The use of complementary and alternative medicine by individuals with features of metabolic syndrome

The use of complementary and alternative medicine (CAM) by individuals with features of Metabolic Syndrome (FeMS).

Rajadurai Akilen PhD[1]; Zeller pimlott MSc[1], Amalia Tsiami PhD[1] and Nicola Robinson PhD[2]

[1] Nutritional Sciences, Faculty of Health and Human Sciences, University of West London, UK.
[2] Faculty of Health and Social Care, London South Bank University, UK.

Corresponding Author:
Rajadurai Akilen PhD
Faculty of Health and Human Sciences,
University of West London,
Boston Manor Road, Brentford,
TW8 9GA, UK.
email: rakilen22@hotmail.com

Running Title:
Use of CAM supplements

Conflict of interest:
The authors declare that they have no conflict of interests

Word count = 1300 words

INTRODUCTION

Within the last decade there has been a dramatic increase in the sale and use of CAM especially herbal dietary supplements by individuals within the UK. Sales of herbal dietary supplements by individuals within the UK have been increasing (1). Use of CAM by the UK population can be attributed to several factors, including personal belief, increased media publicity and changes in public attitude (1, 2). However, there is a considerable debate around the definition of CAM and definitions varying over time (3). CAM can be defined as "any health improving technique outside of the mainstream of conventional medicine (3).

People, who use CAM, do so because they hold beliefs about health, treatment and illness which are congruent with CAM, have chronic health problems, and are disillusioned with the experience and outcomes from conventional medicine (4). Currently substantial numbers of people are turning to CAM. It is very popular, with recent population based estimates of yearly adult use in the UK of 20% to 28% (3). The prevalence of the CAM use in the general population in the USA increased from 34% in 1990 to 39% in 1997 (5) and remained stable from 1997 to 2002. In the UK, 46% of the population can be expected to use one or more CAM therapies in their life time (6). There is a remarkable interest in CAM remedies by diabetic patients for active engagement in health and disease self-management (3). The objective of this study is to determine whether individuals with self-reported FeMS were more likely to use different CAM therapies compared with individuals without FeMS. Furthermore, FeMS was defined as any individuals having at least one clinically diagnosed self-reported health condition of diabetes or hypertension or hyper-cholesterol or obesity.

MATERIALS AND METHODS

The study protocol was approved by the Faculty research ethics committee, University of West London (FREC31/Feb07). The participants in this study were 25 years or older and employed by University of West London, UK. A total of 300 individuals were randomly invited to participate in this study.

Participants were asked to complete a self-administered questionnaire on their socio demographic characteristics, lifestyle characteristics, perceived health status, and regular CAM use in the past 12 months.

Metabolic syndrome is a metabolic abnormality associated with dyslipidemia, hypertension, abdominal obesity, and Impaired Glucose Tolerance (IGT). The diagnosis of FeMS was defined as any individuals having at least one clinically diagnosed self-reported health condition of diabetes or hypertension or hyper-cholesterol or obesity. FeMS has been reported and defined in previous studies (7). Cross tabulation/Chi square statistics were used to compare individuals with FeMS to those without FeMS . All statistical analysis was performed using SPSS (version 15).

RESULTS

Of the 300 questionnaires administered, 192 individuals completed and returned the questionnaires (64% response rate). The majority (83%; n=159) were under 54 years and 65% were females (Table 1). Self-reported FeMS were; diabetes (n=10), hypertension (n=11), hyper cholesterolaemia (n=19) and obesity (n=39). Just over a quarter of individuals had at least one self-reported FeMS.

Among individuals with FeMS (n=54), approximately 68% (n=37) had only one self-reported health condition of either diabetes or hypertension or hyper cholesterol or obesity, while 24% (n=13) and 7% (n=4) had two and three or four self-reported conditions respectively. Over a third were currently using or had used CAM in the past 12 months (Table-1). The five most common CAM remedies used were nutritional supplements (87%; n=66), massage therapy (42%, n=32), acupuncture (26%, n=26), yoga (26%, n=20) aromatherapy (21%, n=16) and herbal supplements (21%, n=16) (Table-1). The average expenditure on CAM therapy per month was found to be £37.20 with a range of £5.00 to £75.00 per month. Table-1 shows that individuals with FeMS were more likely to use different CAM therapies,

such as nutritional and herbal supplements, aromatherapy and massage therapy ($P<0.05$) than those without FeMS. Furthermore, individuals with FeMS were significantly less likely to report or discuss the use of different CAM therapies with their General Practitioner (Table 1). Individuals with FeMS tended to be older; young individuals were less likely to have FeMS compared with older individuals ($P<0.01$) (data not shown). Individuals with higher education levels of university or postgraduate degrees were more likely to have FeMS compared with individuals with secondary school education ($P=0.027$) (data not shown). Gender, ethnicity and income status of the individuals did not show any significant associations with FeMS.

Table 1 – The relationship between intake of different CAM therapies and features of MS

CONCLUSION

There is considerable debate around the definition of CAM and what approaches it includes, such as home remedies, dietary and herbal supplements (3). Surveys conducted in various developed countries have shown that personnel use of dietary and herbal supplements is becoming widespread and increasingly popular (8, 9, 12). This was particularly true for the individuals with FeMS participating in this study (Table-1). One possible explanation for this is that individuals with FeMS may have had less success in treating their own health problems and their continued problems may have prompted them to seek CAM therapies. Other studies have also revealed that patients suffering from chronic diseases have a higher use of alternative therapies than those who do not have any chronic diseases (10). A recent survey conducted in Switzerland demonstrated that patients with type-1 diabetes were more likely to use CAM especially, herbal supplements to improve general wellbeing and ameliorate glucose homeostasis (11).

One of the important findings in this study was that individuals with FeMS were less likely to report the use of CAM to their General practitioners which could be due to; being worried about their doctors' response. People may be scared to report the use of various CAM therapies, as doctors may ask them to stop using CAM therapies because of their potentially adverse effects or interactions with regular

medications. However, interaction between CAM use and prescription medicine is possible and there are many reports in the literature of interactions, adverse effects and even fatalities associated with CAM use (13). Furthermore, Canter & Ernst (12) suggested that the concomitant use of several herbal supplements is poorly reported to doctors and may place older people at risk of negative herb-drug interaction. Therefore this issue needs to be addressed by educating the general public or patients to encourage discussion on the use of different CAM with their doctors (14). Therefore it would be more appropriate that health care providers and doctors acknowledge the use of CAM, and learn to discuss CAM use with their patients. There are some potential limitations to this study. Despite a good response rate of 64%, the small sample, purposive sampling of a university staff is a limitation and data cannot be generalised to the population. Recall of the use of CAM therapies in the past 12 months could cause potential bias as well as possible inaccuracies in the self-reporting or perceived of medical conditions (diabetes, hypertension, hyper-cholesterol and obesity), though previous studies have shown that self-reports are reliable tools (15).

In summary, individuals with FeMS were more likely to use different CAM therapies, especially nutritional and herbal supplements, aromatherapy and massage therapy than individuals without FeMS. This study provides preliminary data which points to the need for future studies on the use and safety of different CAM practices in people with FeMS. Healthcare professional should be conscious of the increasing number of patients using CAM remedies, and the use of CAM should be explored with patients before any clinical judgments made.

Acknowledgements:

This study was supported by grants from the University of West London. We Thank Dr Senan Devendra (consultant Endocrinologist) for technical assistants and continues support.

Conflict of interest and author contributions

The authors declare that they have no conflict of interests. R.A – designed the study and conducted the research, wrote the manuscript and performed data analysis; Z.P – reviewed and edited manuscript and contributed to discussion; N.R and A.T – reviewed and edited manuscript, contributed to discussion and data analysis. All authors critically reviewed the manuscript and agreed the final version submitted for publication.

REFERENCES:

1. Ritchie MR. Use of herbal supplements and nutritional supplements in the UK: what do we know about their pattern of usage? Proc Nutr Soc 66: 479-482, 2007.
2. Ernst E, White A. The BBC survey of complementary medicine use in the UK. Complementary therapies in Medicine 8: 32-36, 2000.
3. Lorenc A, Clarke YL, Robinson N, Blair M. How patients chose to use CAM- a systematic review of theoretical models. BMC Complementary and Alternative Medicine 9(9): 2009.
4. Hanssen B, Grimsgaard S, Launso L, Fonnebo V, Falkenberg T, Rasmussen NK. Use of complementary and alternative medicine in the Scandinavian countries. Scand J Prim Health Care 23(1): 57-62, 2005.
5. Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Rompay M, Kessler RC. Trends in alternative medicine use in the United States, 1990-1997. Results of a follow-up national survey. Journal of the American Medical Association 280: 1569-1575, 1998.
6. Thomas KJ, Nicholl JP, Coleman P. Use and expenditure on complementary medicine in England: a population based survey. Complementary Therapies in Medicine 9: 2-11, 2001.
7. Volek JS, Felmann RD: Carbohydrate restriction improves the features of metabolic syndrome, metabolic syndrome may be defined by the response to carbohydrate restriction. Nutrition and Metabolism 2: 3–8, 2005.
8. Block G, Jensen CD, Norkus EP, Dalvi TB, Wong LG, McManus JF, Hudes ML. Usage patterns, health, and nutritional status of long-term multiple dietary supplement users: a cross-sectional study. Nutrition Journal 6 (30): 2007.

9. Hori S, Iordan M, Joana CV, Malcolm M. Patterns of complementary and alternative medicine use amongst outpatients in Tokyo, Japan. Complementary and Alternative Medicine 8: 1-9, 2008.
10. Fleming S, Rabago DP, Mundt MP, Fleming MF. CAM therapies among primary care patients using opioid therapy for chronic pain. BMC Complement Altern Med 7(15): 2007.
11. Scheidegger UA, Fluck CE, Scheidegger K, Diem P, Mullis PE. Role of complementary medicine in type 1 diabetes mellitus in two Swiss centres. Praxix 98: 1001–1005, 2009.
12. Canter PH, Ernst E. Herbal supplement use by persons aged over 50 years in Britain: frequently used herbs, concomitant use of herbs, nutritional supplements and prescription drugs, rate of informing doctors and potential for negative interactions. Drugs Aging 21: 597-605, 2004.
13. Heck A, Dewitt B, Lukes A. Potential interactions between alternative therapies and warfarin. Am J Health-syst Pharm 57: 1221–1227, 2000.
14. Shakeel M, Trinidade A, McCluney N, Clive B. Complementary and alternative medicine in epistaxis: a point worth considering during the patient's history. Eur J Emerg Med: 2009.
15. Egede L, Ye X, Zheng D, Silversten MD: The prevalence and pattern of complementary and alternative medicine use in individuals with diabetes. Diabetes Care 25(2): 324–329, 2002.

Table 1 – The use of different CAM therapies by individuals with and without FeMS.

CAM Therapies	Respondents with Features of MS (n=54)		Respondent without Features of MS (n=138)		p
	n	%	n	%	
Acupuncture	4	7.4	22	15.9	0.089
Shiatsu	3	5.6	3	2.2	0.219
Chiropractic	5	9.3	5	3.6	0.114
Massage therapy	18	33.3	14	10.1	0.001*
Reflexology	4	7.4	11	8.0	0.581
Aromatherapy	8	14.8	8	5.8	0.045*
Meditation training	3	5.6	4	2.9	0.309
Yoga	8	14.8	12	8.7	0.162
Herbal supplements	9	17.0	7	5.0	0.017*
Dietary/nutritional supplements	34	63.0	32	23.1	0.001*
Naturopathy	1	1.9	1	0.7	0.484
Ayurveda medicine	1	1.9	2	1.4	0.631
Osteopathy	2	3.7	10	7.2	0.292
Homeopathy	3	5.6	6	4.3	0.488
Hypnosis	0	0.0	1	0.7	0.719
Traditional Chinese medicine	2	3.7	5	3.6	0.634
Use of CAM (n=192)					
currently or in the past 12 months	30	55.5	46	33.3	0.003[μ]
Discuss the use of CAM with GP (n=61) [β]					
Discussed with General Practitioner	4	16.0	18	50.0	0.006[a]
Use of one or more CAM therapies (n=76)					
Have used only CAM therapy	5	9.3	11	8.0	
Have used two CAM Therapies	11	20.4	16	11.6	
Have used three or more CAM therapies	14	25.9	19	13.8	0.033[‡]

Data presented as n (%); MS – metabolic syndrome, * P<0.05 shows that individuals with features of MS were more likely to use dietary or nutritional supplements (P=0.001), herbal supplements (P=0.017), massage therapy (P=0.001) and aromatherapy (P=0.045) than their counterparts without features of MS. [μ] P=0.003 shows that individuals with features of MS are more likely to use CAM therapies currently or in the past 12 months compared to persons without features of MS. [a] P=0.006 shows that individuals with features of MS were significantly less likely to report or discuss the use of CAM therapies with their General Practitioner or doctor. [‡] P=0.033 shows that individuals with features of MS were more likely to use 3 or more types of CAM than individuals without features of MS. [β] respondents with and without features of metabolic syndrome n=25 and n=36 respectively.