

## MEDICAL EDUCATION

# Perspective of Medical and Dental Undergraduates towards Complementary and Alternative Medicine

Fizza Saher<sup>1</sup>, Jabbar Ahmed Qureshi<sup>2</sup>, Zohaib Jawed Abubakr<sup>3</sup>, Muhammad Muaz Abbasi<sup>3</sup>, Ahmed Jamshed<sup>3</sup>, Muhammad Taha Sohail<sup>3</sup>

<sup>1</sup>Department of Oral Biology, Ziauddin Dental College, Ziauddin University, <sup>2</sup>Department of Pharmacology, Ziauddin Medical College, Ziauddin University, <sup>3</sup>Student Ziauddin Medical College, Ziauddin University, Karachi, Pakistan.

### ABSTRACT

**Background:** The prevalent use of complementary and alternative medicine (CAM) requires health professionals including doctors and dentists having the essential knowledge to have better recommend their patients. This has led to an increased need for integration of CAM teaching at the undergraduate level. Thus, the purpose of the study was to assess the perspective of complementary and alternative medicine among Pakistani medical and dental undergraduates.

**Methods:** A questionnaire based cross sectional survey was conducted among first to fifth year undergraduate medical and dental students at Sindh Medical College and Ziauddin University in Karachi, during April until May 2019, using a structured 13-item questionnaire. Descriptive statistics were calculated for baseline characteristics. Frequency and proportions were calculated for categorical variables using SPSS version 20.

**Results:** The response rate was 100% (40.7% for males and 59.3% for females). The mean age of medical and dental students was 20.5±1.39 years. Almost three-fourth of students (75.1%) had the knowledge of CAM. The most experienced CAM modality amongst all was Yoga (23.4%) and Homeopathy (20%). Nearly 69.4 % of students believed that CAM is beneficial for medical and dental healthcare and 44.1% students will recommend CAM to their patients in future. Almost 39% of students think that CAM should be included into undergraduate medical and dental curriculum.

**Conclusion:** This study showed an encouraging interpretation of both medical and dental students regarding CAM knowledge and benefits. Majority of the students have optimistic attitude towards CAM practice in future and for the integration of CAM studies at undergraduate level.

**Keywords:** Complementary; Alternative Medicine; Medical; Dental; Undergraduates; Perspective; Knowledge.

### Corresponding Author:

**Dr. Fizza Saher**

Department of Oral Biology,  
Ziauddin Dental College,  
Ziauddin University, Karachi, Pakistan.  
Email: fizza.saher@zu.edu.pk  
doi.org/10.36283/PJMD9-2/023

### INTRODUCTION

Complementary Alternative Medicine (CAM) has always been used alongside conventional medicine and even in today's world; the advancements in the field of modern medicine have failed to overshadow the perceived beneficial effects produced by CAM among patients<sup>1</sup>. To the extent

that around 80% of the population across the globe still depends upon these traditional alternative therapies for their health care<sup>2,3</sup>.

CAM is defined by the WHO as "a broad set of healthcare practices that are not part of that country's own tradition and are not integrated into the dominant healthcare system"<sup>4</sup>. In Developed coun-

tries like United States, Canada, France and Australia, approximately half of the population uses CAM on regular basis i.e. 42%, 48%, 49% and 70% respectively. Also in many developing countries the CAM use is moderately considerable (Colombia 40%; Chile 71%; and up to 80% in African countries)<sup>5</sup>. It should be noted that in many parts of Latin America Africa and Asia majority of the population depends upon alternative medicine despite the availability of modern medicine<sup>6</sup>. According to a survey by Barnes et al. in 2007, showed that about 40% of adults and 11% of children used CAM therapy, and among the adult users, white and black adults constituted 43.1% and 25.5%, respectively in United States<sup>7</sup>.

People having faith in spiritual healers, clergymen, Hakeem's and homeopaths have utilized alternative therapies. There are a number of reasons why CAM is practiced in comparison to conventional medicine in many parts of the world<sup>2</sup>. These include advantages of being cost effective, safe and giving the freedom of self-treatment without having any harmful effects<sup>8</sup>. There have been many controversies on this whether CAM is beneficial? However, in 2012 according to a study which depicts that most of the doctors practice CAM modalities but also recommends patients for such treatment<sup>9</sup>.

According to a study done by Moran et al. in 2012, which showed that CAM use is highly associated with higher education level and also with greater use in young patients when compared with adults<sup>10</sup>. There is an increased utilization of CAM therapies in modern day healthcare practices, which shows the popularity of CAM among medical professionals. But despite of the increasing trend of CAM use in medical fields, it has not been included in the medical curricula of many medical universities around the world<sup>1</sup>. Therefore, utmost importance should be given to setting up an atmosphere in which CAM is not only accepted but also promoted at undergraduate level. This study was therefore designed to show the knowledge, attitude and perspective to accept CAM as a form of therapy amongst medical and dental students. This study

will also help us in identifying the major subdivisions of CAM (e.g. homeopathy, acupuncture etc.) that are preferred among our target population.

**METHODS**

A cross sectional study was conducted where 290 medical and dental students from both public and private sector of Karachi were selected by convenience sampling. Data was obtained from Sind Medical College and Ziauddin University, during April to May 2019. Inclusion criterion for the study was any medical or dental student from 1st, 2nd, 3rd, 4th or 5th year, willing to participate in the study. Utilizing data from previous studies, a structured 13-item questionnaire was prepared<sup>11</sup>. Individual consent was taken before students were enrolled for the study. The questionnaire was comprised of the information regarding respondent's awareness, knowledge, experience and attitude towards complementary and alternative medicine. Descriptive statistics were calculated for baseline characteristics. Frequency and proportions were calculated for categorical variables using SPSS version 20.

**RESULTS**

A total of 290 medical and dental undergraduate students were enrolled for the study and all of them filled the questionnaire. The mean age of both medical and dental students was 20.5 ±1.39 years. Majority of the students n=249 were studying medicine whereas n=41 were dental students, with n=118(40.7%) were males n= 172 (59.3%) were females. Amongst 290 students who were assessed at the end, n=76 (26.2%), n=93 (32.1%), n=102 (35.2%), n=13 (4.5%), n=6 (2.1%) were from first, second, third, fourth and fifth year respectively. About three-fourth (75.1%) of both medical and dental undergraduates reported to be aware of CAM therapies and the most common modalities which were known among them was Yoga (54.5%) followed by Homeopathy (53.4%) and Herbal medicine (50.3%) (Table 1).

**Table 1: Knowledge about CAM modalities.**

Statement	Positive	Negative
	N	%
Have you heard of any Complementary and Alternative Medicine therapies	218	75.1

Knowledge of CAM Modality				
Homeopathy	155	53.4	135	46.6
Acupuncture	121	41.7	169	58.3
Aromatherapy	72	24.8	218	75.2
Faith healing	67	23.1	223	76.9
Hypnosis	86	29.7	204	70.3
Yoga	158	54.5	131	45.2
Energy medicine	37	12.8	253	87.2
Herbal Medicine	146	50.3	144	49.7
Reflexology	18	6.2	272	93.8
Meditation	145	50.0	145	50.0
Chiropractic	86	29.7	204	70.3

Moreover, regarding experience of CAM modalities, the most experienced therapy among all was Yoga (23.4%) followed by Homeopathy (20.0%), whereas the least experienced modalities among all students were Acupuncture (0.7%) and Aromatherapy (1%). Regardless of many benefits of CAM, this part of questionnaire was administered as

a multiple choice for the students. Around 54.1% of undergraduates think that CAM is suitable for maintaining and improving the health, whereas 38.6% has a perspective that it has no side effects (Table 2). More than one-third (35.2%) of undergraduates takes CAM as a traditional therapy and 30.0% thinks that the therapy is inexpensive.

**Table 2: Experience and impression of CAM modalities among medical and dental undergraduates.**

Experience of CAM Modality	Positive		Negative	
	N	%	N	%
Homeopathy	58	20.0	232	80.0
Acupuncture	2	0.7	288	99.3
Aromatherapy	3	1.0	287	99.0
Faith healing	11	3.8	279	96.2
Hypnosis	4	1.4	286	98.6
Yoga	68	23.4	222	76.6
Energy medicine	10	3.4	280	96.6
Herbal Medicine	35	12.1	255	87.9
Reflexology	6	2.1	284	97.9
Meditation	29	10.0	261	90.0
Chiropractic	4	1.4	286	98.6

Impression regarding CAM among medical and dental undergraduates				
Suitable for maintaining and improving our health	157	54.1	133	45.9
Suitable for curing chronic diseases	28	9.7	262	90.3
Traditional	102	35.2	188	64.8
Unique to Western medicine and with its own merits	50	17.2	240	82.8
No side effects	112	38.6	178	61.4
Potency is low	53	18.3	237	81.7
Laborious	16	5.5	274	94.5
Inexpensive	87	30.0	203	70.0

Regarding perspective of CAM in clinical practice, 37.3% of students are very much sure that CAM is routinely applied in clinical practice and 69.4% thinks that it is beneficial for both medical and dental healthcare, whereas 15.5% are unsure about its benefits. Moreover, more than one-third (44.1%) would recommend CAM to their patients in future. Regarding importance of CAM in healthcare, approximately 43.4% of undergraduates agree that it is important for doctors and dentists to have a good knowledge of CAM and for that, almost 39% had agreed that CAM studies should be integrated in the undergraduate curriculum.

### DISCUSSION

Knowledge among the medical and dental undergraduates about the field of CAM was high, with a three-fourth of the population (75.1%) having heard of it. Despite this, only the minority of the respondents (23.4%) had personally experienced the practice in any form, which was reported to be Yoga. This was considerably lower than the number found in previous studies comparing unfavorably to the 36% found in a study among anesthetists in Hungary<sup>12</sup> and the 84.6% found in a study in Riyadh<sup>1</sup>.

Yoga and homeopathy were the most popular modality. Of the 11 listed CAM modalities, they were cited highest in both knowledge (54.5% and 53.4% respectively) and experience (23.4% and 20.0% respectively), similar to the results of a study conducted amongst German Medical Students and Doctors in 2011<sup>13</sup> and also amongst Indian dental students in year 2017<sup>11</sup>. In contrast to our findings was a study conducted in Ethiopia, which found that students were more informed about the

practices of massage therapy, spiritual healing, and herbal medicine<sup>14</sup>.

Questions on the perceived efficacy of the practices of CAM yielded great insight. Whether or not it was suitable to use in sustaining health in general proved to be a divisive question, with little over half (54.1%) agreeing it was. In stark contrast, the idea of CAMs being capable of treating or curing chronic diseases was believed by less than a tenth of the respondents (9.7%). As a comparison, a survey in the United States in 1997<sup>15</sup> found that 42% of all alternative therapy was being used exclusively for existing illnesses. This can be associated in part to the lack of scientific evidence of the success of these methods, but it also owes a great deal to the fact that there are very few credible sources of alternative healthcares, especially in Pakistan<sup>2</sup>. Interestingly, and in strong contrast to a study performed in Riyadh, Saudi Arabia<sup>5</sup>, students were unconvinced of the practice's redeeming qualities, with only less than half believing that it was either cheap (30%), or safe (38.6%). Although most did believe that potency of CAM modalities is high (81.7%) which is similar to the results obtained from a study done at Japanese Dental Schools in 2017<sup>16</sup>.

It was encouraging to see that most students believed in CAM as an alternative or perhaps supplement to modern medicine. When asked on their stance on the prospect of CAMs being integrated into the curriculum of medical or dental students at an undergraduate level, only 22.8% were explicitly against the idea, with the 39% of students agree and 11.9% strongly agree for the integration. Rest being either unsure or open to the

idea that a physician with exposure to and knowledge of multiple medical systems, similar to the findings of earlier studies<sup>17</sup>. Moreover, the majority (69.4%) of students were of the belief that CAMs are beneficial for healthcare, and almost half (44.1%) stated their intent to apply it when they enter their practice, almost similar to the results in study done by Sahil and Jothipriya<sup>11</sup>.

This study was conducted in both private and public sector universities, among the students of both medical and dental health, but of a similar age group and socioeconomic background in order to evaluate their overall attitude and awareness about the practice. We sought to find if there is a difference in attitude of students in both fields to a topic that has been the source of much public controversy. However, the cross sectional nature is a clear limitation in our attempt to assess this. Convenience sampling was used, which falls short in comparison to random sampling. This shows the need for a structured and accessible system to provide the future healthcare providers with knowledge on the field, in particular to the various modalities it comprises. Moreover further researches are needed to assess the knowledge of CAM amongst medical and dental practitioners on a large scale.

### CONCLUSION

In conclusion, the results showed an encouraging interpretation of both medical and dental students regarding CAM knowledge and benefits. Most of the students have positive attitude towards CAM practice in future and for the integration of CAM studies at undergraduate level. Instead of a strict devotion to the more accepted practice of modern medicine, the students hold an open mind and are at the very most willing to learn about the field and take advantage of the benefits it may hold.

### ACKNOWLEDGEMENTS

The researchers would like to acknowledge all the students who participated in the study.

### CONFLICT OF INTEREST

The authors have no known conflicts of interest associated with the study

### AUTHORS' CONTRIBUTION

This work was carried out in collaboration between all authors. Author FS designed the study, performed the statistical analysis, author JAQ wrote the protocol, author ZJA wrote the first draft of the manuscript. Authors MMA and AJ managed the analyses of the study and author MTS managed the literature searches. All authors read and approved

the final manuscript.

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