

Use of complementary and alternative medicines by patients with chronic obstructive pulmonary disease

Johnson George, Lisa L Ioannides-Demos, Nick M Santamaria, David C M Kong and Kay Stewart

Complementary medicines, also known as “traditional” or “alternative” medicines, include vitamin, mineral, plant or herbal, naturopathic and homoeopathic preparations and some aromatherapy products.¹

Patients’ decisions to use or not to use any type of medication are influenced by their personal beliefs about the necessity to take the medication and their concerns about taking it.² Studies have shown that a person’s interest in complementary and alternative medicines (CAM) is determined by various psychosocial factors.^{3–5} Little research has been done on factors associated with CAM use among Australian patients, and there have been calls for research, mainly using qualitative approaches, to better understand CAM use.⁶

Users of CAM in Australia⁷ and other countries^{3,8,9} report chronic respiratory conditions as being among their leading health problems, but there is little confirmatory evidence to support the role of CAM in these ailments.¹⁰ Chronic obstructive pulmonary disease (COPD) is the fifth leading cause of global mortality¹¹ and accounts for more than 4% of all deaths in Australia.¹² In the Australian population, the prevalence of COPD is higher in males than in females (19.4 per 1000 v 13.0 per 1000), and older people (> 65 years) account for two-thirds of those reporting COPD as their main disabling condition.¹²

Among the various CAM preparations, only ginseng, used in combination with ongoing respiratory medications, has proven clinical efficacy in COPD.¹³ However, ginseng’s potential for interactions with common drugs — warfarin, digoxin, nifedipine, loop diuretics and monoamine oxidase inhibitors — overshadows its benefits.¹⁴

ABSTRACT

Objectives: To investigate complementary and alternative medicine (CAM) use by patients with chronic obstructive pulmonary disease (COPD) and to explore their beliefs about CAM.

Design and participants: Cross-sectional study of 173 patients with moderate to severe COPD, and indepth interviews with a purposive sample of 28 patients.

Setting: Ambulatory care.

Main outcome measures: Use of CAM; beliefs about the value of CAM.

Results: 71 patients (41%) claimed to be using some form of CAM. Most commonly used were multivitamins and minerals, and garlic was the most commonly used herbal preparation. Patients reported that advertisements and people with prior experience of using CAM were their major sources of information. Extent of knowledge about CAM, degree of faith in CAM and personal attitudes influenced decisions to try CAM. Patients used CAM to promote general wellbeing, to counteract drug side effects, to compensate for dietary deficiencies and to ameliorate their disease. Efficacy appeared less important to users than safety. CAM practitioners were regarded as more convincing, informative, considerate and available compared with mainstream health professionals.

Conclusions: Communication between patients and mainstream health professionals about CAM use could be improved by health professionals being more accepting of CAM use and having some basic knowledge about commonly used CAM preparations.

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We aimed to investigate current CAM use by patients with COPD and to explore their beliefs about CAM.

METHODS

Our study was nested within a randomised controlled trial (RCT) investigating the impact of a multidisciplinary community management program for patients with moderate to severe COPD (forced expiratory volume in 1 second [FEV₁] < 60% predicted). Subjects were enrolled in the RCT (*n* = 173), based on their lung function, from among patients admitted to a major tertiary-care hospital for an acute exacerbation of COPD in the preceding 2 years, and from

hospital and community-based voluntary databases of respiratory patients.

Cross-sectional study

During home visits, the pharmacists (L LI-D and JG) recorded baseline data on use of current prescription and non-prescription medications and CAM.

Although broader definitions of CAM exist,¹⁵ for the purposes of our study products listed in Schedule 14 of the Therapeutic Goods Regulations¹ were classified as CAM. Laxatives such as bisacodyl with senna, calcium supplements and vitamin D were not classified as CAM, because of their common clinical use in this patient group for preventing constipation and osteoporosis.

Interviews

The pharmacists (L LI-D and JG) selected a subsample of patients for indepth interviews during home visits. Selection to give a suitable casemix was based on disease status, medications and management. One of us (JG), a trained interviewer, conducted indepth interviews (30–100 minutes) with patients in their homes. Patients decided whether or not their spouses would be

Department of Pharmacy Practice, Faculty of Pharmacy, Monash University, Melbourne, VIC.

Johnson George, MPharm, PhD Scholar; David CM Kong, MPharm PhD, Lecturer; and Senior Pharmacist, The Alfred, Melbourne, VIC; Kay Stewart, BPharm(Hons), PhD, Senior Lecturer.

Ambulatory and Community Services, The Alfred, Melbourne, VIC.

Lisa L Ioannides-Demos, BPharm, PhD, Senior Research Scientist; and Research Fellow,

Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, VIC;

Nick M Santamaria, RN, PhD, Principal Research Scientist; and Associate Professor,

Faculty of Medicine, Dentistry, and Health Sciences, Monash University, Melbourne, VIC.

Reprints will not be available from the authors. Correspondence: Dr Kay Stewart, Department of Pharmacy Practice, Faculty of Pharmacy, Monash University, 381 Royal Parade, Parkville, Melbourne, VIC 3052. Kay.Stewart@vcp.monash.edu.au

included in the interviews. The interviewer explored patients' health beliefs, experiences and attitudes towards medications (including CAM), as well as their attitudes towards disease conditions, their management and health professionals, using an interview guide based on a literature review.

Interviews were audiotaped and transcribed verbatim. Two of us (JG and KS) listened to all tapes, and JG analysed all transcripts line-by-line for relevant content and themes using NVivo.¹⁶ The identified themes were verified by KS and discussed among all of us.

Ethics approval

Institutional ethics approval was obtained from The Alfred Human Research Ethics Committee and the Monash University Standing Committee on Ethics in Research Involving Humans, and the study participants provided written informed consent.

RESULTS

Cross-sectional study

The mean age (SD) of the 173 patients was 70.0 (9.6) years and 62.4% were men. CAM use was self-reported by 71 patients (41%), of whom 39 (55%) were men. They used from one to four different CAM preparations, with a mean (SD) of 1.7 (0.9) CAM preparations per user. The Box shows the types of CAM used.

The proportion of patients using vitamins/minerals and herbal/natural preparations was 23/65 (35% [95% CI, 23%–47%]) and 15/65 (23% [95% CI, 13%–33%]) among women, and 31/108 (29% [95% CI, 20%–38%]) and 15/108 (14% [95% CI, 7%–21%]) among men, respectively. The mean age (SD) of patients who used CAM (71.6 [8.5] years) was not significantly different from that of non-users.

Interviews

Of 30 patients approached for interview, two declined. The mean age (SD) of the interviewees (seven women; 21 men) was 70.1 (7.6) years. Five had never married, 15 were married, four were widowed and four

Use of complementary and alternative medicine by patients with chronic obstructive pulmonary disease (n = 71)

| Complementary and alternative medicine | Men (n = 39) | Women (n = 32) |
|--|-------------------|-------------------|
| Vitamin and mineral preparations | 31 (79%) | 23 (72%) |
| Multivitamins and minerals | 14 (36%) | 12 (38%) |
| Vitamin B or B complex | 6 (15%) | 3 (9%) |
| Vitamin C | 4 (10%) | 4 (12%) |
| Fish oils or omega 3 | 3 (8%) | 4 (12%) |
| Vitamin E | 2 (5%) | 5 (16%) |
| Antioxidants | 3 (8%) | 2 (6%) |
| Glucosamine/chondroitin | 3 (8%) | 2 (6%) |
| Magnesium compounds | 3 (8%) | 2 (6%) |
| Cod-liver | 2 (5%) | 2 (6%) |
| Others (eg, zinc, iron, chromium) | 7 (18%) | 3 (9%) |
| Herbal and natural preparations | 15 (38.5%) | 15 (46.9%) |
| Garlic | 2 (5%) | 1 (3%) |
| Saw palmetto | 2 (5%) | 0 |
| Evening primrose and combinations | 1 (3%) | 1 (3%) |
| Horseradish and combinations | 1 (3%) | 1 (3%) |
| Aloe and combinations | 0 | 2 (6%) |
| Ginkgo | 0 | 2 (6%) |
| Others (eg, acidophilus, avocado, capsicum, echinacea, ginger, kelp, peppermint, squill, valerian) | 9 (23%) | 9 (28%) |

As some patients were taking more than one CAM preparation, individual entries do not sum to the column totals. Also 17.9% of men and 18.8% of women were taking both vitamins/minerals and herbal/natural preparations.

divorced. Thirteen patients were living alone, two with family and 13 with spouses. All spoke fluent English. Multiple comorbidities were common among the interviewees, who were taking a mean (SD) of 9.57 (4.18) prescribed medications. Twelve patients self-reported using some form of CAM at the time of the interview.

Seven major themes relating to CAM use emerged from the interviews.

1. Sources of information

Advertisements in the media and friends or family members with prior experience of CAM or CAM practitioners were the major sources of information about CAM. Input from mainstream health professionals was meagre.

I just bought [CAM] listening to the wireless, and some health blokes get on and tell you how good they all are and I got out and bought them ... I'm a sucker. (Man, 78 years, taking three vitamin preparations and marine lipid extracts.)

Our son had tennis elbow and he went up to this [traditional Chinese medicine practitioner] and he cured his tennis elbow ... He suggested that we take dad up there and we've been going ever since. (Spouse of man, 77 years, uses herbal tea.)

[CAM users] must get to know about [CAM] independently of the medical profession, I think, because, going on my experience, no doctor has ever mentioned anything like that to me. (Woman, 60 years, not taking any CAM.)

2. Factors governing opinions about CAM

Knowledge, attitudes and degree of faith were found to influence patient decisions to try CAM. Patients who totally relied on mainstream health professionals for guidance were less likely to try CAM.

I've yet to know of anybody who [CAM] has helped. (Woman, 83 years, not taking any CAM.)

I only believe in ... 21st-century medical science; I don't want to know about health food shops and the [traditional Chinese medicine] and whatever. They are all question mark things ... No, I haven't tried any and I won't try any. (Man, 69 years, not taking

any CAM.)

Not unless I'm told to go on [CAM] or try it, no ... If [my GP] thought I would have to go on something else he would soon tell me. (Man, 67 years, not on any CAM.)

3. Facilitators for CAM use

CAM users described their mainstream health professional as being too busy and having little time to discuss their health issues. In contrast, CAM practitioners were described as informative, thorough, available for longer discussions and receptive towards other therapies, which motivated some patients to try CAM as well as their existing treatment. CAM information provided by practitioners with qualifications in both CAM and Western medicine was considered more credible. Success stories of others with similar or even different medical conditions could generate faith in a particular CAM preparation or a CAM practitioner and become the motivation for trying CAM.

[Traditional Chinese medicine practitioner] will sit down . . . and talk to you for half an hour and go through everything concerning your problem. He will sit and he will explain this and explain that . . . more so than even the local GP or specialist; he covers much more than even they do. (Male, 77 years, uses herbal tea.)

My daughter has Crohn's disease and she was advised by her specialist . . . he was also a naturopath . . . he suggested that she went on two fish oil [capsules] every day. She thought it was doing her good and I thought, well, it might do me good. (Woman, 77 years, taking fish oil capsules.)

4. Intentions behind CAM use

CAM was used by the study participants for several reasons: as a preventive measure, for general wellbeing, to counteract side effects of prescribed medications, to compensate for dietary deficiencies due to restrictions or dislike of certain foods, and to help alleviate their disease condition.

[Garlic] might stop him from getting infections and whatever; anyway [he's] been quite good this year. (Spouse of man, 77 years, taking garlic.)

I take a fantastic New Zealand herbal cough elixir . . . which is Manuka honey and a lot of natural things, which I think helps me . . . 'cause you get this hoarseness from all your steroid. (Woman, 69 years, taking many herbal and vitamin preparations.)

Listening to the "smart alec" on the wireless, telling you how good it is, how we lack it in our meals and stuff . . . that's the only reason why I did it. I thought . . . I might miss my meal, and then this would make up [for it]. (Man, 78 years, taking three vitamin preparations and marine lipid extract.)

5. Perceived safety of CAM

While patients taking CAM sometimes expressed doubt about the efficacy of CAM, they were confident that they did not pose any health risks due to their "naturalness".

I thought, oh well, fish oil, omega 3, and what I've read, I thought, well, it can't do me any harm, I'm not taking a chemical . . . nothing's ever come up in a blood test that it's doing me any harm, so I feel I'll benefit by them. (Woman, 77 years, taking fish oil capsules.)

6. Adherence

Use of CAM raised a two-dimensional adherence issue — adherence to CAM and adherence to existing drug therapy. Physical properties such as the large size of the

dosage form, unpleasant smell and taste were initial barriers to patients taking some CAM preparations. However, long-term adherence was determined by treatment response during the phase when the preparation was first tried, as well as perceived satisfaction. Reinforcement by CAM practitioners after the initiation of CAM was found to facilitate patients' decision to adhere to their existing drug therapy.

I'll spend the money but I won't take them . . . because I can't swallow the big tablets, all of these huge tablets. A lot of them won't squash down in that pill cutter. (Woman, 69 years, taking many herbal and vitamin preparations.)

I feel that a lot of these things are not worth the paper they are printed on; I might give them away. (Man, 78 years, taking three vitamin preparations and marine lipid extract.)

The [traditional Chinese medicine practitioner] . . . appreciates both sides and I said to him one day . . . "I'm taking your stuff now, what about . . .?". He said, "Don't stop any of your tablets. You keep taking what they've given you, and I'll give you this herbal medicine, but don't stop what they're giving you." (Man, 77 years, uses herbal tea.)

7. Information sharing with mainstream health professionals

The attitude of mainstream health professionals towards CAM and patients' relationship with their health professional influenced patients' decisions to discuss their CAM use with mainstream health professionals, especially during the initial phase of trying a CAM preparation. The reasons given by patients for not disclosing CAM use to their mainstream health professionals were anticipation of a negative response, belief that CAM use is a patient's own healthcare issue, and a perception that disclosure of CAM use is not relevant.

A lot of doctors don't believe in . . . Chinese stuff, to save any controversy or anything else, keep them apart . . . the right hand doesn't know what the left hand is doing; leave it at that. (Man, 77 years, uses herbal tea.)

DISCUSSION

This is the first Australian study to explore beliefs about CAM in a sample of chronically ill patients. We found that use of CAM preparations by patients with COPD was higher than in the general Australian population,⁷ but falls in the range of CAM usage reported among Australians with other chronic disease conditions.¹⁷⁻¹⁹ Our partici-

pants' age and sex distribution was representative of that of community-based COPD patients.¹²

That patients generally obtain information on CAM and CAM practitioners from advertisements and recommendations from friends or family with previous experience of CAM has been reported elsewhere.^{8,17,18,20} This reflects the lack of a reliable and unbiased source of information on CAM for the public. The report submitted to the Australian government by the Expert Committee on Complementary Medicines in the Health System²¹ might improve this situation.

Use of CAM in conjunction with, rather than as a replacement for, existing treatments is consistent with previous studies.^{3,4,18,20,22} Avoiding side effects was a major motivation behind CAM use, according to a community-based survey.⁸ Use of CAM for general wellbeing and to compensate for dietary deficiencies contrasts with usage reported in the 1999 National Health Survey,⁷ but matches the findings of a recent Australian study.¹⁸ Unlike other reports,^{4,5,8,20} dissatisfaction with or lack of effectiveness of conventional treatment and desire for greater autonomy were not mentioned as reasons for using CAM in our study.

Eagerness to experiment with different treatment options, including CAM, has been reported previously in patients suffering from incurable conditions.¹⁷ A belief in the safety of CAM because of its "naturalness" is known to appeal to patients.^{5,17,20} Patients with COPD often have multiple comorbidities²³ requiring complex medication regimens.²⁴ The ready availability of CAM from health food shops and supermarkets could jeopardise these patients' safety. For example, several CAM preparations used by patients in this study — vitamin E, avocado, coenzyme Q10, garlic, ginkgo, saw palmetto, omega-3/fish oil and ginger — are known to alter platelet aggregation.^{14,25,26} Changes in international normalised ratios (INR) in patients taking warfarin after initiation or cessation of a self-prescribed multivitamin supplement have been reported.²⁷ The potential for such adverse events is greater when patients do not disclose information relating to their intake of CAM preparations to their mainstream health professionals.

Mainstream healthcare providers are known to be less informed about the use of CAM preparations by their patients,^{5,17,22,28} and physicians' comfort level when discussing CAM with patients is known to be

poor.²⁹ Other studies have found similar reasons for patients not disclosing CAM use to their mainstream health professionals.^{5,28} Interestingly, difficulty communicating with medical practitioners and insufficient time were the least important reasons given.²⁸ The Expert Committee on Complementary Medicines in the Health System recommends that medical practitioners include questions (in a non-judgemental way) about use of CAM when taking a patient history, and include complementary medicines in adverse drug reaction reports.²¹

Our findings suggest that CAM practitioners are more receptive to conventional medicine than mainstream health professionals are towards CAM. Improved communication between CAM practitioners and mainstream health professionals could improve health professionals' knowledge of their patients' use of CAM.

Our study has several limitations. We relied on self-reporting by patients and indepth interviews for information on CAM use, and our findings were not verified against any objective measures. The study design does not allow our results to be generalised to COPD patients as a whole. The congruence of our findings with those in published reports on other patient populations substantiates our study's reliability; however, patients participating in clinical trials tend to be more health conscious and their views on health may not be representative of the general patient population.

Two out of five patients with moderate to severe COPD were found to use CAM preparations in conjunction with their existing treatments, mainly for general wellbeing. Unbiased information on the safety and efficacy of CAM for both health professionals and the public is warranted. Mainstream health professionals need to be more accepting of CAM use and possess basic knowledge about the commonly used CAM preparations. This might improve communication between patients and mainstream health professionals on CAM issues, in turn facilitating optimal treatment outcomes.

COMPETING INTERESTS

None identified.

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REFERENCES

- Complementary medicines information sheets: Therapeutic Goods Administration, 2003. Available at: www.tga.gov.au/docs/html/cmfact3.htm (accessed Jul 2004).
- Horne R, Weinman J. Patients' beliefs about prescribed medicines and their role in adherence to treatment in chronic physical illness. *J Psychosom Res* 1999; 47: 555-567.
- Astin JA. Why patients use alternative medicine: results of a national study. *JAMA* 1998; 279: 1548-1553.
- Sirois FM, Gick ML. An investigation of the health beliefs and motivations of complementary medicine clients. *Soc Sci Med* 2002; 55: 1025-1037.
- Wagner PJ, Jester D, LeClair B, et al. Taking the edge off: why patients choose St John's Wort. *J Fam Pract* 1999; 48: 615-619.
- Sibbritt D, Adams J, Easthope G, Young A. Complementary and alternative medicine (CAM) use among elderly Australian women who have cancer. *Support Care Cancer* 2003; 11: 548-550.
- Australian Bureau of Statistics. National Health Survey: use of medications, Australia. Canberra: ABS, 1999. (Catalogue No. 4377.0.) Available at: www.abs.gov.au/ausstats/abs@.nsf/0/bf60d2b59d518692ca2568a9001393d1?OpenDocument (accessed Jul 2004).
- Palinkas LA, Kabongo ML. The use of complementary and alternative medicine by primary care patients. A SURF*NET study. *J Fam Pract* 2000; 49: 1121-1130.
- Ong CK, Petersen S, Bodeker GC, Stewart-Brown S. Health status of people using complementary and alternative medical practitioner services in 4 English counties. *Am J Public Health* 2002; 92: 1653-1656.
- Pauwels RA, Buist AS, Calverley PM, et al. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. NHLBI/WHO Global Initiative for Chronic Obstructive Lung Disease (GOLD) workshop summary. *Am J Respir Crit Care Med* 2001; 163: 1256-1276.
- World Health Organization. World Health Report 2001. Geneva: WHO, 2001. Available at: www.who.int/whr2001/2001/main/en/index.htm (accessed Jul 2004).
- Australia's Health 2002. Canberra: Australian Institute of Health and Welfare, 2002; 493. Available at: www.aihw.gov.au/publications/aus/ah02/ (accessed Jul 2004).
- Gross D, Shenkman Z, Bleiberg B, et al. Ginseng improves pulmonary functions and exercise capacity in patients with COPD. *Monaldi Arch Chest Dis* 2002; 57: 242-246.
- Tatro DS, editor. Drug interaction facts: herbal supplements and food. St Louis, Mo: Facts and Comparisons, 2003.
- Zollman C, Vickers A. What is complementary medicine? *BMJ* 1999; 319: 693-696.
- NVivo [computer program], version 1.2. Melbourne: Qualitative Solutions and Research, 2000.
- Begbie SD, Kerestes ZL, Bell DR. Patterns of alternative medicine use by cancer patients. *Med J Aust* 1996; 165: 545-548.
- Alderman CP, Kieper B. Complementary medicine use by psychiatry patients of an Australian hospital. *Ann Pharmacother* 2003; 37: 1779-1784.
- Clifford RM, Batty KT, Davis W, Davis TME. Prevalence and predictors of complementary medicine usage in diabetes: Fremantle Diabetes Study. *Pharm Prac Res* 2003; 33: 260-264.
- Quattropani C, Ausfeld B, Straumann A, et al. Complementary alternative medicine in patients with inflammatory bowel disease: use and attitudes. *Scand J Gastroenterol* 2003; 38: 277-282.
- Expert Committee on Complementary Medicines in the Health System. Complementary medicines in the Australian health system, 2003; 165. Available at: www.tga.gov.au/docs/pdf/cmreport.pdf (accessed Jul 2004).
- Featherstone C, Godden D, Selvaraj S, et al. Characteristics associated with reported CAM use in patients attending six GP practices in the Tayside and Grampian regions of Scotland: a survey. *Complement Ther Med* 2003; 11: 168-176.
- Mapel DW, Picchi MA, Hurley JS, et al. Utilization in COPD: patient characteristics and diagnostic evaluation. *Chest* 2000; 117: 346S-353S.
- Dolce JJ, Crisp C, Manzella B, et al. Medication adherence patterns in chronic obstructive pulmonary disease. *Chest* 1991; 99: 837-841.
- Tatro DS, editor. Drug interaction facts. St Louis, Mo: Facts and Comparisons, 2003.
- Cheema P, El-Mefty O, Jazieh AR. Intraoperative haemorrhage associated with the use of extract of saw palmetto herb: a case report and review of literature. *J Intern Med* 2001; 250: 167-169.
- Kurnik D, Lubetsky A, Loebstein R, et al. Multivitamin supplements may affect warfarin anticoagulation in susceptible patients. *Ann Pharmacother* 2003; 37: 1603-1606.
- Adler SR, Fosket JR. Disclosing complementary and alternative medicine use in the medical encounter: a qualitative study in women with breast cancer. *J Fam Pract* 1999; 48: 453-458.
- Corbin Winslow L, Shapiro H. Physicians want education about complementary and alternative medicine to enhance communication with their patients. *Arch Intern Med* 2002; 162: 1176-1181.

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