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Knowledge, attitude and practice of medical students towards complementary and alternate medicine

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Complementary and alternative medicine has been an important part of Pakistani culture for a long time. Whilst it is widely practiced amongst the general population, this study aims to determine attitude and practices of medical students towards complementary and alternative medicine (CAM), and their willingness to learn about them and give advice to their patients about it in future. Cross sectional study was conducted using a self administered questionnaire on the medical students of a public and private sector medical college in Karachi. Students from all years of bachelor of medicine and bachelor of dental surgery (BDS) program were included and were approached using convenience sampling. The data was collected and analyzed using statistical package for social sciences (SPPS) version 21. The study included 246 students and showed they had a positive attitude regarding CAM. Only 18.3% respondents appeared not to be using any of the CAM modalities mentioned in the questionnaire. Participants were more inclined to opt for CAM for common ailments like headache flu rather than medical emergencies in which allopathic medicine was the first choice of treatment. Results showed willingness of 56.4% respondents to advice their patients about CAM in future. Regarding barriers pertaining to usage of CAM, the most important was the belief in the ineffectiveness of CAM (39.5%). Respondents in general believed in the effectiveness of CAM and showed willingness to be trained in various CAM modalities. Considering the widespread popularity of CAM methods amongst medical students, incorporating this in their curriculum could prove really helpful and may aid in better health care for patients in the future.

Key words: Complementary and alternative medicine, medical students.

INTRODUCTION

Complementary and alternative medicine (CAM) is the popular term for health and wellness therapies that have typically not been part of conventional medicine techniques. CAM focuses on the physical, emotional, mental and spiritual health of a person. It is an alternative form of healing used by patients widely in Asian countries like China, Japan, India and Pakistan (WHO Fact Sheets, 2007)[1]. The usage of CAM has also increased considerably in the past 10 years by the general population of western countries (Harris et al., 2006). In

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United States, the use of CAM increased from 34 to 42% within 7 years. CAM therapies were used by 20 to 50% of the population in European countries and 52% population in Australia (Yeo et al., 2005). The reason behind the popularity of CAM can be dissatisfaction with conventional health care system or expensive treatments provided by it (Astin, 1998). Alternative medicine is often coincidental with patients beliefs about health and illness (Astin, 1998; Cowen and Cyr, 2015). Patients seek alternative therapies because they see them as less authoritarian and more empowering. CAM offers people more control over their health care decisions. However the statistics on the prevalence of CAM use in the general population of Pakistan is not available.

Many surveys done previously indicate that medical students are interested to know more about CAM however their courses do not provide sufficient amount of information on techniques and methods used in it. A survey held in Singapore in 2005 states that 91% of medical students believe that CAM could play an important role in their future practice (Yeo et al., 2005). The major reason for not including CAM in medical courses can be the lack of education, training, regulation and the evidence base for CAM practioners (Shaikh and Hatcher, 2005).

In most countries, doctors are at the forefront of patient interactions and provide information and guidance to patients about safe and effective use of all medicine. However doctors usually regard their knowledge of CAM as being inadequate and they are not confident in answering many patients' inquiries (Levine et al., 2003). Proper education of CAM would prepare physicians to ask patient information about the current use of CAM. Knowledge of CAM will help physicians to respond more effectively to the patient's inquiries. A study held in Pakistan in 2007 reveals that about 51.5% students voted in favour of introducing CAM in medical education and 35.4% rejected the proposition (Kashif et al., 2007).

Studies have been carried out in many countries to determine the knowledge and attitude of medical students concerning CAM.

Majority of medical students welcomed the addition of CAM in their curriculum (Hussain et al., 2012). The research into the use of CAM is based on small scale studies in Pakistan that focuses on prevalence of use among medical students, cancer patients and other special patient population[10]. The present study was conducted for assessing the knowledge, attitude and behaviour of medical students in public and private sector universities of Karachi, Pakistan about complementary and alternative medicine.

METHODOLOGY

This was a cross sectional study conducted at public and private sector medical colleges in Karachi. Both colleges offer a five year medical education program leading to 'Bachelor of medicine and Bachelor of surgery (MBBS) and a four year program leading to Bachelor of dentistry (BDS). The curriculum of these courses does not include any knowledge on CAM.

Students, from both courses were included irrespective of their class size, and convenience sampling was used to collect data. All consenting students were interviewed using the self administered English questionnaire. The time period for data collection was two months (January 2018 to March 2018). Keeping the expected frequency of all variables at 50%, the desirable sample size using a 95% confidence interval came out to be 379. The survey tool was approved by research department of Dow University of health sciences

The development of the questionnaire was based on the review of previous publications and was pre tested on 15 students who were later excluded from the study. After the pilot run, questionnaires were distributed to the larger population to collect the data. Apart from the demographic questions, the questionnaire comprises of 12 multiple choice questions relating to the knowledge, attitude and practices of medical students about CAM. The first part of the questionnaire dealt with the CAM methods most commonly sought by people, their frequency of usage and illnesses for which they were commonly preferred. The second part was based to assess the knowledge of students on 9 different CAM modalities. It was a yes/no question based on whether they knew about those CAM methods, believed in their effectiveness, wanted education in and if they would recommend it to their patients in future .The third part of questionnaire was on barriers pertaining to use of CAM on a professional level.

Data from questionnaires was entered and assessed using statistical package for social sciences (SPSS) version 21.0. Comparison was done to check intergender differences in the usage of CAM and its preference amongst students of different years. Variables frequency and percentages were calculated. Associations were determined using Chi-square test and P-value < 0.05 was considered significant. Tables and graphs were included to display the results

RESULTS

In total, 246 questionnaires were filled with a response rate of 92% .The study population included 145 students (58.9%) from MBBS and 82 (33.3%) from BDS with 19 (7.7%) people failing to mention their course of study. The total number of males and females were 81 and 164 respectively. Students from all years were included with 23 (9.3%), 75 (30.5%), 88 (35.8%), 34 (13.8%) and 26 (10.6%) being in the first, second, third, fourth and final years of their respective programs. The mean age of students was 21.06±1.79 years. Out of 246 respondents, only 45 (18.3%) reported no to be using any of the CAM modalities mentioned in the questionnaire.

Respondents had different reasons for opting for CAM rather than traditional allopathic medicine with the most common reason being family practices 102 (42.3%), past experiences 66 (27.4%), religious or spiritual beliefs 17 (7.1%) whilst 61 (23.2%) respondents did not specify a reason for their preference of CAM.

When asked which system of alternative medicine do students commonly opt for, variable responses were recorded with home remedies being the most popular choice 128 (52%), prayers 63 (25.6%), homeopathic 48 (19.5%) and herbal treatment being the least popular

Table 1. Difference in the usage of CAM.

Variable	Public sector		Private sector		P value
Homeopathic					
Yes	19	17.9	29	20.7	0.58
No	87	82.1	111	79.3	
Home remedies					
Yes	59	55.7	70	50.0	0.37
No	47	44.3	70	50.0	
Prayer					
Yes	43	40.6	21	15.0	0.000*
No	63	59.4	119	85.0	
Herbal treatment					
Yes	18	17.0	20	14.3	0.56
No	88	83.0	120	85.7	

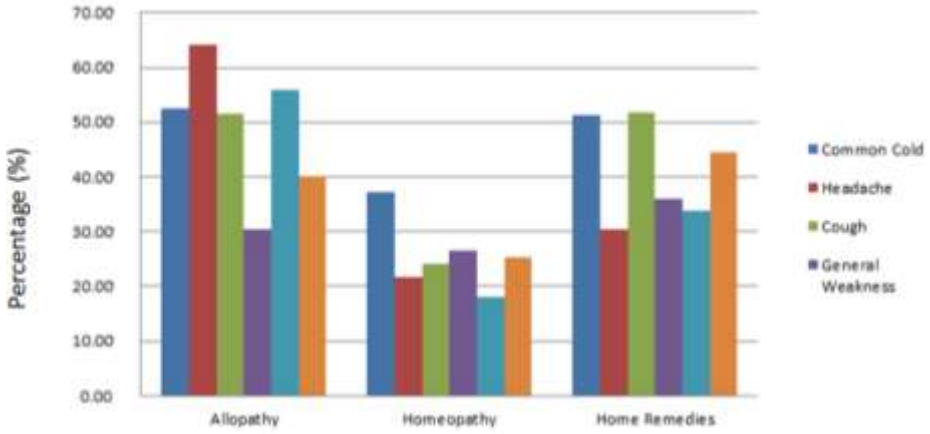

Figure 1. Preference of treatment for common ailments.

one 38 (15.4%). The only CAM modality in which intergender difference was significant was in the usage of home remedies (p=0.047).

Among public and private sector colleges, the difference for the usage of CAM was significant only for prayers (p=0.000) and not for any other CAM modality as shown in Table 1. Common ailments in the questionnaire include cold, headache, cough, general weakness, acidity and constipation. Figure 1 illustrates the preference of the participants for the treatment of these common ailments with either allopathic (traditional medicine), homeopathy (complementary medicine that makes use of natural substances in minute amounts to treat various ailments) or home remedies.

The results showed greater faith of all cohorts in CAM modalities for the treatment of various common ailments rather than using them at times of emergency like severe chest pain, choking, profuse bleeding etc. CAM was the first choice of treatment for 47.7% students suffering from common ailments whereas in cases of medical emergencies 69% said they would opt for allopathic medicine followed by home remedies (16.7%). The use of spiritual methods, herbal medicines and other CAM modalities was not a popular choice in emergency situations and was pursued by 14.3% of the respondents only. As the study was on medical practitioners, the relevance of taking CAM history from patients was also asked. Majority of the respondents (68%) answered in affirmative while only 13.9% medical students believed it to be unnecessary. There were no significant differences in the usage of CAM amongst the pre clinical (1st and 2nd year students) and clinical ones (3rd, 4th and 5th

Table 2. Significant differences in the usage of CAM amongst the pre-clinical and clinical ones.

Variable	Pre-clinical		Clinical		P value
Homeopathic					
Yes	20	20.4	28	18.9	0.773
No	78	79.6	120	81.1	
Home remedies					
Yes	47	48.0	82	55.4	0.252
No	51	52.0	66	44.6	
Prayer					
Yes	21	21.4	43	29.1	0.182
No	77	78.6	105	70.9	
Herbal treatment					
Yes	10	10.2	28	18.9	0.064
No	88	89.8	120	81.1	

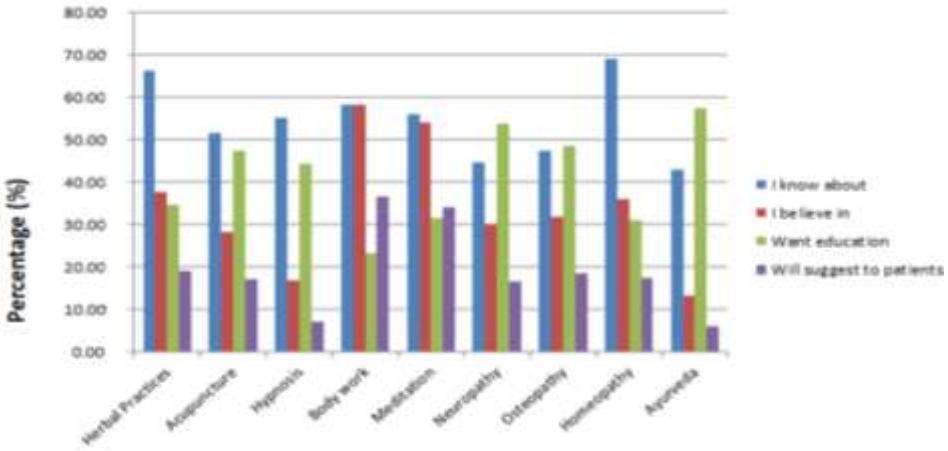

Figure 2. % distribution of answers to questions given by participants who knew about alternate medicine methods.

year students) as shown in Table 2.

Overall (60%), students believed that CAM usage could be benefitted from better when coupled to conventional allopathic medicine and the exclusive use of CAM modalities was quite rare (13.6%). For future reference, 56.4% of the respondents agreed to give advice to their patients about CAM although there was a difference in opinion of males and females regarding this. Females were more inclined to do so (67.1%) while 32.9% of males agreed to it.

Figure 2 shows distribution of opinions on the knowledge of various CAM modalities among students, their willingness to be trained in these methods, and future likelihood of recommending them to their patients. The most commonly known CAM modalities were found to be homeopathy (69.2%), herbal practices (66.2%) and body work (58.2%).

Barriers towards CAM

When asked about the barriers pertaining to use of CAM, the most important perceived barrier was the belief of ineffectiveness of CAM (39.5%). Also important was the fear of liability and distrust of CAM (23.1%). Other important barriers were lack of certified professionals (18.5%), profit motives of medical practitioners (10.5%) and philosophical differences between CAM and conventional practices (8.4%).

General attitude toward CAM

Despite large use of CAM modalities by respondents, there was a general belief amongst them regarding CAM having low status within modern medicine (74%). As

Table 3. General attitude of people towards CAM.

Variable	Agree (%)	Disagree (%)	Other (%)
CAM has low status within medicine	74	18	8.5
Patients on CAM hardly get better	15	58.1	27
CAM should be taught in medical schools	51	23.2	26
CAM is fairly unscientific	29	41.1	31
CAM is only effective in treating minor illnesses	59	15.4	26
A doctor should know CAM methods	73	13.4	14
CAM is important part of my culture	61	13.8	25
CAM is more effective than traditional medicine	47	25.2	28
CAM is important part of my professionalism	26	46.7	27
Results of CAM are due to placebo effect	30	19.5	50

medical practitioners, respondents believed that CAM has been an important part of their culture (61%) and that it should be incorporated in medical school's curriculum (51%). Students believing in ineffectiveness of CAM to improve patient's health were a small minority (15%). The results for general attitude of people toward CAM are shown in Table 3.

DISCUSSION

Despite the increasing popularity of allopathic healthcare system, it appears that CAM would serve to be an integral part of the health care for most of the population in Pakistan. It is essential to conduct similar studies in Pakistan that aims to bridge the gaps in the general attitudes/ perceptions of a medical student towards CAM. The study survey evaluates the knowledge, attitude and overall practices towards CAM among the medical and dental students studying in various medical colleges of Karachi, Pakistan.

The study revealed that home remedies were the most popularly used CAM modality (52%) while herbal treatment was the least popular among our survey population (19.5%). However, another study conducted on pharmacy students of Pakistan suggested massage therapy (83%) and herbal treatment (58%) as two of the majorly used CAM modalities[9]. This difference in opinions could possibly be due to the difference in the impacts of the curriculums of these two distinctive courses, namely MBBS and D. Pharm.

Majority (67%) of the medical students believed that it was relevant to take CAM history from the patients they shall be treating while 60% of the population agreed to CAM being more beneficial when compared to conventional allopathic medicine, this has been supported by another study conducted at AKU, where 76.3% of the students agreed to the fact that CAM should be used in conjunction with the conventional medicine (Kashif et al., 2007).

Majority of the students identified family practices as the main factor which influenced their attitude towards CAM followed by past experiences as the second most popular factor. This implies that recommendations by family and friends as well as personal experiences are the major driving forces for the positive attitude towards CAM. Surprisingly, only 7.1% of the students stated religious and spiritual beliefs as the leading factor influencing their attitude towards CAM. This contrasts with a study conducted among the medical students of Singapore where half of the student believed that their religious and spiritual beliefs affected their attitude towards CAM (Virginia and Vicki, 2015).

Regarding various CAM modalities, the most widely known were homeopathy and herbal practices with 69.20 and 66.20% claiming to know about them, respectively. This is probably due to the relatively higher use of these two modalities in Pakistani households. This study shows that there is still a considerable number of students who are not aware about the various other CAM modalities specially ayurveda, neuropathy and osteopathy. Additionally, more students wanted education in the fields implying that there is need to include CAM in the medical curriculum in Pakistan. This however is in sharp contrast to a study conducted among pharmacy students in Pakistan in which 85% of the students disagreed to including CAM courses in their curriculum (Shahzad et al., 2012). Furthermore, the study results show that the students' overall belief in CAM was very low, except in Body Work and Meditation in which 58.20 and 54.20% students claimed to believe in it, respectively. This overall lack of belief in CAM was reflected in the students' unwillingness to suggest CAM modalities to patients in future.

In relation to the barriers against the use of CAM, majority of the students (39.5%) believed that the belief of ineffectiveness of CAM was the major barrier. This can be considered synonymous to the previous literature where lack of scientific evidence is cited as the major barrier to the use of CAM (Harris et al., 2006; Cowen and Cyr, 2015; Hussain et al., 2012) 23.10% believed fear of liability and distrust towards CAM as the major barrier

which again corresponds to the lack of scientific evidence. Only 18.5% students believed that the lack of certified professionals of CAM was the most significant barrier. This implies that merely increasing the number certified professionals of CAM might not overcome the barriers to CAM use unless appropriate research is carried out for the specific CAM modalities, and scientific evidence favoring their use is provided.

Regarding the general attitude towards CAM, the students strongly agreed that CAM has low status in medicine. This can be attributed to the lack of knowledge about CAM in the medical curriculum. Students strongly disagreed to the statement that patients do not get better with CAM treatment which indicates that the students do consider CAM as an effective form of treatment. 51% of the students agreed that CAM should be taught in the medical school which is in accordance with another study conducted upon the medical students in Pakistan earlier (Kashif et al., 2007). There were mixed opinions on CAM being scientific with a slightly greater percentage of respondents considering it as scientific as those who didn't. There was a strong agreement that CAM is only effective for treating minor illnesses. This could be due to personal experiences because people mostly use CAM for minor illnesses and few people use it for major illnesses as there is a lack of scientific data.

A large majority of respondents agreed that a medical practitioner should know about CAM methods which could be explained by the agreement of the considerable majority as CAM being a part of their culture. However, at the same time, most of the students disagreed to CAM being part of the medical profession. This may indicate that students consider it as an additional knowledge rather than a vital one. A greater percentage of the students considered CAM as cost effective (47%) than those who didn't (25.20%). This opinion is supported by previous literature[11].

Finally, when asked about the placebo effect, most of the students were unaware of the term (50%) while only 30% thought the effectiveness of CAM is due to the placebo effect. The younger generation opt allopathic mode of treatment both in their everyday and emergency. It could be due to lack of knowledge or some barriers in the use of CAM. It should be the integral part and included in the curriculum.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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