



## **Complementary and alternative medicines (including traditional Māori treatments) used by presenters to an emergency department in New Zealand: a survey of prevalence and toxicity**

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### **Abstract**

**Aim** To establish the prevalence of use of complementary and alternative medicines (CAM), including traditional Māori therapies, their perceived benefit, and frequency of adverse effects among presenters to an emergency department (ED) in New Zealand.

**Method** An analytical cross-sectional survey of a convenience sample of patients and relatives presenting to a large tertiary ED (Waikato Hospital, Hamilton) was undertaken. Consenting participants completed a specifically designed questionnaire.

**Results** 1043 people completed the questionnaire (participation rate 97.2%). 1 in 3 (397 or 38.1%) people had used CAM, including 29 who had used a traditional Māori therapy. CAM use was significantly more likely in females ( $p < 0.0001$ ), those aged 20–60yrs ( $p < 0.001$ ), and in those of European ethnicity ( $p = 0.01$ ). Only 148 (37.3%) people had told their medical practitioner that they were using CAM, and 103 (25.9%) had used conventional medicines concurrently. Most people (266, 67%) believed that CAM had been beneficial. Adverse effects were reported by 16 people (4% of users).

**Conclusions** Many ED presenters in New Zealand use CAM. These may be associated with adverse effects, toxicity, and interactions with conventional medicines, although the incidence of these appears to be low. Doctors in New Zealand should routinely specifically enquire about the use of CAM during patient assessment.

Complementary and alternative medicines (CAM) is a widely used term, but it has no commonly accepted definition. For the purposes of this paper, the definition of CAM chosen is *any product including herbal remedies, vitamins, minerals, and natural products that can be purchased without a prescription at a health food store, supermarket, or from alternative medical magazines and catalogues, with the purpose of self treatment.*<sup>1</sup>

The use of CAM is known to be widespread in many Western countries, with billions of dollars being spent on treatments each year. Factors believed to contribute to the popularity of CAM include the perception of treatments as “natural and therefore safe”, the goal of treating the individual not the illness, and the requirement of the patient to take responsibility for their healing process.

However, these beliefs may result in problems for CAM users. Indeed, herbal therapies may produce adverse effects, cause toxicity, or interact with conventional medicines. Moreover, in the majority of countries (with the notable exceptions of Germany, France, and Sweden) herbal products are marketed without proof of testing

for efficacy or safety. They are sold as food and dietary supplements under regulations for Current Good Manufacturing Practice, which ensures that they are produced under sanitary conditions but provides no guarantee of purity or efficacy.

Recent studies have reported that CAM have been used by up to 68.1% of ED presenters in Australia<sup>2</sup> and 24% of ED presenters in the USA.<sup>3</sup> Studies in New Zealand have looked at the prevalence of use in certain subgroups of patients<sup>4-7</sup> but none has looked at the use in ED presenters.

Therefore, this project was designed with the primary aim of assessing the prevalence of use of CAM (including use of traditional Māori treatments) among presenters to a tertiary hospital ED in New Zealand. Secondary aims were to determine if any patient subgroups are more likely to use CAM, and what types of CAM are used.

Additionally it was hoped to determine where people get their information about CAM from, where they purchase the products from, how many inform their medical practitioner of their use of CAM, how effective they believe the treatments are, and how many suffer adverse effects or toxicity.

## Method

The study was an analytical, cross-sectional convenience sample of all patients (regardless of their presenting complaint) and their relatives who presented to an ED. It was undertaken between December 2004 and January 2005 at Waikato Hospital in Hamilton, New Zealand. This is a tertiary referral and trauma centre, which sees approximately 49,000 presentations per year. The study was approved by the Waikato Ethics Committee.

The survey forms were self explanatory, anonymous, and required short written answers or a tick response to the questions. They were handed out to patients and their relatives either upon presentation to ED by clerical staff or the triage nurse, or at some point during their stay in the department by their primary nurse.

Children less than 14 years of age were excluded from the survey, although the parents of paediatric patients were asked to complete the survey for themselves. Any patients who either were too ill, had dementia, or could not read English well were also excluded.

Those patients who presented with a condition that needed emergent treatment were also initially excluded, but could be reconsidered later for participation once their condition had improved. The forms were available for distribution 24 hours a day for 7 days of the week. People who did not wish to participate in the survey were asked to tick the "No" box in the consent section, and return the form to their primary nurse.

Sample size calculation was difficult due to the paucity of systematic review of this topic in the literature in New Zealand. However, it was decided that a pilot sample of 1000 patients would be able to provide indicative results.

The questionnaire first collected data relating to the patient's age, sex, and ethnicity. It was subsequently divided into two parts. The first part enquired about the use of complementary and alternative medicines, which will be discussed here. The second part asked about the use of herbal party pills, and this information is the subject of a separate paper published in the April 2006 issue of *Emergency Medicine Australasia* (Vol. 18, Issue 2).

Most of the results are reported descriptively with 95% confidence intervals fitted around simple proportions. However, ordinal logistic regression was used to investigate the effect of age, sex, and ethnicity on the use of CAM. Frequency of use was used as the ordinal outcome variable, with age, sex, and ethnicity used as the explanatory variables.

Ordinal logistic regression was also used to investigate the relationship between the source of information about CAM (used as the ordinal outcome variable), and knowledge of the contents of the CAM and possible adverse effects (used as the explanatory variables).

## Results

During the period of the study, 5880 patients were seen in the Emergency Department at Waikato Hospital. Of these patients, a convenience sample of 1073 were invited to participate in the survey, and only 30 declined (thus a participation rate of 97.2%). The mean patient age was 40.6 years with a range of 14–97years.

616 of the responders (59%, CI 56.0–62.0) were female and 412 (39.5%, CI 36.6–42.5) were male (15 people, or 1.4%, did not state their sex). Table 1 below describes the ethnicity of the study sample.

**Table 1. Ethnicity or citizenship of respondents to the questionnaire (N=1043)**

Ethnicity	Number of people (n)	Percentage of people (95% CI)
New Zealand European	633	60.7% (57.5–63.6)
Māori	223	21.4% (19.0–24.0)
Other European †	52	5% (3.8–6.5)
“Other”	37	3.5% (2.6–4.9)
“Other” specified:		
Chinese	5	0.5% (0.2–1.2)
Samoaan	5	0.5% (0.2–1.2)
Fijian	4	0.4% (0.1–1.0)
Pacific Islander (island unspecified)	3	0.3% (0.06–0.9)
Cook Islander (island unspecified)	3	0.3% (0.06–0.9)
South African	3	0.3% (0.06–0.9)
African	2	0.2% (0.01–0.76)
Australian	2	0.2% (0.01–0.76)
Canadian	2	0.2% (0.01–0.76)
Indian	2	0.2% (0.01–0.76)
Niuean	1	0.1% (-0.04–0.6)
Rarotongan	1	0.1% (-0.04–0.6)
Tongan	1	0.1% (-0.04–0.6)
Sri Lankan	1	0.1% (-0.04–0.6)
“Other” not stated	2	0.2% (0.01–0.76)

†Europeans were distinguished from New Zealander Europeans in terms of their country of birth.

Since vitamin and mineral supplements are generally considered free of significant adverse effects when not taken in excess, people were asked not to give information regarding these products, and if information was given then it was not analysed. The data that was analysed, however, revealed that the use of CAM was common, with approximately one in three responders reporting CAM use.

Table 2 compares the sex and ethnicity of CAM users with non-users.

**Table 2. Comparison of sex and ethnicity of users and non-users of complementary and alternative medicines (CAM) [N=1043]**

<b>Demographic variable</b>	<b>Number surveyed</b>	<b>Number of CAM users (n=397)</b>	<b>% surveyed who were CAM users (95% CI)</b>	<b>Number of CAM non-users (n=646)</b>	<b>% surveyed who were CAM non-users (95% CI)</b>
<b>Sex</b>					
Female	616	295	47.9% (44.0–5	321	52.1% (48.2–56.0)
Male	412	97	23.5% (19.7–27.9)	315	76.5% (72.1–80.3)
Not stated	15	5	33.3% (15.1–58.5)	10	66.6% (41.5–84.9)
<b>Ethnicity</b>					
New Zealand European	633	245	38.7% (35.0–42.6)	388	61.3% (57.4–65.0)
Māori	223	75	33.9% (28–40.4)	148	50.1% (42.7–58.6)
Other European	52	25	48.1% (35.1–61.3)	27	51.9% (38.7–64.9)
Other	37	12	32.4% (19.6–48.7)	25	64.9% (48.7–78.2)
Not stated	98	40	40.8% (31.6–50.7)	58	59.2% (49.3–68.4)

Eighty-seven of the 397 people who had used CAM (21.9%, CI 18.1–26.3) reported use of only one course. 199 (50.1%, CI 45.2–55) reported occasional CAM use, whilst 70 (17.6%, CI 14.2–21.7) reported use on a regular basis. (Forty-one people didn't answer.)

There was strong evidence of an association of age ( $p < 0.0001$ ), sex ( $p < 0.001$ ), and ethnicity ( $p = 0.01$ ) with the use of CAM. Specifically, females were more likely to use CAM than males; Europeans (NZ- and Europe-born) were most likely (and those of "Other" ethnicity least likely) to use CAM; and those aged 20–60 years were more likely to use CAM than younger (<20 years) or older (>60 years) people.

Respondents reported the use of a total of 75 different types of CAM. Table 3 describes the 21 most commonly used treatments and/or their indication, excluding Māori therapies. Arnica was the most commonly used CAM (77 people or 19.4%), with Rescue Remedy and St John's wort next most used, respectively. Together these therapies were used by 38% of users (either alone or with other treatments). Many CAM were used by only a few people, and 23 were used by only 1 person. Five people (1.3%) considered marijuana to be a CAM.

**Table 3. The top 21 commonest complementary and alternative therapies (CAM) used by ED presenters to Waikato Hospital during December 2004 and January 2005 (excluding Māori therapies) [N=397]**

Name of CAM therapy	n	% people using therapy (95% CI)	General indications for use of therapy
Arnica	77	19.4% (15.8–23.6)	Assists natural healing of joints and soft tissues
Rescue Remedy	46	11.6% (8.8–15.1)	To reduce stress & promote relaxation
St Johns wort	28	7% (4.9–10)	Depression
Aloe Vera	12	3% (0.6–3.4)	Minor wounds/skin irritation. Constipation (laxative effect)
Aid with morning sickness or pregnancy	10	2.5% (1.3–4.7%)	Morning sickness or pregnancy
Aid with childbirth	9	2.3% (1.1–4.7%)	Childbirth
Joint treatment	9	2.3% (1.1–4.7%)	Osteoarthritis/other joint pain
Bee pollen	8	2% (0.9–4)	To increase energy & rejuvenate the body
Echinacea	8	2% (0.9–4)	To treat & prevent colds or flu
Aid to lactation	7	1.8% (0.8–3.7)	Breast feeding difficulties
Evening Primrose Oil	6	1.5% (0.6–3.4)	Premenstrual syndrome
Hay fever treatment	6	1.5% (0.6–3.4)	Hay fever
"Cleanser"	5	1.3% (0.5–3.0)	To improve general health
Marijuana	5	1.3% (0.5–3.0)	To achieve euphoria & relaxation
Treatment to increase immunity	5	1.3% (0.5–3.0)	During an acute illness or as a preventative
Treatment for menstrual pain	5	1.3% (0.5–3.0)	Menstrual related pain
Garlic	4	1.0% (0.3–2.7)	To treat & prevent coughs & flu
Treatment for insomnia	4	1.0% (0.3–2.7)	Difficulty sleeping
Cranberry	4	1.0% (0.3–2.7)	Treatment & prevention of urinary tract infections
Treatment for menopause	3	0.7% (0.2–2.3)	Depression, irritability & hot flushes associated with the menopause
Chinese herbal medicine	3	0.7% (0.2–2.3)	Assorted disorders

Of those who had used CAM, 29 (7.3%, CI 5.1–10.3) had used traditional Māori therapies. Of these, 24 people (82.8%, CI 64.8–92.7) were of Māori ethnicity, whilst 3 (10.3%, CI 2.9–27.4) were New Zealand Europeans. (The remaining 2 people didn't state their ethnicity).

The total number of Māori responding to the questionnaire was 223. Thus, in this population sample, 10.7% (CI 7.3–15.5) of Māori presenting to ED used traditional Māori therapies. The total number of Māori responders that had used CAM was 75. Of these, 17 (22.7%, CI 14.6–33.5) reported use of only traditional Māori therapies, whilst 7 (9.3%, CI 4.4–18.4) also reported use of non-Māori CAM.

Interestingly, more Māori used non-Māori CAM (51 or 68% of those reporting use, CI 56.7–77.4) than used traditional Māori therapies (29 or 13.1% of those reporting use, CI 9.2–18.1). The majority of people grew or collected the plants needed, and then made the Māori therapy themselves (15 people or 51.7%, CI 34.5–68.6).

Table 4 describes the different traditional Māori therapies used with their indication where known.

**Table 4. Types of traditional Māori treatment used by the ED presenters**

Name of Māori Treatment	Number using treatment	% (of those using Māori treatment) & 95% CI	Indications for use (with description of how the plant is used) if known
Kumaraho	12	41.4% (25.6–59.3)	General cleanser. (Leaves boiled to produce a tonic that's drunk and causes diarrhoea, which is believed to cleanse the body.)
Kawakawa	6	20.7% (9.6–38.9)	To help wound healing. (Hot water is poured over mature leaves to form a poultice. Initially the leaves are put vein side down on wounds to draw out exudate. When wound is dry, leaves are turned over to help healing. Leaves can also be boiled, strained, and the juice drunk as a cleanser.)
Rongoa†	3	10.3% (2.9–27.4)	
Dock leaves	2	6.9% (1–23.3)	To stop bleeding. (Leaves are heated over a flame, then squeezed over a wound so that the juice falls directly onto the wound.)
Harakeke§	1	3.4% (-0.7–18.9)	General cleanser. (The roots are boiled to produce a juice which is drunk and causes diarrhoea, believed to cleanse the body.)
Kohekohe	1	3.4% (-0.7–18.9)	
Manuka honey	1	3.4% (-0.7–18.9)	To help wound healing. (Placed directly onto wounds to help with healing.)
Ponga‡	1	3.4% (-0.7–18.9)	Elevated blood sugar level. (Hair & skin are removed from the black curl, which is then boiled. The mixture is then strained & the juice produced drunk to lower the blood sugar level. Primarily used by diabetics.)

†Rongoa is not a specific treatment but is the Māori word for all traditional medicines; ‡Only the Mamaku Ponga is used; §Harakeke is the Māori word for flax plant.

**Note:** Traditionally, plants must be blessed by a Māori elder before use, and the residue must be returned to the earth (buried) after use.

Seven main sources of CAM were reported. Most people (170 or 42.8%, CI 38.0–47.7) reported buying products from health shops. 118 (29.7%, CI 25.4–34.4) people reported buying products from a specialist in alternative therapy (such as a herbalist or homeopathist). Sixty-six people (16.6%, CI 13.3–20.6) reported buying products from a pharmacy, whilst 23 (5.8%, CI 3.9–8.6) reported growing and/or making the treatment themselves. Ten people (2.5%, CI 1.3–4.7) reported buying CAM from a supermarket. A small number reported using either a mail order company (5 or 1.3%, CI 0.5–3.0) or a company representative (four or 1%, CI 0.3–2.7) as their source. Seven people (1.8%, CI 0.8–3.7) reported a different, unspecified source to those above, and 120 (30.2%, CI 25.9–34.9) reported multiple sources.

Table 5 describes the origins of information about CAM that were reported. The commonest source reported was friends and family, followed by specialists in alternative medicine and shop assistants. Eighteen people (4.5%) reported receiving their information from their midwife.

**Table 5. Origin of information about complementary and alternative medicines (CAM)**

Source of information about CAM	Number of people	% of users of CAM (95% CI)
Friend	188	47.3% (42.5–52.3)
Specialist in CAM	141	35.5% (31.0–40.3)
Shop assistant	100	25.1% (21.2–29.7)
Advertisement	44	11.1% (8.3–14.6)
Packaging	33	8.3% (6.0–11.5)
Midwife	18	4.5% (2.8–7.1)
Own reading (Internet or books)	16	4.0% (2.5–6.5)
GP	11	2.8% (1.5–5)

Only 129 people (32.5%, CI 28.1–37.3) reported that they knew what the CAM they had used contained; hence 245 (61.7%, CI 56.8–66.4) reported that they did not know the contents (23 people didn't answer the question). There was no evidence that receiving information about CAM from a specialist in alternative therapy had any influence on the knowledge of the content of CAM ( $p=0.25$ ).

132 people (33.2%, CI 28.8–38.0) reported that they were aware that the use of CAM could be associated with adverse effects; hence 243 (61.2%, CI 56.3–65.9) were unaware of this at the time of use (16 didn't answer the question). There was no evidence that receiving information from a specialist in alternative therapy had an influence on the knowledge of possible adverse effects ( $p=0.48$ ).

Just over a quarter of users (103 or 25.9%, CI 21.9–30.5) reported that they were taking conventional medicines when they used CAM; hence 276 (69.5%, CI 64.8–73.8) reported that they weren't using conventional medicines at the same time (12 didn't answer the question).

Only 148 people (37.3%, CI 32.7–42.1) reported that they had told their medical practitioner of their use of CAM; hence 227 people (57.21%, CI 52.3–61.9) reported not telling them (16 didn't answer the question).

The majority of people (266 or 67%, CI 62.2–71.4) reported that CAM had helped them. Only 92 people (23.2%, CI 19.3–27.6) reported that CAM had been ineffective, whilst 12 (3.0%, CI 1.7–5.3) reported being unsure if there had been any benefit (21 didn't answer the question).

The majority of people (349 or 87.9%, CI 84.3–90.8) reported no adverse effects from CAM. Sixteen people (4.0%, CI 2.5–6.5) reported that they had suffered an adverse effect (26 didn't answer the question). The effects reported were generally non-specific and included abdominal pain, poor appetite, indigestion, constipation, diarrhoea, and skin rash. The two most serious reactions reported were serotonin syndrome (when paroxetine was prescribed to a person already taking St John's wort), and excessive post-surgical bleeding (in a patient taking *Ginkgo biloba* preoperatively).

Of those suffering an adverse effect, only one (6.2%, CI –0.6–30.6) person reported telling their general medical practitioner about it, whilst 6 (37.5%, CI 18.5–61.5) had not told them (9 did not answer the question). For both of the most serious cases, the diagnosis of an adverse effect from a CAM was made by the responders' medical practitioner.

## Discussion

This study demonstrates that the use of CAM is common in people presenting to EDs in New Zealand. This is consistent with reports from Australia<sup>2,8</sup> and the USA.<sup>3,9–11</sup> Use in this study was significantly more likely in females aged 20–60 years, and in those of European ethnicity. This sex and age bias is also consistent with previous studies.<sup>12–15</sup>

CAM were primarily used either for general health promotion, or for the treatment of minor complaints and chronic conditions. Arnica (used to treat soft tissue injuries), Rescue Remedy, and St John's wort (used to treat anxiety, stress, and depression) were the commonest CAM used. Comparison with the recent study by Taylor et al from Melbourne<sup>2</sup> reveals a similar prevalence of use of St John's wort (in this study 6.1%, and in theirs 4.5%). However, Arnica and Rescue Remedy do not feature in the top 26 CAM reported in the Melbourne study.

Not surprisingly, traditional Māori therapies were most likely to be used by Māori and the majority were homegrown/made. As with most CAM, Māori treatments are generally used for non-specific conditions. They primarily consist of poultices made from the leaves of plants, or tonics made from boiling part (s) of the fresh plant.

Many people reported obtaining information about CAM from multiple sources, but the commonest used was family and friends. The percentage for this source (47.3%, CI 42.5–52.3) was similar to findings in other studies in the USA (62.5%)<sup>16</sup> and Turkey (43.5% for family and 57.5% for friends).<sup>17</sup>

Additionally, the US study<sup>16</sup> reported a similar percentage of people receiving information from specialists in CAM (32.5% from herbalists and 27.5% from naturopaths, compared with the total percentage for all specialists in CAM of 35.5%

in this study.) However, in the US study,<sup>16</sup> more people cited the Internet as a source of information than in this study (25% compared with 4%).

In this study, 4.5% of people reported their midwife as a source of information about CAM. In all cases, as might be expected, this was information about therapies that could be used to help with morning sickness, child birth, and lactation. However, few people stated the name of the CAM used, with most only describing its indication.

There is little evidence available regarding the safety of CAM during pregnancy and lactation, and many would recommend avoidance of CAM during these times. However, a few studies have looked for evidence of adverse effects on the offspring, and beneficial effects in mothers suffering from nausea and vomiting of pregnancy (NVP), using vitamin B<sub>6</sub>,<sup>18,19</sup> multivitamins,<sup>20</sup> and ginger;<sup>21</sup> and these have been reassuring. In general, however, the use of CAM during pregnancy and lactation should be cautioned, since there is little evidence of safety.

The lack of knowledge of the contents of CAM, and the possibility of adverse effects from treatments revealed in this study, is perhaps not surprising—but it is concerning, particularly as over a quarter of users were concurrently using conventional medicines. The Slone Survey in the USA<sup>24</sup> also assessed this issue and found that 16% of prescription drug users also used CAM. In comparison, 25.9% of CAM users in our study were also using conventional medicines.

Reporting of the use of CAM to medical practitioners in this study was moderate and consistent with other studies.<sup>3,6,23–25</sup> Reported effectiveness of CAM was very high, and this is also consistent with other studies.<sup>2,6,17</sup> Several studies have directly compared the effects of CAM against placebo and/or conventional therapies and shown a beneficial effect.<sup>18–21,36–38</sup> However, rigorous evidence for the efficacy of many CAM is lacking, and some degree of placebo effect and/or variation in symptom intensity of chronic conditions with time may also influence the perceived effect.

Previous studies have looked at the incidence of adverse effects or toxicity associated with the use of CAM in ED presenters and our findings were very similar to those of Taylor et al.<sup>2</sup> Firstly the incidence of adverse effects was not high (4.0% here compared with 4.5% in their study), and secondly, most effects were non-specific. Additionally, during the relatively short period over which this study was conducted (7 weeks) there were no presentations to the Emergency Department with adverse effects associated with the use of CAM.

The two most serious adverse effects described were serotonin syndrome from the use of St John's wort in combination with paroxetine, and postoperative bleeding associated with the use of Ginkgo biloba. St John's wort (*Hypericum perforatum*) has been compared in studies both against placebo and against commonly used antidepressants.<sup>36–38</sup> It has been shown to be effective in mild to moderate depression and has relatively few adverse effects.<sup>36–41</sup> Though its exact mechanism of action remains unclear, it is thought to involve some inhibition of serotonin reuptake. Indeed, there have been at least three case reports in the literature of symptoms consistent with serotonin syndrome occurring in people taking St John's wort.<sup>42–44.</sup>

Two meta-analyses have suggested that *Ginkgo biloba* has a positive effect over placebo in the treatment of “cerebral insufficiency without dementia”<sup>45,46</sup> and a

systematic review of its use in the treatment of dementia has also shown a suggested a positive effect.<sup>47</sup> An increased risk of bleeding is a recognised association with the use of *Ginkgo*, and is thought to be caused by Ginkgolide B, which is a terpenoid that inhibits platelet activating factor. There have been several case reports of intracerebral bleeds associated with the use of *Ginkgo*,<sup>48-51</sup> one of bleeding into the eye,<sup>52</sup> and one of postoperative bleeding after a laparoscopic cholecystectomy.<sup>53</sup>

This study has several limitations. Firstly, it used a convenience sample, and it excluded the sickest patients and those who did not speak English. In the area of New Zealand where the study was conducted, very few patients would have been excluded because of poor English, and this is unlikely to have had a significant effect on the results. However, excluding the sickest patients may have underestimated the number of severe adverse effects or drug interactions associated with the use of CAM. Also, the survey was completed by patients and their relatives/friends. It may be that more relatives/friends completed the questionnaires than patients, again resulting in an underestimation of adverse effects and toxicity from CAM in ED patients. Another confounding factor is that the survey was retrospective, and thus may have been influenced by recall bias.

Finally, the survey did not ask specifically when the responders had used CAM, so it was not possible to determine how many had used CAM on the day of presentation. It would have been useful to ask this and also how many had used CAM within the past year.

Despite the limitations of this study, it can still be concluded that the use of CAM is common in people presenting to emergency departments in New Zealand. In addition, people's knowledge about possible adverse effects from CAM and/or interactions with conventional medicines is limited, and few people volunteer the information that they are using CAM to their regular medical practitioner. Therefore, doctors should routinely enquire specifically about the use of CAM in all patients presenting to the emergency department.

Additionally, doctors should also be aware that CAM may cause non-specific adverse effects, which might be the reason for presentation, and conventional medicines might interact with CAM, which must be considered before they prescribe any treatment. The incidence of such effects appears to be low, and therefore diagnosis may be difficult. Thus all emergency departments should have a source of information about CAM readily available, and in addition, teaching about CAM should be included in continuing medical education (CME) sessions.

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