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Knowledge, attitude and practice (KAP) regarding complementary and alternative medicine to control of dyslipidemia and diabetes in the adult population.

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ABSTRACT

To estimate the knowledge, attitude and practice (KAP) regarding complementary and alternative medicine to control of dyslipidemia and diabetes in the adult population. Complementary and alternative medicine (CAM) is the group of medical and health care practices and products that are not generally considered to be part of conventional medicine. CAM remedies can be an important component of health self-management in diabetes and dyslipidemia. A cross sectional survey based study was carried out at a public health awareness program organized by Oman Medical College in primary health care. All adult >18 years consent to participate in the study were included. Statistical analysis was performed using SPSS (IBM SPSS Statistics 20.0). Data was expressed in frequencies and percentages and independent sample t-test was used. A total of 95 participants have filled the questionnaire, 71.6% were below 50 years and 58.9% were male. Self reported problems 55.8% were type II diabetes, 24.2% were hypertensive, 12.6% had known dyslipidemia and smoker. 45.3% were taking medications only 31.6% were having physical activity. Most commonly used herb was garlic 32.6%, black seed and cinnamon 24.2% 26.3% were using it to control diabetes. Nearly half of survey respondents believed CAM can help them achieve better control high cholesterol and diabetes (48.4%) and has fewer side effects (50.5%). An independent samples t-test revealed no statistical significant difference regarding knowledge of CAM between males and females. Lack of knowledge in heart disease in the public can appear in the form unhealthy behaviors. Furthermore its insight may help to transform the gaps in public knowledge which can be filled by increasing health educational programs on Heart disease and Life style modification strategies. Study participants had adequate knowledge regarding risk factors of heart disease however the knowledge about CAM used is not appropriate. There is a positive attitude in public towards CAM used in diabetes and dyslipidemia and most commonly used CAM garlic, black seed and cinnamon.

Keywords: complementary and alternative medicine, dyslipidemia, diabetes , general population, awareness, knowledge, perception

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INTRODUCTION

Complementary and alternative medicine (CAM), also known as nonconventional medicine, includes a wide range of health care practices (such as herbal medicine, acupuncture, yoga, meditation, and homeopathic medicine) that are not part of a health care system ¹. The popularity of CAM has dramatically increased in many developed countries since the 1990s. This could be attributed to the aging of population, prevalence of chronic diseases, and concern about the adverse reaction of chemical drugs. All these aspects have contributed greatly to the worldwide popularity of CAM ²⁻³.

Oman continues through the epidemiological transition and socioeconomic development, the burden of non-communicable diseases like cardiovascular diseases and diabetes are expected to increase in this region ⁴⁻⁵. Dyslipidemia is an independent preventable risk factor of coronary heart disease and has been shown to increase the risk of cardiovascular mortality. It is important to recognize the need for treatment of dyslipidemia and to start necessary therapies to reduce the risks of disease due to atherosclerosis ⁶⁻⁷.

Drugs used in dyslipidemia may cause adverse effects if used for longer duration. Therefore patients use CAM to reduce lipids without any major side effect. Studies have reported that CAM can be effective for a specific condition and they do not harm the patients. Chinese herb and its monomers or effective extracts during the past 10 years. The traditional Chinese medicine (TCM) has some beneficial effects on the treatment of patients with dyslipidemia and has less adverse effects as compared to chemical agents ⁸⁻⁹.

Daily consumption of the fruit extract of *Vaccinium arctostaphylos* significantly reduces the serum levels of total cholesterol, LDL-C, and triglyceride (TG) and oxidative stress in hyperlipidemic patients. Garlic (*allium Sativum*) has been used in herbal medicine for centuries for various diseases. In recent years garlic has been the focus of serious medical and clinical attention because of beneficial effects on several cardiovascular risk factors like reduction of serum lipids, blood pressure and plasma viscosity ¹⁰. The cardiovascular-protective effects of garlic have been evaluated extensively in recent years, a number of intervention studies have similarly shown that garlic significantly reduced plasma lipids, especially total cholesterol and Low Density Lipoprotein (LDL) cholesterol in humans. Herbal remedies, vitamins, spirituality, and exercise are common CAM therapies pursued by patients.

The use of CAM appears to be on the rise in all adult age groups, including the elderly population ¹¹. Patients and health care providers need to know which forms are safe and effective through unbiased scientific evaluation. Through the rigorous researches, the benefits

of CAM therapies will be highlighted, and this will help in integration of CAM into the mainstream medicine.

Diabetic dyslipidemia is an important cause of accelerated atherogenesis and cardiovascular diseases in patients with diabetes. A person's knowledge and attitude regarding the disease play an important role in the overall success of the treatment. CAM remedies can be an important component of health self-management, depending on the patient's financial resources, culture, and self-empowerment. The main purpose of this study was to estimate the knowledge, attitude and practice (KAP) regarding complementary and alternative medicine to control of dyslipidemia and diabetes in the adult population and to determine the influence demographic and socioeconomic factors on the level of KAP. The findings would be important for monitoring the consumption trends in relation to disease prevention and in comparison with other Arab countries.

MATERIALS AND METHOD

A cross sectional survey based study was carried out at a public health awareness program organized by Oman Medical College. More than 200 participants visited the events. All adult >18 years who gives consent to participate in the study were included.

Data Collection Tool/Survey Questionnaire

Data was collected using a structured self-filled questionnaire. Survey instrument was made after literature search reviewed by and agreed on via several brain storming sessions. Translation in Arabic version was performed by an expert coauthor. A structured questionnaire administered to obtain demographic and lifestyle characteristics including age, gender, education level (primary school; secondary school or above), occupation before retirement (professional; others), smoking status (nonsmoker; smoker). Self-reported health conditions such as the presence of hypertension, hyperlipidemia and diabetes were confirmed with medical records whenever.

The knowledge, attitudes, beliefs, and perceptions towards CAM were explored. Participants were asked whether they had used dietary supplements over the last year. Information on the then recorded for six categories of common dietary supplements, namely, multivitamins and minerals, vitamin C, vitamin E, fish oil, calcium.

Statistical Analysis

Statistical analysis was performed using SPSS (IBM SPSS Statistics 20.0). Data was expressed in frequencies for questionnaire responses calculated for all variables in numbers and percentages. Independent sample t-test was used to compare differences between two groups.

RESULTS AND DISCUSSION

A total of 95 patients were participated in the study in which 68 (71.6%) were aged below 50 years and 56 (58.9%) were male participants. Among the 95 participants, 75 (78.9%) were married and nearly half (47.3%) of the participant's had graduate or postgraduate qualification. About two third (72.6%) of the participants annual income were below 1000. Participant's sources of income were from teaching (11.6%), business (6.3%), private job (21.1%), retired (4.2%), student (12.6%), and housewife (24.2%) and from other sources (20%).

Table 1: General Characteristics of the Study Participants

	Frequencies	Percent
Age		
<50	68	71.6
50-60	22	23.2
60-70	4	4.2
>70	1	1.1
Gender		
Male	56	58.9
Female	39	41.1
Marital Status		
Single	18	18.9
Married	75	78.9
Divorced	2	2.1
Education		
None	18	18.9
Primary	7	7.4
Secondary	25	26.3
Graduate	33	34.7
Postgraduate	12	12.6
Monthly Income		
<1000	69	72.6
1000-3000	23	24.2
>3000	3	3.2
Occupation		
Teacher	11	11.6
Business	6	6.3
Private Job	20	21.1
Retired	4	4.2
Student	12	12.6
Housewife	23	24.2
Others	19	20.0

Patients were asked multiple questions regarding their comorbid diseases and life style activities. Their answers were labeled as yes and no. Figure 1 shows the patients responses in this regard.

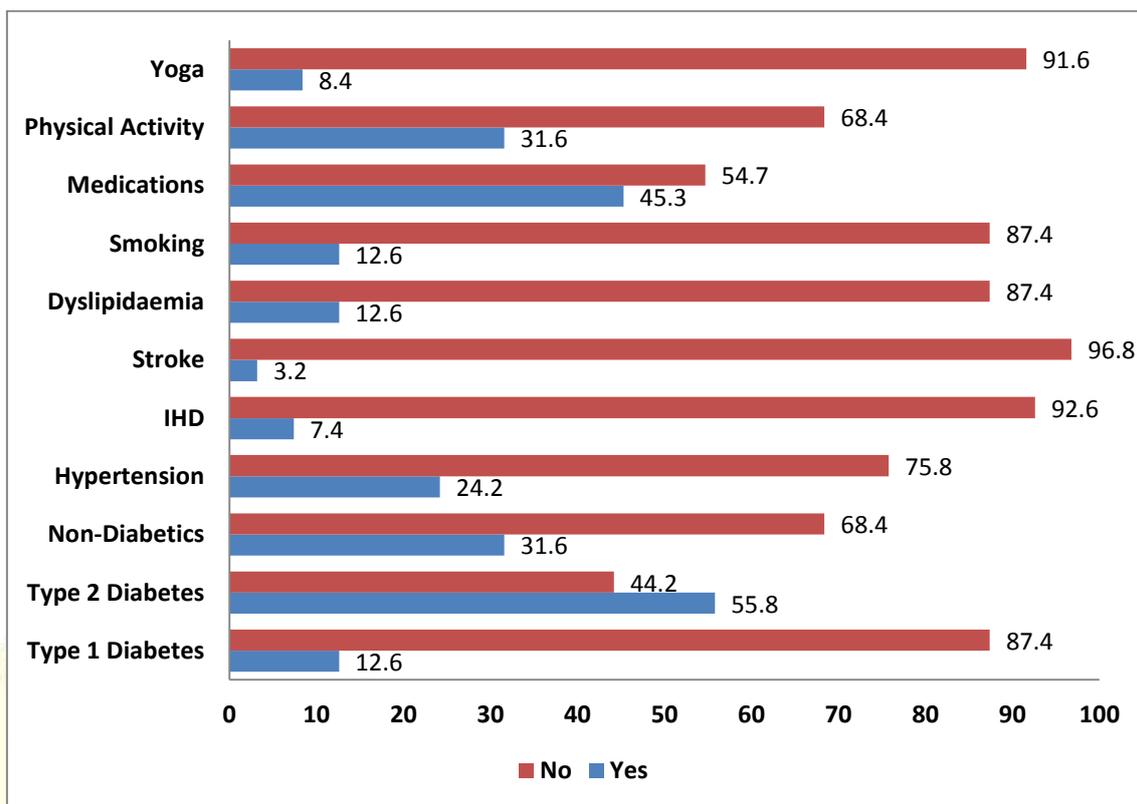


Figure 1: Underlying Comorbidities and lifestyle characteristics of the Study Participants

In this study, more than a two third (76.8%) of the participants does not consume red meat, 64.2% white meat and nearly one third (32.2%) does not have fish in their diet (Figure 2). More than half of the participants have vegetables (57.9%) and fruits (55.8%) in their meal. The majority of participants don't have a meal with fizzy drinks (85.3%), sweets (81.1) and fast food (86.3%).

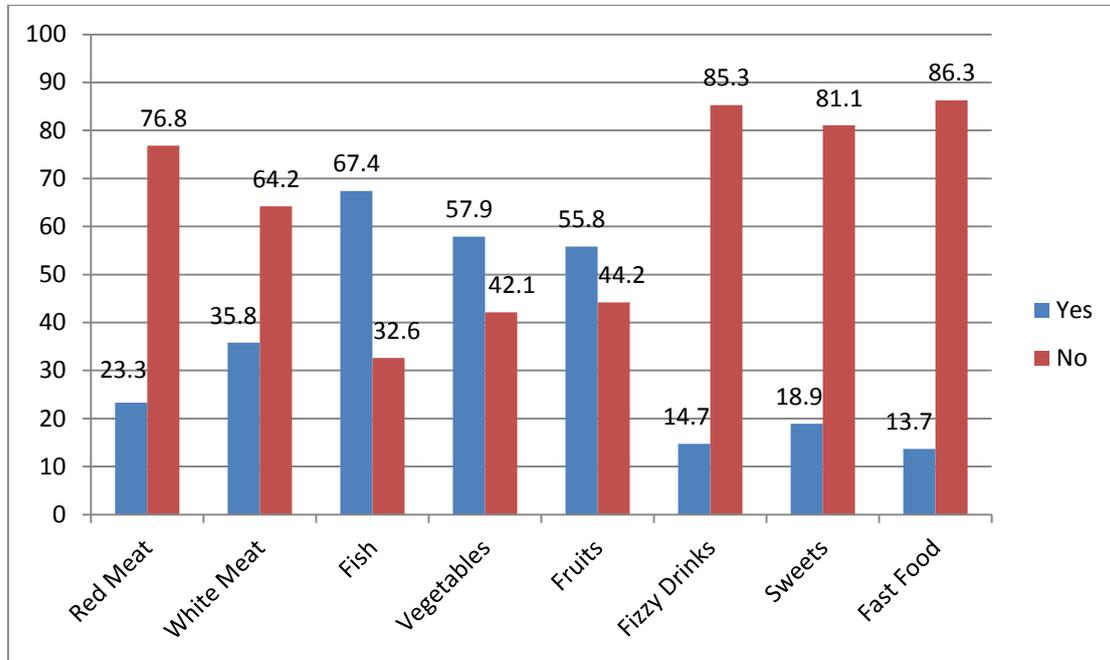


Figure 2: Diet Preferences of the Study Participants

In the questionnaire, patients were asked about their herbs and supplements intake using options of yes and no (Table 2). More than half (61.1%) of the participant does not utilize herbs. The most commonly used herbs were garlic (32.6%), black seeds (24.2%), ccinnamon (24.2%) and fenugreek (15.8%). On the other have nearly half (51.6%) of the participants make use of supplements in this study. Most commonly used supplements fish oil (15.8%), calcium (16.8%) and multivitamins (17.9%).

Table 2: Intake of Herbs and Supplements of the Study Participants-n(%)

	Yes	No
Herbs		
Black Seeds	23 (24.2)	72 (75.8)
Garlic	31 (32.6)	64 (67.4)
Chinese	5 (5.3)	90 (94.7)
Cinnamon	23 (24.2)	72 (75.8)
Fenugreek	15 (15.8)	80 (84.2)
Artichoke	2 (2.1)	93 (97.9)
Basil	9 (9.5)	86 (90.5)
Aloe Vera	1 (1.1)	94 (98.9)
Bitter gourd	7 (7.4)	88 (92.6)
Other Herbs	10 (10.5)	85 (89.5)
None	37 (38.9)	58 (61.1)
Supplements		
Fish Oil	15 (15.8)	80 (84.2)
Vitamin C	7 (7.4)	88 (92.6)
Vitamin E	8 (8.4)	87 (91.6)
Calcium	16 (16.8)	79 (83.2)
Multivitamin	17 (17.9)	78 (82.1)
Other Supplements	5 (5.3)	90 (94.7)
None	49 (51.6)	46 (48.4)

Patients were inquired about intention of supplements intake and their recommendations (Table 3). Nearly one fourth of respondents pursued supplements because they believed it will help them to achieve better control in diabetes (26.3%). This study found that most respondents learned about supplements intake primarily from friends (13.7%), family members (14.7%) and doctors (14.7%).

Table 3: Purpose of supplements intake and Recommendations-n(%)

	Yes	No
Purpose		
Diabetes	25 (26.3)	70 (73.7)
Hypertension	9 (9.5)	86 (90.5)
Osteoarthritis	0	95 (100)
Dyslipidaemia	4 (4.2)	91 (95.8)
Obesity	2 (2.1)	93 (97.9)
Headache	3 (3.2)	92 (96.8)
Menopause	1 (1.1)	94 (98.9)
Other	8 (8.4)	87 (91.6)
Motivation		
Friend	13 (13.7)	82 (86.3)
Family Member	14 (14.7)	81 (85.3)
Doctor	14 (14.7)	81 (85.3)
Electronic Media	6 (6.3)	89 (93.7)
Others	10 (10.5)	85 (89.5)

In the questionnaire, patients were asked regarding their knowledge and beliefs about dyslipidemia and CAM using options of yes, no and do not know. Agreement was highest (78.9%) for the statement suggesting that high cholesterol is a risk for heart attack and 71.6% were agreed about high fiber diet is effective to reduce cholesterol (Table 4). More than a half (57.9) suggested that LDL is a good cholesterol and high cholesterol increases risk of paralysis (51.6%). Nearly half of survey respondents believed CAM can help them achieve better control high cholesterol and diabetes (48.4%) and has fewer side effects (50.5%). No significant statistical difference was observed between male and female participants involving knowledge and perception regarding CAM ($p < 0.295$; 95 % CI – 6.28 – 1.92).

Table 4: Knowledge of Participants regarding Complementary and Alternative Medicine-n(%)

Statements	Yes	No	Don't Know
High cholesterol is a risk for heart attack	75 (78.9)	12 (12.6)	8 (8.4)
LDL is a good cholesterol	55 (57.9)	19 (20)	21 (22.1)
HDL is a protector for heart disease	36 (37.9)	19 (20)	40 (42.1)
Walking increases HDL	30 (31.6)	20 (21.1)	45 (47.4)
Reduction in LDL will reduce the risk of heart attack	41 (43.2)	15 (15.8)	39 (41.1)
High cholesterol increases risk of paralysis	49 (51.6)	22 (23.2)	24 (25.3)
Fast food has no effect on cholesterol	36 (37.9)	52 (54.7)	7 (7.4)
High fiber diet is effective to reduce cholesterol	68 (71.6)	12 (12.6)	15 (15.8)

Normal level of total cholesterol in blood is <5mmol	24 (25.3)	18 (18.9)	53 (55.8)
Normal HbA1C <7	29 (30.5)	26 (27.4)	40 (42.1)
CAM help achieve better control high cholesterol and diabetes	46 (48.4)	17 (17.9)	32 (33.7)
CAM is easily available	50 (52.6)	18 (18.9)	27 (28.4)
It has less side effects	48 (50.5)	24 (25.3)	23 (24.2)
Low cost	45 (47.4)	21 (22.1)	29 (30.5)
No prescription requires for CAM	45 (47.4)	31 (32.6)	19 (20)
Fish oil is good for health	71 (74.7)	09 (9.5)	15 (15.8)
Garlic reduces cholesterol	66 (69.5)	4 (4.2)	25 (26.3)
Fenugreek seeds has no effect on cholesterol	24 (25.3)	32 (33.7)	39 (41.1)
Black seed increases LDL	19 (20)	27 (28.4)	49 (51.6)
Chinese herbs has no effect on LDL	13 (13.7)	19 (20)	63 (66.3)
Cinnamon reduces blood sugar and cholesterol	44 (46.3)	14 (14.7)	37 (38.9)
Western medicines has side effect	49 (51.6)	18 (18.9)	28 (29.5)
My experience with CAM is good	37 (38.9)	33 (34.7)	25 (26.3)
I will recommend CAM to others	44 (46.3)	25 (26.3)	26 (27.4)
I take low fat diet	71 (74.7)	21 (22.1)	3 (3.2)
My physical activity is adequate	56 (58.9)	33 (34.7)	6 (6.3)
I adhere to all drugs given by my doctor	72 (75.8)	13 (13.7)	10 (10.5)
I adhere to my regular follow up and investigations	73 (76.8)	16 (16.8)	6 (6.3)

DISCUSSION

Complementary and alternative medicine (CAM) a "group of diverse medical and health care systems, practices, and products that are not generally considered to be part of conventional medicine." Complementary medicine is used with conventional medicine, whereas alternative medicine is used instead of conventional medicine¹². More than one-third of patients with diabetes in the United States use some type of complementary and alternative medicine (CAM). Herbs, dietary supplements, and mind-body medicine are the most commonly used and studied CAM modalities to treat diabetes¹³.

Most of our study participants had appropriate diet however; use of fruits and vegetable was not according to international guidelines. Nearly half of survey respondents in our study believed CAM can help them achieve better control high cholesterol and diabetes and has fewer side effects. One of the study reported that the prevalence of CAM use was high among diabetics¹⁴⁻¹⁵. Our study participants had positive attitude towards CAM, same result has shown in the literature, a high prevalence and increased public interest in CAM use in the Riyadh region participants had positive attitude towards CAM but they were reluctant to share and discuss CAM information with their physicians¹⁶⁻¹⁷.

In our study most commonly used herb was garlic, black seed and cinnamon to control diabetes. Several medicinal plants have been investigated for their beneficial effect in different type of diabetes. Other alternative therapies such as dietary supplements therapies less likely to have the side effects of conventional approaches for diabetes¹⁸⁻¹⁹. Our survey

respondents believed CAM can help them to promote good health . One study from Jordan confirmed that there is an appreciable prevalence of herbal use among patients with chronic kidney disease, dyslipidemia and hypertension in Jordan²⁰. Literature reports a high frequency of CAM use among diabetic patients, association and positive correlation was observed between the family history of CAM use and those diabetic patients who were using CAM²¹.

This study found that most respondents learned about supplements intake primarily from friends family members and doctors. Use of medicinal plants in communities knowledge starts in the home and is passed on to family members .One study has shown a high percentage of students agreed that CAM in combination with conventional therapy is beneficial in treating unusual cases, but the choice of CAM should be based on evidence²².

In our study most commonly used supplements are fish oil, calcium and multivitamins because they believed it will help them to achieve better control in diabetes .Literature reported that patients born in cities, having more education and longer duration of diabetes, at relatively young ages and living in large families were more likely to use CAM. CAM gives strengthening of body, improve psychological condition and symptomatic care²³.

In our study participants had positive attitude that CAM improve therapeutic outcomes, decrease or prevent complications from conventional medicine, and improve quality of life. Participants acknowledged that they may be ill-informed about the basic concepts or actions of CAM. This is imperative and urge that policymakers to create an environment that assists the public and health care providers in promoting safe and effective CAM practice²⁴.

CONCLUSION

Study participants had adequate knowledge regarding risk factors of heart disease however the knowledge about CAM used is not appropriate. There is a positive attitude in public towards CAM used in diabetes and dyslipidemia and most commonly used CAM garlic, black seed and cinnamon. Lack of knowledge in heart disease in the public can appear in the form unhealthy behaviors. Furthermore its insight may help to transform the gaps in public knowledge which can be filled by increasing health educational programs on Heart disease and Life style modification strategies.

STUDY LIMITATION:

This study is conducted in one region so the result cannot be generalized. Further research is required at different regions at different level with a larger sample size.

DISCLOSURE STATEMENT:

Authors declared no conflict of interest and no funding was received for this work.

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