

What are doctors' views of
Complementary and Alternative
Medicine (CAM); and has this
changed since 1970 until the
present, 2009?

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Jenna Nacagilevu

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Acronyms:

CAM – *Complementary and Alternative medicine*

GPs – *General Practitioners*

RCTs – *Randomised Controlled Trials*

EBR – *Evidence Based Research*

WMDs – *Western Medicine Doctors*

OMDs – *Oriental Medicine Doctors*

CBT – *Cognitive Behaviour Therapy*

Note:

The following words will be used interchangeably throughout this review, except where direct quotes are used or original research is being mentioned; then the actual word stated in the correct context of the direct quote or original research will be used.

- Attitudes, views, perceptions and beliefs.

- Physicians, doctors, unorthodox/Western medical practitioners, and GPs.

- Orthodox medicine, Western medicine, conventional medicine, mainstream medicine.

- CAM, unconventional medicine, alternative medicine, unorthodox medicine.

Abstract:

There are notable differences between the dominant Western medical model of health and the model of CAM, and looking at these differences may provide a greater understanding around doctors' views towards CAM and its place in the wider health system.

The purpose of this dissertation is to provide a systematic literature review into how doctors view complementary and alternative medicine, and to see if this has changed since the 1970s through to 2009. A systematic review of the literature was conducted, mainly using online original research Journal articles from medical databases. The internet was the main tool used in locating data, and literature was included or excluded based on relevance. This was evaluated on the relevance of time period, such as 1970, subject, such as chiropractic, or theme, such as attitudes of doctors to CAM.

Literature from the 1970s was scarce on this research question, but this review noted a significant increase in literature on this topic since the 1990s, identifying this research area as a relatively new field of study, with much potential for further exploration into beliefs and attitudes of doctors towards CAM.

Scientific research papers that were published highlighted a strong emphasis towards doctors' requirement for further scientific research on the efficacy of CAM. Randomised controlled trials (RCTs) were the preferred method of testing; however this review also discusses appropriate methodology to test both CAM and doctors' views and beliefs.

The difference between the Western medical model and the CAM model highlights the differences between both concepts; from which this author provides a possible interpretation of doctors' indifferent views towards CAM using the psychological theory of cognitive dissonance (Festinger, 1957). This theory suggests that a person cannot hold two conflicting beliefs simultaneously, without the presence of cognitive 'dissonance.'

"The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance" (Festinger, 3: 1957).

This systematic review then provides a discussion around how this could explain doctors' views towards CAM.

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This then leads to the question of whether 'successful integration of Western medicine and CAM is therefore possible'? The systematic review concludes with the highlighting of important issues in regard to the study design and methodology on effectively testing CAM, and on effectively testing doctors' beliefs: also, the issues around integration and further scientific literature on CAM in a bid to potentially reduce the 'moderate tone of answering' that is reported in the literature in regard to doctors' views towards CAM.

1. Background and Introduction:

The World Health Organisation definition of health is that “*health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*” (WHO, 1948).

The literature documents a definite demand for complementary and alternative medicine (CAM) by the general population.

“*Studies conducted in Europe, and the United States, as well as in Israel, have shown that a large proportion of the population uses non-conventional modalities to treat a broad spectrum of health problems, ranging from the subjective to the life-threatening*” (Fadlon, Granek-Catarivas, Roziner, & Weingarten, 212: 2008).

Because of the dominant position Western medicine has in health care, it is fitting to understand how they, and in particular physicians, view CAM. This is important especially as physicians are usually the first port of call for patients when they need medical advice or treatment. There are such differences between the health models of CAM and Western medicine, that by looking at what doctors’ views are towards CAM, it can help understand their position towards CAM, and in turn, the position of CAM within medicine in general. A review from the Netherlands (Schepers & Hermans, 1999) reports that, “*Doctors are both conserving and changing their position*” (Schepers & Hermans, 350: 1999). Therefore the aim of this systematic review is to identify and

explore doctors' views towards CAM between 1970 and 2009; as well as possible influences on these views and any significant changes over this time period.

The Biomedical model and the CAM model

A focus of the biomedical model of health is on the '*absence of disease*' (Aakster, 268: 1986); (Coulter, 111: 2004) in a pathological sense. It diagnoses and treats diseases biologically, based on scientific evidence and physiological symptoms.

The CAM model is considered holistic in nature, combining the social, psychological, physical and mental aspects, which are incorporated into the diagnosis and treatment.

The Western model in a different way (or by comparison) provides a diagnosis on the '*description of symptoms*' (Aakster, 269: 1986).

Therefore this author explains that, with such conflicts between the two concepts, there may be a potential lack of success with the integration of the two, based on these differences. This author therefore suggests the theory of cognitive dissonance as a possible explanation as to why there has not been a significant change in doctors' views towards CAM, as shown in the literature in this review, and as to why changes may not be expected in the future.

The idea of complementary medicine is that it compliments another treatment; whereas alternative denotes the idea of separate or another option outside mainstream medicine.

An example of a complementary medicine may be massage, vitamin supplements or cognitive behaviour therapy. All of these therapies can either be used by themselves or easily in conjunction with mainstream medicine, such as pharmaceuticals, to treat a health complaint. Alternative could be described as 'alternative to mainstream' in that the therapy is used 'instead' of mainstream medicine. Examples of this could be traditional Chinese medicine or ayurveda. Again, when looking at the dominant Western medicine paradigm, 'complementary' in this sense infers complementary medicine is used 'secondary' to Western medicine; either used in conjunction with Western medicine, or in place of Western medicine if it was not successful. This is interesting, as traditional medicines and medicines of Eastern origin have been around longer in terms of time, but are still considered CAM, because they are no longer the dominant form of medicine today in the Western world.

Different complementary and alternative therapies are usually all grouped under the same heading of CAM. Both chiropractic and traditional medicine, for example, come under, the umbrella term of CAM, yet are very different in method, country, origin and application. There are even differences in regard to the professionalisation and legislation regarding these two therapies. Therefore, there are differences within the field of, in regard to the therapies, the therapists, and their place in the wider health system.

While this review challenges the idea of integration, the health system is worth a mention here in regard to the opportunity consumers have to access CAM.

A health system equally offering the consumers both Western medicine and CAM individually or conjointly may improve its functionality. Because there is such a difference between the concepts themselves, they are unlikely to change and therefore unlikely to work together while the concepts remain conflicting. This is why the attitudes of practitioners from both sides may experience 'cognitive dissonance' because the belief (in their preferred health discipline), and their action (the practice of their health discipline) need to be in alignment for the practitioner to experience the absence of cognitive conflict. According to the theory of 'cognitive dissonance,' the belief is changed to line up with the action. Therefore a Western medicine doctor practicing western medicine would need to refrain from promoting CAM if their belief was formed in the Western biomedical paradigm.

The central question of discovery in this systematic literature review is whether doctors have become more interested in their beliefs, attitudes and knowledge of CAM, or if they have become more positive or hold more favourable views towards CAM? Has there been no significant change at all or have doctors' views towards CAM become even more skeptical, more negative and less interested in CAM over the last 40 years? An answer this review has provided is that there is no significant change in the views of doctors since 1970 until today. There is however limited literature, if any at all, on this topic in the 1970s and the 1980s. This review proposes that looking at the views of doctors towards CAM seems to be a relatively new field of study since the 1990s. This has been concluded by the lack of available scientific studies published on this topic during the

1970s and 1980s, and by the obvious development of research papers that emerged in the 1990s. As discussed later in this review, with the rise of the Internet in the 1990s and consumer demand through the age of accessible health information provided by the Internet, this may be offered as an explanation for the larger amount of scientific articles published in the 1990s.

Coulter (2004) explains that some physicians believed that different types of CAM treatments failed the evidence-based medicine standard, and were therefore nothing more than 'effective placebos,' with the CAM practitioners only after the consumers' money. This gives the idea that they are unsafe and ineffective.

A suggestion from Christie, (1991) as to why patients are going to consult CAM practitioners, may be because of the biomedical position that a Western medicine doctor is coming from: the diagnosis and the treatment of the disease, less holistic perspective and more clinical in focus. There is no better or worse in this scenario, it is instigated from the patient and may be dissatisfaction with the 'system' of a purely biomedical position, and not a judgement of the doctor's diagnosis or practice. It may be, in this case, less about the doctor as such, as a 'vessel' or 'provider' of the system, and more about the 'system' itself, as in the 'biomedical system'.

This author found the literature from the 1970s and 1980s was scarce on the beliefs of doctors towards CAM; although reference was made to the general status of alternative medicine and its place within the wider health system. This was more of a focus in the

scientific literature published at this time. Literature that was searched was related to the methodology, which included original scientific research. This shows the relative newness of this field of study that has emerged in the 1990s in regard to beliefs, perceptions, attitudes and views within medicine. This author proposes a further pioneering study done in this area would challenge given beliefs within the medical community and the health system, prompting the medical fraternity to begin to look further into the specific influences and reasons why doctors have certain beliefs towards CAM.

This systematic literature review therefore aims to look at some of the views doctors have towards CAM, and identifies what main themes have arisen from the literature between 1970-2009, and offers an interpretation of this.

2. Methodology:

2.1. Aim:

The purpose of this dissertation is to present a systematic literature review into how doctors view complementary and alternative medicine, and to see if this has changed since the 1970s through to 2009. By exploring the foundations for doctors' views towards CAM and looking at the developments or changes between the time periods, this review aims to explore influences on doctors' views on CAM. By looking

retrospectively at trends and significant changes in doctors' views towards CAM, as well as the idea of the integration of CAM into Western medicine, potential future developments in CAM can be explored.

2.2. Method:

A systematic review of literature was conducted in this dissertation. The sources of data that were searched included published books as secondary sources, and journals through electronic databases and original research as primary sources. Journals that were searched included the British Medical Journal, New Zealand Medical Journal and the Journal of the American Medical Association.

Google, Google Scholar, and Science Direct were used each time as search engines to locate the journals and to display the results from these search engines. The University of Canterbury Library database and book catalogue were used to locate the published books for secondary sources.

The books were searched systematically through the University of Canterbury Library database, by using keywords (see Table 1. below). Such as the date, for example, 1970 and the subject of interest, for example chiropractic, or by theme, such as attitudes of doctors to the use of CAM. Journals and archived articles were also searched in the same way, firstly via the online search engine Google and Google Scholar, and secondly by typing keywords into the journal databases that were already known (such as AMA,

NZMJ, BMA) or to find unknown journal databases that were relevant. A further search was conducted to refine a search, confirm a search, or search for additional or alternative information within the journals. Additional journals were included by their relevance to a chronological search, such as 1970; by subject, such as chiropractic; by theme, such as attitudes of doctors to the use of CAM; and also by their validity and credibility. Journals that were sourced and deemed relevant included: Pergamon Press (including Social Science and Medicine), American Journal of Public Health, European Journal of Internal Medicine, Complementary and Alternative Medicine, eCAM, and Complementary Therapies in Medicine. The electronic databases used were: Elsevier Science, BioMed Central and Science Direct.

The Internet was the main tool for conducting searches for relevant sources, such as the location of hard copy books, online books, online journals and archived records. Hard copies of books were also used. The supervisor of this systematic review also provided articles to this author, which were then evaluated and included or excluded according to their relevance to the search criteria outline in this review. Both qualitative and quantitative research was included in the search and in the review. Literature written only in English was reviewed. This did not exclude original research literature that has been translated into English. This was conducted using the search engine Google and Google Scholar. The data search form is presented in Table 1 below:

2.3. Table 1: Data Search Form:

<u>SEARCH</u>	<u>DATABASE / SEARCH ENGINE</u>	<u>KEYWORDS SEARCH 1</u>	<u>KEYWORDS SEARCH 2</u>	<u>KEYWORDS SEARCH 3</u>	<u>YEAR</u>
1.	Google	Doctors	Attitude	CAM	1970-2009
2	Google	Doctors	Views	CAM	1970-2009
3	Google	Doctors	Beliefs	CAM	1970-2009
4	Google	Doctors	Think of/ about/ towards	CAM	1970-2009
5	Google	Physicians	Attitude	CAM	1970-2009
6	Google	Physicians	Views	CAM	1970-2009
7	Google	Physicians	Beliefs	CAM	1970-2009
8	Google	Physicians	Think of/ about/ towards	CAM	1970-2009
9	Google	Changes in	Doctors attitudes	Towards CAM	1970-2009
10	Google	Changes in	Doctors views	Towards CAM	1970-2009
11	Google	Changes in	Doctors beliefs	Towards CAM	1970-2009
12	Google	What are	Doctors attitudes	Towards CAM	1970-2009
13	Google	What are	Doctors views	Towards CAM	1970-2009

14	Google	What are	Doctors beliefs	Towards CAM	1970-2009
15	Google	Changes in	Physicians attitudes	Towards CAM	1970-2009
16	Google	Changes in	Physicians views	Towards CAM	1970-2009
17	Google	Changes in	Physicians beliefs	Towards CAM	1970-2009
18	Google	What are	Physicians attitudes	Towards CAM	1970-2009
19	Google	What are	Physicians views	Towards CAM	1970-2009
20	Google	What are	Physicians beliefs	Towards CAM	1970-2009
21	Science direct	What are	Doctors views	Towards CAM	1970-2009
22	Science direct	What are	Doctors attitudes	Towards CAM	1970-2009
23	Science direct	What are	Doctors beliefs	Towards CAM	1970-2009

2.4. Keywords:

Doctors: Also; physicians, medical doctors, GPs

Views: Also; attitudes, perceptions, beliefs, ‘think of/about/towards’

CAM: Also; complementary and alternative medicine

Changes in: Also; changes since, changes between, changes from

2.5. Relevance or Inclusion/Exclusion to be used in Analysis:

After the literature had been sourced, it was reviewed systematically for relevance. A summary of the literature was conducted to determine if the literature was to be included in the review. This was evaluated on the relevance of time period, such as 1970, subject, such as chiropractic, or theme, such as attitudes of doctors to CAM. This was also conducted in regard to the source – primary source or original research, secondary source, (methodology) – This author did not exclude on methodology type (i.e. Both qualitative and quantitative, RCT etc. were included when or if they came up in an initial search). The scope and validity of the articles were narrowed down by including original research. However studies that had NO research basis or methodology were excluded. Primary research was used to show validity; therefore the author’s own interpretation was used instead of relying on another reviewer’s interpretations of the literature for this topic. In selecting papers, the PICO (Population, Intervention, Comparison, Outcomes)

method was used and is illustrated below:

2.6. P.I.C.O:

Population: Doctors trained in conventional medicine.

Intervention: Developments and events through time –technology (i.e. Internet and more access to information), research and knowledge on CAM, evidence based research, education, and changes in the population.

Comparison: Having no intervention (and therefore possibly no change?). Also making a comparison between the years of 1970-2009 in regard to comparing the changes in the views of doctors and comparing the interventions between the years. Comparing changes that have occurred over the years (i.e. interventions), and comparing doctors' views (between the years, between doctors, between countries, towards different CAM modalities). Including:

-vitamin supplements/ nutrition therapy / orthomolecular medicine

-naturopathy

-chiropractic

-osteopathy

-massage

-aromatherapy

-medical herbalist (+ traditional medicines)

-mind-body interventions (CBT)

-energy therapies (reiki, kinesiology etc.)

-homeopathy

-yoga

-ayurveda

-hypnosis

Initially, yoga and homeopathy were excluded from the review, but this author eventually included yoga and homeopathy in the review, because it was a topic that doctors had a recorded view on. Conversely CBT did not end up being specifically included, (even though mind therapies was the term most used in literature to cover CAM modalities including CBT, hypnosis, yoga). There was also a review of those previously excluded CAM modalities that were drawn up in this proposal, such as iridology, reflexology, and aromatherapy. These therapies were included in the review after initially putting them in the exclusion section of the proposal because there was substantive literature recording doctors' views on these modalities.

Outcome: Expecting to see the views of doctors in conventional medicine change towards the use of CAM since events and developments that have occurred during the time period 1970-2009; such as those developments stated in the 'intervention' section.

If the literature was deemed relevant by the criteria above, the literature was then

referenced into a database to keep a systematic record of all literature used. This was referenced using the Endnote bibliographic management software system.

2.7. Method of Analysis of Literature:

Data was extracted from included papers using a proforma data extraction form which is presented in Table 2 below:

2.8. Table 2: Data Extraction form:

Article no:		Review Date:		
Title:				
Author (s):		Publication Date:		
Publisher:		Place of Publication:		
Journal:	Volume:	No:	Page No:	
Keywords/definitions:				
Conceptual framework:				
Findings/argument:				
Author conclusions:				
Own notes:				
Rating: quality of research:		Rating: relevance to study:		
A	High quality	1	Extremely relevant	
B	Medium quality	2	Quite relevant	
C	Low quality	3	Marginal relevance	

DATA EXTRACTION FORM: From: (Saks, M. & Allsop, J. (2007) *Researching Health. Qualitative, Quantitative and mixed methods*. London: Sage)

The comparison was around doctors' views on CAM overall and also the comparison between different CAM modalities, and between countries. The CAM modalities themselves showed more differences between them, in doctors' views. There was no substantive comparison between time periods, or between doctors as a group. There was, however, more of a comparison between doctors' views towards different CAM modalities, hence a need to categorise this briefly in the results section, as views of doctors towards different CAM modalities were worth noting and then discussing. This also warranted a discussion of comparison around the similarities or consistencies in the views of doctors towards specific CAM modalities, i.e. there was a significant result in the consistency of certain views of doctors towards certain CAM modalities. These are worth briefly noting in the results section and then in the discussion.

An analysis of the results was then compiled into each section, and then discussed, using a method of comparison, and a discussion according to main themes. Comparisons were between themes, such as differences in attitudes of doctors to the use of CAM, and between subjects, such as countries, CAM modality and views towards the efficacy of CAM. The results were discussed in the context of understanding the foundation of doctors' views to CAM, and noting significant changes in this over time, between countries and between CAM modalities.

3. Comparisons between countries and studies:

3.1. Table 3:

Comparisons between countries, study types and themes 1990-2009

<u>CITATION</u>	<u>COUNTRY</u>	<u>YEAR</u>	<u>STUDY OBJECTIVE</u>	<u>STUDY DESIGN</u>	<u>RESPONSE RATE</u>	<u>MAIN THEME</u>
(Verhoef & Sutherland, 1995)	CANADA/ (NETHERLANDS <i>comparison</i>)	1995	General practitioner assessment of and interest in alternative medicine in Canada	Cross-sectional survey (randomly selected)	52%	Recognising a low response rate from physicians to these types of studies. There are differences in views towards CAM between countries- cultural, traditional, historical (Netherlands and Canada). Scientific research was an influencing factor to doctors' beliefs towards CAM.
(Bernstein & Shual, 1997)	ISRAEL	1997	Attitudes of primary care physicians	Unstructured interviews	20 participants	41% of respondents reported views about non-conventional medicine were influenced by observing the effects of non-conventional medicine on their patients.
(Schepers & Hermans, 1999)	NETHERLANDS	1999	The medical profession and alternative medicine in the Netherlands: its history and recent developments	Review	N/A	-The Health Council – has requested more clinical evidence of the efficacy of CAM therapies -Medical specialists and medical scientists question the efficacy of alternative treatments
(Harmsworth & Lewith, 2001)	CHINA	2000	Attitudes to traditional Chinese medicine amongst Western trained doctors' in China	Structured interview & questionnaire	70.8%	Attitudes towards CAM were influenced by their training, published research that was available, and also their clinical experience.

(Wong & Neill, 2001)	CANADA	2001	Physician use of complementary and alternative medicine (CAM) literature	Retrospective study	N/A	The average number of times an article was requested (within a 2 year period 1996-1998) by physicians from a Medical library service was 18.7 for CAM related articles, and 7.6 for non-CAM related articles.
(Lee, Khang, Lee, & Kang, 2002)	KOREA	2002	Attitudes of Western trained medical doctors' towards CAM (compared with the attitudes of Oriental medical doctors' towards CAM).	Structured interviews	60.5% of WMD completed the interview (randomly selected)	41% of WMDs strongly agree with the statement that 'scientifically unproven treatments should be discouraged legally.' The combined percentage of those who strongly agree or agree is 77.6%. It was reported that WMDs had more negative attitudes to CAM (in regard to referrals and belief of efficacy).
(Schmidt, Jacobs, & Barton, 2002)	GERMANY	2002	Cross-cultural differences in GPs attitudes towards CAM: a survey comparing regions of the UK and Germany	Questionnaire	68% overall	There are small national differences between attitudes towards CAM, but mostly a non significant difference. Both countries have an overall generally positive attitude towards CAM. The lack of scientific evidence was an issue for both countries however.
	UK					
(Cocconi et al., 2006)	ITALY	2006	Attitudes to, and practice of, unconventional medicine by physicians in Italy	Cross-sectional survey	66%	53% of physicians attribute some efficacy to unconventional medicine.
(Wahner-Roedler et al., 2006)	USA	2006	Physicians' attitudes towards CAM and their knowledge of specific therapies	Survey of closed questions	76%	Evidence based research was required by physicians in regards to assessing the efficacy of CAM. Prospective RCTs were considered the standard for evidence.
(Poynton, Dowell,	NEW ZEALAND	2006	General	Cross-sectional	60%	An overview of CAM in Western

Dew, & Egan, 2006)			practitioners' attitudes toward (and use of) complementary and alternative medicine.	questionnaire	Randomly selected	medical education was needed, according to 67% of respondents. Another large percentage was the referral rate – 95% referred patients to some type of CAM treatment.
(Maha & Shaw, 2007)	UK	2007	Academic doctors' views of CAM and its role within the NHS	Exploratory qualitative study – semi-structured interviews	9 doctors were interviewed	The results fell into three categories in regard to views towards CAM – 'enthusiasts,' 'sceptics,' and the 'undecided.' Scientific proof and evidence is required on CAM therapies in general. The undecided view of doctors towards CAM was another main theme.
(Munstedt, Harren, von Georgi, & Hackethal, 2008)	GERMANY	2008	CAM: Comparison of current knowledge, attitudes and interest among German medical students and doctors.	Questionnaire	78.2% of doctors'	Doctors felt they lacked knowledge about CAM, and would like to become better informed about CAM.
(Fadlon, Granek-Catarivas, Roziner, & Weingarten, 2008)	ISRAEL	2008	Senior hospital doctors' attitudes towards CAM	Structured Questionnaire	70%	The general attitude of senior hospital doctors in this study was positive, and it was reported that they were aware of the potential benefits of CAM treatments; however, they showed concern about the possible side effects of the possible misuse of CAM.
(Fujiwara, Imanishi, Watanabe, Ozasa, & Sakurada, 2009)	JAPAN	2009	Changes in attitudes of Japanese Doctors towards CAM	Survey	67% Randomly selected	Doctors' knowledge of CAM has increased significantly between 1999 and 2005. 96% of Japanese doctors in this study believe in the efficacy of

						kampo (traditional Japanese medicine). Doctors' beliefs in the efficacy of CAM therapies had not significantly changed between 1999 and 2005.
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Table 3 above provides a comparison between different countries, the years of publication, and main themes. Response rates and study design were important variables to include to highlight research trends in this field. Response rate was similar across all studies, and saw a slight increase over time. This may be because of an increased interest of GPs to participate in these studies, or an improved approach to study design by the researchers. Studies mentioned above that collected data by conducting interviews did not specifically mention response rate.

There are similarities shown in comparisons between countries, such as the USA study (Wahner-Roedler, et al., 2006) in 2006 reporting the need for more scientific evidence on CAM, which is a finding also supported by the UK study (Maha & Shaw, 2007) in 2007. There is also a wide range of main themes and attitudes of doctors across these studies. This is one of the main reasons that there are only a few significant main themes to collate on the views of doctors, especially in documenting significant changes over time. To look more closely at changes over time in order to try and find a significant change, specific CAM modalities, or 'types of attitudes', such as positive or negative may need to be traced throughout time periods.

4. Results in the literature on the views of different CAM Modalities (1980-

2009):

4.1. Table 4:

Note: These results are compiled from the literature that had been sourced from the initial search. A separate search was not conducted on specific CAM modalities outside what was already available from the initial search of the literature for this review.

	<u>1980</u>	<u>1990</u>	<u>2000 +</u>
Alternative/Traditional medical systems			
Ayurveda	No information located from searches	Least practiced therapy in Italy, along with other therapies of Eastern origin (Cocconi et al., 2006).	85.4% of WMDs in a Korean study had never heard of this therapy (Lee, Khang, Lee, & Kang, 2002). There was a significant increase between 1995-2005 in the belief in the efficacy of this therapy in a Japanese study (Fujiwara, Imanishi, Watanabe, Ozasa, & Sakurada, 2009).
TCM	No information located	No information located	The therapy believed to

	from searches	from searches	<p>be the most effective by WMDs in a Korean study (Lee, et al., 2002).</p> <p>TCM was reported to be safe and useful by WMDs in a Chinese study (Harmsworth & Lewith, 2001).</p>
Homeopathy	No information located from searches	<p>Most widely practiced CAM therapy in Italy (Cocconi, et al., 2006).</p> <p>Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997).</p> <p>A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).</p> <p>A therapy that was considered to be the least effective by GPs in a Canadian study</p>	<p>British GPs refer more so than German GPs (Schmidt, Jacobs, & Barton, 2002).</p> <p>This therapy was considered to be effective by WMDs in a Korean study (Lee, et al., 2002).</p>

		(Verhoef & Sutherland, 1995).	
Naturopathy	No information located from searches	A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).	<p>German GPs refer to naturopathy more so than British GPs (Schmidt, et al., 2002).</p> <p>53% of physicians in a USA study were unfamiliar with this therapy (Wahner-Roedler et al., 2006).</p> <p>This therapy was the least referred to by British GPs in the UK study (Schmidt, et al., 2002).</p>
Aromatherapy	No information located from searches	No information located from searches	<p>British GPs refer more so than German GPs to this therapy (Schmidt, et al., 2002).</p> <p>There was a significant increase between 1995-2005 in the belief in the efficacy of this therapy in a Japanese study</p>

			<p>(Fujiwara, et al., 2009).</p> <p>40% of physicians in a USA study were unfamiliar with this therapy (Wahner-Roedler, et al., 2006).</p>
Acupuncture	No information located from searches	<p>Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997).</p> <p>A therapy that was most known, in a Canadian study (Verhoef & Sutherland, 1995).</p>	<p>The therapy perceived to be the most beneficial by New Zealand GPs (Poynton, Dowell, Dew, & Egan, 2006).</p> <p>The therapy New Zealand GPs most interested in training in (Poynton, et al., 2006).</p> <p>The therapy believed to be the most effective by WMDs in a Korean study (Lee, et al., 2002).</p> <p>The therapy most referred by German GPs in a UK study (Schmidt, et al., 2002).</p>

			In a Japanese study, 'almost all' of the doctors considered this therapy to be effective (Fujiwara, et al., 2009).
Reflexology	No information located from searches	A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995). A therapy that was considered to be the least effective by GPs in a Canadian study (Verhoef & Sutherland, 1995).	Perceived as having no benefit by 51.7% of GPs in a New Zealand study (Poynton, et al., 2006).
Herbal Medicine	No information located from searches	No information located from searches	The second therapy New Zealand GPs have an interest in training in (Poynton, et al., 2006). In a Canadian study, literature on herbal medicine was requested the most (Wong & Neill, 2001).
Iridology	No information located	No information located	58.9% of WMDs had

	from searches	from searches	<p>'never heard of this therapy' as reported in a Korean study (Lee, et al., 2002).</p> <p>This along with the methods of spiritual healing was the therapy that was the most disapproved of by GPs in a German study (Munstedt, Harren, von Georgi, & Hackethal, 2008).</p>
Biologically based medical systems			
Vitamin supplements	No information located from searches	No information located from searches	<p>Megavitamin therapy in a USA study showed 18% of physicians were unfamiliar with this therapy, 27% limited familiarity, 25% understood the proposed medicinal use, but were uncomfortable advising patients about this therapy, 30% understood its use and were comfortable</p>

			advising patients (Wahner-Roedler, et al., 2006).
Nutritional healing/diet therapy	No information located from searches	No information located from searches	78.4% of WMDs in a Korean study had 'never heard' of Gerson's diet therapy (Lee, et al., 2002).
Bio feedback	No information located from searches	No information located from searches	The therapy USA physicians were the most familiar with (Wahner-Roedler, et al., 2006).
Mind/Body medical systems			
CBT/psychotherapy	No information located from searches	83% of doctors in a Dutch study viewed this therapy to be useful for patients with psychological issues (Knipschild, Kleijnen, & Ter Riet, 1990).	No information located from searches
Prayer/ Spiritual healing	No information located from searches	7% of doctors' in a Dutch study gave less credit to this therapy (faith healing), and 17% (healing), in comparison	This along with the methods of iridology was the therapy that was the most disapproved of by GPs in a German

		to homeopathy and acupuncture (Knipschild, et al., 1990).	study (Munstedt, et al., 2008).
Hypnosis	No information located from searches	<p>Hypnosis was considered useful by Canadian physicians for smoking cessation (Verhoef & Sutherland, 1995).</p> <p>Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997).</p> <p>A therapy that was most known, in a Canadian study (Verhoef & Sutherland, 1995).</p>	93% of GPs in a New Zealand study categorised this therapy as CAM over conventional (Poynton, et al., 2006).
Yoga	No information located from searches	62% of doctors in a Dutch study viewed this therapy to be useful for patients with psychological issues (Knipschild, et al., 1990).	No information located from searches
Energy therapies			

Reiki	No information located from searches	No information located from searches	No information located from searches
Qi gong	No information located from searches	No information located from searches	No information located from searches
Kinesiology	No information located from searches	No information located from searches	No information located from searches
Energy healing	No information located from searches	No information located from searches	The therapy USA physicians (59%) were the least familiar with (Wahner-Roedler, et al., 2006).
Body Based therapies			
Chiropractic	No information located from searches	Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997). A therapy that was most known, in a Canadian study (Verhoef & Sutherland, 1995). Manual therapy is reported to be <i>not</i> an alternative therapy now in the Netherlands. At least 80% of respondents in a Dutch	The most referred therapy by New Zealand doctors (Poynton, et al., 2006). 28.5% of WMDs in a Korean study knew the principles of this therapy (Lee, et al., 2002). This therapy was considered to be effective by WMDs in a Korean study (Lee, et al., 2002).

		study viewed manual therapy to be effective, for chronic back and neck issues (Knipschild, et al., 1990).	The most referred therapy by UK GPs in a UK study (Schmidt, et al., 2002).
Massage	No information located from searches	Manual therapy is reported to be <i>not</i> an alternative therapy now in the Netherlands. At least 80% of respondents in a Dutch study viewed manual therapy to be effective, for chronic back and neck issues (Knipschild, et al., 1990).	The therapy WMDs in a Korean study referred patients to the most (Lee, et al., 2002). This therapy was considered to be effective by WMDs in a Korean study (Lee, et al., 2002).
Osteopathy	No information located from searches	A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).	British GPs refer more so than German GPs (Schmidt, et al., 2002).

5. Physicians' access to the medical literature:

A study conducted in Canada between 1996 and 1998 looked at physicians' use of complementary and alternative medical literature. Findings of this study showed that complementary and alternative medical literature was used by Canadian physicians, and the most popular literature that was used were papers on herbal medicine (Wong & Neill, 2001).

This may, firstly, show either that physicians may be the most ill-informed in regard to herbal medicine, or secondly, that they may have more of an interest in this type of medicine. They also may use them [papers on herbal medicine] to administer herbal medicine to their patients or to refer them to herbal medicine practitioners. This may not necessarily show a favourable attitude towards herbal medicine, but it does show the action or the behaviour, and by this we may interpret the belief or attitude. However, the question and the 'gap' that could be seen in this type of study is not addressing the 'why' question in regard to physicians beliefs towards CAM, and, in this case, 'herbal medicine'.

Wong & Neill (2001) suggest that the use of CAM literature by physicians is a useful indicator of the interest from physicians in CAM. Therefore this retrospective study on British Columbian physicians provides a report on the popularity of CAM papers requested. Statistics (that had been published in the Medical Library Service (MLS), a monthly newsletter) in regard to CAM articles were requested, collected and analysed in

this study and then reported. The findings relevant to this literature review include results as to the popularity and frequency of CAM-related articles used or requested, compared to those that were non-CAM articles.

This study included those physicians and surgeons in British Columbia, Canada, who had registered with the CPSBC (The College of Physicians and Surgeons British Columbia), and who had requested articles from a monthly newsletter from the MLS (Medical Library Service). This is mainly a collection of information, citations, books and articles and covers latest information on topics of interest (Wong & Neill, 2001). The results of this two year retrospective study showed that “*the average number of requests per article in these two years was 18.7 among CAM literature and 7.1 among non-CAM literature*”(Wong & Neill, 174: 2001). The results also mentioned that the number of articles being requested remained constant, while the number of requests for non-CAM literature had decreased significantly from an average of 7.6 in the first year of the study to an average of 6.7 in the second year of the study (Wong & Neill, 2001).

This illustrates a trend in how, over this time period, there may have been an increased interest in, or on the other hand, a lack of knowledge about CAM. This is shown by the quantity of CAM articles requested and used.

Another significant result in this study (Wong & Neill, 2001) was that “*three out of the five most frequently requested articles belong to CAM literature. They are: herbal health products, glucosamine sulfate in the treatment of osteoarthritis, and St. Johns wort. Ten of the top 15 are CAM articles*” (Wong & Neill, 174: 2001).

This type of study shows that there may be different ways to analyse or determine doctors' views towards CAM. For example in the review of the Wong and Neill (2001) study, one may look at the popularity of the articles requested, how frequently they are requested and the comparison between CAM and non-CAM being requested.

The comparison in this study was between different types of literature that the study analysed: statistics of photocopy requests, the difference between CAM and non-CAM literature requests, and the frequency of requests. Results showed that the three most listed categories in order of the most articles listed are: herbal medicine; diet, nutrition and lifestyle changes; and alternative systems of medical practice. Following on from this, the three subjects listed that held the most interest, in order, are: herbal medicine; pharmacological and biological treatments; and alternative systems of medical practice (Wong & Neill, 2001).

An interesting point here is that among other popular topics on CAM were 'safety' papers on CAM. Examples are 'adverse affects and safety of herbal medicines and alternative therapies'; toxicity and interactions; and clinical trials (Wong & Neill, 2001). It is worth noting that physicians are interested also in the adverse affects of CAM. This may be a strong factor within Western medicine that physicians need to know the safety and side effects of pharmaceuticals used in Western medicine, and therefore physicians would possibly have the same approach or the same mind towards the safety of CAM treatments. There may be an assumption that because drugs need to be regulated and

tested and have side effects, (and side effects that may not even be known entirely), that CAM therapies would have a similar risk and therefore be on a similar scale. This is an interesting illustration when it comes to looking at how doctors may incorporate their education and ‘Western medicine models’ when approaching, interpreting and ‘handling’ views and beliefs about CAM. A question may be, ‘how would an assessment between side effects of inappropriately-used CAM therapies and inappropriately-used pharmaceuticals compare in clinical trials in the literature?’ Also, would there be the same amount of literature freely and publicly available on both the adverse affects of pharmaceuticals and of CAM therapies?

The popularity of CAM articles being requested over non-CAM articles could show a lack of research on CAM and therefore a ‘need’ for this type of information in the Western medicine sector. Physicians may not have appropriate literature or enough reliable literature on CAM and therefore we see in this study the repeated requests from physicians for this type of information. This interest in CAM literature may also show that physicians are open to being informed about CAM in this way, and therefore the literature needs to be specific and appropriate. The accuracy of this medical literature needs to be properly portrayed and measured appropriately for CAM. This raises the issue of appropriate ‘methodology’: using the right methods of research to effectively measure the effects of CAM in its own field.

Further results and discussion in this study about the types of articles that were listed in the MLS, indicate that articles on herbal medicine were more frequently listed (Wong &

Neill, 2001), and therefore possibly more readily available for physicians to be able to request. This possible bias may be added to by the small ‘quantity’ of articles listed and available in the MLS on pharmacological and biological treatments. Only 5 articles were listed in the MLS for pharmacological and biological treatments compared to the 22 for herbal medicine (Wong & Neill, 2001). Pharmacological and biological treatments were, however, the second most requested topic of interest, in spite of the few articles available. There were two topics with many more articles: diet, nutrition and lifestyle changes showing 17 listed articles, and the alternative systems of medical practice with 14 listed. Wong and Neill (2001), state that *“There is a possibility of increased number of requests per article simply indicating that there are fewer good articles in this particular category”* (Wong & Neill, 176: 2001).

Wong & Neill (2001) also make reference to the fact that there may be a number of reasons that have contributed to the interest in CAM literature by physicians. These include media coverage, advancement in knowledge and research, patient request and, *“physician interest for personal use”* (Wong & Neill, 176: 2001).

Physicians open to being informed about CAM through the medium of literature (Wong & Neill, 2001) may raise an important focus point for the future in medical education and evidence-based literature in regard to properly informing doctors about CAM. Therefore more evidence-based research needs to be conducted with appropriate methodologies to test CAM. And to test it effectively, objectively and fairly; therefore to better provide a buffet of information available to physicians interested in and open to CAM.

6. New Zealand study:

6.1. Referrals:

A study published in New Zealand in 2006 looked at GPs attitudes toward (and use of) complementary and alternative medicine. The study was a cross-sectional study in which questionnaires were posted to randomly selected GPs in New Zealand. A prominent result reported was that of referral rate, in which 95% of GPs in this study referred patients to one or more forms of CAM.

The NZMJ (2006) article reports that there are more GPs referring patients to CAM practitioners in 2006 and less actually practising CAM themselves over the past 15 years (Poynton, Dowell, Dew, & Egan, 2006).

6.2. Efficacy:

New Zealand GPs also agreed with the fact that CAM therapies need more scientific testing before they are used in conventional medicine. Fifty-eight per cent strongly agreed with this statement and 19.0% agreed with this statement (Poynton, et al., 2006).

These results are consistent with other global statistics.

The New Zealand ACC (Accident Compensation Corporation) provides funding for the CAM modalities of acupuncture, chiropractic and osteopathy. These are provided in main stream medicine and patients can be referred via a GP or they can refer themselves.

A nationwide survey in New Zealand in 2006 looked at GPs attitudes toward, and their use of, CAM. Randomly selected GPs from the New Zealand medical register were sent a questionnaire asking GPs which therapies were considered conventional or CAM. Also questions of relevance to this review were regarding the efficacy, and the requirement of further scientific testing to be done on CAM therapies (Poynton, et al., 2006).

The focus of this study was to try to identify changes in the attitudes of New Zealand GPs towards 13 specific CAM therapies over the last 15 years (Poynton, et al., 2006). Pacific Island traditional medicine and Maori traditional medicine were added to the 13 CAM therapies, because of their relevance to New Zealand. The response rate of the participants in this study was 60%, which is consistent with other studies mentioned in this review.

Results of the views of GPs towards CAM in this study showed acupuncture (44.7%), chiropractic (42.7%), and osteopathy (41.7%) were viewed as conventional medicine over CAM. The therapies that were viewed as CAM were homeopathy and reflexology, both (94%) (Poynton, et al., 2006).

A success of this study in regard to data collection and results was in specifying the CAM modalities to test and within a specific time frame.

7. Scientific research and efficacy:

Literature in the 1990s saw doctors expressing the need for evidence-based literature on CAM. They requested more RCTs (Randomised Controlled Trials) and other evidence-based research be conducted on CAM along with specific attention being paid to the efficacy of CAM. This has only increased with time, and, in the age of technology and greater access to the Internet, means of communication and scientific discoveries. This demand for research, experiments and evidence-based reports on the efficacy of CAM has been, and, in the author's opinion, will continue to be, in even greater demand.

Especially in this area of science, where more sophisticated means and methods of testing are being developed and perfected, comes the demand and the requirement to use these methods of testing on therapies and treatments that may not have been explored scientifically as much as they could or should. In looking at the testing of CAM from this perspective, doctors, as scientists, would (at least) be expected to request and require this type of testing and evidence on a medical therapy before they use it or even become interested in it. There have been studies published by different countries that look into the views of doctors to CAM. Relevant literature will be reported below in regard to the main themes of these studies, with the main focus on scientific research and efficacy.

7.1. Canada

A cross-sectional questionnaire conducted in Canada (British Columbia) in 1990, that was sent out by mail to doctors, looked at their desired involvement in alternative

medicine, the beliefs about the efficacy of alternative medicine and the demand that they perceived alternative medicine to have. The results of interest here are about the beliefs of doctors towards the efficacy of alternative medicine. To keep in mind here also, in regard to the influence and differences between countries and cultures, this cross-sectional study focused on Canadian doctors (Verhoef & Sutherland, 1995).

Verhoef and Sutherland (1995) mentioned that because there was a significant geographical variation in the general practitioners they were assessing, they mention the results of their study cannot generalise to all Canadian physicians. These variations include differences in alternative use in regard to, “*historical circumstances, ethnic and folk traditions, the degree of cultural isolation, the personalities of local leaders, and the degree of support and suppression by local governments*” (Verhoef & Sutherland, 511: 1995).

This is interesting to note in looking at the possible difference between countries, because when looking at the ‘why do general practitioners have certain beliefs about CAM’ question, the example in this study that variations in “*historical circumstances, ethnic and folk traditions, the degree of cultural isolation, the personalities of local leaders, and the degree of support and suppression by local governments*” (Verhoef & Sutherland, 511: 1995), give rise to a variation *geographically* in regard to the USE of alternative medicine. These things also could be seen to be an influencing factor in shaping and/or determining ‘why general practitioners have certain beliefs about CAM.’ The idea that

doctors' views on CAM may be socially and historically constructed has weight added to it in this Canadian study (Verhoef & Sutherland, 1995) example.

The Canadian 1995 study (Verhoef & Sutherland, 1995) found that general practitioners in Canada showed a connection with scientific research being an important influencing factor in doctors' beliefs about CAM. An example from this study found that there was a strong relationship between not knowing the efficacy of some CAM approaches and the doctor having a lack of knowledge in the particular approach. This study mentioned that doctors did not necessarily hold any greater knowledge about acupuncture, but they believed or perceived acupuncture to be effective, potentially because of recent reports, at the time this study was published, about the success of acupuncture amongst other alternative medicines (Verhoef & Sutherland, 1995).

The Verhoef and Sutherlands (1995) study reported a correlation between a physician's belief in the efficacy of an alternative medicine and the referral behaviour of the physician for the alternative medicine (Verhoef & Sutherland, 1995). It should be brought to attention here also that the referral behaviour is correlated to the alternative medicines that were perceived by the physician to be effective.

The Canadian study reported that "*several physicians indicated that they perceived acupuncture to be efficacious despite not knowing much about acupuncture. This may be due to recent reports about the success of acupuncture*" (Verhoef & Sutherland, 514: 1995).

This is important to note (Verhoef & Sutherland, 1995) in looking at possible influences as to 'why' doctors have certain beliefs about CAM. This could show peer reports and scientific literature to hold a certain amount of 'weight' and influence over the views that doctors hold towards alternative medicine. This again brings one back to the reliability, validity and accuracy of these reports. Who are they done by, and have they tested the CAM modality in a way that is appropriate to test a complementary or alternative medicine, (such as testing a vitamin with an appropriate dosage, or looking at long term studies of the effects of the same vitamin in the appropriate dosage) for example. Are these vitamins tested in the same way as drugs are tested, and if so, then is this actually an appropriate way to test and compare these two different types of medicine? This example highlights the importance of correct or appropriate methodology when addressing CAM in the form of scientific research papers. Also what effect the methodology can have on presenting an accurate depiction of the results of the medicine or treatment.

Cultural differences between countries may be seen in the Canadian Study (Verhoef & Sutherland, 1995) in regard, here, to the beliefs of Dutch and Canadian physicians. This was shown when comparing two different CAM modalities – hypnosis and homeopathy. The scores were recorded as a mean score 4.6 for Canadian physicians' belief in the efficacy of hypnosis, and a mean score 3.6 for Dutch physicians. This could be seen however as a generalised indication of 'cultural differences,' as it shows one modality, and does not take into account the 'individuals beliefs' and also possibly the 'medical education' that the individual or people group had on this modality, or the 'legislation'

that each country has on this CAM modality. So it may well be a 'cultural difference' developing this idea, one may ask if the 'cultural difference' could include and portray education and legislation? Again, 'individual belief' could also be an even stronger determining factor in the belief of a certain CAM modality and the efficaciousness of it. Cultural could also mean the social and historical discourses physicians in a country may hold towards certain CAM modalities or even CAM in general.

Another comparison mentioned here which Verhoef and Sutherland (1995) recorded as a cultural difference is between the various beliefs in the efficacy of homeopathy.

Canadian physicians regarded homeopathy to be less efficacious, scoring a mean score 1.8, whereas Dutch physicians regarded it to be more efficacious, scoring a mean score of 4.7. (Verhoef & Sutherland, 1995). The scoring was done by scale in a percentage out of 10. This example shows the likely influence historical discourse and experience may have on shaping the views of physicians towards CAM.

7.2. Israel

An Israeli study in 1997 (Bernstein & Shuval, 1997), which looked at the attitudes of primary care physicians to non-conventional medicine, saw the views about non-conventional medicine influenced primarily by observing the effect of non-conventional medicine on their own patients (41%).

Secondly, the attitudes of primary care physicians in this study saw the views about non-conventional medicine influenced by the experience the physicians themselves and their families had with non-conventional medicine (38%). Lastly, the views of primary care

physicians towards non-conventional medicine were influenced through media representation of the efficacy of different non-conventional therapies (14%). These results, however, do not report that RCTs and evidence-based research are prerequisites to the belief in how effective CAM therapies are.

In this exploratory study, 20 Israeli primary care physicians were interviewed about their attitudes and experiences with alternative medicine. The interviews were unstructured (which could have been a hindrance in regard to focusing the interview, or it could have been beneficial regarding creating space to gather valuable feedback that may have developed in the interview, and that may otherwise have been limited in a structured environment. The latter is preferred in regard to exploring beliefs). With relevance to this literature review, the two areas that were specified in the interview process were

- 1) beliefs about the efficacy of different therapies, and
- 2) attitudes to government regulations of alternative practices and attitudes about the coverage that is specific to the Israeli health system.

This study also mentions that, *“in general, the literature indicates that general practitioners’ views about alternative therapies are influenced most strongly by their observed benefits to patients and, even more so, by their own and their family members personal experiences (with alternative therapies)”* (Bernstein & Shuval, 1343: 1997).

A finding in this study reported that physicians who knew about patients and family members who had used alternative therapies, or who themselves had used alternative therapies, had believed the results to be positive.

In a way, this is evidenced based research through observation, rather than a clinical trial. Their belief in the efficacy of the alternative treatment was high, *after* they had seen the results either directly through their own use of alternative therapies, or indirectly through the believed positive results about the efficacy of the treatment on another. Of this study, 71% of the physicians who had actually used an alternative therapy for themselves or who had observed a family member's results after using an alternative therapy believed that the results of the alternative therapy were positive, and therefore had a positive view towards the efficacy of CAM.

In this study again (Bernstein & Shuval, 1997), the results on the efficacy of CAM are not related to the presence, quality or knowledge derived from RCTs or evidence-based scientific research. The results from this Israeli study (Bernstein & Shuval, 1997) therefore, are not consistent with other literature at this time pertaining to the views of doctors of the efficacy of CAM. Other literature shows a significant demand and requirement for an evidence-based focus when it comes to forming a belief about the efficacy of CAM; be it positive or negative. These points will be discussed further later on in this review.

If doctors seem to need scientific literature and evidence-based research or clinical trials to have been conducted on a therapy or treatment (and this is understandable when coming from a scientific perspective, as the foundation for medicine usually is), then if there is not enough credible literature available out there for a doctor to form a belief

from, there may not be a belief formed at all. Alternatively, there may not be any substantial or conclusive literature available on the therapies.

When searching for significant correlations of views and beliefs from Western medicine doctors towards the efficacy of CAM, the author cannot relay positive or negative results but instead there seem to be results expressing an uncertainty as to how to position their beliefs about the efficacy of CAM. This uncertainty can be interpreted, from the perspective of Western medicine, as possibly caused by a lack of RCTs and evidence-based research on CAM therapies and treatments. Therefore, because of the lack of this research, the search for doctors' views towards CAM is inconclusive because the beliefs are either inconclusive, or have not yet been established, because of the wait for the evidence-based research results to provide a foundation from which to establish a view. When the authors say evidence, in this context they are referring to clinical trials, RCTs and evidence-based research; as is generally required by the scientifically based Western medical profession.

It is like asking for an answer to a question, when the knowledge or understanding pertaining to that question has not yet been exposed. For example, "I do not know, so I cannot comment or make an informed opinion." If there have not been credible clinical trials from which to form an opinion, then any opinion will either be based on or rooted in other areas such as religion, experience, values, culture, and age. Otherwise they will continue not to be formed or the physician will continue to remain uninformed, until such knowledge is obtained from somewhere (in this case from clinical trials). The

inconsistency in researching beliefs, therefore, on doctors' views on the efficacy of CAM may not be appropriately clarified solely by quantitative research. As just stated, these beliefs will be formed from other sources such as culture, religion, age, and values and hence the inconsistency and inconclusive nature of the results on doctors' views towards CAM. The one central currently reliable aspect that can produce a consistency in doctors' beliefs towards CAM is the health concept and philosophy that Western medicine has. This can be seen in the comparison between the Western biomedical model and the CAM health model.

If all doctors' beliefs about the efficacy of CAM came out of the evidence produced from RCTs or evidence-based research, then the results would be solid, quantitative, and more easily measurable to produce a conclusion. However, because not a lot of RCTs or evidence-based research have been conducted on CAM, and more specifically on the different CAM modalities, other qualitative research variables such as culture, religion, age and values may currently therefore influence or form the basis of beliefs towards the efficacy of CAM. This is not to say that RCTs or evidence-based research or quantitative research is more reliable or appropriate to gather data on this topic, it may be, in fact, the opposite; since in this case, we are looking to measure beliefs, and the parameter of psychological measurement can be as wide as it is allowed to be, and can cover as many variables as required.

7.3. Korea

A Korean study in 2002 (Lee, Khang, Lee, & Kang, 2002) looked at the attitudes of Western medicine trained physicians towards CAM. The physicians were interviewed using structured questionnaires. This study compared Oriental medical doctors (OMDs) with Western trained medical doctors in Korea. The results showed an expected obvious outcome with OMDs having a greater understanding and more favourable attitudes towards CAM. This study primarily compared WMDs and OMDs views towards CAM, but relevant to this review, the results of a study into Korean WMDs attitudes towards CAM are worth including as they are consistent with WMDs views towards CAM mentioned in this review, especially in regard to scientific efficacy. These results then add weight to the view that the requirement and need for evidence-based research on CAM is a strong view that many physicians have towards CAM. This need of physicians to have evidence based-research on CAM can be viewed as an 'attitude or view' in itself, or can be seen as a limitation or barrier that is holding up a more concrete definition to what physicians really think about CAM. One would ask then, if evidence-based research was carried out on CAM in a more robust way and the results of the efficacy proved positive, would that be sufficient to induce doctors to actually form a view towards CAM that was favourable? Here again comes the idea of the two different medical paradigms of health. The paradigm of Western medicine and the paradigm of CAM.

Forty-four point one per cent of WMDs ‘strongly agree’ with the statement, “*scientifically unproven treatments should be discouraged legally*” (Lee, et al., 1997: 2002). This is compared with the 11.3% of OMDs in this study who ‘strongly agree’ with this statement. This 44.1% result also shows though that the remaining 55.9% of doctors do not strongly agree with this statement. Looking at this more closely in a way that is useful for this review, 77.6% of WMDs strongly agree or agree, where as 22.4% strongly disagree or disagree. Even more of a significant comparison was in the WMDs who strongly agree 44.1% against the 6.4% who strongly disagree.

This study also looked at the belief in the efficacy of certain CAM modalities. The CAM modalities are worth noting in this section of the review in regard to doctors’ beliefs in the efficacy of CAM. Since this Korean study in 2002 (Lee, et al., 2002) was conducted using structured questionnaires, the results were measured and reported on the “*proportion of all positive answers,*” (Lee, et al., 1998: 2002) in regard to how effective a certain CAM modality was. Korean WMDs viewed the most effective CAM therapy to be acupuncture and Chinese herbal medicine:

- Acupuncture rated 62.0%,
- Chinese herbal medicine rated 51.6%,
- Massage rated 48.6%,
- Chiropractic rated 34.7%,
- Herbal therapy rated 20.3%, and
- Homeopathy rated 11.6%.

Now if we compare the results from the UK study (Schmidt, Jacobs, & Barton, 2002) on the belief in the efficacy of CAM treatments by physicians, they are not entirely similar; creating an inconclusive result when compared to physicians from different countries. For example, the UK study (2002) reports that, “*there is a very high prescription of herbal medicine in Germany whereas in the UK herbal medicine is not often prescribed*” (Schmidt, et al., 142: 2002). This, in contrast to the above results on Korean WMDs views towards the effectiveness of herbal therapies (20.3%), and homeopathy (11.6%), shows differences of opinion when looking at the efficacy of these CAM modalities between countries.

Other studies also support the disunity in beliefs disallowing any conclusiveness of a significant global view (see Table 4 below). It does however provide a conclusive result in highlighting the differences between countries, culture and health systems worldwide. This sheds light on the influencing factors towards doctors’ beliefs in regard to the effectiveness of certain CAM modalities. It also brings up a cross-cultural difference in the belief in the efficacy of CAM treatments by physicians from different countries. Again this point will be discussed further later on in the review.

7.4. Table 4:**Results in the literature on the views of different CAM Modalities (1980-2009):**

Note: These results are compiled from the literature that had been sourced from the initial search. A separate search was not conducted on specific CAM modalities outside what was already available from the initial search of the literature for this review.

	<u>1980</u>	<u>1990</u>	<u>2000 +</u>
Alternative/Traditional medical systems			
Ayurveda	No information located from searches	Least practiced therapy in Italy, along with other therapies of Eastern origin (Cocconi et al., 2006).	85.4% of WMDs in a Korean study had never heard of this therapy (Lee, Khang, Lee, & Kang, 2002). There was a significant increase between 1995-2005 in the belief in the efficacy of this therapy in a Japanese study (Fujiwara, Imanishi, Watanabe, Ozasa, & Sakurada, 2009).
TCM	No information located	No information located	The therapy believed to

	from searches	from searches	<p>be the most effective by WMDs in a Korean study (Lee, et al., 2002).</p> <p>TCM was reported to be safe and useful by WMDs in a Chinese study (Harmsworth & Lewith, 2001).</p>
Homeopathy	No information located from searches	<p>Most widely practiced CAM therapy in Italy (Cocconi, et al., 2006).</p> <p>Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997).</p> <p>A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).</p> <p>A therapy that was considered to be the least effective by GPs in a Canadian study</p>	<p>British GPs refer more so than German GPs (Schmidt, Jacobs, & Barton, 2002).</p> <p>This therapy was considered to be effective by WMDs in a Korean study (Lee, et al., 2002).</p>

		(Verhoef & Sutherland, 1995).	
Naturopathy	No information located from searches	A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).	<p>German GPs refer to naturopathy more so than British GPs (Schmidt, et al., 2002).</p> <p>53% of physicians in a USA study were unfamiliar with this therapy (Wahner-Roedler et al., 2006).</p> <p>This therapy was the least referred to by British GPs in the UK study (Schmidt, et al., 2002).</p>
Aromatherapy	No information located from searches	No information located from searches	<p>British GPs refer more so than German GPs to this therapy (Schmidt, et al., 2002).</p> <p>There was a significant increase between 1995-2005 in the belief in the efficacy of this therapy in a Japanese study</p>

			<p>(Fujiwara, et al., 2009).</p> <p>40% of physicians in a USA study were unfamiliar with this therapy (Wahner-Roedler, et al., 2006).</p>
Acupuncture	No information located from searches	<p>Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997).</p> <p>A therapy that was most known, in a Canadian study (Verhoef & Sutherland, 1995).</p>	<p>The therapy perceived to be the most beneficial by New Zealand GPs (Poynton, Dowell, Dew, & Egan, 2006).</p> <p>The therapy New Zealand GPs most interested in training in (Poynton, et al., 2006).</p> <p>The therapy believed to be the most effective by WMDs in a Korean study (Lee, et al., 2002).</p> <p>The therapy most referred by German GPs in a UK study (Schmidt, et al., 2002).</p>

			In a Japanese study, 'almost all' of the doctors considered this therapy to be effective (Fujiwara, et al., 2009).
Reflexology	No information located from searches	<p>A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).</p> <p>A therapy that was considered to be the least effective by GPs in a Canadian study (Verhoef & Sutherland, 1995).</p>	Perceived as having no benefit by 51.7% of GPs in a New Zealand study (Poynton, et al., 2006).
Herbal Medicine	No information located from searches	No information located from searches	<p>The second therapy New Zealand GPs have an interest in training in (Poynton, et al., 2006).</p> <p>In a Canadian study, literature on herbal medicine was requested the most (Wong & Neill, 2001).</p>
Iridology	No information located	No information located	58.9% of WMDs had

	from searches	from searches	<p>'never heard of this therapy' as reported in a Korean study (Lee, et al., 2002).</p> <p>This along with the methods of spiritual healing was the therapy that was the most disapproved of by GPs in a German study (Munstedt, Harren, von Georgi, & Hackethal, 2008).</p>
Biologically based medical systems			
Vitamin supplements	No information located from searches	No information located from searches	<p>Megavitamin therapy in a USA study showed 18% of physicians were unfamiliar with this therapy, 27% limited familiarity, 25% understood the proposed medicinal use, but were uncomfortable advising patients about this therapy, 30% understood its use and were comfortable</p>

			advising patients (Wahner-Roedler, et al., 2006).
Nutritional healing/diet therapy	No information located from searches	No information located from searches	78.4% of WMDs in a Korean study had 'never heard' of Gerson's diet therapy (Lee, et al., 2002).
Bio feedback	No information located from searches	No information located from searches	The therapy USA physicians were the most familiar with (Wahner-Roedler, et al., 2006).
Mind/Body medical systems			
CBT/psychotherapy	No information located from searches	83% of doctors in a Dutch study viewed this therapy to be useful for patients with psychological issues (Knipschild, Kleijnen, & Ter Riet, 1990).	No information located from searches
Prayer/ Spiritual healing	No information located from searches	7% of doctors' in a Dutch study gave less credit to this therapy (faith healing), and 17% (healing), in comparison	This along with the methods of iridology was the therapy that was the most disapproved of by GPs in a German

		to homeopathy and acupuncture (Knipschild, et al., 1990).	study (Munstedt, et al., 2008).
Hypnosis	No information located from searches	<p>Hypnosis was considered useful by Canadian physicians for smoking cessation (Verhoef & Sutherland, 1995).</p> <p>Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997).</p> <p>A therapy that was most known, in a Canadian study (Verhoef & Sutherland, 1995).</p>	93% of GPs in a New Zealand study categorised this therapy as CAM over conventional (Poynton, et al., 2006).
Yoga	No information located from searches	62% of doctors in a Dutch study viewed this therapy to be useful for patients with psychological issues (Knipschild, et al., 1990).	No information located from searches
Energy therapies			

Reiki	No information located from searches	No information located from searches	No information located from searches
Qi gong	No information located from searches	No information located from searches	No information located from searches
Kinesiology	No information located from searches	No information located from searches	No information located from searches
Energy healing	No information located from searches	No information located from searches	The therapy USA physicians (59%) were the least familiar with (Wahner-Roedler, et al., 2006).
Body Based therapies			
Chiropractic	No information located from searches	Viewed as a beneficial technique in an Israeli study (Bernstein & Shuval, 1997). A therapy that was most known, in a Canadian study (Verhoef & Sutherland, 1995). Manual therapy is reported to be <i>not</i> an alternative therapy now in the Netherlands. At least 80% of respondents in a Dutch	The most referred therapy by New Zealand doctors (Poynton, et al., 2006). 28.5% of WMDs in a Korean study knew the principles of this therapy (Lee, et al., 2002). This therapy was considered to be effective by WMDs in a Korean study (Lee, et al., 2002).

		study viewed manual therapy to be effective, for chronic back and neck issues (Knipschild, et al., 1990).	The most referred therapy by UK GPs in a UK study (Schmidt, et al., 2002).
Massage	No information located from searches	Manual therapy is reported to be <i>not</i> an alternative therapy now in the Netherlands. At least 80% of respondents in a Dutch study viewed manual therapy to be effective, for chronic back and neck issues (Knipschild, et al., 1990).	The therapy WMDs in a Korean study referred patients to the most (Lee, et al., 2002). This therapy was considered to be effective by WMDs in a Korean study (Lee, et al., 2002).
Osteopathy	No information located from searches	A therapy that was the least known by GPs in a Canadian study (Verhoef & Sutherland, 1995).	British GPs refer more so than German GPs (Schmidt, et al., 2002).

The Korean study (Lee, et al., 2002), looked at possible reasons for the beliefs WMDs have towards CAM. They reported that out of the 41 medical schools in Korea, none of them teach CAM in their medical curriculum, or provide any courses on CAM. This is also similar to other countries regarding their Western medical curriculum and the lack of incorporation of CAM education into their curriculum. Interestingly, the New Zealand study (Poynton, et al., 2006), makes reference to the fact that New Zealand GPs (67%), *“felt that an overview of CAM should be included in conventional medical education”* (Poynton, et al., 2006).

This example is not necessarily explaining physicians' views on CAM education, but is shining light possibly on foundations or a possible basis as to how doctors' views towards CAM may have been developed or formed, and the possible influences and consistencies in doctors' views in regard to the question of 'why' doctors have certain views towards CAM.

Specifically of interest in this Korean study (Lee, et al., 2002), is that another possible influence of socialisation on the attitudes of Korean doctors towards CAM is how both Oriental medicine [CAM] and Western medicine are 'positioned competitively' (Lee, et al., 1999: 2002) against each other in Korea. The issue of competition in any market may cause one to promote or develop one's own product in order to ensure the survival of that product in a competitive market; regardless of the credibility, potential value or usefulness of the opposing product. If this was the case with CAM and Western

medicine in the same competitive market, would integration of both into the same domain be effective for both the benefit and best interests of the consumer and the ensured survival of both products in a market which may be free of competition?

The Korean study (Lee, et al., 2002) points out that, “*this competitive position may cause some WMDs to adhere to their own medical domain as a way to differentiate themselves from OMDs [in Korea], and it may cause them to rigidly excuse CAM*” (Lee, et al., 1999: 2002).

The Korean study (Lee, et al., 2002) suggests that another influence that may shape the beliefs or views of physicians to CAM may be their family. Family members who practiced either Western medicine or CAM may influence another family member to practice that same medicine. Western doctors who had a family member who practiced CAM were more likely to practice CAM themselves. Whereas a CAM practitioner who had a family member who practiced Western medicine, was not as likely to then start to practice Western medicine. This study (Lee, et al., 2002), suggests that OMDs or CAM practitioners may have more influence over and “*would lead in the introduction and diffusion of CAM in the future*” (Lee, et al., 1999: 2002).

This suggestion however is not congruent with other literature on the development of CAM into mainstream medicine. An Israeli study (Fadlon, Granek-Catarivas, Roziner, & Weingarten, 2008), mentions, “[*senior hospital physicians*] are often involved in the decision-making processes at the institutional or national level” (Fadlon, et al., 213:

2008). This is not to say that hospital doctors will be the ones 'leading the way' in regard to health care decision making [including CAM], but possibly highlights another area of research into the possible need to study different types of doctors: for example, GPs, surgeons, private practice, hospital doctors, medical students to name a few, as there may be differences in each group of doctors' views towards CAM.

The Korean study (Lee, et al., 2002), also reports that knowledge about certain CAM therapies is an important predicting factor to the acceptance and use of CAM in general. This supports the fact that understanding of something gives you grounds to better make an informed decision about it. This also leads to the need for credible evidence-based research on CAM to better inform physicians and WMDs on the efficacy of CAM modalities. The need to correctly understand CAM may explain possibly why doctors report an 'I don't know' or a 'moderate' or '5/10' answer to a question on the efficacy of CAM. Or even as to why there is a lack of participation or response in CAM surveys and studies on this topic, because they may not know enough or be well informed enough about CAM.

Therefore does this then create a responsibility to provide credible research on the efficacy of CAM; tested with the appropriate methodology to accurately represent CAM?

The Korean study (Lee, et al., 2002), also mentioned a limitation of this type of study design [the cross-sectional survey]. "*More attention should be paid to arriving at definitive conclusions regarding cause-and-effect relationships*" (Lee, et al., 1999: 2002).

It recommends studies with a 'prospective design' may help in providing greater clarity rather than the current lack of conclusive findings in regard to the relationship between the variables of physician's attitudes, beliefs and knowledge of CAM.

7.5. Netherlands

A review published in the Netherlands in 1999 explained "*medical specialists in particular, question the relative effectiveness of alternative therapies and claim that they are scientifically unproved*" (Schepers & Hermans, 348: 1999). To add to this view from medical specialists, the standard and credibility of a therapy that has been scientifically tested and proven has been removed from association with alternative therapies in this Dutch study. Along with the unfavourable view towards alternative therapies that have not been scientifically tested, it is reported in the Dutch study that unorthodox therapies "*are not felt to match the standards of modern scientific medicine*" (Dunning (1982) & Borst (1996), cited in Schepers & Hermans, 348: 1999).

This Dutch review also noted that "*the prestigious scientific body, the Health Council, has pressured for further clinical evidence on the efficacy of the therapies concerned*" (Gezondheidsraad (1993), cited in Schepers & Hermans, 348: 1999).

A comparison is made in the Dutch review (Schepers & Hermans, 1999) between the view of medical specialists towards alternative medicine and the views of GPs towards alternative medicine. It reports that GPs are actually more favourable towards alternative medicine, and therefore are not to be associated or correlated with their medical specialist

colleagues when considering the results. Furthermore, it reports that “*almost all GPs occasionally refer patients to alternative practitioners. Half of them practice alternative medicine themselves (mostly homeopathy)*” (Visser & Peters, cited in Schepers & Hermans, 348: 1999).

According also to this Dutch review, a study by Knipschild et al. (1990), states that “*many Dutch GPs really believe in the efficacy of certain alternative procedures.*” “*About 45% considered homeopathy effective in the treatment of certain upper-respiratory tract infections, and hay fever*” (Knipschild (1990), cited in Schepers & Hermans, 348: 1999).

Interesting to note from this is the ‘moderate’ tone of the results, at the ‘45%’ level. This is not a convincing majority or significant enough to be conclusive. Again, this resonates with a similar feel in the literature in regard to doctors’ views towards CAM. For example, results of an Italian study (below) found, “*the majority of the physicians (53%) attributed some efficacy to unconventional medicine*” (Cocconi et al., 32: 2006).

The author interprets this ‘moderate tone of answering’ again by suggesting the theory of cognitive dissonance as referred to earlier, which will be discussed later on in the review.

The clash of the two different health concepts, CAM and western medicine, along with the lack of evidenced-based research required by doctors in order for them to make a decision or form an opinion about the efficacy of CAM, would support a negative view towards CAM; this is because the science of both health concepts disallows these two

contradicting beliefs working in harmony, when they are not in unison. The third would suggest that if the evidence-based research came back proving the efficacy of such CAM treatments, that doctors would then have no choice but to support the treatments because of the proved scientific efficacy of them. But this author proposes the general Western medical population would still not fully support the efficacy of CAM, even with positive evidence-based research results, because of the strength and potency of the first two theories at work. Beliefs in the end will outweigh facts, objectivity and logic.

7.6. Italy

A cross-sectional study conducted in Italy, which was published in 2006, looked at physicians' attitudes towards and practice of unconventional medicine. The main result in this study was that *“the majority of the physicians (53%) attributed some efficacy to unconventional medicine”* (Cocconi, et al., 32: 2006).

It needs to be noted here that this study was isolated to the area of Parma, Italy and so it is specifically mentioned that it cannot be considered to be representative of Italian physicians in general (Cocconi, et al., 2006). It also mentions that, prior to this research, there have been few, if any, studies done on the attitudes of physicians towards CAM in the south of Europe, and none in Italy. For this reason, it was decided to include the study in this research, and to include the results from Italy in this review.

In this Italian study, (Cocconi, et al., 2006) a questionnaire was sent to the physicians in Parma, with one of the questions being, ‘Do you think unconventional medicine has some efficacy?’ The results showed the percentage of physicians that answered ‘yes’ was 53%, and the percentage of physicians that answered ‘no’ was 47%. These types of results are consistent with other literature that has been mentioned, in which the split between positive and negative views towards the efficacy of CAM is very evenly divided. This again could be because of ill-informed physicians, a lack of evidence-based research on CAM, personal experiences with CAM, the differences in the two health concepts between CAM and Western medicine, or as suggested, the theory of cognitive dissonance.

The Italian study (Cocconi, et al., 2006) states that Italy currently has “*no officially accepted registration for any type of unconventional medicine*” (Cocconi, et al., 35: 2006).

Here again, the study shows the contribution that legislation and the health system have on influencing the culture of the medical system.

A point was noted in the Italian study (Cocconi, et al., 2006), that culture and education, for example, may determine the type of CAM modalities used. As this varies from country to country, “*it seems the spectrum of unconventional modalities practiced depends on geographically predetermined factors such as education and culture*” (Cocconi, et al., 36: 2006).

Homeopathy is the most widely applied type of unconventional medicine in Italy, along with homotoxicology. (Cocconi, et al., 2006). And, following the argument that culture

potentially influences the types of CAM modalities used, it is reported in the Italian study (Cocconi, et al., 2006), that modalities from religious or old Eastern origins are rarely practiced in Italy (Cocconi, et al., 2006).

7.7. USA

A USA study was published in 2006 (Wahner-Roedler et al., 2006) about physicians' attitudes towards CAM, and their knowledge of specific therapies. Their findings were in regard to what views physicians hold towards the efficacy of certain CAM modalities.

The physicians in this American study required more RCTs to be able to even consider incorporating CAM into their practice. The RCTs were considered to be a standard for EBR (Evidence-Based Research). This again supports other literature on the requirement of RCTs by physicians. It shows that more evidence-based research and RCTs are a requirement from the Western medical profession globally. This finding can be applied to almost all of the countries reported in this review. Most of the original research studies included in this review have reported in their results a requirement from physicians to have more RCTs and evidence-based research, in order to form a more conclusive view about the efficacy of certain CAM modalities. To recall the countries that reported this requirement from the physicians they studied, they are Canada (1995), Netherlands (1999), Korea (2002), UK and Germany (2002), USA (2006), and Japan (2009).

A questionnaire was used in this American study (Wahner-Roedler, et al., 2006) addressing three areas: attitudes towards CAM, along with the utilisation and outcomes, and the familiarity and experience of the physicians with CAM. The relevant findings of this review are in the attitudes towards CAM results.

Sixty-seven per cent of physicians in this American study agreed that “*some CAM therapies hold promise for the treatment of symptoms, conditions and disease, 70% of the physicians stated that the current practice of CAM therapies in the United States represents a threat to the health of the public*” (Wahner-Roedler, et al., 498: 2006).

Another relevant result in the American study (Wahner-Roedler, et al., 2006) significant to this review is that 88% of physicians agreed that RCTs could affect physicians’ attitudes towards CAM.

This is consistent with other literature mentioned in this review with similar results.

7.8. UK and Germany

Cross-cultural differences were also surveyed, in comparing differences in GPs attitudes towards CAM in the UK and Germany (Schmidt, et al., 2002). The study design was a descriptive questionnaire mailed to physicians in both Germany and the UK. The results reported a general overall positive attitude; more so in Germany than in the UK. This study reports the result, however, to be non-significant as there was no statistical

difference in positive attitudes overall. The mean score out of 10.0 was 6.75 for German GPs and 5.81 for UK GPs.

Again, in this cross-cultural study of the UK and Germany, a lack of evidence-based research on CAM was an issue that was raised in both countries.

Results from this study recorded a response rate to the posted questionnaires of 68%, and the response was split evenly between countries, 67 from Germany and 66 from Britain. Most of the respondents were male. This study quotes a “*relatively high response rate*” (Schmidt, et al., 144: 2002) of 68%, meaning there were just over two-thirds of the questionnaires collected, and the remaining 32% did not respond. This response rate was seen to suggest a positive attitude towards CAM in general from these physicians. It could also be looked at in a different way, showing an ‘average response rate’ of 68%, and very ‘general’ views towards CAM. This possible interpretation would be in correlation with other studies that have shown a ‘moderate’ view and tone of response from GPs on this topic.

In regard to the perceived efficacy of CAM by physicians in this study, “*both groups [British and German GPs] related a low intention of CAM use due mainly to the lack of scientific evidence*” (Schmidt, et al., 145: 2002).

“Most GPs in the UK and Germany would like to be able to consider different CAM treatments on their respective merits if more scientific evidence was available from high quality research” (Schmidt, et al., 145: 2002).

These results are also consistent with the Canadian results mentioned earlier in regard to the efficacy of CAM and the requirement for scientific literature on this topic.

7.9. Japan

A Japanese study published in 2009 (Fujiwara, Imanishi, Watanabe, Ozasa, & Sakurada, 2009), looked at changes in the attitudes of Japanese doctors towards CAM. It was a comparison study between surveys of Japanese doctor’s attitudes conducted in 1999 and then again in 2005. Randomly selected doctors in 1998 and then in 2003 (this was carried out two years before the reported comparison date) were mailed a structured questionnaire asking general questions, including ‘the belief in the effectiveness of CAM and reasons why,’ and ‘referral to [CAM] specialists.’ The question about effectiveness was answered through the single-choice method, and the question about referrals was answered through multiple-choice.

The response rate in this study was 67% in 1999 and 68% in 2005. There were no significant differences in regard to age or gender in this study in either of the years surveyed.

The results from the 1999 survey showed the familiarity of doctors towards the term CAM was 45%, in comparison to the 2005 survey in which 83% of doctors showed a familiarity towards the term CAM. This was a significant increase between these years, and the study includes these results under the results table 'Changes in attitudes towards CAM therapies between 1999 and 2005.'

Efficacy was measured by asking the respondents to rate their reasons for the belief or disbelief in the effectiveness of CAM therapies. The highest recorded reason for belief was 'improvement of patients during treatment with CAM,' with 56% in both 1999 and 2005. Respondents rated this the major reason for beliefs in the effectiveness of CAM treatments out of other options available such as: 'experience of improvement by themselves' at 29% in 2005 and 25% in 1999; 'existence of reliable references, presentation in academic meetings, information about goods associated with CAM and so on', 46% in 2005 and 40% in 1999; 'recommendation by reliable persons', 5% in 2005 and 3% in 1999; and 'other', 19% in 2005 and 16% in 1999.

The highest recorded reason for the disbelief in the effectiveness of CAM treatments was for 'no reliable evidence', 74% in 2005 compared to 50% in 1999. The highest recorded reason for lack of belief in 1999 was 'no reliable information', at 59% compared with 69% in 2005 (Fujiwara, et al., 2009). These differences in time periods show that, along with an increased awareness of CAM was an increase in the requirement for scientifically proven efficacy. Other similar results were 'unreliable data and conclusion in references,' 36% in 2005 and 25% in 1999, 'no experience of cases in which CAM was

effective', 14% in 2005 and 56% in 1999. These last results may not be representative of the efficacy of all CAM treatments, but those in which these particular physicians have had direct exposure themselves to CAM's effectiveness.

The lack of scientific evidence was also a reason in these results as to why doctors would not desire to practice CAM therapies in the future. Fifty-seven per cent reported the fact that there was 'no solid evidence,' as a reason for not desiring to practice CAM therapies in the future (Fujiwara, et al., 2009).

The discussed results in this study (Fujiwara, et al., 2009) mention that there were no significant changes in the doctors' beliefs in the effectiveness of CAM treatments between 1999 and 2005. However, the results did show a greater requirement from doctors for scientific evidence on CAM. This desire for a greater amount and availability of scientific evidence is similar to literature from other countries on this topic. It seems to be a reoccurring theme, and is one that is only increasing over time, as shown in the results of this Japanese study (Fujiwara, et al., 2009). Therefore the conclusive results show an increase in familiarity towards CAM, a greater requirement for scientific evidence on CAM, and no significant changes in doctors' beliefs towards the efficacy of CAM.

This study also reported on the differences between countries in regard to what type of CAM therapies they are familiar with and are practicing. Also, what type of CAM therapies they have positive attitudes towards in regard to their effectiveness. These two

points may be related regarding culture and experiences of a certain CAM treatment to that country, and its perceived effectiveness.

“Several Asian countries possess their own specific medical systems, which are occasionally practiced as conventional medicine in those countries” (Fujiwara, et al., 2009). Examples of such medicine are in India with ayurveda, China with traditional Chinese medicine (TCM), and Japan with kampo (traditional Japanese herbal medicine). This study (Fujiwara, et al., 2009) specifically mentions that *“although Kampo may deeply influence beliefs concerning the effectiveness of other CAM therapies, Japanese doctors regard Kampo as somewhat independent of the other [CAM] therapies”* (Fujiwara, et al., 2009).

This again could show the influence that culture and different countries’ traditional medicine practices could have on particular doctors’ views towards the effectiveness of CAM and CAM in general. It also shows that there has been research conducted on different countries’ physicians’ attitudes towards CAM.

This study also concluded that *“solid evidence is important as a factor influencing doctors’ attitudes. Therefore, solid scientific evidence of the effectiveness of CAM therapies should be established”* (Fujiwara, et al., 2009). Conclusions also stated that the attitudes of Japanese doctors are more similar to those in other Asian countries, such as China and Korea, and less similar to those in America and European countries (Fujiwara, et al., 2009).

This, again, is in support of other literature in this review that suggests differences in countries and cultures, and proposes the correlation between the history of CAM and traditional medicines in particular countries, and the type of general attitude a doctor has towards CAM.

7.10. UK

Another study published in 2007 (Maha & Shaw, 2007) looked at doctors' views of CAM and its role in the NHS in the UK. This study was an exploratory qualitative study, and similar to this review, wanted to look at perspectives and 'reasons why' doctors hold particular views towards CAM. The study design encompassed semi-structured interviews with nine doctors in the Bristol area of the UK. This study reported a broad spectrum of results, that fell into three main categories, "*the 'enthusiasts,' the 'sceptics,' and the 'undecided'*" (Maha & Shaw, 2007).

There was a wide range of responses to each category, but the most prominent was the 'sceptics' category. A significant point, consistent with other results in the studies mentioned on this topic, is the need for further scientific literature. This was the main reason and rationale for the sceptical view of CAM and its effectiveness.

The study design was qualitative, and the reason this was used as reported in this study was that "*they help us to gain deeper understanding of phenomena from the perspective of participants, giving emphasis to the meanings that participants attach to their*

experiences and the rationales behind their views” (Pope & Mays (1995), cited in Maha & Shaw, 2007).

A sampling strategy was used to source the participants for the study, and they were each interviewed individually in a semi-structured way, that allowed for some room for movement within the conversation.

A key result here to this review, was in regard to ‘the role of doctors’ professional experiences in shaping their views towards CAM’ (Maha & Shaw, 2007).

Doctors in this study who held positive views towards CAM, reported professional experience, or had observed the positive effect, of a CAM treatment on a patient. Those who held negative views reported concerns about CAM in reference to CAM therapists. It was reported that the doctor’s concerns were the suspicion of ‘financial scams’ by ‘unscrupulous complementary therapists’ (Maha & Shaw, 2007).

This area of doctors’ views towards CAM therapists is another aspect to come out of this review. It also may be included when researching doctors’ attitudes towards CAM.

Whilst it is not a specific aim to find out what the doctors’ attitudes towards CAM therapists are, rather towards CAM therapies and the area of CAM in general, within the studies that look at the views and attitudes of doctors towards CAM, views about CAM therapists specifically have arisen. However, it does not seem to be a dominant theme in the literature. Whether this is because the research design of the literature available has not focussed specifically on this, or whether it has not emerged before, this theme may be

an area to look into in further research with more of a qualitative research design to focus on understanding the meaning of such attitudes.

Another significant finding reported in this study (Maha & Shaw, 2007) that is also consistent with a recurring theme found in this review, is that *“doctors who were undecided about CAM often claimed that they lacked sufficient knowledge of CAM to make an informed judgement. They also drew on arguments about the uncertainty of scientific evidence regarding CAM”* (Maha & Shaw, 2007).

A question raised during an interview with one of the GPs in this study (Maha & Shaw, 2007) was ‘*how*’ does homeopathy work? They were aware that some of the evidence shows that it does work, but the question raised by this GP was ‘*how?*’ This is consistent with the need by doctors for evidence-based research on CAM in order to form a view about CAM. There seem to be a lot of ‘grey’ areas in doctors’ minds about the efficacy of CAM, the science behind CAM and the safety of CAM. All of these areas may be answered, to some degree at least, by providing more evidence-based research on CAM.

These studies show the views of doctors towards CAM, and a lot of them touch on the same theme regardless of time period or country. This theme is the efficacy of CAM and the requirement for more evidence-based research on CAM. This need for evidence may show an openness to CAM to become more tolerated once doctors are educated about it from a scientific point of view. This is one change over time that is significant: the desire for more evidence-based research on CAM, as shown in the Japanese study (Fujiwara, et

al., 2009) and the results are evident between the 1999-2005 time period. Whereas in 1999 scientific evidence was not as sought after, it became increasingly desirable towards 2005 as the awareness of CAM increased. This may also show an increased openness towards CAM over time, and even though this may have been slow moving, or not a significant change in views over time at all, it will be interesting to measure doctors' views towards CAM again after a considerable amount of evidence-based research has been conducted on CAM and been made available to doctors the world over. The main themes of these findings will now be further discussed.

8. Discussion:

8.1. Limited scientific literature on CAM:

It seems fitting to start with the greatest and most significant finding in regard to the views of doctors towards CAM: this is the physicians' requirement for more scientific evidence on CAM, as well as population demand for greater access and availability of information, as seen in the increase of literature in the 1990s, and the increase in the scientific literature on CAM that has emerged since that time. This demand has the potential to give momentum to further scientific literature on CAM being developed, especially in regard to efficacy. This has already been extensively covered in the main text, but it can be mentioned again as the main theme in this literature review, along with

an inconclusiveness of doctors' views towards the efficacy of CAM, and the 'moderate tone' of doctors' responses in a number of these studies.

Firstly, the 1970s and 1980s did not provide significant literature on the views of doctors towards CAM based on the inclusion criteria of this review. This is discussed further, but it is important to note the difficulties faced in documenting the 'changes' in doctors' views between 1970 and 2009 when there is limited literature available on the topic. Even without substantial literature from the 1970s to contribute towards this search, the literature that was found from 1990-2009 still has not shown a significant change in doctors' views in general. There has been reference made to an increase in desire to learn about CAM, or an increase in requirement for scientific literature, but not a definite change since the 1970s that can be classed as significant. Reasons for this are outlined below in regard to the theory of cognitive dissonance and the differences between the Western medicine and CAM health concepts.

8.2. 1990s – A new field of study:

A change that could be noted in this review in regard to the documentation of doctors' views concerns the quantity of literature published since the 1990s on this topic.

First of all it is important to understand again that literature was searched from the 1970s and the 1980s and only one article was found published in the 1980s that matched the inclusion criteria. Studies on the beliefs and views of medical professionals were not

plentiful, and could even be called sparse. This could possibly mean that this topic was not a research area that had been surveyed before, causing this author to think this is a relatively new field of study with published papers coming to the surface around the 1990s. There has been significantly more literature published since the 1990s. It is interesting to note here that an explanation for this increase or surge in literature published in this decade could be because of the Internet. Publications were no longer sitting just in Universities, Libraries or organisations' filing cabinets, but now information was made global and accessible. Secondly, consumers had more access to information in general, such as popular sources, journals, online scientific articles and the like. This in turn informed the consumers with a wide range of information that, before the Internet, was not as readily available. It also created a demand on GPs that may have been driven by consumers for a wider range of treatment options; to be better informed about CAM therapies; and for advice and further clarification about information consumers had sourced from the Internet. Beliefs and views of physicians have since been researched. Again this may have been driven by the demand that consumers may have placed on GPs at this time, and that is still being continued into the 21st century, as indicated by studies mentioned in this review from 2000 onwards.

This leads us onto another major finding in this systematic review in regard to doctors' desire to have more RCTs and evidence-based research on CAM.

8.3. RCTs required by physicians to prove efficacy:

This author could most likely make mention of almost all of the studies used in this review and put them all into this section of the discussion. This point highlights the strong theme that has come out of these studies in regard to the efficacy of CAM, and the 'standard of evidence' that is required by GPs in order to come to some sort of conclusion on the efficacy of CAM.

A comparison here can be made with the results of the Israeli study (Bernstein & Shuval, 1997), in which the most influential factor reported in physicians' beliefs towards CAM was in the observed effect of CAM on their patients or families. The views were formed based on observation of family members or patients whom the doctors had observed using CAM, and its apparent effectiveness. Similar results can be observed from the Japanese study (Fujiwara, Imanishi, Watanabe, Ozasa, & Sakurada, 2009). The highest recorded reason for the belief in CAM was the 'improvement of patients during their treatment with CAM,' with 56% in both 1999 and 2005 (Fujiwara, et al., 2009).

This can be interpreted as showing that physicians need evidence of the efficacy of a therapy *before* forming a belief about it. This may be why there is insubstantial literature on the beliefs of doctors towards CAM, as there may not be enough RCTs on the efficacy of CAM for doctors to form a belief. This is also consistent with the Western bio medical model of health, using biological science to interpret and understand health.

Correct methodologies are therefore the next step in determining useful and appropriate studies to use in testing CAM.

8.4. Methodology appropriate to test CAM:

This is interesting to note here, because in order for doctors to have a belief about CAM, scientific papers need to have been published that measure CAMs efficacy. The influential factor here is the scientific research in influencing doctors' views on CAM. If this is a strong factor in shaping doctors' views towards CAM, then the research that is being conducted needs to be the most appropriate method for testing the efficacy of CAM. To explain further, the research methods that may be effective for scientific studies, such as pharmaceuticals, may not be effective for comprehensively testing CAM treatments, such as vitamin supplements. To relate this to scientific research, it needs to be made certain that the scientific papers that doctors are reading and then basing their beliefs about CAM on, are papers that have a correct methodology specifically for testing CAM. This obviously goes both ways, and shows the importance that using the correct methodology has on the treatment or subject that is to be tested.

This is important to note (Verhoef & Sutherland, 1995) in looking at possible influences as to 'why' doctors have certain beliefs about CAM. This could also show peer reports and scientific literature to hold a certain amount of 'weight' and influence towards the views that doctors hold towards alternative medicine. This again brings one back to the reliability, validity and accuracy of these reports. Are those who are testing the CAM

modality testing it in a way that is appropriate to test a complementary or alternative medicine, (such as testing a vitamin with an appropriate dosage, or looking at long term studies of the effects of the same vitamin in the appropriate dosage, for example)? Is it being looked into whether vitamins are tested in the same way that pharmaceuticals are tested, and examining whether this is actually the appropriate way to test and compare these two different types of medicine. This example again highlights the importance of correct or appropriate methodology when addressing CAM in the form of scientific research papers, as well as the effect the methodology can have on putting forward an accurate representation of the results of the medicine or treatment.

8.5. Methodology appropriate to study beliefs:

This review of the literature has also brought up the question of effectiveness; how effective the methods of testing ‘beliefs’ and ‘views’ have been with the methodologies used in the papers reviewed. Semi-structured or structured interviews seem to have produced depth to the style of answering in the literature. An example of this is in both the Israeli study (1997) (Bernstein & Shuval, 1997), and in the UK (2007) (Maha & Shaw, 2007) study. Questions in the 1997 Israeli study (Bernstein & Shuval, 1997) were asked around the beliefs about the efficacy of CAM therapies and attitudes towards government regulations and coverage by health insurance organisations. Responses that were given ranged from, “*it’s all bluff*” to *‘I don’t feel threatened by alternative medicine. Those of us who take care of patients with chronic illnesses that we cannot cure need all the help we can get’*” (Bernstein & Shuval, 1997).

Since looking at beliefs, views and attitudes, this author challenges the way in which attitudes, views and beliefs are being measured. If this is to be truly effective, the methodology needs to incorporate some type of interview style questioning, as the topic being researched is not material but psychological and psychosocial. Again, as seen in the UK study (2007) (Maha & Shaw, 2007), the interviewer was able to look into possible 'reasons' for certain views or answers that the participants provided. Looking at gathering information in this way is an idea for future research of doctors' views. Reports would be of a qualitative nature, and still produced in a scientific way; even using psychological resources as measuring tools, in order to draw a conclusion from the study. This author suggests future research in this area may be aided by drawing on styles of research from the cognitive and social psychological discipline, as the area of beliefs, attitudes and views would come under this discipline; therefore keeping the methodology appropriate to the area of research as stated above in regard to using the appropriate methods for researching CAM. The area of methodology has been noted to benefit from further research in regard to testing CAM treatments; testing CAM practitioner experiences as to how they see CAM being assessed appropriately; and testing physicians' beliefs towards CAM using more of a psychosocial approach.

8.6. The ‘moderate tone of answering’ – doctors don’t know:

This statement brings up an important point about the level of education required to be able to possess ‘some knowledge’ about the most important therapies, and then to be able to inform or advise their patients on these therapies. A question here would be ‘how well informed do the physicians firstly need to be to be able to advise their patients about alternative medicine, and secondly to say that they possess ‘some knowledge’ about the most important alternative medicines? And further; ‘do physicians need to know the same amount as, or more than, an informed homeopath about homeopathy?’ Then ‘does a physician carry more weight about advising a patient about the best types of alternative treatment, including alternative medicine, than an alternative medicine practitioner such as a homeopath?’

An example of a ‘moderate tone of answering’ can be seen in the percentages given in these studies to physicians’ views towards CAM. As referred to already, the 2006 Italian study reported that 53% of physicians’ attributed *some* efficacy to unconventional medicine (Cocconi et al., 2006). Also, 44.7% of GPs in the 2006 New Zealand study considered acupuncture to be CAM (Poynton, et al., 2006). A good number of the major statistics hover around the 50% mark.

Also, this ‘moderate tone’ can be seen in the ‘low response rate’ mentioned in the Canadian study (Verhoef & Sutherland, 1995) in 1995. They made reference to the fact that there has generally been ‘low response rates’ from GPs in these types of studies, and

that an average response rate from physicians to participate is 49%. However, in reference to Table 3 (page 27), the last 3 studies that have been done more recently in the last 10 years have shown a much higher response rate. This could possibly show a changing trend, however there is no significant finding given in the literature in this review as to why this increase has been seen.

8.7. The theory of Cognitive Dissonance:

The theory of cognitive dissonance (Festinger, 1957), hypothesises that,

1. *“The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance.*
2. *When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance” (Festinger, 3: 1957).*

This theory (Festinger, 1957) proposes that people cannot hold two conflicting beliefs without the presence of cognitive dissonance, or cognitive conflicts. In a bid to reduce the anxiety or discomfort accompanied by these two conflicting beliefs, a person sets out to resolve this conflict by changing their action to line up with their belief, or changing their belief to line up with their action. People therefore hold beliefs that they feel are consistent with ‘who they are’ and act in accordance to that belief they hold about themselves. When faced with a conflict that challenges either an action or belief that a

person holds about themselves, that person would then try and rectify that challenge to become consistent with their beliefs.

Festinger (1957) mentions that 'consistency' is a standard event and sometimes there are exceptions to this, "*but only rarely, if ever, are they accepted psychologically as inconsistency by the person involved. Usually more or less successful attempts are made to rationalise them*" (Festinger, 2: 1957).

Festinger (1957) goes on to say that people can try to explain, justify or rationalise their inconsistencies in different ways. He gives the example of someone who smokes, even while already knowing that smoking is bad for their health. They may give several reasons together in order to 'justify' or 'rationalise' why they continue to smoke, even though they know it is bad for them. Hence, reducing the dissonance or inconsistencies they would have between their belief about smoking and their actual smoking behaviour [the action]. For example, they may say that they cannot reduce every danger in their lives, and smoking keeps them thin, therefore reducing weight problems that they may have if they did not smoke, which would also be bad for health: therefore they should smoke to prevent obesity. Also they may say that the dangers of smoking are over-exaggerated and not as bad as they sound; that they do exercise and eat well so this could outweigh the effects of smoking; and also that smoking is something in their life that they enjoy doing.

Festinger (1957) explains, also, that people are not always successful in rationalising their inconsistent beliefs and behaviours, and therefore they would live with the cognitive

dissonance, which would provide a state of “*psychological discomfort*” (Festinger, 2: 1957).

Festinger (1957) mentions that dissonance can be a momentary or temporary event when new information is provided that is assessed by the individual and a decision made; whereas dissonance can also be a more constant occurrence.

New knowledge that comes to challenge one’s cognitions may be accepted readily if that knowledge is consistent with the already formed cognition or belief an individual holds. It may be rejected if it is not consistent, and it also may be avoided if it is not consistent. The last point is interesting, as, if a person receives information that is not consistent with their belief, then they may choose to resolve dissonance by changing the knowledge that is available to them. For example, a smoker who receives information through a newspaper that says smoking is connected to heart disease, may then seek out information that says that smoking has no strong correlation with heart disease, in order to lessen the psychological discomfort that comes with that person’s action of smoking, and the belief that smoking is bad for one’s health. Festinger suggests that dissonance would persist or become a more constant occurrence if the person “*may encounter difficulties in trying to either change his behaviour or his knowledge*” (Festinger, 6: 1957).

If no agreement in consistencies of beliefs can be made, Festinger explains that the person would lean towards the more ‘balanced’ state.

“Cooperation between two quite different medical systems is, of course, difficult when their language, concepts and practices vary widely” (Fulder (1987); Ingstad (1989), cited in Christie, 549: 1991).

There is no literature that this author has found that suggests the theory of cognitive dissonance as a possible explanation to doctors' views noted in this literature search towards CAM. But instances when this theory could be offered as an interpretation of doctors' views or actions towards CAM have been referred to throughout this review. Coming from a Western medical paradigm that has conflicting beliefs and attitudes towards the approach to health, a doctor may not be able to hold the beliefs of Western medicine and support or practice CAM. Similarly, according to cognitive dissonance, as a doctor they could not disbelieve the Western medical model, yet support or practice CAM therapies. Festinger (1957) makes mention that those experiencing cognitive dissonance may try and rationalise a practice that is not consistent with their beliefs, in order to lessen the cognitive discomfort. In this context, this can be related to a doctor who considers acupuncture to be conventional medicine (as reported in the 2006 New Zealand study (Poynton, et al., 2006)), with the possible rationalisation that it is actually physiologically based as an example. Another example could be in regard to the 'questionable views' doctors hold towards CAM. Their practice [or action] is Western medicine; therefore their beliefs need to line up with their practice according to the theory of cognitive dissonance. Hence a doctor would experience cognitive dissonance if they believed in CAM and the CAM model of health, yet was practicing, or continued to practice, Western medicine from the biomedical model of health.

This is not saying they cannot be practiced together, but based on the theory of cognitive dissonance; it is suggesting that the practising doctor may experience cognitive dissonance because of the differences in the beliefs behind both theories and approaches to health. Therefore, a suggestion as to why they may not be practiced together more commonly may be because of the cognitive dissonance of the practitioner.

This possible application of the theory of cognitive dissonance in this context is focusing on the doctors' beliefs and what may potentially be occurring psychologically when practicing both Western medicine and CAM. Not necessarily focusing on Western medicine practices or the CAM therapies themselves, but on the psychology of the practitioner.

There is also the topic of 'decision making' in the theory of cognitive dissonance. In relation to this review, this could also be used to partially explain doctors' 'moderate tone' of answering questions in regard to CAM in the studies mentioned. Festinger (1957) points out the need to deal with rejection of the other alternative, especially if it is also attractive.

This can be looked at in terms of CAM, and doctors forming opinions towards CAM based on the conflicting differences in health concepts.

8.8 Two different health concepts:

As mentioned earlier, the differences in the position of the biomedical and the CAM paradigms can be seen clearly in their description, diagnosis and treatment of health.

Health concepts

The differences between the Western medicine health concept and the CAM concept can be explained as follows.

The conventional model or the Western model of 'health' can be defined as the "*absence of disease*" (Aakster, 268: 1986). In comparison, the CAM model can be defined as "*the balance of opposing forces, internally as well as externally*" (Aakster, 268: 1986).

Disease can be identified from a Western view as "*specific, locally defined deviations in organ or tissue structure*" (Aakster, 268: 1986). Whereas disease from a CAM perspective could be defined as, "*body language indicating disruptive forces and or restorative processes*" (Aakster, 268: 1986).

The elements of the CAM model again are outlined in Aakster (1986), in which the patient plays an active role taking responsibility for their participation in their treatment and recovery. In the Western model, the patient is considered a recipient of the diagnosis and the treatment given and concluded by the physician. CAM treatment is considered holistic, with the social, psychological, physical and mental aspects incorporated into the

diagnosis, in a different way from the Western model, which provides a diagnosis on the “*description of symptoms*” (Aakster, 269: 1986).

There is, hereafter, a development that looks at integrating these two health systems together; and the theory of cognitive dissonance suggests integration of these two health concepts may pose a challenge.

8.9. Integration – Is it possible?

This author proposes that because of the differences in the underlying foundation of the two different health concepts, that there would be a conflict or dissonance in the minds of doctors if there were an integration of these two fields in their complete forms. With such conflicting values and beliefs, there cannot, according to the theory of cognitive dissonance, be an administration of CAM by a physician, while that physician holds the complete belief of Western medicine, and functions out of this position.

However, as mentioned earlier, some may rationalise or justify why a Western medicine practitioner may practice acupuncture, even though they are a WMD. The example that could be used here refers back to the New Zealand study, in which 44.7% of doctors considered acupuncture to be a conventional medicine (Poynton, et al., 2006).

Interestingly, chiropractic, in the same study, is also considered by 42.7% of New Zealand physicians to be conventional medicine. The reasons behind this may be that acupuncture could be seen as physiologically and biologically based, and therefore

'comes under' the scope of the scientific anatomy-based model of western medicine. The same could be said with chiropractic over osteopathy, as chiropractic could be seen to be more physiologically based on anatomy, whereas osteopathy may incorporate homeopathy also into a treatment plan, and therefore 'falls outside' the scope of Western medicine. A question to ask here would be around the 'definitions and criteria of inclusion' into what denotes Western medicine, and what denotes CAM. There are also wide differences between countries that may consider a therapy to be CAM, and other countries that consider the same therapy to be Western medicine.

In relation to this review, this theory of cognitive dissonance could be used to interpret doctors' views toward CAM. Even though there is no literature available that this author has found to support this, this author believes that this theory could be offered as a possible explanation to a variety of themes and points that have arisen from this review. Firstly the 'moderate tone of answering' that is reflected in the statistics of this literature search; secondly, to understand the two different health concepts that Western medicine and CAM hold; thirdly, is the question of integration, and how successful this may or may not be. Lastly, this theory can be used to look at the possible changes in doctors' views both in the past and when looking to the future.

The 'moderate tone of answering' that is reflected in the literature's statistics, may show that doctors either do not really understand CAM treatments specifically, or that they do not hold strong opinions in general about CAM because they have not yet formed an

opinion. The opinion that may not yet be formed may be caused by a lack of scientific evidence on the efficacy of CAM.

Another way to look at the response of doctors to the knowledge and efficacy of CAM would be to turn the subject around and ask CAM practitioners about their knowledge and the efficacy of Western medicine. Of course, there is substantial literature available on Western medicine and the efficacy of Western medicine treatments. But would CAM practitioners read, want to be educated on and support Western medicine treatments and a Western medicine paradigm if they believed in CAM treatments and the CAM paradigm. This highlights the 'separatism' of the two health concepts and treatment options. It also shows a possible incompatibility in the integration between the two. So would these two different types of medicine and these two different types of practitioners be better off remaining as 'two separate types of medicine'. Where then do the governing bodies and legislation fit in, and likewise the consumers, with regard to responsibility, accountability, opportunity and choice?

8.10. Differences between countries:

There are differences between countries in regard to culture, medical education, and legislation, and all these elements would add to the influences governing the formation of doctors' beliefs towards CAM.

When comparing countries, a similarity was found between New Zealand and the UK in regard to referrals to CAM therapies by physicians. Both countries referred their patients

to chiropractic, osteopathy and acupuncture most frequently. (Poynton, et al., 2006); (Schmidt, Jacobs, & Barton, 2002). Further differences were seen between different countries views towards CAM modalities (see Table 4, page 31).

Results of the Italian study (Cocconi, et al., 2006) recorded that “*the most widely used types of unconventional medicine were homeopathy, manipulative treatments, herbal therapy and acupuncture. The use of homeopathy more than tripled between 1991 and 1999, while the use of other types of unconventional medicine was considerably less*” (Cocconi, et al., 33: 2006). Homeopathy, along with homotoxicology, is the most widely practiced CAM modality in Italy (Cocconi, et al., 2006). In the 2002 cross-cultural study of comparisons in attitudes towards CAM between German and UK physicians (Schmidt, et al., 2002), it was shown that significantly more British GPs than German GPs referred patients to Alexander technique, aromatherapy, homeopathy [and osteopathy]. A significant difference was seen in German GPs referring their patients to naturopathy and herbal medicine; more so than UK physicians in this study (Schmidt, et al., 2002).

Verhoef and Sutherland (1995) mention that alternative medicine is not uncommon in Canada, and this is again interesting to note, when looking at the history or traditional practices of alternative medicine in a country and the effect or influence that this history may have now on the attitudes and beliefs of doctors towards alternative medicine today. A question now could be whether a country’s history with traditional medical practices could be an indication of a significant influential factor in that particular country’s doctors’ views of CAM?

Religion was also measured in this study to have possible correlations with Western medicine or CAM in Korea. The most significant results were within the religions of Catholicism and Buddhism between OMDs and WMDs. Of the total of the WMDs, 21.5% were Catholic and 10.6% were Buddhist. Whereas of the OMDs 10.6% were Catholic, 25.2% were Buddhist. This study (Lee, Khang, Lee, & Kang, 2002) suggests religion may be correlated with which branch of medicine a medical student may choose to go into to begin with, either Western medicine or CAM or Oriental medicine: whatever is compatible with their beliefs. Therefore beliefs or values may influence which area a doctor may go into. A question would be, 'can this change over the years'? The choice of which field of medicine to study may not necessarily be based on whether the field of medicine originated in an Eastern or Western country; nor whether it is compatible to one's own ethnicity or religion; but rather on one's beliefs. This, therefore, may be linked holistically with one's ethnicity or religion, but may not be an absolute.

8.11. Influences towards beliefs:

Something that this author found significant in the review in regard to the influences on the beliefs of doctors, was the level of knowledge they possessed in regard to CAM. If the physician was aware of CAM modalities or practices they were more readily able to offer an opinion. If their exposure to CAM had been great, regardless whether their experience of CAM was positive or negative, then they were again able to offer an opinion in regard to CAM. Therefore, this author could hypothesise that a doctors' level of exposure to CAM will decide whether they can form an opinion on CAM. Their level

of knowledge will be a deciding factor in regard to providing a view. The author can offer an explanation of this by looking at knowledge through different levels of exposure, understanding and of education.

8.12. Levels of Knowledge example:

An example of how the level of knowledge a person has could influence how they construct a view or offer an opinion towards something could be as follows:
a topic of research may be about the country New Zealand. Someone is then asked about New Zealand. There could be different levels of 'knowledge' about New Zealand that different people possess, and depending on that level of knowledge it will firstly determine if they can form an opinion, and then how much that opinion is worth based on their level of knowledge, and accurate knowledge at that, and therefore the credibility of their opinion or advice.

8.12.1. Table 5: Levels of Knowledge (a)

Levels of Knowledge	
1	Haven't heard about New Zealand
2	Have heard about New Zealand but haven't been
3	Have seen and read about New Zealand on the TV or in a book
4	Have been to New Zealand on a holiday
5	Have lived in New Zealand
6	Is a New Zealander

This can be related now to a CAM therapy for example;

8.12.2. Table 6: Levels of Knowledge (b)

1	Haven't heard about chiropractic
2	Have heard about chiropractic, but haven't tried it
3	Have seen and read about chiropractic on the TV or in a book but haven't tried it
4	Have learnt about chiropractic
5	Have been to the chiropractor for treatment
6	Is a chiropractor

1. No knowledge at all (ignorant)
2. Have heard the knowledge, but not considered it thereafter
3. Have sought knowledge out
4. Have studied what have heard
5. Have applied what have learnt (action)
6. Have mastered what have learnt and now can instruct others

These tables illustrate that there are different levels of knowledge, understanding and experience that doctors have towards CAM, and therefore the views towards CAM will be varied based on this. The UK study (Maha & Shaw, 2007) mentioned that doctors in

this study reported that “*‘ignorance’ was the greatest barrier to other doctors accepting homeopathy*” (Maha & Shaw, 2007). The key here is understanding, in order to make an informed decision; seeking and searching the understanding in the first place, in order to be open and proactive, in order to learn. The outcome, whether positive or negative, at least has been from a place of understanding and not judgement, subjectivity or self-opinion.

Can one form opinions if they haven’t experienced, felt, known or had understanding about it? This is a suggested analysis of how the lack of knowledge may contribute towards physicians’ inconclusive or unsure or varied positions towards CAM in general and specifically the efficacy of CAM as mentioned in this review.

Other influences that have been noted, especially in the New Zealand study and the Japanese study, may have come via the health system.

8.13. Health system influences:

This review in particular highlights the movement of the medical profession in regard to the influence the governing health system has over legislation changes and legitimisation of the medical profession. This review notes the comparison between the lack of legal recognition that alternative medicine practitioners receive, but how some of their therapies receive government subsidy and therefore the profession as a whole is acknowledged in this way (Schepers & Hermans, 1999).

In the New Zealand study (Poynton, et al., 2006) some CAM therapies are also funded by the government in the Accident Compensation Corporation (ACC). These include chiropractic, acupuncture and osteopathy.

A reason why these three therapies are

- 1) most commonly perceived as beneficial, [acupuncture 86.7%, chiropractic 79.7%, and osteopathy 73%]
- 2) most commonly practiced, [acupuncture 10%, chiropractic 1%, and osteopathy 2%]
- 3) viewed to be possibly both CAM and conventional medicine (or unsure about where these therapies fit, as indicated in the 'moderate' and even results), [acupuncture 47.7% CAM, 44.7% conventional, chiropractic 48.7% CAM, 42.7% conventional, and osteopathy 94% CAM, 0.3% conventional]

may be because they have been covered, or 'subsidised' under the New Zealand no fault injury insurance system (ACC). Therefore New Zealand GPs may be more familiar with these treatments, have more knowledge of them, and may feel 'covered' to recommend or refer to these treatments because of the backing from ACC.

Naturopathy is also worth mentioning here in regard to the results, as 41.7% perceived it to be conventional, and 51.0% perceived it to be CAM. These results suggest GPs either consider these therapies [such as acupuncture, naturopathy and chiropractic] to be both CAM and conventional, or they are unsure over where they fit or how they are to be categorised. This may be influenced, however, as mentioned earlier, by the fact some of the therapies that are considered both CAM and conventional are covered by the New

Zealand medical insurance system [acupuncture, chiropractic, osteopathy.]. This poses a question though; if these therapies were not covered under the New Zealand medical insurance system, would the results be similar to the other CAM therapies that GPs recognise as CAM? Another question raised would be how much influence does the health system, as a governing body, have over the beliefs and perceptions of the GPs? This last question would be another area of suggested research for the future.

Continuing with discussing the New Zealand study (Poynton, et al., 2006), there was a section provided in the survey that allowed GPs to answer, 'I don't know.' This type of answer does seem to be a common theme in regard to the 'moderate tone of response' within other literature, such as results of the Italian study (Cocconi, et al., 2006) that reported that 53% of the physicians surveyed attributed *some* efficacy to unconventional medicine (Cocconi, et al., 2006).

New Zealand GPs did not seem to give this type of answer ['I don't know] much weight when it came to recognising which category different CAM therapies belonged under. They had the choice of 'CAM' or 'conventional' and while the results were interesting in how GPs categorised the CAM therapies, there was not a high percentage of GPs that had answered 'I don't know' to the identification of each of the therapies included. The therapy that had wielded the 'I don't know answer' in the New Zealand's study (Poynton, et al., 2006) was 'traditional Pacific Island medicine,' with 9.0%. This was followed by, 'traditional Maori medicine' with 8.0%, and then 'traditional Chinese medicine,' with

7.0%. The next therapy that was classed as, 'I don't know,' was chiropractic, and there was a relatively large drop down to 4.7%.

These findings were singled out in the results, as a large proportion of GPs had noted specifically traditional Maori and Pacific Island medicine as therapies that they were unsure of: whether they constituted CAM or conventional therapies. This is interesting in regard to the cultural context of New Zealand, especially when compared to other countries that have a culturally traditional medicine such as Japan.

With the results from the Japanese study (Fujiwara, et al., 2009), in regard to Japanese WMDs perceiving kampo (traditional Japanese medicine) to be effective, (96%), it would be interesting to see what results would emerge from conducting a similar New Zealand study in regard to the perceived effectiveness of traditional Maori and Pacific Island medicine in New Zealand by New Zealand GPs. Consideration could be given for future study to the comparison of views between Maori and Pacific Island WMDs compared with traditional Maori and Pacific Island physicians who are not medically qualified. This would propose an interesting cross-cultural study looking into the effects and influences of culture and tradition in New Zealand, then comparing this with the Japanese study. This author has not found any such study available in New Zealand on this topic.

The Japanese study mentions that kampo was introduced into Japan from China around the 5th century. Over the years Japanese have modified it and incorporated it into their medical practice. This study (Fujiwara, et al., 2009) also mentions that, over the last 100 years, kampo has been excluded from the Western medical curriculum in Japan, however

Japanese doctors still practice kampo. They also still possess the knowledge and belief in the effectiveness of kampo. [96% of doctors' in this Japanese study believed in the effectiveness of kampo] (Fujiwara, et al., 2009). This is interesting to note as this is not taught officially in Western medical education in Japan, but doctors are still practicing it and possess knowledge of it. This study does make reference to the fact that Japanese doctors may regard kampo as separate and “*somewhat independent of other therapies*” (Fujiwara, et al., 2009). A reason why doctors may freely practice kampo in Japan is that it is covered under the medical insurance system in Japan (Fujiwara, et al., 2009). Another reason may be the traditional and cultural element of kampo in Japan.

In comparing this to New Zealand, there are not a lot of similarities in regard to New Zealand's traditional medicine in the medical insurance system, and in the practice of it by New Zealand doctors. This may be because of a lack of population demand and the lack of GP knowledge of traditional New Zealand medicine, or the fact that it is not covered under the New Zealand medical insurance system (ACC). This, however, is a suggestion for the interpretation of this comparison between New Zealand and Japan, as there is no literature that this author is aware of at the time of the initial search for this review, on this topic. This could provide another area of suggested research in the future, along with a much more rigorous study into New Zealand GPs and their beliefs, use of and knowledge around CAM and specifically traditional Maori and Pacific Island medicine.

This, again, is an important finding to note and to be aware of when looking into further research, because in turn this will potentially affect patients, their care, treatment options, advice and potential health outcomes. Therefore a comparison, for example, could be made measuring the health of Japanese patients receiving kampo (traditional Japanese medicine), or at least having the option of it, by Japanese doctors educated in kampo; compared to New Zealand patients. This could be done as both an exploratory qualitative study of both patient wellbeing and doctors' experiences, and also as a clinical trial of patients' health statistics.

In conclusion, in the area of suggestions for future research, health systems of countries seem to have a substantial influence in contributing to the beliefs of physicians towards CAM. It may be predicted that the health system may be the one to change the 'culture' of medicine. This is an area of research that may assist in understanding past, present and future developments in health.

8.14. Conclusion:

When looking at gaps in the research in the area of doctors' attitudes to CAM, an important focus here needs to be on the type of study or research design. When looking at attitudes, the method of study could most likely be qualitative, as the focus is attitudes and not scientific measurement. Above this, what needs to be looked at is where the construction of these attitudes came from, such as the discourses that have been socially and historically constructed; especially if there has not been much of a change in the

attitudes of this group since the 1970s, whereas elements outside of this group are changing. Changes are noted in the environment, patients' use of CAM and increased interest in CAM, together with greater technological advances such as the Internet.

With literature available that shows unfavourable or skeptical views of doctors to some CAM modalities, one would need to ask, 'why there are skeptical or unfavourable attitudes towards some CAM modalities more than others?' This also shows a potential bias in the way in which doctors measure or make decisions on which one CAM modality may be more favourable than another. An example is the method of testing the CAM modality. If this method is viewed as an accepted method of testing to a doctor, it may not have been a suitable method of testing the actual efficacy of that CAM modality. This therefore may again provide a bias to why some CAM modalities may be seen to be more favourable than others.

Possibly interviewing doctors conversationally and not necessarily with questionnaires may be a direction that would be helpful in generating more conclusive answers on this topic. Closed questions or scaling may not be effective because there is also the need to take into consideration the historical, social, educational and cultural elements of any population of physicians. Another point is not only to ask 'what are their views', but 'why do they have these views', especially if the views are unsure or negative; instead of reading the literature that supports negative or average views of doctors towards CAM and assuming that because there is a negative or an average view that there must be an insufficiency or discrepancy with CAM. This will direct research towards the

contribution that doctors' views make towards the area of medicine outside the scope of Western medicine. Otherwise this may lead research to be directed towards the insufficiencies of CAM because doctors may or may not have a negative view of it.

Cognitive dissonance theory can be used to contribute towards this in regard to asking what it is about doctors' backgrounds, education, history, and societal experiences that may cause them to hold unsure or negative views towards CAM. If doctors are practicing Western medicine and CAM is different in regard to practice and structure, then doctors would not be able to have a supportive view of CAM and continue to practice Western medicine, as their views and beliefs would not match up. Doctors would then need to justify their practice of Western medicine by having an unsure or negative view of CAM; otherwise there would be a conflict, cognitively, according to the cognitive dissonance theory. This is because the practice, values and models of Western medicine are so different to those of CAM.

Based on the theory of cognitive dissonance, doctors' views are not likely to change in the near future, as they have not changed significantly in the past four decades. It is the underlying principles and theories of medicine that are so different. Of course a doctor will think like a doctor. A doctor cannot think like a naturopath, for example, as the paradigm of each is completely different. Therefore the idea of integration of both here is challenged, and living alongside each other, rather than with each other, may be needed. There is the idea, called into play here, about the responsibility of the patient, as in the model of CAM where the patient takes active responsibility in their treatment and

recovery. What if this concept were also added to the choice, opportunity of health services and activation of prevention, treatment and maintenance of health? Could a dominant Western medicine *paradigm* or culture be taking responsibility off the patient for their own prevention, treatment and maintenance of their health?

In conclusion, perhaps the monopoly that doctors have experienced for so long is changing, and as people search for health and wellbeing, the door may be opening for CAM to play a more dominant role. Each mode of operation between the two paradigms is different; therefore the modes of thinking (cognitions) are and will be different. Unless the principles of medicine on each side change or soften, the views will not. The principles and views that are rooted in each paradigm so differently will motivate and drive each practitioner on either side how to act.

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