Medical Students’ Opinion Toward the Application of Complementary and Alternative Medicine in Healthcare

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ABSTRACT

Context: An accelerated approach to popularize complementary and alternative medicine (CAM) in healthcare services has led to the need to assess medical students’ knowledge of CAM. Furthermore, their attitude toward its efficacy and usage will determine its growing popularity in healthcare. Another key idea is to integrate CAM with conventional medical teaching to make it a part of the mainstream medical curriculum. The objectives were to assess the medical students' perceptions about integrating CAM with conventional medicine and to assess the attitude of prescribing different CAM modalities to patients presenting with a particular disease or health disorder.

Settings and Design: This is a descriptive, institutional based study conducted on undergraduate 3rd year medical students.

Materials and Methods: Data were collected by a structured and pretested questionnaire to be filled in by the participants in the presence of the investigator. Statistical data were entered in SPSS software, and descriptive analysis was conducted.

Results: Most of the students (74%) agreed that conventional and CAM therapy can be integrated to achieve a better health care outcome. Forty-eight percent of the participants were positive that knowledge of CAM is important since many patients still prefer this option, particularly for chronic illnesses.

Conclusions: The students were receptive to the introduction of a new treatment method in their curriculum, which although unconventional, presents an alternative and traditional form of treatment even if it does not have major backing from the scientific community. The participants felt that more knowledge is required to make an informed opinion about its usefulness to the community as a whole.

Key words: Complementary and alternative medicine, conventional medicine, integrative medicine, medical student, Saudi Arabia

ملخص البحث:
أن النهج المتسارع لنشر الطب البديل في خدمات الرعاية الصحية أدى إلى الحاجة لتقييم المعرفة بين طلبة الطب. كما أن موقفهم نحو فعاليته واستعماله قد يحدد تزايده شعبية في خدمات الرعاية الصحية. يتساءل الباحثون عن مدى إمكانية دمج الطب البديل في منهج كلية الطب. إذا تهدف هذه الدراسة لتقديم إدراك طلبة الطب عن دمج الطب البديل مع الطب التقليدي وكذلك لتقييم موقفهم لوصف علاج الطب البديل لبعض المرضى الذين يعانون من بعض الأمراض. توصلت الدراسة إلى أن طلبة الطب تقبلوا إضافة طريقة جديدة للعلاج إلى منهج الكلية بالرغم أنه غير تقليدي.

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INTRODUCTION

Complementary and Alternative Medicine (CAM) has been an integral part of mainstream health care services in many countries. In some developing countries where basic health care services do not penetrate certain areas, CAM is the backbone of affordable and accessible healthcare.

Multiple studies have shown its growing popularity and penetrance even in more developed countries where allopathic medicine is firmly entrenched as the major healthcare provider. CAM is also favored by people who have had a higher education. This indicates that CAM is gaining prominence as a primary source of healthcare in certain disorders. In addition, an increasing interest among healthcare practitioners, healthcare professionals and medical students has led to its inclusion in the medical curriculum at the undergraduate level.

Research showed that in recent years, CAM is becoming the preferred treatment in Saudi Arabia for a variety of diseases, including cancer. Its importance as a medium of healthcare intervention for different diseases and health disorders has increased, which is reflected by its increased use by the general population. The inclusion of CAM as a study topic in medical curricula has gained momentum, and it is taught in most medical colleges. Multiple studies have shown that there has been a perceptive change in the attitude of students in medicine/allied health sciences after the course has been taught in their curriculums. Therefore, the scope and application of complementary medicine can be easily integrated with mainstream medical curriculum to enable the students to have some knowledge about alternative therapies.

Similarly, other studies have pointed out that a high degree of acceptance of CAM among medical students and others support the inclusion of complementary medicine in an academic curriculum, particularly at the level of undergraduates. Many studies reflect a positive attitude among students regarding CAM usage and they considered that healthcare personnel should have knowledge of CAM.

When the issue of barriers against CAM education was assessed, it raised a lot of doubts, including its applicability in medicine, evidence-based CAM, the resistance of faculty, presence of reliable sources of information, appropriate teaching and assessment tools. This was extensively researched and its presence acknowledged in the proper implementation of CAM curriculum including its inclusion in the medical syllabus.

Research in the field of CAM in Saudi Arabia has focused on its acceptability among the general population, the attitude of healthcare professionals and the inherent interest of medical and healthcare students toward it. One study revealed that there is a positive attitude of healthcare professionals toward CAM and there is a need to introduce it in the medical schools as part of the curriculum. Another study indicated a balanced approach to establishing culturally appropriate medical curricula based on CAM.

The objectives of the current study were to assess medical students’ perceptions of integrating CAM with conventional medicine or using it as an alternative treatment and to assess opinions related to prescribing different CAM modalities to patients presenting with a particular disease or health disorder.

MATERIALS AND METHODS

This was an observational, institutional based, cross-sectional study among undergraduate medical students. It was carried out in a medical college in Majmaah, which is a small town in one of Riyadh region’s provinces in the center of Saudi Arabia. It lies 180 kilometers from the capital city of Riyadh. The CAM module was introduced in the college curriculum as an introductory course for seventh-semester students.

This study was conducted on two batches (2014 and 2015) of 3rd year (seventh semester) students (total = 70) who had completed the CAM module. All the students (both batches) of the seventh semester who were enrolled for the CAM module were included in the study.

All the students of the seventh semester who had studied the CAM module were included. A complete enumeration method was used to collect the study samples from among both batches. The total number of students who participated in the study was 70.

The data were collected with the aid of:
- A pretested, structured and semi close-ended questionnaire completed by the study participants
- An investigator was available to assist the participants in understanding the questions.

SPSS for Windows Software, Version 21 (SPSS, Chicago, Illinois, USA) was used to enter and analyze the
data. Statistical analysis was undertaken to assess the significance of the findings from the qualitative data collected during the study.

**Ethical considerations**

This study was approved by the Ethics Committee before being initiated. Witten informed consent was obtained from all participants prior to the study. The participants were briefed about the advantages to them as well as to the medical community due to their participation. In addition, they were advised that all information would be treated with the highest confidentiality and would be used only for the purpose of statistical analysis.

**RESULTS**

The total number of students who participated in the study was seventy. This included both past and present (2014 and 2015) 3rd year male students who had studied CAM as part of their medical curriculum.

An assessment of the opinion of students’ views on the use of CAM showed that 74% supported the integration of conventional and CAM practices in clinical care [Table 1]. Nearly, 67% had a favorable opinion regarding the benefits that conventional medicine would accrue from ideas and methods used in CAM. While on the other hand, almost half of the participants were neutral on whether a CAM approach on its own is singularly beneficial in treating diseases.

An elaborate assessment of CAM as a treatment option showed that almost 66% of the participants either agreed or remained neutral on their opinion of CAM treatment mostly due to a placebo effect [Table 1]. However, 50% of the students felt strong that CAM therapies which had not been scientifically tested should be discouraged, while 31.4% were neutral in their opinion. There were very few (−10%) who disagreed with the above opinion.

Almost 33% felt that CAM treatment does not have any true impact on diseases while 37.1% remained undecided about its effects. More than 25% disagreed and felt that it does have some impact. With regard to whether CAM was a threat to public health, approximately 40% agreed and 28.6% disagreed while 25.7% remained neutral in their assessment.

This study showed a remarkable attitude of positivity toward the use of CAM in professional practice [Table 1]. A large number of the participants (63%) favored the availability of some CAM practices for patients in their practice. Similarly, approximately 60% believed that the healthcare practitioners should integrate commonly used CAM methods for the benefit of their patients. As far as their views on including CAM as part of the medical curriculum was concerned, around 41% agreed while 50% remained neutral in their opinion. Only 24% felt that it should not be included in the curriculum. Most of them (48%) agreed that knowledge of CAM is important in the current scenario, including for practicing healthcare in the future. Around 35.7% remained neutral on its importance in the field of conventional medicine, while the rest disagreed.

The majority of the responders indicated that complementary medicine and its branches are an alternative form of treatment compared to allopathic treatment, which is considered the mainstream or the first line of treatment [Table 1]. Some exceptions were traditional practices such as prayers (40.0%), osteopathy (31.4%), nutritional supplements (38.6%) and acupuncture (38.6%). These were considered the mainstream in the field of healthcare intervention [Table 2].

**DISCUSSION**

Our study is in line with other studies that have indicated that even though CAM is currently not a part of the mainstream educational curriculum, it is looked upon favorably as a treatment option. Including CAM as a component in the curriculum would improve the perception of students’ attitude toward its practicability. The use of CAM is contrary to the belief that without scientific evidence, it is only effective as it has a placebo effect. Most of the participants also believed that many of the practices under CAM are harmful to the public. This has been corroborated in other studies showing similar observations.

This study also revealed that the majority of the students favored its integration with conventional medicine and CAM should be kept as a treatment option either in addition to allopathic medicine or as an alternative form of therapy. Similar studies have voiced the same opinion and further emphasized that patients should be informed of alternative methods of treatment and their consent taken after explaining to them their benefits and side effects. Ben-Arye et al. showed in their study that physicians can benefit immensely if they receive regular training on integrative medicine and in our study more than 48% agreed with this finding. Khalil et al. in a similar
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Table 1: Distribution of knowledge and attitude of students about complementary and alternative medicine

| Opinion                                                                 | Agree   | Neutral | Disagree | Total   |
|------------------------------------------------------------------------|---------|---------|----------|---------|
| Clinical care should integrate the best of conventional and CAM practices | 52 (74.3) | 13 (18.6) | 05 (7.1) | 70 (100) |
| CAM includes ideas and methods from which conventional medicine could benefit | 47 (67.1) | 15 (21.4) | 08 (11.4) | 70 (100) |
| While we need to be cautious in our claims, a number of CAM approaches hold promise for treatment of symptoms, conditions and/or diseases | 29 (41.4) | 34 (48.6) | 07 (10.0) | 70 (100) |
| The result of CAM is in most cases due to a placebo effect              | 24 (34.3) | 20 (28.6) | 26 (37.1) | 70 (100) |
| CAM therapies not tested in a scientific manner should be discouraged   | 40 (57.1) | 22 (31.4) | 08 (11.4) | 70 (100) |
| While a few CAM approaches have limited health benefits, they have no true impact on treatment of symptoms, conditions and/or diseases | 23 (32.9) | 26 (37.1) | 19 (27.1) | 70 (100) |
| CAM is a threat to public health                                        | 27 (38.6) | 18 (25.7) | 23 (32.8) | 70 (100) |
| I hope to have some CAM practices available to patients in my practice or referral network | 44 (62.9) | 17 (24.3) | 09 (12.9) | 70 (100) |
| Health professionals should be able to advise their patients about commonly used CAM methods | 43 (61.4) | 21 (30.0) | 06 (8.6) | 70 (100) |
| CAM practices should be included in my school curriculum                | 29 (41.4) | 24 (34.3) | 17 (24.3) | 70 (100) |
| Knowledge about CAM is important to me as a student/future practising health professionals | 34 (48.6) | 25 (35.7) | 11 (15.7) | 70 (100) |

Table 2: Distribution of student’s opinion about various complementary and alternative medicine practices

| Distribution of CAM practices                                      | Clearly mainstream (%) | Neither/nor (%) | Clearly alternative (%) | No opinion (%) | Missing (%) | Total (%) |
|-------------------------------------------------------------------|------------------------|----------------|------------------------|---------------|-------------|-----------|
| CAM practices associated with traditional/alternative medicine     |                        |                |                        |               |             |           |
| Acupuncture                                                       | 27 (38.6)             | 07 (10.0)      | 30 (42.9)              | 04 (5.7)      | 02 (2.9)    | 70 (100)  |
| Homeopathy                                                        | 12 (17.1)             | 11 (15.7)      | 36 (51.4)              | 09 (12.9)     | 02 (2.9)    | 70 (100)  |
| Hijama                                                            | 22 (31.4)             | 08 (11.4)      | 32 (45.7)              | 06 (8.6)      | 02 (2.9)    | 70 (100)  |
| Cauterization                                                     | 16 (22.9)             | 07 (10.0)      | 34 (48.6)              | 09 (12.9)     | 04 (5.7)    | 70 (100)  |
| Naturopathy                                                       | 18 (25.7)             | 12 (17.1)      | 31 (44.3)              | 08 (11.4)     | 01 (1.4)    | 70 (100)  |
| CAM practices associated with healing related to touch            |                        |                |                        |               |             |           |
| Chiropractic                                                      | 19 (27.1)             | 13 (18.6)      | 33 (47.1)              | 05 (7.1)      | 0 (0.0)     | 70 (100)  |
| Massage                                                           | 19 (27.1)             | 13 (18.6)      | 30 (42.9)              | 06 (8.6)      | 02 (2.9)    | 70 (100)  |
| Rolfing                                                           | 06 (8.6)              | 16 (22.9)      | 23 (32.9)              | 25 (35.7)     | 0 (0.0)     | 70 (100)  |
| Osteopathy                                                        | 22 (31.4)             | 12 (17.1)      | 23 (32.9)              | 11 (15.7)     | 02 (2.9)    | 70 (100)  |
| CAM practices involving diets and herbs                           |                        |                |                        |               |             |           |
| Herbal medicine                                                   | 18 (25.7)             | 11 (15.7)      | 35 (50.0)              | 04 (5.7)      | 02 (2.9)    | 70 (100)  |
| Nutritional supplements                                           | 27 (38.6)             | 12 (17.1)      | 23 (32.9)              | 06 (8.6)      | 02 (2.9)    | 70 (100)  |
| CAM practices associated with external energy                     |                        |                |                        |               |             |           |
| Magnetic therapy                                                  | 14 (20.0)             | 16 (22.9)      | 21 (30.0)              | 17 (24.3)     | 02 (2.9)    | 70 (100)  |
| Therapeutic touch                                                | 12 (17.1)             | 14 (20.0)      | 29 (41.4)              | 13 (18.6)     | 02 (2.9)    | 70 (100)  |
| CAM practices associated with mind and body medicine              |                        |                |                        |               |             |           |
| Biofeedback                                                       | 10 (14.3)             | 17 (24.3)      | 24 (34.3)              | 17 (24.3)     | 02 (2.9)    | 70 (100)  |
| Hypnosis                                                          | 08 (11.4)             | 14 (20.0)      | 32 (45.7)              | 14 (20.0)     | 02 (2.9)    | 70 (100)  |
| Prayer                                                            | 28 (40.0)             | 14 (20.0)      | 17 (24.3)              | 09 (12.9)     | 02 (2.9)    | 70 (100)  |
| Meditation                                                        | 14 (20.0)             | 08 (11.4)      | 25 (35.7)              | 31 (44.3)     | 02 (2.9)    | 70 (100)  |
| CAM practices associated with healing by senses                   |                        |                |                        |               |             |           |
| Aromatherapy                                                      | 09 (12.9)             | 15 (21.4)      | 32 (45.7)              | 12 (17.1)     | 02 (2.9)    | 70 (100)  |
| Music                                                             | 12 (17.1)             | 14 (20.0)      | 16 (22.9)              | 27 (38.6)     | 01 (1.4)    | 70 (100)  |

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study in Saudi Arabia also pointed out that the physicians can improve the efficacy of treatment by training in CAM specialty.[38]

In this survey, study participants favored some complementary medicine practices such as acupuncture, prayer, osteopathy and nutritional supplements as primary preferences. Studies involving chronic diseases such as cancer, chronic liver diseases and diabetes have shown that patients who use prayers, dietary modifications, herbal therapy and exercises like yoga as co-interventions in their treatment of the diseases believe that it was of benefit.[39-41]

**CONCLUSIONS**

The attitude of medical students toward the inclusion of CAM as a subject is very positive and most of them have shown an inclination to be flexible with treatment protocols in a more integrative manner. Further research is needed to establish a more thorough database of evidence to prove that CAM could be an integral part of the healthcare industry. The skepticism that arises among the respondents regarding the ineffectiveness of CAM treatment results from a vague knowledge about its application. This awareness and attitude among the new generations of healthcare professionals can be dissipated through books, the Internet, peer-reviewed journals and awareness of CAM treatment facilities.

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**Conflicts of interest**
There are no conflicts of interest.

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