

Complementary and alternative medicines versus prescription drugs: perceptions of emergency department patients

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Background: The perceptions of emergency department (ED) patients towards complementary and alternative medicines (CAM) are poorly understood. We assessed these perceptions and compared CAM users with non-users, particularly regarding CAM safety and efficacy.

Methods: This was an analytical, cross sectional survey of ED patients undertaken in a tertiary referral ED. A five point Likert scale evaluated patients' level of agreement with statements relating to CAM and prescription drugs.

Results: Of 404 patients who were enrolled (participation rate 97.1%), 275 (68.1%; 95% confidence interval (CI) 63.2 to 72.5) were CAM users (had taken a CAM within the previous 12 months). There were 178 patients (44.1%, 95% CI 39.2 to 49.1) who agreed or strongly agreed that CAM are drug free, and there was no significant difference between CAM users and non-users ($p=0.77$). There were 115 patients (28.5%, 95% CI 24.2 to 33.2) who agreed or strongly agreed that CAM are always safe to take with prescription drugs, and there were no significant difference between CAM users and non-users ($p=0.39$). Significantly more CAM users agreed or strongly agreed that CAM are safe to take, can prevent people from becoming ill, allow people to be in charge of their own health, can treat the mind, body, and spirit, and are more effective than prescription drugs ($p<0.01$). Significantly fewer CAM users agreed or strongly agreed that prescription drugs are safe to take ($p<0.001$).

Conclusion: Considerable proportions of ED patients are CAM users yet are ignorant of the nature and potential toxicities of CAM. In addition, CAM users have significantly different perceptions of CAM and prescription drugs from non-users. The impact of these perceptions on clinical practice needs evaluation.

Reports indicate that up to 68% of populations sampled have used one or more complementary and alternative medicines (CAM) within the previous 12 months.^{1–4} Although there are reports of CAM toxicity,^{2–7} most CAM users believe that these “natural” products are safe.^{8–9} Despite toxicity and a lack of efficacy data to support much of their use,¹⁰ CAM are well accepted, and their use is increasing.^{1–11}

Increasing CAM use may impact upon conventional emergency department (ED) practice. Patients may require management of CAM toxicity^{2–7} and there is the potential for interaction between CAM and drugs prescribed in both primary care and ED settings.^{6–12–15} Finally, individuals may use CAM for reasons of self empowerment,¹⁶ failure or distrust of conventional medicine,¹⁷ and a belief that CAM are safe^{1–6} and drug free.^{1–8–17} These perceptions may impact adversely upon ED management, especially with regard to patient compliance with conventional treatment regimens.

The extent to which CAM impact upon clinical practice is poorly understood. This study assessed the perceptions of ED patients regarding CAM and prescription drug use. It compared CAM users with non-users, particularly regarding the safety and efficacy of these agents. An understanding of such perceptions may result in improved patient management, especially with regard to patient compliance and the potential for CAM and drug interactions.

METHODS

This was an analytical, cross sectional survey of ED patients undertaken between February 2002 and March 2003 at the Royal Melbourne Hospital, Australia, a tertiary referral centre with approximately 46 000 patient presentations annually.

The study was authorised by the hospital's human research and ethics committee.

All patients aged 18 years or older were eligible for enrolment but were excluded if medically inappropriate (significant pain, major medical, surgical or psychiatric illness, major trauma) or unable to communicate adequately (language difficulties, sedation, dementia). Two investigators enrolled a convenience sample of patients between 0800 and 2200 hours, 7 days per week. Patient sampling was dependent upon the availability of the investigators. During enrolment periods, the investigators moved sequentially through ED cubicles and waiting areas, in a pre-determined manner.

Data was collected using a self administered questionnaire, specifically designed for the study, with content derived from focus groups comprising physicians and a clinical pharmacist, and from published research. Most questionnaire items were set out as a tick box, Likert scale format with five possible responses to a given statement that ranged from “strongly disagree” to “strongly agree”. Where possible, items were derived from previously validated questionnaires¹⁸ and research reports. The questionnaire was reviewed for face validity, trialled, and revised prior to use. English, Italian, Greek, Turkish, Arabic, Chinese, and Vietnamese versions were available. The data presented represents a subset of all information collected during the undertaking of a large CAM project.²

We adopted the CAM definition of “any product including herbal remedies, vitamin, mineral, and natural products that

Abbreviations: ED, emergency department; CAM, complementary and alternative medicines

Table 1 Subject demographics

Mean (SD) patient age, years	50.6 (20.0)
Men	220 (54.5) (49.5 to 59.4)
Born in Australia	239 (59.1) (54.2 to 64.0)
English preferred language	308 (76.4) (71.9 to 80.4)
Required translated questionnaire	27 (6.7) (4.5 to 9.7)
Used CAM in previous 12 months	275 (68.1) (63.2 to 72.5)
Used CAM in previous week	203 (50.2) (45.3 to 55.2)

Data are number (%) (95% CI) except for age.

may be purchased without a prescription at a health food store, supermarket or from alternative medicine magazines and catalogues for the purpose of self treatment⁸. Such products provided by alternative practitioners (such as Chinese herbalists) were also classified as CAM. We defined a CAM user as a patient who had taken at least one CAM product in the previous 12 months.²

Statistical analysis

A sample size of 400 was required to demonstrate a clinically significant difference in proportions of 15% between patient subgroups (level of significance 0.05, power 0.85). Proportions are reported with 95% confidence intervals (95% CI). The Mann-Whitney *U* test was used to compare ordinal responses of patient subgroups. SPSS for Windows software (version 11.5, SPSS Inc., Chicago, IL, USA) was used for all analyses.

RESULTS

Of 416 patients invited to participate, 404 were enrolled (participation rate 97.1%). Patient demographics are summarised in table 1 and detailed elsewhere.² Patients were mostly middle aged, Australian born, with English as their preferred language. Of the many CAM users, 138 (50.2%, 95% CI 44.1 to 56.2) were taking prescription medications at the time of presentation.

Table 2 describes CAM user and non-user perceptions of a range of statements regarding CAM and prescription drugs. For each statement, comparison of the distributions of the responses given (for example “agree” from CAM users versus “agree” from non-users) may be more clinically meaningful than the overall summary p value provided. There was a wide range of responses regarding whether or not CAM are drug free and but no significant difference between the patient groups.

Overall, CAM users perceived CAM more favourably than non-users. While the majority of all patients reported that CAM are safe to take, significantly more CAM users did so. Significantly more CAM users reported that CAM can prevent illness, can allow a person to be in charge of their health, and that CAM can treat the mind, body, and spirit.

CAM users generally perceived prescription drugs less favourably than non-users. Overall, significantly fewer CAM users reported that prescription drugs are safe. Furthermore, significantly more CAM users believed that prescription drugs treat only physical symptoms and ignore the mind and spirit.

There was a significant difference between the groups regarding the effectiveness of CAM compared to prescription drugs. However, the groups did not differ regarding the safety of taking CAM with prescription drugs.

DISCUSSION

CAM use is common and increasing.^{1 2 6 11 13 19 20} Indeed, half of our patients had taken a CAM in the previous week. While there are reports of CAM toxicity^{2 5-7} and interactions between CAM and prescription drug,^{6 12-14 21} our understanding of the perceptions of ED patients regarding these agents is less clear.

The reasons why the CAM users perceived CAM more favourably than prescription drugs are of interest. Only small numbers believed CAM to be more effective and that prescription drugs were unsafe. It is unlikely, therefore, that concerns related to the effectiveness or safety of prescription drugs were the main reasons for CAM use. Other reported

Table 2 Perceptions about CAM and prescription drug safety and efficacy

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	p
CAM are “drug free”						
CAM user	60 (21.8)	68 (24.7)	33 (12.0)	54 (19.6)	60 (21.8)	0.77
CAM non-user	14 (10.9)	36 (27.9)	35 (27.1)	28 (21.7)	16 (12.4)	
CAM are safe to take						
CAM user	107 (38.9)	98 (35.6)	51 (18.5)	14 (5.1)	5 (1.8)	<0.001
CAM non-user	19 (14.7)	47 (36.4)	46 (35.7)	13 (10.1)	4 (3.1)	
CAM can prevent people from becoming ill						
CAM user*	60 (21.8)	107 (38.9)	45 (16.4)	48 (17.5)	14 (5.1)	<0.01
CAM non-user	15 (11.6)	38 (29.5)	42 (32.6)	20 (15.5)	14 (10.9)	
CAM allow people to be in charge of their own health						
CAM user	67 (24.4)	92 (33.5)	51 (18.5)	49 (17.8)	16 (5.8)	<0.001
CAM non-user	14 (10.9)	39 (30.2)	35 (27.1)	23 (17.8)	18 (14.0)	
CAM treat the mind, body, and spirit						
CAM user	72 (26.2)	108 (39.3)	48 (17.5)	27 (9.8)	20 (7.3)	<0.001
CAM non-user	20 (15.5)	38 (29.5)	41 (31.8)	16 (12.4)	14 (10.9)	
Prescription drugs are safe to take						
CAM user	91 (33.1)	114 (41.5)	25 (9.1)	36 (13.1)	9 (3.3)	<0.001
CAM non-user	75 (58.1)	35 (27.1)	9 (7.0)	8 (6.2)	2 (1.6)	
Prescription drugs treat only physical complaints and ignore the mind and spirit						
CAM user	51 (18.5)	100 (36.4)	39 (14.2)	64 (23.3)	21 (7.6)	0.014
CAM non-user†	6 (4.7)	47 (36.4)	31 (24.0)	39 (30.2)	5 (3.9)	
CAM are more effective than prescription drugs						
CAM user	36 (13.1)	38 (13.8)	94 (34.2)	57 (20.7)	50 (18.2)	<0.001
CAM non-user	4 (3.1)	7 (5.4)	33 (25.6)	33 (25.6)	52 (40.3)	
CAM are always safe to take with prescription drugs						
CAM user	30 (10.9)	57 (20.7)	44 (16.0)	79 (28.7)	65 (23.6)	0.39
CAM non-user†	7 (5.4)	21 (16.3)	37 (28.7)	29 (22.5)	34 (26.4)	

CAM user n = 275, CAM non-user n = 129. *n = 274; †n = 128.

motivations for CAM use (CAM are “drug free”,¹⁷ “natural”^{6, 22} and “safe”¹⁶) are supported by our study.

Patients do not use CAM because they are dissatisfied with conventional medicine^{22, 23} and most use them concurrently.^{17, 23} Others report that CAM offer a holistic approach to health care, compatible with patients’ philosophical beliefs.^{23–25} This suggests that conventional medicine may be failing to fulfil some patients’ expectations of complete care plans. Our findings provide some evidence for this possibility.

Myers and Cheras⁷ stated that the concept of “naturalness” as a guarantee of harmlessness is both simplistic and untrue. It is of concern, therefore, that a considerable proportion of all patients in this study believed that CAM are drug free. This highlights an ignorance of the true nature of CAM that appears to be held by many ED patients. The finding that significantly more CAM users believed CAM to be more effective than prescription drugs has also been reported.^{17, 23} Although the proportion of users who agreed or strongly agreed that CAM are more effective was relatively small, this may represent a considerable proportion of all ED patients, especially if it impacts upon compliance. It is of concern that many patients believe it is safe to combine CAM and prescription drugs. This finding is consistent with the perceptions that CAM are drug free and safe and represents further ignorance of the true nature of CAM.

The study has limitations. Attempts to minimise selection bias included the sequential method of approaching patients and translated documentation. However, the sampling was under-representative of patients who presented “out of hours”, and the exclusion of seriously ill patients may have under-represented CAM users. Although considerable effort was taken in questionnaire development, we lacked a gold standard for its validation. Measurement bias may have been introduced when relatives or the investigators assisted some patients with questionnaire completion. As patients were asked to report CAM use in the previous 12 months, recall bias may have resulted in an underestimation of CAM use. Finally, enrolment at a single hospital may have limited external validity.

This study indicates that further work is required to investigate the implications of CAM use, especially the extent to which patients use CAM prior to their ED presentation. Such self treatment may affect the evaluation of presenting symptoms, especially if side effects are experienced, and may impact upon decision making if interactions between CAM and prescription and ED drugs are considered. The issue of compliance with ED treatment regimens should also be investigated.

Pending further research, we make several recommendations. Education initiatives are indicated to promote better awareness of the need to advise treating doctors of CAM use, and EDs could contribute through distribution of information leaflets and signage. We also recommend that medical practitioners incorporate a CAM history into their patient evaluations. Practitioner training may provide a better understanding of CAM use and more effective management of CAM users. Finally, practitioners should be supported with accurate CAM reference material in accessible formats (for example, online databases). However, this is not an easy undertaking, especially given that data on the effects of many

CAM are incomplete and the active ingredients of some CAM cannot always be identified.

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