55	4
Back pain	18, 28, 34	3
Psychological/psychiatric	31, 42, 76	3
ENT	42, 72, 84	3
allergy	31, 42, 84	3
Arthrosis	18, 37	2
Migraine	18, 34	2
Gastrointestinal	42, 84	2
Nervous system	31, 55	2
Dermatology	31, 84	2
Elevated blood lipids	18	1
Varicosis	18	1
Thyroid disease	18	1
Arthritis	18	1
Gastritis	18	1
Bronchitis	18	1
Hypertension	18	1
Diabetes	18	1
Cancer	34	1
Cholesterol	34	1
Asthma	37	1
Dizziness	37	1
Herpes zoster	37	1
Chronic disease	37	1
Eczema	42	1
Gynaecological	42	1
Infections & parasitic	55	1
Neoplasm's	55	1
Endocrine – metabolic	55	1
Injuries	55	1
colic	72	1
Diarrhoea and vomiting	72	1
Reproductive hormone related	76	1

3.10 The reasons why people use CAM

As reported in Table 5 below, 18 papers (21%) [16;18;20;29;30;32-34;38;50;55;59;71;77;78;80;89;99] reported varying reasons why people used CAM (table 4, see also Appendix 5). The main reasons were reported to be dissatisfaction or disappointment with a medical doctor or western medicine or that the doctor didn't understand, or didn't take time or didn't seem interested in the problem. Not wanting to take medical drugs, not wanting the side effects of drugs or invasive treatments and preferring natural methods were also mentioned as was having a better therapeutic relationship with a CAM practitioner, receiving a more personal service, on the advice of a friend or relative or to maintain health/general wellbeing. However so few

papers reported reasons for use we cannot make any firm conclusions about why people use CAM from the included studies.

Table 4. Reasons why people use CAM

Author / Study No	Reasons for using CAM
Bucker et al / 11	wish to take as few drugs as possible, doctor's advice, dissatisfactory results from conventional medicine, coincidence, used before conventional medicine, dis-appointed by conventional medicine, more natural or wanted to try everything, few side effects, safer, medical doctor did not understand problem, medical doctor did not take enough time, medical doctor not interested in their case
Bernstein et al / 28	disappointment with the outcome of conventional treatment, wanted to try, did not want a lot of medications , did not want invasive procedures, there was no other solution , other reasons
Giveon et al / 30	strengthening body, prevention of disease
Shmueli et al / 34	did not want to take many medicines, did not want invasive care, disappointment with conventional medicine, there was no other solution, wanted to experience, it was readily available (provider is a friend, family), past good experience
Ben-Arye et al / 27	wanted to try, didn't want to use medical drugs
Albertazzi et al / 36	Cod liver oil is good for joints, multivitamins for general wellbeing, calcium prevents brittle bones, primrose oil for general wellbeing, glucosamine is good for joints, vitamin C prevents colds, garlic capsules for general wellbeing, selenium is an antioxidant, gingko is good for memory, zinc for general wellbeing, echinacea prevents colds
Buono et al / 37	advice of friends, family, by GP, specialist, own initiative
Menniti-Ipolito et al / 39	lower toxicity, only therapy available, greater efficacy, better doctor-patient interaction, cultural belief, don't know
Norheim et al / 42	lack of conventional medicine effect, experience of acupuncture, distinctive character of acupuncture, avoiding negative effects of conventional medicine, wanting additional therapy, desperation due to pain and other health complaints
Gozum et al / 68	treatment for health problems, maintain health or prevent health problem, to prevent and to treat health problem
Cumming et al / 71	health risks associated with HRT. alternatives more natural. desperation. recommended by friend
Emslie et al / 73	doctor or health professional referred/recommended. read about it. looked it up in telephone directory. recommended by friend/colleague. practitioner known to me. local clinic available. other
Ernst et al / 75	helps relieve injury/condition. just like it. find it relaxing. good health/well-being generally. preventative measure. do not believe conventional medicine work. doctors recommendation/referral. to find out about other ways of life/new thing. way of life/part of lifestyle. cannot get treatment on NHS/under conventional medicine
Simpson et al / 84	word of mouth recommendation, dissatisfaction with conventional medicine, fear of side effects of conventional medicine, more personalised attention, having a child with a chronic condition.
Sobal et al / 85	ensuring nutrition = 33, prevent illness=27, tiredness=27, more energy=22, to feel good=18, stress=12, to feel stronger=6, treat illness=5, other=
Thomas et al / 88	birthday treats, assist student, health spa, beauty treatment, gift voucher, prize, pleasure
Thomas et al / 87	treat an illness for which conventional medicine advice had previously been sought, treat illness condition for which no conventional medical treatment had been sought, improve general health or prevent illness, recreational/beauty, other reason
Van Tonder et al / 98	boost immune system, improve quality of life, pain relief, stress management

3.11 Who uses CAM?

Table 5 reports the demographic information about which sectors of the population use CAM.

Table 5. Demographic information of CAM users

Demographic (% studies reporting)	Reported for whole sample. Study No.	Reported for CAM users Study No.
Age Range or Mean (90%)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 67, 68, 69, 70, 72, 73, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90	1, 8, 36, 39, 43, 44, 45, 46, 51, 55, 59, 60, 62, 64, 68, 69, 72, 75, 78, 79, 80, 83, 86, 87, 88
Gender (86%)	1, 2, 3, 4, 5, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 36, 38, 39,40, 42, , 45, 46, 47, 48, 49, 50, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 67, 68, 69, 70, 71, 75, 76, 77, 78, 79, 80, 82, 3, 85, 86, 87, 88, 89	5, 7, 9, 11, 12,13, 15, 16, 18, 19, 21, 30, 36, 37, 40, 41, 42, 44, 45, 46, 47, 49, 54, 53, 55, 56, 57, 59, 60, 64, 65, 68, 71,75, 78, 79, 80, 81, 82, 83, 86, 87, 88
Gender reported separately for CAM users (32%)		7, 9, 11,14, 18, 19, 21, 22, 30, 33, 37, 40, 41, 43, 44, 45, 48, 53,59, 64, 65, 75, 79, 81, 82, 83, 87,
Ethnicity (9%)	7, 24, 31, 32, 64, 69, 72, 78	87
Income (5%)	7, 13, 18, 46, 67, 76, 90	7, 8, 33, 46, 87,
Education (5%)	5, 7, 13, 18, 24, 31, 32, 38, 43, 44, 45, 46, 47, 48, 55, 56, 60, 62, 64, 67, 68, 69, 76, 90,	5, 7, 18, 31, 33, 38, 44, 47, 48, 51, 87
Employment (7%)	7, 8, 30, 37, 38, 47, 64, 75	7, 30, 38, 47, 64, 75, 76, 86

Demographic data such as age, gender and ethnicity were documented in 83 (95%), 75 (86%) and 9 (10%) papers respectively as detailed in Table 5. CAM use was reported separately for males and females in 28 (32%) studies. These studies suggest that more females than males use CAM. Age was categorised in a large variety of different groupings therefore it was not possible to determine an age range where CAM was used most commonly. At least one item of socio economic status was reported in 51 (59%) papers but when examined separately for the main indicators, income of CAM users was only reported in 5 papers, education in 11 papers and employment status in 8 papers. Not enough papers described these three main indicators to allow us to draw any clear conclusions for this information and therefore we

were unable to ascertain what sections of the population used CAM. It was not possible to combine the socio economic data in any meaningful way due to the methods and quality of reporting in the studies. From the data, we could not determine with any certainty which age range or economic sections of the population use CAM in the EU member states.

4. Discussion

4.1 Summary

The studies we reviewed that met our inclusion criteria only allowed us to report descriptive, weak and often the absence of prevalence data for CAM use across the EU members states. The reported prevalence rates were between 0.3 and 86 % but due to the substantial heterogeneity of the material we were unable to pool the data in a meta-analysis. The definition of CAM was inconsistent across the reports and certainly unclearly defined in many of them. Some 'local' or regional CAM's were only represented and reported in individual member states. The methodology involved in these epidemiological studies was generally poor with many studies not piloting their data collection questionnaires, not reporting clearly on their population sample selection and the methods used to obtain a complete and representative sample. Therefore although we were able to report on the methodological quality of the included studies our main conclusions were that we had little and very limited data to deliver the requirement of WP4 (prevalence of CAM use, reasons for use and conditions treated) with any clarity.

4.2 Study selection and characteristics

We performed a rigorous search of both the electronic databases and grey literature for relevant studies including and excluding according to the previously designed WP4 systematic literature review search strategy without restriction for language. We located studies from only 14 out of 39 EU member states suggesting that data from 25 states has either not been collected, not published or a combination of these two factors. In particular we had no information from the Eastern European countries leaving a large and potentially important gap in our knowledge of CAM use in Europe.

4.3 Data extraction

The ease of data extraction varied between papers depending on the quality of report and quantity of data reported. The time taken to review and data extract from different studies also varied according. We attempted to extract the data directly from tables or text to

reduce potential error in calculating by hand, calculating only when it was necessary to do so. Due to the large number of categories in the extraction protocol which had been developed for a comprehensive and detailed report of CAM use our results databases contained considerable amounts of missing data because studies reported data so heterogeneously. For example if one paper reported many types of CAM and the next paper only reported one type then there was apparently missing data for this next study. Similarly studies reported use over different time periods meaning further apparently missing data. The lack of a standard tool for reporting both prevalence and socio-demographic information made data extraction a longer and more complex process than it could have been. Some of our categories were not reported on by any study, for example the type of CAM provider, medical or non-medical was not reported at all therefore we cannot make any firm statements about the proportions of different types of provider. Clearly it is important to know who is providing CAM as it is an aspect of safe provision to have properly qualified and trained professional providers for the legitimate use of EU citizens. No study reported whether CAM was paid for by health insurance companies and only 1 study reported data pertaining to the out-of-pocket expenses for CAM. Therefore we have limited information on the economic issues surrounding CAM use. A standardised set of items to include in a survey of CAM use with a structure for reporting would have enhanced our ability to extract the relevant data in a consistent, easier and quicker manner.

4.4 Reporting quality

The quality of report in the included studies was mixed and we identified several limitations that could be overcome in future studies of CAM prevalence. For example, studies had wide ranging definitions of CAM that may have contributed to the variation in prevalence rates and therefore the use of core definitions for the main CAM disciplines, variable by country could improve the accuracy with which CAM use is measured. Further limitations noted were the use of unpiloted and un-validated measuring instruments over varying time periods. The accuracy of these measuring instruments is therefore both unclear and potentially subject to recall bias. Future studies should incorporate the use of a valid standard measuring instrument and care should be taken to minimise recall bias by limiting recall periods for CAM use. Although some socio demographic information was collected by most studies, again, a lack of standardisation hampered our ability to compare this data across the study populations. A standardised methodology which adhered to good epidemiological practice would enable us to more accurately ascertain which populations are using which CAMs for which conditions.

4.5 Prevalence of CAM use

Similarly to the WHO Centre for Health Development [7] we were unable to draw a clear picture of CAM use across the whole of the EU because we only had data from 14 out of 39 EU states. Data from the Eastern European countries was entirely missing, possibly due to our search strategy, our inclusion criteria or more probably that this data simply does not exist. From the studies we included prevalence rates varied widely possibly due to the varying definitions and sample sizes and potentially to recall bias due to the variable and sometime long time frames over which CAM use was measured. CAM prevalence rates in specific countries were similarly wide and we were unable to determine whether their use was OTC purchase or practitioner delivered. Mansky et al [8] report the use of CAM up to 90% for some benign conditions which corresponds with the higher prevalence rates reported in the review data and the lower prevalence rates reported are similar to previous surveys in the UK and Germany [4;5]. CAM use was measured as specific therapies, by groups of therapies or by umbrella terms such as 'complementary medicine' where no therapy was specified at all therefore we were unable to make any meaningful conclusions about the prevalence of individual CAM's. However, we were able to ascertain the most commonly reported CAM's in countries for which we had data although this is limited due to a lack of clear definitions of individual CAM's and indeed may not represent the picture across the whole of the EU. Prevalence data is required to suggest which CAM's are most popular so that the necessary safety or efficacy research may be conducted and guidance given to EU citizens about their use. A standardised instrument, variable enough to take country differences into account would enable a more accurate picture to emerge.

4.6 Types of CAMs reported

The most common CAM methods reported were herbalism, homeopathy, chiropractic, acupuncture and reflexology and more countries reported the use of Homoeopathy than any other therapy. However because these therapies were also reported as groups of therapies where numbers were not given individually it was not possible to determine individual prevalence. It is also possible that the order of most common report may have changed if figures had been available for these CAM's on an individual basis in every study or we had been able to obtain sufficient data from each EU member state. However, a recent survey in the UK reported massage and aromatherapy to be the most commonly used CAM [5] and the NCCAM report that the use of natural products followed by breathing/meditation techniques are the most commonly used CAM's [101] suggesting that there may be country wide variations in the popularity of different CAM's and differing views on what constitutes CAM. Indeed, our data suggested that some CAM's may not be practiced in all countries for example Anthroposophic medicine and Naprapathy in Germany, Denmark and Sweden and Folk or Traditional medicine in Spain and Israel. It is therefore important that a standardised

questionnaire of CAM use including a core set of therapies that allows for the addition of country specific therapies be utilised in future population surveys.

4.7 Conditions treated and reasons for use

There was a large gap in the data about which conditions are treated with CAM with only 10% of studies reporting on this important area however musculoskeletal problems were reported most commonly reflecting the recent figures from the NCCAM [9]. Similarly, studies of acupuncture and chiropractic report musculoskeletal problems as the main condition treated [102]. The reasons people use CAM were reported in 18 studies and were commonly dissatisfaction with orthodox medicine and beliefs in a natural approach which mirrors evidence from other studies [102-105].

4.8 Who uses CAM

Whilst most of the included papers reported some demographic information, few reported in sufficient detail for us to make any firm conclusions about the sections of the population who use CAM. Only 1 UK study [22] reported in every socio demographic category in our data extraction protocol document but the demographics comprised data for the entire study populations with only some studies reporting demographics for the proportion of CAM users therefore. The demographic data was reported inconsistently therefore we were unable to determine who used CAM from this study. Previous studies report that more women than men use CAM [9] which was also suggested in our data. Agreement on a standard set of socio demographic indicators would enable future studies to determine which sectors of the population use CAM across the EU.

4.9 Strengths and limitations

Limitations

Our electronic database search of the peer reviewed literature and grey literature whilst thorough, did not locate studies from all the EU member states and some studies we did locate were unavailable to us therefore it is possible that we missed some potentially relevant studies. The inclusion and exclusion criteria may also have meant we missed possibly relevant data. Our previously designed quality scoring instrument is potentially open to error because we are not certain which characteristics are associated with CAM use. CAM use across adult populations is reportedly more common in middle aged women with higher income and educational status [106] but socio demographic association with CAM use is rare in families of paediatric patients [107;108].

Strengths

The strengths of this study were the rigorous methodology, extensive searching and the detailed data extraction tool. Our quality scoring instrument whilst having its limitations as above was also a strength in that it detailed a comprehensive set of socio demographic characteristics. Inter-rater agreements were good for data extraction.

4.10 Comparisons with other studies

Similarly to other studies we were unable to draw firm conclusions about CAM use across the EU due to heterogeneity of the studies we included and a lack of data from more than half the EU member states [7]. Our data concurs with other studies indicating than CAM use may be highly prevalent [109], that women use CAM more than men [106], that musculoskeletal problems are the main conditions for which CAM is sought [9] and that dissatisfaction with orthodox treatment is a common reason for CAM use [103].

4.11 Improvements for future studies

Future studies of CAM prevalence should consider including the following to better enable data pooling and accuracy of report.

- A set of core definitions, variable by country
- Standardised methodology for the survey according to good epidemiological practice[11]
- Researchers should make efforts to manage recall bias and utilise representative samples
- CAM use defined as practitioner provided or OTC purchase
- The medical conditions for which CAM is used and reasons for use
- A standardised set of socio demographic variables

It would also be important to understand how CAM use in the general population differs from illness populations as we are aware that CAM is used mainly in addition to conventional care but that its uses it not often disclosed. This is potentially problematic due to interactions with conventional medications [110] and comparison studies between these different populations would be pertinent.

4.12 Conclusions

There are limited conclusions about the prevalence of CAM use that may be drawn from this review primarily due to the heterogeneity and poor quality of the studies we included. We considered sub group analyses by country and by type of CAM but did not find convincing evidence for this data being any more homogenous and suitable for pooling in a meta-analysis. We had data from less than half the EU member states with several countries only being represented by 1 or 2 papers so the overall picture of CAM use was unclear.

The need for a valid questionnaire on CAM use, standardised but variable by country would increase the accuracy of data collection and enable data pooling. Such a questionnaire is currently being piloted by the CAMbrella team for use across the EU member states [111].

In conclusion, we were unable to report the prevalence of CAM across the EU member states due to the heterogeneity and poor quality of the included studies although we were able to identify the current most commonly used therapies and the large evidence gaps e.g. lack of studies from Eastern Europe.

The future needs for CAM are not clear at this stage although we are aware that CAM use is increasing therefore further research is necessary to enable us to build a picture of current use and future needs.

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Appendix 1: Search strategy

OVID MEDLINE: limit 68 to (humans and yr="1989 - 2009"); - + Search terms used:

- access
- access barriers
- access trends
- acupuncture
- alternative
- alternative medicine*
- alternative therap*
- attitude to health
- ayurveda
- barriers
- belief*
- biofield
- biofield therap*
- chiropractic
- choice
- complementary
- complementary medicine
- complementary therap*
- complementary therapies
- consumer
- consumer choice
- consumer health information
- data collection
- demand
- dietary supplements
- epidemiology
- europe
- expectation*
- frequency
- healing
- health care quality, access, and evaluation
- health care surveys
- health knowledge, attitudes, practice
- health services needs and demand
- health services research
- health surveys
- herbal medicine
- homeopathy
- homoeopathy
- incidence
- inclination
- inhabitant*
- integrative
- integrative medicine*
- integrative therap*
- interviews as topic
- israel
- knowledge
- knowledge inclination
- manipulation, chiropractic
- manipulation, osteopathic
- manipulation, spinal
- massage
- medicine
- medicine*
- medicine, ayurvedic
- medicine, chinese traditional
- meditation
- mind-body
- mind-body therap*
- motivation
- naturopathy
- needs assessment
- nutrition assessment
- nutrition surveys
- occurance
- of
- opinion
- osteopathic medicine
- osteopathy
- outlook
- patient acceptance of health care
- pervasiveness
- point
- point of view
- popularity
- population
- predominance
- prevalence
- questionnaire
- questionnaires
- reason*
- records as topic
- reflexology
- registration
- registries
- reiki
- relaxation therapy
- resident*
- spiritual
- spiritual healing
- spiritual therapies
- survey

- therap*
- therapeutic touch
- trends
- turkey
- unconventional
- unconventional medicine*
- unconventional therap*
- utilisation
- view
- yoga

Search Returned:
2400 results

Appendix 2: Extraction variables

Common variables for all WPs	Definition/Explanation	Values
1. Study ID-Number	generated by reviewer	
2. Reviewer initials	Corresponding to list of names	
3. Title of publication	Full title of article	
4. Year of publication	Year article was published	Year
5. First author	First author's surname and first initial	
6. Journal title	Full title of journal	
7. Publication details of article	Journal issue Journal volume Article page numbers	
8. Place of research	Country where research conducted	
9. Language of publication	Language that article was written in. Abstract must be in English	
10. Academic definition of CAM in paper	Type of CAM definition on which the research was based, as indicated in paper	(1) NCCAM (2) Cochrane collaboration (3) BMA (4) WHO (5) House of Lords (6) Eisenberg (1993) (7) Ernst & Cassileth (1998) (8) Zollman & Vickers (1999) (9) Other (describe)
11. CAM Definition	Direct quote of definition used in article	
12. Year of data collection	Year that data was collected (**not** year published nor year of diagnosis)	Year
13. Study objective	Direct quote from article of what the authors wanted to study	
14. Length of recruitment period	How long from initial questionnaire to establishment of sample population	
15. Ethical approval	Statement of whether the study had been approved by IRB or similar ethics committee	(0) not described (1) approved by ethical committee
16. Sampling method	Direct quote from article describing the sampling method	
17. Study design	Stated type(s) of study design in article	(1) cross-sectional (2) longitudinal (3) multi-centre (4) single centre (5) other
18. Type of questionnaire used	State whether questionnaire was piloted (used in a small group, evaluated and changed if necessary before general use), validated (validity statistically analysed against other markers to corroborate results) etc.	(0) not stated (1) piloted (2) validated (3) based on previous questionnaire (4) non-validated questionnaire
19. Sample size	Number of participants: i.e. 100 questionnaires sent out and 80 returned, sample size is 80	
20. Participation rate	Response rate is the proportion (%) of people participating in study out of the selected study population. (e.g. if 100 questionnaires were sent out and 80 returned, the participation rate is 80%)	
21. Number of patients receiving CAM therapy	Number of patients receiving CAM therapy as proportion (% to 1 decimal)	*x*/N (number of CAM patients/sample size), %

	of total sample size. i.e if sample size was 80 and 45 people received CAM: 45/80, 56.3%	
22. Age of whole sample*	The age range and/or mean age±standard deviation (SD) of **all participants in the sample** (=sample size) inclusive of 1 decimal point	Age range and/or mean age±SD (0) = not described
23. Age of CAM users*	The age range and/or mean age±standard deviation (SD) of **CAM users** inclusive of 1 decimal point	Age range and/or mean age±SD (0) = not described
24. Age of non-CAM users*	The age range and/or mean age±standard deviation (SD) of **non-CAM users** inclusive of 1 decimal point	Age range and/or mean age±SD (0) = not described
25. Gender of whole sample*	The fractions and % of male and female patients of **all participants in the sample** (N=sample size)	M: *x*/N, % F: *x*/N, % (0) = not described
26. Gender of CAM users*	The fractions and % of male and female patients of **CAM users** (n=CAM users)	M: *x*/n, % F: *x*/n, % (0) = not described
27. Gender of non-CAM users*	The fractions and % of male and female patients of **non-CAM users** (n=non-CAM users)	M: *x*/n, % F: *x*/n, % (0) = not described
28. Ethnicity of whole sample*	The different ethnicities of **all participants in the sample** listed with fraction and % of whole sample (N=sample size)	Ethnicity, *x*/N, % (0) = not described
29. Ethnicity of CAM users*	The different ethnicities of **CAM-users** listed with fraction and % of CAM users (n=CAM users)	Ethnicity, *x*/n, % (0) = not described
30. Ethnicity of non-CAM users*	The different ethnicities of **non-CAM-users** listed with fraction and % of non-CAM users (n=non-CAM users)	Ethnicity, *x*/n, % (0) = not described
31. Marital status of whole sample*	The different marital status of **all participants in the sample** listed with fraction and % of whole sample (N=sample size)	Marital status, *x*/N, % (0) = not described
32. Marital status of CAM users*	The different marital status of **CAM-users** listed with fraction and % of CAM users (n=CAM users)	Marital status, *x*/n, % (0) = not described
33. Marital status of non-CAM users*	The different marital status of **non-CAM-users** listed with fraction and % of non-CAM users (n=non-CAM users)	Marital status, *x*/n, % (0) = not described
34. Education levels of whole sample*	The different education levels of **all participants in the sample** listed with fraction and % of whole sample (N=sample size)	Education level, *x*/N, % (0) = not described
35. Education levels of CAM users*	The different education levels of **CAM-users** listed with fraction and % of CAM users (n=CAM users)	Education level, *x*/n, % (0) = not described
36. Education levels of non-CAM users*	The different education levels of **non-CAM-users** listed with fraction and % of non-CAM users (n=non-CAM users)	Education level, *x*/n, % (0) = not described
37. Income levels of whole sample*	The different income levels of **all participants in the sample** listed with fraction and % of whole sample (N=sample size)	Income level, *x*/N, % (0) = not described
38. Income levels of CAM	The different income levels of **CAM-**	Income level, *x*/n, %

users*	**users** listed with fraction and % of CAM users (n=CAM users)	(0) = not described
39. Income levels of non-CAM users*	The different income levels of **non-CAM-users** listed with fraction and % of non-CAM users (n=non-CAM users)	Income level, *x*/n, % (0) = not described
40. Employment status of whole sample*	The different employment statuses of **all participants in the sample** listed with fraction and % of whole sample (N=sample size)	Employment status, *x*/N, % (0) = not described
41. Employment status of CAM users*	The different employment statuses of **CAM-users** listed with fraction and % of CAM users (n=CAM users)	Employment status, *x*/n, % Ĩ⍰) = not described
42. Employment status of non-CAM users*	The different income levels of **non-CAM-users** listed with fraction and % of non-CAM-users (n=non-CAM users)	Employment status, *x*/n, % (0) = not described
43. Condition(s) treated with CAM	The different conditions and number of patients with this condition treated with CAM listed with fraction and % of whole sample (n=CAM users)	Condition treated with CAM, *x*/n, %
44. Length of condition treated with CAM	For each condition listed above, list number of years patients have had illness or condition	mean years±SD and/or range
45. Reasons for using CAM	The reasons mentioned in paper will be listed with the number of CAM users who stated this reason. (n=CAM users). They will later be grouped into categories. Possible categories - Cure illness - Complementary' - To avoid side-effects of conventional medicine - Treatment of side-effects of conventional medicine - For enhanced physician-patient interaction - Prevent recurrence of disease - Maintain good health/overall well-being - Boost immune system - Explore every treatment option - biomedical treatment ineffective or unsuccessful - Other (does not fit into any other category (1) Reason not given: Some papers may have participants who did not give any reason. The percentage and fraction of participants who did not give a reason will be under this category. (2) N/A: If the paper did not investigate the reasons for using CAM, the entire column is denoted with **N/A** *The percentage is calculated from the number of CAM users who selected a reason divided by the overall number of CAM users. As one person could list more*	Reason for using CAM, *x*/n (0) not evaluated (1) Reason not given, *x*/n, %, N/A (2) N/A

	than one reason of CAM use, the total % could be >100%. (n=CAM users).	
46. Reasons for **not** using CAM	The reasons mentioned in paper will be listed with the number of non-CAM users who stated this reason. (n=non-CAM users). They will later be grouped into categories. (1) Reason not given: Some papers may have participants who did not give any reason. The percentage and fraction of participants who did not give a reason will be under this category. (2) N/A: If the paper did not investigate the reasons for not using CAM, the entire column is denoted with **N/A**	Reason for not using CAM, *x*/n (0) not evaluated (1) Reason not given, *x*/n, %, N/A (2) N/A
47. Type of specific practitioner- or physician-prescribed CAM modalities used	List each modality that was **prescribed** or delivered by a **practitioner or physician.** A modality is defined as a technique of applying a therapeutic regimen or agent.[14]	
48. Setting where specific practitioner- or physician-prescribed CAM modality was delivered	For each practitioner- or physician-prescribed CAM modality listed above, list where the service was delivered, e.g. GP's office, hospital, integrated clinic, private clinic etc.	
49. Number (% of whole) of patients using specific practitioner- or physician-prescribed CAM modalities	For each practitioner- or physician-prescribed CAM modality listed above, list number of patients and % of **whole sample** of each practitioner- or physician-prescribed CAM modality (N=sample size). As one person could list more than one type of CAM modality, the total % could be >100%	x/N , %
50. Number (% of CAM-users) of patients using specific practitioner- or physician-prescribed CAM modalities	For each practitioner- or physician-prescribed CAM modality listed above, list number of patients and % of **CAM users** (n=number of CAM users). As one person could list more than one type of CAM modality, the total % could be >100%	x/n, %
51. Time period of specific practitioner-prescribed CAM modalities	For each practitioner- or physician-prescribed CAM modality listed above, list when the modality was used	(0) not stated (1) ever (2) in the past 12 months
52. Duration of CAM use of specific practitioner- or physician-prescribed CAM modalities	For each practitioner- or physician-prescribed CAM modality listed above, list for how long the modality was used	Number of months
53. Level of CAM use (Kristoffersen criteria[15])	Classification of patient's exposure to CAM	(CAM1):Seen a CAM practitioner at least 4 times (CAM2): Seen a CAM practitioner at least once (CAM3): Use of CAM provider, OTC-products or CAM techniques (CAM4): Use of a CAM provider, OTC-products, CAM techniques or special diets (CAM5): Use of a CAM provider,

		OTC-products, CAM techniques, special diets or exercise (CAM6): All CAM use including prayer
54. Outcomes of specific practitioner-prescribed CAM modalities	For each practitioner- or physician-prescribed CAM modality listed above, list any evaluated outcome results	
55. Satisfaction of specific practitioner- or physician-prescribed CAM modality	For each practitioner- or physician-prescribed CAM modality listed above, list number of patients and % of CAM-users in each level of satisfaction (n=number of CAM users)	x/n in each level of satisfaction
56. Type of specific self-prescribed or purchased CAM modalities used	List each modality that was **self-prescribed** or **self-purchased**	
57. Number (% of whole) of patients using specific self-prescribed or purchased CAM modalities	For each **self-prescribed** or **self-purchased** CAM modality listed above, list number of patients and % of **whole sample** of each **self-prescribed** or **self-purchased** CAM modality (N=sample size). As one person could list more than one type of CAM modality, the total % could be >100%	x/N , %
58. Number (% of CAM-users) of patients using specific self-prescribed or purchased CAM modalities	For each **self-prescribed** or **self-purchased** CAM modality listed above, list number of patients and % of **CAM users** (n=number of CAM users). As one person could list more than one type of CAM modality, the total % could be >100%	x/n, %
59. Time period of specific self-prescribed or purchased CAM modalities	For each **self-prescribed** or **self-purchased** CAM modality listed above, list when the modality was used	(1) ever (2) in the past 12 months (3) not stated
60. Duration of CAM use of specific self-prescribed or purchased CAM modalities	For each **self-prescribed** or **self-purchased** CAM modality listed above, list for how long the modality was used	Number of months
61. Outcomes of specific self-prescribed or purchased CAM modalities	For each self-prescribed or purchased CAM modality listed above, list any evaluated outcome results	(0) not described
62. Satisfaction of specific self-prescribed or purchased CAM modality	For each self-prescribed or purchased CAM modality listed above, list number of patients and % of CAM-users in each level of satisfaction (n=number of CAM users)	x/n in each level of satisfaction
63. Other co-morbidities of patients	List any co-morbidities of patients	(0) not described
64. Use of conventional treatments with CAM	List any conventional medical treatments used for illnesses treated also with CAM	(0) not described
65. Use of conventional treatments for illness not treated with CAM	List any conventional medical treatments used for illnesses not treated with CAM	(0) not described
66. Key conclusions from authors	Direct quote of key conclusions	
67. Comments of author	Note any significant comments regarding limitations, etc. listed by author	(0) no comments

68. Study funding source	List the source of funding for the study, as stated by the authors	(0) not stated
69. Correspondence required	Note any necessary correspondence with author	
70. Reference to other studies		
71. Comments of reviewer	Any comments to study from reviewer	
72. Quality of study (based on evaluation Appendix)	Final % grade of quality	

Additional variables specific to WP4	**Definition/Explanation**	**Values**
73. Out-of-pocket (OOP) expenditure on CAM therapy	For each type of CAM modality listed above, list what patient paid OOP for CAM therapy, with currency	ean±SD and currency (0) not described
74. Health insurance expenditure on CAM therapy	For each type of CAM modality listed above, list what the health insurance paid for CAM therapy, with currency	mean±SD and currency (0) not described
75. Total cost of CAM therapy	For each type of CAM modality listed above, list total cost of CAM therapy and currency	mean±SD and currency (0) not described
76. Health insurance coverage of CAM	List whether CAM therapy was covered by health insurance	(0) not described (1) complete coverage (2) partial coverage (3) no coverage

Appendix 3: Study quality criteria

	Brief definition	Answer options	Points awarded
Domain 1: Study Methodology			
1. Recall bias	Description of how data was collected and time lapse between event and reporting	Low risk: Prospective data collection (e.g. diaries); Some risk: Retrospective data collection within past 12 months. High risk; retrospective data collection from more than 12 months ago.	2 for Low risk 1 for Some risk 0 for High risk
2. Piloted questionnaire or interview schedule	Any pilot, feasibility, pre-test or previous use of study materials related to CAM use.	Yes; no	1 for yes 0 for no
3. Effort taken to address potential sources of bias described	For example efforts to address non-response bias by comparing responders to non-responders or information bias through assessing inter-rater reliability, any weighting of data	Yes; no	1 for yes 0 for no
4. Adjustment for potential confounders in statistical analysis	Any adjustment for confounders in analyses of variables associated with CAM use (e.g. ANCOVA, multiple regression, odds ratios)	Yes; no	1 for yes 0 for no
Domain 2: Sampling			
5. Response rate reported	Where response rate=(no. of participants in study/No. of people invited to participate)x100	Yes; able to calculate; not able to calculate	1 for yes or able to calculate 0 for no
6. Representative sampling strategy	Attempt was made to achieve a sample of participants that represents the larger population from which they were drawn (cannot be a single-centre sample or persons responding to an invitation sent to a random sample of potential participants)	Yes if selection process clearly described and sampling method such as purposeful sampling or random sampling used; No if sampling strategy is described but to a systematic strategy as described above	1 for yes 0 for no
Domain 3: Reporting of participants' characteristics			
7. Indicator of socio-economic status	Reports any information about an indicator of participants' or family socio-economic status, e.g. income, education, working status	Yes; no	0.5 for yes 0 for no
8. Information on the health status of respondents	Self reports of general health, SF36	Yes; No	1 for yes. 0 for no
9. Age	Reports any information about participants' age	Yes; no	0.5 for yes. 0 for no
10. Ethnicity	Reports any information about participants' ethnicities	Yes; no	0.5 for yes. 0 for no
11. Gender	Reports information about the participants' gender	Yes; no	0.5 for yes. 0 for no

	Brief definition	Answer options	Points awarded
Domain 4: CAM use			
12. CAM clearly defined to respondents	A definition of CAM and/or a list of specific CAM therapies is provided to participants	Yes; no	2 for yes 0 for no
13. Assessed CAM use in relation to medical conditions	Reports the prevalence of CAM use amongst 1 or more subgroups discussed with named medical conditions e.g. arthritis, cancer, diabetes. This does not include general terms such as pain reduction, relaxation or stress relief etc	Yes; no	2 for yes 0 for no
14. Academic definition of CAM reported in paper e.g. the NCCAM definition - not just a list of therapies	A definition of CAM separate from that given to participants. 1.NCCAM. 2.Cochrane 3.BMA 4.WHO 5.House of Lords 6.Eisenberg 7.Ernst & Cassileth 8.Zollman & Vickers 9.Other	Yes; no	1 for yes 0 for no
15. Use of CAM modalities assessed	Reports the prevalence of use of specific CAM modalities (e.g. relaxation therapy) or groups of CAM (e.g. mind-body therapies)	Yes; no	1 for yes 0 for no
Domain 5: Conflict of Interest			
16. Funding source defined	Reports source of funding	Yes; no	1 for yes. 0 for no
Final percentage grade	Number of points reached/number of points possible from applicable items		

Appendix 4: Characteristics of included studies (by country/language then author)

Citation Study Number	Year	Country/Language	Sample size	Age range or mean age (SD) Gender (n) Recall period - A = Low risk B = some risk C = high risk	Study design CS=Cross Sectional L=Longitudinal O=Other M=Multicent/regional/national S=Single centre/ local/clinic	Mode of administer. 1=Self-complete 2=Interview 3=Internet 4=other	CAM methods recorded
Hanssen et al [97] 3	2005	Denmark/English	16690	< 30 - >60 M=8188, F=8502 C	CS, M	1, 2	Reflexology, massage, homeopathy, acupuncture, relaxation, nutritional advice, healing, magnetism, spiritual healing, hypnosis, other
Knudsen et al [95] 2	2002	Denmark/English	4649	18-65 M=942, F=3707 A	CS, M	1	Dietary supplements and herbal products
Mantyranta et al [82] 4	1999	Finland/English	2,134	15-74 M=1034, F=1100 B	CS, M	2	homeopathic products/remedies, anthropos. products/ remedies, natural remedies, health food products, zone therapist, cupper, phlebotomist, chiropractor, naprapath, vertebral manipulator, spiritual healer.
Mantyranta et al [81] 5	1997	Finland/English	1308	45-64 W=1308 C	CS, M	1	food supplements, calcium, vitamins A,B,C,D, Iron, Selenium, Silicon, Zinc, Bee products (pollen, propolis, royal jelly), essential fatty acids (EPO, wheat germ, Borage), other alternative drugs (ginseng, garlic, valerian, hawthorn, maidenhair, ginko, echinacea, homeopathy), any alternative drug
Marjamaki et al [83] 6	2004	Finland/English	450	2 yrs and 3 yrs M=166, F=126 A	L, M	1	vitamins, minerals, natural products
Wahlstrom et al [84] 2008	2008	Finland/English	7979	> = 30 M=2738, F=3249 B	CS, M	2	chiropractor, naprapath, massage therapist, folk healer, reflexologist, homeopath, lymph therapist, acupuncturist, any other alternative medicine provider
Marques-Vidal et al [94] 8	2000	France /English	10,006	50-59 N/A B	CS, M	1	Vitamin supplements
Beitz et al [36] 9	2002	Germany/English	4030	18-79 N/A A	CS, M	2	Supplements
Bucker et al [38] 11	2008	Germany/English	1001	18-96 M=372, F=629 B	CS, M	4	Complementary medicine

Du,Yong et al [39] 12	2009	Germany/English	17641	0 – 17 M=8985, F=8678 A	CS, M	2	ointments, liniments, contraceptive pills, vitamin and mineral supplements, medicinal teas, herbal medicines and homeopathic medicines
Himmel et al [40] 14	1993	Germany/English	310	40-60+ M=107, F=203 C	CS, M	2	Complementary medicine
Obi et al [41] 15	2009	Germany/English	17,093	63.4 F=6646 B	CS, M	2	Herbal therapies for menopause
Reinert et al [42] 16	2007	Germany/English	25505	35-65 M=11929, F=13615 B	CS, M	1	dietary supplement use including vitamins, minerals, protein products, yeast products, garlic and fibre supplements
Schwarz et al [44] 18	2008	Germany/English	4310	20-70+ M=2106, F=2085 B	CS, M	2	herbal products, homeopathic medicine, exercise therapy, surface warming or cold treatment, deep hyperthermia, hydrotherapy, acupuncture or acupressure, electrotherapy, nutrition therapy and dietetic treatment, neural therapy, chiropractic, oxygen or ozone therapy, relaxation techniques, other type of CAM
Schwarzpaul et al [45] 19	2005	Germany/English	388	60+ M=118, F=270 A	L, M	1	Vitamins and minerals
von,Lengerke et al [47] 21	2006	Germany/English	947	25-74 M=450, F=492 A	CS, M	1	Alternative practitioner use
Walcher et al [48] 22	2009	Germany/English	2129	18-65 (mean 42.5) M=1025, F=1104 B	CS, M	1	Vitamin C
Winkler et al [49] 23	1998	Germany/English	4,854	45-64 M-430 A	CS, M	1	all supplements e.g. vitamin and mineral tablets, fish oil capsules
Beitz et al [37] 10	2004	Germany/German	4,030	18-79 M=1763, F=2267 B	CS, M	Not stated	Vitamins and minerals
Hartel et al [4] 13	2004	Germany/German	1100	18-69 yrs N/A B	CS, M	1	movement therapy, medical massage, nutrition, hydro-therapy, balneotherapy, heat therapy, phytotherapy, biorhythms, chiropractic, manual therapy, light therapy, thalassotherapy, fasting, acupuncture, neural-therapy, breath therapy, yoga, autogenic training. Homeopathy, anthrosopathy, TCM, Ayerveda, Indian or African medicine and any other natural or alternative therapy.
Schellhorn et al [43]	1998	Germany/Germ	4854	24-74	CS, M	2	Vitamins and minerals

17		an		M=2403, F=2451 A			
Six et al [46] 20	2008	Germany/German	1267	12-17 yrs M=621, F=646 A	CS, M	2	supplements
Marques-Vidal et al [94] 1	2000	Ireland/English	10,006	50-59 N/A/ B	CS, M	1	vitamins or tonics containing vitamins
Ben-Arye et al [53] 24	2009	Israel/English	1341	38 M=515, F=813 B	CS, M	1	herbal medicine, Chinese medicine (including acupuncture), homeopathy, folk and traditional medicine (including grandmas traditional remedies), tribal healers and religious healers, dietary/nutritional therapy including nutritional supplements, chiropractics, movement/manual healing therapies (massage, reflexology, yoga alexander and feldenkrais techniques etc) mind-body techniques (meditation, guided imagery, relaxation) energy and healing therapies and other naturopathic therapies
Ben-Arye et al [51] 25	2009	Israel/English	3447	mean of men=45.3, mean of women=42.85 M=1308, F=2139 B	CS, M	1	herbal medicine, Chinese medicine (including acupuncture), homeopathy, folk and traditional medicine (including grandmas traditional remedies), tribal healers and religious healers, dietary/nutritional therapy including nutritional supplements, chiropractics, movement/manual healing therapies (massage, reflexology, yoga alexander and feldenkrais techniques etc) mind-body techniques (meditation, guided imagery, relaxation) energy and healing therapies and other naturopathic therapies
Ben-Arye et al [52] 26	2009	Israel/English	3840	43.9 M=1376, F=2265 B	CS, S	1, 2	herbal medicine, Chinese medicine (including acupunct.), homeopathy, folk and traditional medicine (incl grandma's traditional remedies), tribal healers and religious healers, dietary/nutritional therapy including nutritional supplements, chiropractics, movement/ manual healing therapies (massage, reflexology, yoga alexander and feldenkrais techniques etc) mind-body techniques (meditation, guided imagery, relaxation) energy and healing therapies and other naturopathic therapies
Bernstein et al [99] 28	1997	Israel/English	2030	45-75 N/A B	CS, M	2	alternative medical practitioners such as homeopaths, acupuncturists, reflexologists, chiropractors, naturopaths or herbalists, practitioners in biofeedback or any other type of practitioners
Friedman et al [54] 29	2001	Israel/English	152	42.3 M=102, F=118 B	O, M	1	Alternative healthcare

Giveon et al [55] 30	2004	Israel/English	723	45.5 (18.4) M=229, F=460 B	CS, M	2	CAM use
Kitai et al [56] 31	1998	Israel/English	480	0-65+ M=221, F=259 C	CS, M	1, 2	homeopathy, reflexology, naturopathy, acupuncture, chiropracty, osteopathy, herbal medicine, shiatsu, aromatherapy, colour therapy
Krivoy et al [57] 32	2006	Israel/English	194	18-85 M=97, F=97 C	CS, S	2	homeopathy, herbal medicine, vitamins and religious consultation
Niskar et al [58] 33	2007	Israel/English	2365	21+ N/A B	CS, M	2	Complementary or alternative medicine
Shmueli et al [59] 34	2004	Israel/English	2505	45-75 N/A/ C	CS, M	2	homeopathy, chiropractic, acupuncture, reflexology, naturopathy, biofeedback
Shmueli et al [60] 35	2006	Israel/English	4467	45-75 N/A B	CS, M	2	consultations with CAM practitioners
Ben-Arye et al [50] 27	2007	Israel/Hebrew	1,147	residents pre 1990 = 46.4, immigrants post 1990= 47.6 M=428, F=719 B	CS, M	2	complementary and traditional medicines and folk medicine (alternative, natural) are defined as not being provided in mainstream medical care and include 1 or more of the following herbs (herbal medicine), Chinese medicine (acupuncture) homeopathy, folk(grandmother medicine including folk healers), Rabbinite healing (spiritual healing) supplements from health food shops, chiropractic, manual/ movement therapies (massage, alexander technique, yoga, feldenkrais, reflexology), healing and energy (magnets, reiki, Bekum (like vega testing) meditation, relaxation, guided imagery), naturopathy, aromatherapy bach flowers and others
Albertazzi et al [77] 36	2002	Italy/English	411	60+ F=411 B	CS, M	2	food supplements and other non-prescription remedies
Buono et al [78] 37	2001	Italy/English	655	65+ N/A B	CS, M	2	hytotherapeutic and/or homeopathic products acupuncture and relaxation therapy (including shiatsu massage, yoga, autogenous training)
Menniti-Ippolito et al [80] 39	2002	Italy/English	57,717,200	N/A N/A B	CS, M	2	homeopathy, acupuncture, herbal medicine, manipulative therapy and any other unspecified unconventional therapy
Giannelli et al [79] 38	2004	Italy/Italian	5670	50.6 M-2704, F=2966 C	CS, M	2	acupuncture", "phytotherapy" (= herbal medicine), "homeopathy", "manual therapies" (chiropractic and osteopathy) and "other CAMs"

Dorant et al [96] 40	1993	Netherlands/English	5898	1-75 M=2788, F=3110 A	CS, M	1	minerals, tonics, vitamins or health preparations
Fonnebo et al [70] 41	2009	Norway/English	1007	15-60+ M=461, F=546 B	CS, M	2	acupuncture, homeopathy, reflexology, healing/laying on of hands/religious healing (doing reading,) kinesiology, massage, natural therapy, psychotherapy (not provided by a psychologist or psychiatrist and 'other' modalities
Hanssen et al [97] 48	2005	Norway/English	1000	< 30 - >60 M=440, F=560 C	CS, M	2	Homoepathy, chiropractic, acupuncture, reflexology, natural therapy, healing, kinesiology, other
Norheim et al [71] 42	2000	Norway/English	653	18-70 M=247, F=282 B	CS, M	1	acupuncture or other therapies
Steinsbekk et al [74] 44	2008	Norway/English	42277	> =20 M=19715, F=22509 B	CS, M	1	chiropractor, homeopath, naturopath, reflexologist, layer on of hands, healer, visionary or corresponding service
Steinsbekk et al [73] 45	2008	Norway/English	40027	20-80+ M=18872, F=21155 B	CS, M	1	homeopathy
Steinsbekk et al [72] 43	2007	Norway/English	54448	20-80+ M=24732, F=29716 B	CS, M	1	chiropractor, homeopath
Steinsbekk et al [75] 47	2009	Norway/English	6612	18+ M=3294, F=3318 B	CS, M	Not stated	CAM practitioner
Vollset et al [76] 46	2000	Norway/English	1146	18-45 F=1146 A	CS, M	2	Dietary supplements
Szponar et al [98] 49	2007	Poland/Polish	1241	1-18 M=629, F=612 A	Not stated	Not stated	Vitamins and minerals
Nunes et al [93] 50	2005	Portugal/English	265	>65 M=81, F=184 B	CS, M	2	Alternative treatments
Kersnik et al [92] 51	2000	Slovenia/English	1753	18-65+ N/A B	CS, M	1	Alternative medicines
Gri et al [90] 52	1999	Spain/Spanish	178	76.9 yrs M=80, F=98 B	CS, S	4	natural remedies from the Spanish oral tradition
Vacas et al [91]	2009	Spain/Spanish	240	81.4 yrs	CS, M	2	homeopathic or herbal medicines

53				M=100, F=140 B			
Al-Windi et al [62] 55	2004	Sweden/English	1433	44.8 M-518, W=843 CS, S	CS, S	1	massage, acupuncture, chiropractic naprapathy (manipulative therapy) or other therapies
Al-Windi et al [63] 56	2004	Sweden/English	1433	44.8 M=545, F=888 B	CS, S	1	herbal medicine
Al-Windi et al [61] 57	2000	Sweden/English	827	16-65 M=338, F=420 B	CS, S	1	Herbal medicines
Hanssen et al [97] 54	2005	Sweden/English	1001	< 30 - >60 M=467, F=534 C	CS, M	2	Massage, natural remedies chiropractic, acupuncture, naprapathy, reflexology, homeopathy, healing, Anthropo-sophic medicine, Rosen therapy, kinesiology, crystal therapy
Holmquist et al [64] 58	2003	Sweden/English	2654	45-70 yrs M=1143, F=542 B	CS, M	1	Supplements
Messerer et al [100] 60	2008	Sweden/English	38994	45-79 M=38994 C	CS, M	1	Dietary supplements
Messerer et al [66] 61	2001	Sweden/English	11561	16-84 yrs M=5621, F=5940 B	CS, M	2	vitamins or other strengthening medicines or natural remedies
Messerer et al [67] 59	2004	Sweden/English	248	40-47 yrs M=248 A	CS, M	2	dietary supplements
Nilsson et al [68] 62	2001	Sweden/English	5794	25-74 M=2829, F=2974 A	CS, M	1	minerals, vitamins and other substances not prescribed by a physician (such as Q10, silica, garlic, ginseng, gingko biloba, valeriana, echinacea, fish oil and homeopathic substances
Wallstrom et al [69] 63	1996	Sweden/English	6545	45-65 years M=2267, F=3878 A	CS, M	1	Natural remedy that is part of a plant or animal, mineral or bacterial culture, salt or solution of salt (not herbal teas)
Marques-Vidal et al [85] 64	2009	Switzerland/English	6186	35-65+ M=2937, F=3249 C	CS, M	2	Vitamins and dietary supplements
Messerli-Rohrbach [86] 65	2000	Switzerland/English	2207	20-75 yrs M=762, F=1445 C	L	4	Unconventional medical methods
Sommer et al [87]	1999	Switzerland/Engl	547785	N/A	CS, M	4	Complementary medical services

66		ish		N/A C			
Araz et al [88] 67	2009	Turkey/English	988	35.4 M=418, F=570 C	Not stated	1	bioenergy, reiki, ayurveda, aromatherapy, acupuncture, massage, herbal therapy, meditation, colour therapy, yoga, music therapy, thermal therapy, praying, art therapy
Gozum al [89] 68	2004	Turkey/English	385	>= 65 F=385 B	CS, M	1, 2	Herbal therapy
Bristow et al [15] 70	1997	UK/English	13483	4-12 N/A B	CS, M	1	Food supplements
Bishop et al [14] 69	2009	UK/English	170	23.9 (3.6) M=83, F=87 B	CS, S	3	Traditional Chinese Medicine
Cumming et al [16] 71	2007	UK/English	1072	N/A F=1072 B	CS, M	3	Non specified “alternative therapies”
Ekins-Daukes et al [17] 72	2005	UK/English	16765	0 - 16 yrs N/A B	CS, M	3	paediatric homoeopathy
Emslie et al [18] 73	1996	UK/English	341	>= 18 N/A B	CS, M	1	acupuncture, chiropractic, homoeopathy, hypnotherapy, medical herbalism, osteopathy, reflexology, aromatherapy
Emslie et al [19] 74	2002	UK/English	432	N/A N/A B	CS, M	1	acupuncture, chiropractic, homoeopathy, hypnotherapy, medical herbalism, osteopathy, reflexology, aromatherapy or other therapy
Ernst et al [20] 75	2000	UK/English	1204	18-65+ M=540, F=664 B	CS, M	4	herbal medicine, aromatherapy, homeopathy, acupuncture/acupuressure, massage, reflexology, osteopathy, chiropractic
Featherstone et al [21] 76	2003	UK/English	1174	18-70 M=411, F=752 B	CS, M	1	acupuncture, aromatherapy, chiropractic, herbalism, homeopathy, hypnotherapy, osteopathy, reflexology, other, flower essences, nutritional supplements
Furnham [22] 77	2007	UK/English	243	20-70 M=100, F=142 B	CS, M	1	non specified “CAM user”
Harrison et al [23] 78	2004	UK/English	15465	49.0 (27.57) M=6986, F=8479 C	CS, M	1	Herbal supplements
Kiely et al [24] 79	2001	UK/English	1379	18-65 M=662, F=717 A	CS, M	1	Nutritional supplements

Kirk et al [25] 80	1999	UK/English	13,822	51.4 F=13822 C	CS, M	1	vitamins, minerals, fish oils, fibre or other food supplement
McNaughton et al [26] 81	2005	UK/English	1776	53 M=827, F=949 A	L, M	1	Dietary supplements
Murray et al [27] 82	1993	UK/English	233	28-70 M=103, F=130 C	CS, S	1	Osteopathy, massage, chiropractic, acupuncture, reflexo-logy, Alexander, homeopathy, herbalism, aromatherapy, counselling, psychotherapy, hypnosis. faith healing, self improvement, mediation, yoga, bioenergetics, autogenic training
Ong et al [28] 83	2002	UK/English	8889	18-64 M=3863, F=4938 B	CS, M	1	osteopath, chiropractor, counsellor, psychotherapist, homeopath, herbalist, acupuncturist, other alternative therapist, religious or spiritual healer, self help group
Simpson et al [29] 84	2001	UK/English	904	< 16 N/A C	CS, M	1	Homoeopathy, aromatherapy, herbal medicine, osteopathy (inc cranial), reflexology, chiropractic, acupuncture acupressure, hypnosis, other
Sobal et al [30] 85	1990	UK/English	186	16-82 M=61. F=125 B	CS, S	1	Vitamin supplements
Thomas et al [33] 88	2001	UK/English	2669	M=1333, F=1378 18 - 75+ A	CS, M	1	acupuncture, chiropractic, homoeopathy, hypnotherapy, medical herbalism, osteopathy, reflexology, aromatherapy, OTC herbal and homoeopathic remedies
Thomas et al [31] 86	1998	UK/English	2021	55-69 M=2021 B	CS, M	2	Garlic preparations
Thomas et al [32] 87	2004	UK/English	1794	16-75+ M=843, F=951 B	CS, M	2	Acupuncture, chiropractic, homeopathy, medical herbal-ism, hypnotherapy, osteopathy, reflexology, aroma-therapy, other, OTC homeopathic remedy, ORC herbal remedy, shiatsu, reiki, nutritional therapy, massage, Bowen, kinesiology, tai chi, faith healing, chakra balancing, traditional Chinese medicine, allergy testing cranial sacral therapy
van,Tonder et al [34] 89	2009	UK/English	92	59.7 (12.9) M=34, F=58 C	CS, M	1	Dietary therapies, supplements, herbal remedies
Wye et al [35] 90	2008	UK/English	9723	3 - 4.5 yrs & 19-35+ / F=9273 C	CS,M	1	Homoeopathy

Note. Study number = 90 (included papers = 87) because 2 papers [94, 97] reported more than one set of data; each set of data is reported separately

Appendix 5: Results of CAM prevalence over any time period, reasons for use, conditions treated and study quality (by country)

Citation Study number	Year	Country/Language	Sample size	Any CAM use ever N (% N)	Reasons for use	Conditions treated	Quality score n/16.5 (%)
Hanssen et al [97] 3	2005	Denmark/English	16690	751 (45.0)	n/a	n/a	10 (60.6)
Knudsen et al [95] 2	2002	Denmark/English	4649	2758 (59.0)	n/a	n/a	9.5 (57.6)
Mantyranta et al [82] 4	1999	Finland/English	2,134	832 (39.0)	n/a	n/a	10.5 (63.5)
Mantyranta et al [81] 5	1997	Finland/English	1308	148 (11.0)	n/a	n/a	13 (78.8)
Marjamaki et al [83] 6	2004	Finland/English	450	241 (43.4)	n/a	n/a	8 (48.5)
Wahlstrom et al [84] 7	2008	Finland/English	7979	2119 (35.4)	n/a	n/a	13 (78.8)
Marques-Vidal [94] 8	2000	France /English	10,006	1161 (15.0)	n/a	n/a	8 (48.5)
Beitz et al [36] 9	2002	Germany/English	4030	1733 (43.0)	n/a	n/a	6.5 (39.4)
Bucker et al [38] 11	2008	Germany/English	1001	423 (42.3)	wish to take as few drugs as possible, doctors advice, dissatisfactory results from conventional medicine, coincidence, used before conventional medicine, disappointed by conventional medicine, more natural or wanted to try everything, few side effects, safer, medical doctor did not understand problem, medical doctor did not take enough time, medical doctor not interested in their case	chronic pain , uncomplicated colds , improvement of general health, acute pain,	10.5 (63.6)
Du,Yong et al [39] 12	2009	Germany/English	17641	718 (4.6)	n/a	n/a	12.5 (75.8)
Himmel et al [40] 14	1993	Germany/English	310	122 (39.4)	n/a	n/a	4 (24.2)
Obi et al [41] 15	2009	Germany/English	17,093	669 (10.0)	n/a	n/a	12.5 (75.8)
Reinert et al [42] 16	2007	Germany/English	25505	11340 (44.4)	n/a		10 (60.6)
Schwarz et al [44]	2008	Germany/English	4310	257 (6.0)	n/a	non-specific chronic back pain,	11 (66.7)

18						arthrosis, elevated blood lipids, varicosis, migraine, thyroid disease, urinary tract infection, arthritis, gastritis, chronic bronchitis, hypertension, diabetes	
Schwarzpaul [45] 19	2005	Germany/English	388	179 (46.1)	n/a	n/a	6 (36.4)
von,Lengerke et al [47] 21	2006	Germany/English	947	49 (4.0)	n/a	n/a	7.5 (45.5)
Walcher et al [48] 22	2009	Germany/English	2129	232 (11.0)	n/a		8.5 (51.5)
Winkler et al [49] 23	1998	Germany/English	4,854	430 (16.3)	n/a	n/a	8 (48.5)
Beitz et al [37] 10	004	Germany/German	4,030	4030 (43.0)	n/a	n/a	7 (42.4)
Hartel et al [4] 13	2004	Germany/German	1100	682 (62.0)	n/a	n/a	10.5 (63.6)
Schellhorn et al [43] 17	1998	Germany/German	4854	1109 (22.8)	n/a	n/a	7 (42.4)
Six et al [46] 20	2008	Germany/German	1267	253 (20.0)	n/a	n/a	8 (48.5)
Marques-Vidal et al [94] 1	2000	Ireland/English	10,006	520 (21.0)	n/a	n/a	8 (48.45)
Ben-Arye et al [53] 24	2009	Israel/English	1341	560 (41.8)	n/a	n/a	10.5 (63.6)
Ben-Arye et al [51] 25	2009	Israel/English	3447	1490 (43.0)	n/a	n/a	12 (72.7)
Ben-Arye et al [52] 26	2009	Israel/English	3840	1621 (42.2)	n/a	n/a	11 (66.7)
Bernstein et al [99] 28	1997	Israel/English	2030	122 (6.0)	disappointment with the outcome of conventional treatment, wanted to try, did not want a lot of medications , did not want invasive procedures, there was no other solution , other reasons	pain , back pain, leg or arm pain	5.5 (33.3)
Friedman et al [54] 29	2001	Israel/English	152	47 (29.0)	n/a	n/a	8 (48.5)
Giveon et al [55] 30	2003	Israel/English	723	261 (36.1)	strengthening body, prevention of disease	n/a	10 (60.6)

Kitai et al [56] 31	1998	Israel/English	480	90 (18.7)	n/a	musculoskeletal, respiratory, digestive, preventative medicine, psychiatric and nervous system, dermatological and allergy	7.5 (45.5)
Krivoy et al [57] 32	2006	Israel/English	194	69 (35.5)	n/a	n/a	6.5 (39.4)
Niskar et al [58] 33	2007	Israel/English	2365	139 (5.8)	n/a		9 (54.5)
Shmueli et al [59] 34	2004	Israel/English	2505	250 (10.0)	did not want to take many medicines, did not want invasive care, disappointment with conventional medicine, there was no other solution, wanted to experience, it was readily available (provider is a friend, family), past good experience	digestive and urinary, tension, joints and limbs, back pain, respiratory, migraine, cancer, blood(hypertension, cholesterol), bones, smoking, general health	6.5 (39.4)
Shmueli et al [60] 35	2006	Israel/English	4467	329 (8.0)	n/a	n/a	7.5 (45.5)
Ben-Arye et al [50] 27	2007	Israel/Hebrew	1,147	629 (54.8)	wanted to try, didn't want to use medical drugs	n/a	11.5 (69.7)
Albertazzi et al [77] 36	2002	Italy/English	411	345 (83.9)	Cod liver oil is good for joints, multivitamins for general wellbeing, calcium prevents brittle bones, primrose oil for general wellbeing, glucosamine is good for joints, vitamin C prevents colds, garlic capsules for general wellbeing, selenium is an antioxidant, gingko is good for memory, zinc for general wellbeing, echinacea prevents colds	n/a	6 (36.4)
Buono et al [78] 37	2001	Italy/English	655	193 (29.5)	advice of friends, family, by GP, specialist, own initiative	arthrosis, anxiety, headache, asthma, give up smoking, dizziness, herpes zoster, digestion, gastritis	10.5 (63.6)
Menniti-Ippolito [80] 39	2002	Italy/English	57,717,200	9,000,000 (15.6)	lower toxicity, only therapy available, greater efficacy, better doctor-patient interaction, cultural belief, don't know	acute diseases, pain, psychological disorders, quality of life, chronic disease,	8 (48.5)
Giannelli et al [79] 38	2004	Italy/Italian	5670	1122 (20.2)	n/a	n/a	11 (66.7)
Dorant et al [96] 40	1993	Netherlands/English	5898	1012 (17.2)	n/a	n/a	7 (42.4)
Fonnebo et al [70] 41	2009	Norway/English	1007	490 (48.7)	n/a	n/a	10.5 (63.6)
Hanssen et al [97] 48	2005	Norway/English	1000	340 (34.0)	n/a	n/a	10 (60.6)

Norheim et al [71] 42	2000	Norway/English	653	102 (16.0)	lack of conventional medicine effect, experience of acupuncture, distinctive character of acupuncture, avoiding negative effects of conventional medicine, wanting additional therapy, desperation due to pain and other health complaints	musculoskeletal pain, headache, psychiatric disorders, gastrointestinal, ENT, allergy/eczema, gynaecological, other problems	8 (48.5)
Steinsbekk et al [74] 44	2008	Norway/English	42277	5411 (12.8)	n/a	n/a	12 (72.7)
Steinsbekk et al [73] 45	2008	Norway/English	40027	1003 (4.3)	n/a	n/a	10 (60.6)
Steinsbekk et al [72] 43	2007	Norway/English	54448	5400 (9.9)	n/a	n/a	9 (54.5)
Steinsbekk et al [75] 47	2009	Norway/English	6612	575 (8.7)	n/a	n/a	10 (60.6)
Vollset et al [76] 46	2000	Norway/English	1146	611 (53.3)	n/a	n/a	6.5 (39.4)
Szponar et al [98] 49	007	Poland/Polish	1241	179 (14.4)	n/a	n/a	4 (24.2)
Nunes et al [93] 50	2005	Portugal/English	265	116 (43.7)	n/a	n/a	6.7 (39.4)
Kersnik et al [92] 51	2000	Slovenia/English	1753	115 (6.6)	n/a	n/a	5 (30.3)
Gri et al [90] 52	1999	Spain/Spanish	178	84 (47.2)	n/a	n/a	7.5 (45.5)
Vacas et al [91] 53	2009	Spain/Spanish	240	37 (15.4)	n/a	n/a	8.5 (51.5)
Al-Windi et al [62] 55	2004	Sweden/English	1433	228 (17.0)	n/a	infections & parasitic, neoplasms, blood, endocrine-metabolic-nutritional, mental/behavioural, nervous system, eye & ear, circulatory, respiratory, digestive skin, musculoskeletal, genito-urinary, injuries, external causes, signs & symptoms	11.5 (69.7)
Al-Windi et al [63] 56	2004	Sweden/English	1433	320 (22.3)	n/a	n/a	10 (60.6)
Al-Windi et al [61] 57	2000	Sweden/English	827	258 (31.8)	n/a	n/a	11.5 (69.7)
Hanssen et al [97] 54	2005	Sweden/English	1001	491 (49.9)	n/a	n/a	10 (60.6)
Holmquist et al [64]		Sweden/English	2654	1685 (64.0)	n/a	n/a	7.5 (45.5)

58	2003						
Messerer et al [100] 60	2008	Sweden/English	38994	13295 (34.0)	n/a	n/a	6 (36.4)
Messerer et al [66] 61	2001	Sweden/English	11561	3226 (27.8)	n/a	n/a	10 (60.6)
Messerer et al [67] 59	2004	Sweden/English	248	106 (5.0)	n/a	n/a	7 (42.4)
Nilsson et al [68] 62	2001	Sweden/English	5794	1767 (30.5)	n/a	n/a	12 (72.2)
Wallstrom et al [69] 63	1996	Sweden/English	6545	1448 (22.0)	n/a	n/a	11 (66.7)
Marques-Vidal [85] 64	2009	Switzerland/English	6186	1588 (26.0)	n/a	n/a	8.5 (51.5)
Messerli-Rohrbach et al [86] 65	2000	Switzerland/English	2207	1252 (57.0)	n/a	n/a	4 (24.2)
Sommer et al [87] 66	1999	Switzerland/English	547785	26294 (4.8)	n/a	n/a	4.5 (27.3)
Araz et al [88] 67	2009	Turkey/English	988	849 (86.0)	n/a	n/a	8 (48.5)
Gozum et al [89] 68	2004	Turkey/English	385	186 (48.3)	treatment for health problems, maintain health or prevent health problem, to prevent and to treat health problem	n/a	8 (48.5)
Bristow et al [15] 70	2009	UK/English	170	42 (25.0)	n/a	n/a	11.5 (69.7)
Bishop et al [14] 69	1997	UK/English	13483	2143 (15.9)	n/a	n/a	9 (54.5)
Cumming et al [16] 71	2001	UK/English	1072	424 (40.0)	health risks associated with HRT. alternatives more natural. desperation. recommended by friend	Menopause	2.5 (15.2)
Ekins-Daukes et al[17] 72	2005	UK/English	16765	190 (0.3)	n/a	Colic, cuts & bruises, teething, skin condition earache flu & URT infection, cough, vomiting, irritability, diarrhoea	8.5 (51.5)
Emslie et al 18 73	1996	UK/English	341	96 (29.0)	doctor or health professional referred/recommended. read about it. looked it up in telephone directory. recommended by friend/colleague. practitioner known to me. local clinic available. other	n/a	8.5 (51.5)
Emslie et al 19 74	2002	UK/English	432	175 (41.0)	n/a	n/a	7 (42.4)

Ernst et al 20 75	2000	UK/English	1204	245 (20.0)	helps relieve injury/condition. just like it. find it relaxing. good health/well-being generally. preventative measure. do not believe conventional medicine work. doctors recommendation/referral. to find out about other ways of life/new thing. way of life/part of lifestyle. cannot get treatment on NHS/under conventional medicine	n/a	4.5 (27.3)
Featherstone et al [21] 76	2003	UK/English	1174	837 (71.0)	n/a	musculoskeletal problems, prevention and stress management, reproductive hormone related problems, mental health problems	12.5 (75.8)
Furnham [22] 77	2007	UK/English	243	105 (43.2)	n/a	n/a	7 (42.4)
Harrison et al [23] 78	2004	UK/English	15465	1987 (12.8)	n/a	n/a	7 (42.4)
Kiely et al [24] 79	2001	UK/English	1379	1379 (23.0)	n/a	n./a	5 (30.3)
Kirk et al [25] 80	1998	UK/English	13,822	8409 (60.8)	n/a	n/a	8 (48.5)
McNaughton et al [26] 81	2005	UK/English	1776	636 (35.8)	n/a	n/a	10 (60.6)
Murray et al [27] 82	1993	UK/English	233	95 (40.8)	n/a	n/a	5 (30.3)
Ong et al. [28] 83	2002	UK/English	8889	695 (7.8)	n/a	n/a	8.5 (51.5)
Simpson et al [29] 84	2000	UK/English	904	162 (17.9)	word of mouth recommendation, dissatisfaction with conventional medicine, fear of side effects of conventional medicine, more personalised attention, having a child with chronic condition	ENT, Dermatology, musculoskeletal, infant, respiratory, emotional/behavioural, gastrointestinal, allergies, other	10.5 (63.6)
Sobal et al [30] 85	1990	UK/English	186	82 (44.0)	ensuring nutrition = 33, prevent illness=27, tiredness=27, more energy=22, to feel good=18, stress=12, to feel stronger=6, treat illness=5, other=	n/a	5 (30.3)
Thomas et al [33] 88	2001	UK/English	2669	1210 (46.6)	birthday treats, assist student, health spa, beauty treatment, gift voucher, prize, pleasure	musculoskeletal , other health problems, general health maintenance, stress/relax	12.5 (75.8)
Thomas et al [31] 86	1998	UK/English	2021	119 (5.9)	n/a	n/a	5.5 (33.5)

Thomas et al [32] 87	2004	UK/English	1794	179 (10.0)	treat an illness for which conventional medicine advice had previously been sought, treat illness condition for which no conventional medical treatment had been sought, improve general health or prevent illness, recreational/beauty, other reason	n/a	10 (60.6)
van,Tonder et al [34] 89	2009	UK/English	92	48 (53.0)	boost immune system, improve quality of life, pain relief, stress management	n/a	8 (48.5)
Wye et al [35] 90	2008	UK/English	9723	579 (6.0)	n/a	n/a	5.5 (33.3)