

Complementary Medicine and Integrative Health Module for Undergraduate Medical Students, KSA

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Abstract

Background: Medical education has undergone major transformation along with the change in concept of health and disease.

Objective: Increasing awareness, improving knowledge and acquiring skills of complementary medicine and integrative health for undergraduate medical students.

Methods: Complementary medicine and integrative health module was introduced during the year 2016-2017, for fourth year medical students at Dar Al Uloom University, Riyadh, KSA. The Methods of teaching and learning include interactive lectures, seminars, practical sessions, assignments, field visits, simulation, learning by doing (hands on training), case studies, problem based learning and self-directed learning. Topics covered during the course include; Introduction and overview of Complementary and Alternative Medicine (CAM), Epidemiology of CAM practices, Characteristics and comparison of CAM vs. Conventional Medicine, Integrative Medicine, Research models in CAM, Evidence based CAM, Medical ethics of CAM, Frauds and misconceptions related to CAM practices and products, Health education and communication in CAM, Manipulative and body based practices, Biological-based practices, Mind-body medicine, Energy based therapies, Whole medical systems; Traditional Chinese Medicine (TCM), Unani, Arabic or Hakim Medicine, Prophetic Medicine and Local traditional CAM therapies (Hijamah as a model), Acupuncture, Herbal Medicine, Naturopathy, Nutrition and food supplements, Apitherapy and Homeopathy.

Assessment of the module: The course comprises two types of assessments; continuous and final assessment. Continuous assessments take place throughout the course. They are mostly based on course work as follows; Seminar (10%), Assignments (10%), Field visit report (10%) and Mid-term exam (20%). A proportion of 50% were taken in the final assessment. A student who scored 60 or more deemed to have passed this course.

Conclusion: The feedback received was most supportive of the module and appreciative of the teachers, the information provided and skills gained and the way in which it was delivered.

Keywords: Complementary medicine; Integrative health; Teaching; Medical students, KSA

Introduction

Many Saudis more than 70% use health care approaches developed outside of mainstream western or conventional medicine. When describing these approaches, people often use “alternative” and “complementary” interchangeably or integrative medicine. CAM is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine. Integrative medicine is a term that refers to combining, “treatments from conventional medicine and CAM for which there is some high-quality evidence of safety and effectiveness. Integrative medicine is an approach to care that puts the patient at the center and addresses the full range of physical, emotional, mental, social, spiritual and environmental influences that affect a person’s health [1]. Integrative health care, involve bringing conventional and complementary approaches together in a coordinated way. The use of integrative approaches to health and wellness has grown within care settings across the United States. Researchers are currently exploring the potential benefits of integrative health in a variety of situations, including pain management for military personnel and veterans, relief of symptoms in cancer patients and survivors, and programs to promote healthy behaviors [2].

There it claims that non-mainstream practitioners and practices make can sound promising. However, researchers do not know how safe many of these treatments are or how well they work. Studies are

underway to determine the safety and usefulness of many of these practices. To minimize the health risks of a non-mainstream treatment you should discuss it with your doctor. It might have side effects or interact with other medicines. Find out what the research says about it. Choose practitioners carefully. And tell all of your doctors and practitioners about all of the different types of treatments you use [3].

CAM therapies need to be evaluated with the same long and careful research process used to evaluate standard treatments. CAM therapies include a wide variety of botanicals and nutritional products, such as dietary supplements, herbal supplements, and vitamins. Many of these “natural” products are considered to be safe because they are present in, or produced by, nature. However, that is not true in all cases. In addition, some may affect how well other medicines work in the body. Herbal supplements may be harmful when taken by themselves, with other substances, or in large doses [4].

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Yet, despite increased CAM use by the patients, allopathic health care providers often lack sufficient knowledge of CAM therapies and products and their role in health and healing. They are unaware about the safety and effectiveness of CAM therapies. They lack the requisite expertise to collaborate with CAM practitioners to provide patients with an integrated approach to care [5,6]. CAM therapies have been associated with serious and even life-threatening adverse events [7]. Thus, conventional health care providers need to understand the safety and efficacy issues pertinent to widely-used CAM therapies, incorporate assessment of CAM use into their history and physical examinations of their patients, and collaborate with CAM practitioners to provide safe and integrated approach to care [8].

Medical education has undergone major transformation along with the change in concept of health and disease. It is becoming increasingly community oriented, learner-centered, self-learning, and self-peer assessing process [9]. Educational institutions, particularly those in developing countries such as Saudi Arabia face sorts of challenges in the implementation of change via the introduction of new systems and procedures. This is the more common type of organizational change they will encounter, as they become more global in their perspectives and face performance-based assessments such as accreditation [10-16].

Overall Aims and Objectives

Upon successful completion of the course, students should be able to

- a) Define what is Traditional Medicine, Complementary Medicine, Integrative Health, other names and related terminologies, and how do they differ from each other and from that of conventional medicine.
- b) Acquire a good knowledge about classifications of CAM modalities and therapies.
- c) Discuss the concepts and principles of CAM modalities.
- d) Identify the common local Traditional CAM practices in the Kingdom of Saudi Arabia with emphasis on Arabic and Islamic traditional healing practices and their prevalence.
- e) Assess evidence of safety, efficacy, cost effectiveness and mechanism of action of different CAM modalities.
- f) Access and search the literature and critically evaluate different types of CAM researches.
- g) Decide who, why, where, and when people use CAM and which medical conditions are most suitable for CAM modalities.
- h) Adopt medical ethics related to CAM.
- i) Take a positive attitude towards evidence based CAM practices.
- j) Identify common frauds and misconceptions related to CAM practices and products.
- k) Acquire skills related to common, licensed and high prevalent local CAM practices.
- l) Clarify the role of the National Center for Complementary and Alternative Medicine (NCCAM) in KSA as a national reference for all CAM concerns including regulations, licensing and accreditation.
- m) Introduce health education message for common CAM users about evidence based CAM practices as well as frauds and misconceptions related to CAM use.

- n) Communicate effectively with patients about their use of CAM practices.

Intended Learning Outcome of the Course (Ilos)

Knowledge and understanding

Upon successful completion of the course, students should be able to A-1) Describe the characteristics of Complementary and Integrative Medicine. A-2) Learn about safety, efficacy, cost effectiveness and mechanism of action of different CAM modalities. A-3) Learn about the history of herbal medicine, Prophetic medicine, TCM, tc. A-4) Enumerate side effects and complications of different CAM modalities. A-5) Describe the uses, indications and contraindications of the selected CAM practices. A-6) Learn about evidence based CAM practices. A-7) Enumerate and describe local traditional CAM practices. And A-8) Judge medical ethics related to CAM practice.

Intellectual skills

Upon successful completion of the course, students should be able to B-1) Suggest the right Complementary therapies for a particular health problem. B-2) Summarize common diseases where CAM therapies can be included in the management plan. B-3) Design suitable plan for management of particular cases using CAM modalities. B-4) Communicate efficiently with patient seeking CAM. B-5) Suggest health education message regarding proper use of CAM. And B-6) Deal with misconceptions of CAM modalities.

Professional and practical skills

At the end of the course, students should be able to C-1) Discuss the assignments of different cases in the practical notes concerning the complementary medicine practice used, theories, side effects and contraindications and suggest the disease(s) that can be managed using CAM based on evidence based medicine. C-2) Do interpretation of a research project including different cases treated by the use of CAM therapy, effectiveness and recommendations. C-3) Differentiate between the theories, concepts and principles of Allopathic Medicine and Traditional, complementary, alternative and integrative medicine. C-4) Acquire practical skills related to some practices such as Hijamah, Acupuncture, Herbal medicine, etc.

General and transferrable skills

At the end of the course, students should be able to D-1) Communicate within the team work. D-2) Plan and conduct a research task. D-3) Acquire presentation skills. D-4) Basic information/health technology literacy.

Course Description

Topics to be covered

Topics to be covered during the course include 1) Introduction and overview of CAM. 2) Epidemiology of CAM practices. 3) Characteristics and comparison of CAM vs. Conventional Medicine. 4) Integrative Medicine. 5) Research models in CAM. 6) Evidence based CAM. 7) Medical ethics of CAM. 8) Frauds and misconceptions related to CAM practices and products. 9) Health education and communication in CAM. 10) Manipulative and body based practices. 11) Biological-based practices. 12) Mind-body medicine. 13) Energy based therapies. 14) Whole medical systems. 15) Traditional Chinese Medicine (TCM). 16) Unani, Arabic or Hakim Medicine. 17) Prophetic Medicine. 18) Local traditional CAM therapies (Hijamah as a model).

19) Acupuncture. 20) Herbal Medicine. 21) Naturopathy. 22) Nutrition and food supplements. 23) Apitherapy. And 24) Homeopathy.

Methods of teaching and learning

1. Interactive lectures.
2. Seminars.
3. Case studies.
4. Problem based learning.
5. Self-directed learning.
6. Practical sessions.
7. Simulation.
8. Learning by doing (hands on training).
9. Assignments.
10. Field visits

Interactive lectures: Interactive lectures will involve the students in active discussion, and may provide brief learning activities during the lecture to achieve the learning objectives stated under each topic.

Introduction and overview of CAM: At the end of the lecture, student should be able to define what is Traditional Medicine, Complementary Medicine, Integrative Health and other names and related terminologies, and how do they differ from each other and from that of conventional medicine. Discuss history of CAM, different classifications of CAM modalities and therapies describe the common CAM practices worldwide and in KSA, describe communication between patients and CAM practitioners and define National Center for Complementary and Alternative Medicine.

Epidemiology of CAM practices: At the end of the lecture, student should be able to describe the epidemiology of CAM in relation to time, place and person, the prevalence of CAM use in developed and developing countries and give examples, describe distribution of CAM practices in Saudi Arabia, impact of CAM worldwide and in KSA, determinants of CAM use, determine why and when are CAM used? Describe where do ill people go seeking for health? Answer the question does physician discuss with their patients use of traditional and complementary medicine? And does traditional and complementary medicine educated in different schools?

Characteristics and comparison of CAM vs. conventional medicine: At the end of the lecture, student should be able to describe different specifications and characteristics of CAM, differentiate between conventional and unconventional medicine, discuss difficulties in CAM research as compared to conventional medicine, explain causes of lack training in CAM and describe the difference between evidence based CAM and evidence based conventional medicine.

Integrative medicine: At the end of the lecture, student should be able to define integrative medicine, describe principles of integration, different models of integration and discuss the benefits and advantages of integration.

Research models in CAM: At the end of the lecture, student should be able to describe research methods as applied to CAM, demonstrate advantages and disadvantages of different CAM research models, describe pragmatic clinical trials, understand the role of placebo

and therapeutic encounter in CAM research, explain how to design comparative effectiveness study and discuss how to define study outcomes and identify the role of research in the integration of CAM in health care system.

Evidence based CAM: At the end of the lecture, student should be able to define and explore evidence based medicine (EBM), discuss EBM pyramid, differentiate between evidence based CAM and conventional medicine, demonstrate primary and secondary sources of evidence and classify CAM practices according to evidence.

Medical ethics of CAM: At the end of the lecture, the student should be able to discuss the ethical issues of CAM; ethics of CAM practitioner towards patients, himself, the public and his colleagues and towards his job and discuss ethics of CAM practitioner towards advertisement of CAM practices and products.

Frauds and misconceptions related to CAM practices and products: At the end of the lecture, the student should be able to define frauds and misconceptions, explore frauds and misconceptions related to CAM practitioners and to CAM products and discuss examples of CAM misconceptions and frauds.

Health education and communication in CAM: At the end of the lecture, the student should be able to discuss how to communicate properly with patients seeking for CAM, how to deal properly with misconceptions about CAM, explore proper methods of health education and communication related to CAM and describe common health education messages for CAM users.

Mind-body medicine: (Hypnotherapy, Meditation, visualization, Prayer, Yoga, etc.): At the end of the lecture, student should be able to describe mind-body medicine, discuss how the mind-body medicine works in health and disease, the fundamentals and principles of mind-body medicine, discuss application of various mind-body therapies, describe evidence base regarding safety and efficacy of mind-body medicine and discuss different mind-body medicine practices in prevention and treatment of diseases.

Energy medicine: At the end of the lecture, student should be able to define different Energy medicine modalities, explain principals and mechanism of action of energy medicine, discuss evidence based safety and effectiveness of energy based medicine and describes various applications of the energy medicine in treatment.

Herbal medicine: At the end of the lecture, student should be able to define herbal medicine, discuss the history of herbal medicine, sources of information for herbal medical products, describe some important herbs in various geographic areas, scientific names and its botanical features related to medicinal importance with examples, describe how extractions and preparations of herbs are made, give examples of four medical local herbs; indications with high scientific evidence and discuss education, licensing and regulation of herbal medicine.

Apitherapy: At the end of the lecture, student should be able to define Apitherapy and its uses, describe composition and uses of Beeswax, propolis, Royal Jelly, Bee Pollen and Bee Venom, discuss possible side effects, and complications of Apitherapy and decide evidence based safety and effectiveness of Apitherapy.

Local traditional practices in KSA: At the end of the lecture, the student should be able to list and define different local traditional CAM practices in KSA, identify the prevalence of traditional CAM practices in

the Kingdom of Saudi Arabia, discuss the advantages and disadvantages of local traditional CAM practices, describe the philosophical basis and principles of local traditional CAM practices, explain the difference between current trend of modern medicine and those practices and discuss evidence of safety and effectiveness of those practices.

Whole medical system (TCM): At the end of the lecture, the students should be able to define different components of Traditional Chinese Medicine (TCM), discuss philosophical background of TCM, describe models of the body and concept of disease in TCM and discuss the conditions that TCM may be useful.

Whole medical system (Naturopathy): At the end of the lecture, the students should be able to describe the history and ideology of naturopathy, describe the practice and practitioners of naturopathy, discuss regulations of naturopathy in different areas of the world and describe evidence based safety and efficacy of naturopathy.

Student led seminars

Guidelines for students seminar: Literature search of reliable sources and data basis must be done. Five seminars are scheduled during the module. Duration of each seminar is 2 hours. A staff member will be assigned as a Seminar Supervisor. The Seminar Supervisor will guide the group to coordinate with the group leader in assigning students for providing the presentation, assigning topics of seminars in coordination with the group leader, directly helping and advising students during preparation of the presentations, leading and supervising the seminars in terms of secure convenient venue, managing time for each presentation and keeping order during seminars sessions, facilitate group discussion after each presentation and assessing students (those who give presentations and who do not give presentations).

Students are divided into five groups. The seminar should be addressing the following: Introduction, methods, findings, critical appraisal of evidence, take home messages and references. The groups should work as a team to prepare the seminar. The work is divided such that every student should participate in preparation of the presentation. The presentation should be formatted by Microsoft office Power Point program. At least 10 to 15 slides are required for each presentation. The contribution of the sub groups should be compiled in one presentation and every student should have active participation in the presentation. Time should be managed in such a way that presentation is completed within the allocated time. Ten minutes are devoted for the tutor to give feedback and comments at the end of the seminar.

Other students (not giving presentations) have prepared properly for active collaboration and discussion by reading topics related to seminars prior to attending. All students should consider that they are assessed by the assigned tutor (Not only presenters of the seminar). Topics discussed during seminars are included in the module written exams.

Manipulative and body based practices: At the end of the seminar, student should be able to define Manipulative-based medicine, list the main types of manipulative therapy, explain the use of different manipulative therapies globally, describe different techniques of manipulative therapy, describe education, licensing and regulation of manipulative therapies, the safety and efficacy of manipulative based therapies and describe different models of integration of manipulative therapies.

Biological based practices: At the end of the seminar, student

should be able to define and enumerate types of Biological based medicine, explain the philosophy and principles of Biological based practices, describe mechanism, effects and interaction of different Biological based practices, describe the evidence base regarding safety and efficacy of Biological based practices and discuss the rationale behind the use of Biological based practices.

Whole medical system (Homeopathy): At the end of the seminar, student should be able to discuss the history and definition of homeopathic medicine, describe mechanism of action and “the law of similar”, identify evidence base, safety and efficacy of Homeopathic medicine, describe various applications of the Homeopathic remedy in treatment and describe education, licensing and regulation of homeopathy.

Whole medical system (Unani Medicine, Arabic or Hakim Medicine): At the end of the seminar, student should be able to define different components of Unani medicine, identify philosophical background of Unani medicine, describe models of the body and concept of disease in Unani medicine and discuss cases that Unani medicine may be useful in.

Nutritional therapy: At the end of the seminar, that student should be able to discuss background of nutritional therapy, enumerate types and best sources of macronutrients, enumerate types and best sources of micronutrients, discuss healthy eating, balanced diet and food pyramid, discuss examples of nutritional therapy (Mediterranean Diet and macrobiotic) and learn how to read Nutritional facts on Food label.

Practical sessions

Selected CAM therapies to be demonstrated by CAM therapists as a model include Prophetic Medicine, Acupuncture, and Cupping (Hijama) **Location:** NCCAM for practical session of prophetic medicine and Dar Al Uloom Faculty of Medicine for practical session of Acupuncture, and cupping (Hijama).

Local traditional CAM practices (Hijama): At the end of the session student should be able to define Al-Hijamah and discuss history of cupping, explain different types of cupping and cupping sets, discuss how to deal with patient before, during and after cupping, discuss indications, contraindications and precautions of cupping, describe different side effects related to cupping, Explain safe cupping techniques and infection control measures, discuss rules of choosing points of cupping according to research evidence, Simulation in cupping training (use of artificial skin), hands on training on volunteers, Adopt evidence based cupping and explain regulation of cupping in KSA.

Alternative CAM practices (Acupuncture): At the end of the session student should be able to define prevalence of acupuncture worldwide, discuss principles and theories of acupuncture, explain meridians and points of acupuncture, discuss indications, contraindications and precautions of acupuncture, describe different side effects related to acupuncture and how to avoid them, discuss rules of choosing points of acupuncture according to TCM and research evidence, adopt evidence based acupuncture and explain regulation of acupuncture worldwide and in KSA. Simulation was used in the practical sessions before application on human skin. This is followed by hands on training on volunteers.

Prophetic medicine: At the end of the session student should be able to define Prophetic Medicine and identify its principles and components, describe various aspects and types of Prophetic Medicine,

discuss some examples of Prophetic Medicine in detail (Cupping, Cautery, Ruqia, Bees products and honey, camel milk and urine, herbal medicine, Zamzam water, zikr, dates AlMadena, etc.) discuss methods for integrating Prophetic Medicine by Muslim doctors and discuss examples of research studies done in prophetic medicine regarding safety and efficacy.

Assignments

CAM from evidence to integration: It includes criticism of one published clinical trial in CAM to identify the (PICO) question and to comment on the quality of the study. Each student should submit a report within one week from the lectures (Integrative Medicine and Evidence Based CAM).

Report on local traditional medicine therapies: Each student should submit (within one week after the lecture on local traditional practices) a report about one of the following local traditional medicine therapies (Hijamah, Cautery, Bone setting, Ruqia, Bees products and Honey) short essay.

Field visits

Guidelines for field visits: Students should follow instructions given to them prior to the visit. Students are encouraged to use transportation arranged and secured by the college administration. Students are expected to behave as future doctors. At the end of the field visit, students are requested to give their feedback regarding fulfillment of the objectives of the visit and clarify any comments and suggestions they may have. Field visit report (written report should be submitted by each student within one week after the field visit about results of the field visit including what objectives has been achieved.

Objectives of field visit to the nearby community: Explore local traditional CAM practices in their community. Explain how the practitioner and practices be delivered. Assis quality of CAM practices and products provided. Assis and discuss skills of dealing with the patient. Give recommendations and future considerations of Local traditional CAM practices.

Assessment of the Module

The course comprises two types of assessment:

Continuous assessment

These assessments will take place throughout the course. They are mostly based on course work as follows; Seminar (10%), Assignments (10%), Field visit report (10%) and Mid-term exam (20%).

Final assessment

A proportion of 50% will be taken in the final assessment. This is the end of the course assessment, and will be conducted under formal examination conditions. The eligibility criteria for sitting the final examination will be the attainment of 75% of the attendance. This is based on (MCQs and SEQs). A student who score 60 or more will be deemed to have passed this course.

Quality Assurance and Evaluation Process

Any new course needs constant reviewing and monitoring to ensure that it meets the demands placed on it by the overall curriculum. This curriculum is no exception. Hence, there will be a number of evaluation

strategies employed by the module. They are 1) Student feedback at the end of the module, seeking student comments on both teaching and learning, and assessment, along with the student views on the general course organization and implementation. 2) Student feedback on a sample of teaching and learning activities, obtained at the end of each activity. 3) Tutor feedback. 4) Examiner feedback. 5) Peer evaluation, where a staff member may visit a particular teaching and learning activity and provide formative feedback about its conduct. 6) Analysis of the students' examination results. 7) External reviews.

Discussion

The Complementary Medicine and Integrative Health Module were planned and implemented for increasing awareness, improving knowledge and acquiring skills of complementary medicine and integrative health for undergraduate fourth year medical students. The module covers one month of teaching in Dar AlUloom University, Riyadh, KSA. It located in the north part of Riyadh city, the capital of Saudi Arabia. It is a private University serving many specialties; medical, Pharmacy, dentistry, administration ...etc.

Study of the status of CAM education in health colleges in Saudi Arabia [17], revealed that there is no CAM specialized track or postgraduate education in any health college in Saudi Arabia and only Eleven (12.2%) colleges are teaching CAM courses in their curricula. Also, studying the knowledge and attitude of health professionals in the Riyadh region, Saudi Arabia, toward CAM (2012) recommended that Health educational organizations have to play a greater role by being the source of evidence-based knowledge of CAM. It reported that mass media represented 60.1% of sources of the knowledge of CAM followed by family, relatives, and friends (29.08%) and health educational organizations (14.71%) [18]. Hence the importance of introducing this module for teaching complementary medicine and integrative health for undergraduate medical students.

We try to cover most of topics related to CAM and integrative health. The National Center for Complementary Medicine and Integrative Health in USA classify CAM modalities into five main groups namely; Manipulative and body based practices, Biological-based practices, Mind-body medicine, Energy based therapies and whole medical systems [2]. The most common, evidence based CAM modalities were covered in the course. Also, practical skills related to acupuncture therapy, and cupping therapy (Hijama) was acquired. Students see, observe and criticize CAM practitioners during their work through field visit. They have opportunity to compare the ideal work according to knowledge gained and skills acquired versus the actual field work. They have active communication with patients in clinic. They acquired skills of searching data basis for evidence based CAM modalities. They share as a team work in preparing and presenting power point presentation of CAM topics.

Use a lot of methods of teaching and learning included; interactive lectures, seminars, practical sessions, assignments, field visits, simulation, learning by doing (hands on training), case studies problem based learning and self-directed learning helped learners to gain knowledge and acquire skills. This in accordance with many authors who stated that they have a great impact on knowledge and skills retention [19-21].

All students attended the course passed the exam. They highly satisfied with learning methods used, knowledge gained and skills

acquired through self-assessment of the course at the end of the module. The feedback received was most supportive of the module and appreciative of the teachers, the information provided and skills gained and the way in which it was delivered. This learners' satisfaction with the course may have a good impact on retention. This is in agreement with El-Olemy et al. [22] who recorded health professional satisfaction with training on cupping therapy using the same methods of teaching. Notably, most of medical students expressed that CAM course needs to be integrated into their medical school curriculum, and this trend is consistent with other studies [23-25]. The long-term implications of this finding are many, including CAM capacity building in relation to clinical practice, research, teaching, and training [26].

Medical students tend to collect information on CAM from multiple sources as revealed in the study of Al-Mansour et al. [27] Accordingly, medical students reported that their most important sources of CAM information were peers, scientific journals, media, and Internet. Predictably, this CAM info-source scenario would change in future when CAM course will be integrated into main curriculum of all medical schools in KSA. Physicians with vast medical knowledge

and multiple skills could discuss with the patient a variety of disease-related issues and put forward more than one option to be accepted, the best one, by the patient, that would fit into patient-centered approach currently in vogue in CAM/IM [28-30].

According to many studies, there are many barriers against integration of CAM curriculum and use of CAM therapies exist across the world. [31-33] In the context of western medical settings, lack of evidence for practices, lack of staff training, lack of reimbursement, legal issues raised by medical schools and institutions, relative lack of competent CAM providers, lack of appropriate equipment, and CAM therapies being too time consuming, were the main barriers (Tables 1 and 2) [31,32,34].

Limitations

This is a survey of fourth-year medical students in one university, and hence, its results may not generalizable to medical students in other universities in KSA. Similarly, the results may not be applicable to other health professionals such as nursing or dental students and first, or second or third or even fifth year students as their KAP tend to differ from fourth year students [23,35,36].

No	Topic	Teaching and learning method		Hours
1	Introduction and overview of CAM	Interactive lecture		2
2	Epidemiology of CAM practices	Interactive lecture		2
3	Characteristics and comparison of CAM vs. Conventional Medicine	Interactive lecture		2
4	Integrative Medicine	Interactive lecture		2
5	Research models in CAM	Interactive lecture		2
6	Evidence based CAM	Interactive lecture		2
7	Medical ethics of CAM	Interactive lecture		2
8	Frauds and misconceptions related to CAM practices and products	Interactive lecture		2
9	Health education and communication in CAM	Interactive lecture		2
10	Mind body medicine	Interactive lecture		2
11	Energy medicine	Interactive lecture		2
12	Local traditional practices in KSA	Interactive lecture		2
13	Herbal medicine	Interactive lecture		2
14	Apitherapy	Interactive lecture		2
15	Whole medical system (TCM)	Interactive lecture		2
16	Whole medical system (Naturopathy)	Interactive lecture		2
Seminar 1	Manipulative and body based practices	Student led seminar		2
Seminar 2	Biological based practices	Student led seminar		2
Seminar 3	Whole medical system (Homeopathy)	Student led seminar		2
Seminar 4	Whole medical system (Unani Medicine, Arabic or Hakim Medicine)	Student led seminar		2
Seminar 5	Nutritional therapy	Student led seminar		2
Practical session 1	Local traditional CAM practices (Hijama)	Demonstration & simulation		12
Practical session 2	Alternative CAM practices (Acupuncture)	Demonstration & simulation		12
Practical session 3	Prophetic medicine	Demonstration & simulation		6
Field visit	field visit to the nearby community	Field visit		6
SUBTOTAL	Interactive lectures	16 x 2 hours	32	78
	Seminars	5 x 2 hours	10	
	Practical session	5 x 6 hours	30	
	Field visit	1 x 6 hours	6	
GRAND TOTAL DURATION INCLUDING EXAMINATION	Interactive lectures	32 hours		82
	Seminars	10 hours		
	Practical session	30 hours		
	Field visit	6 hours		
	Mid-term exam	2 hours		
	Final exam	2 hours		
TOTAL hours available		82 hours		

Table 1: Details of teaching schedule.

No	Topic	ILOs	Teaching and learning methods	Student assessment method
1	Introduction and overview of CAM	A1, A7, C1, D1	lecture	MCQs & SEQs
2	Epidemiology of CAM practices	A1, A4, A5, A7, B6, C1, D1	lecture	MCQs & SEQs
3	Characteristics and comparison of CAM vs Conventional Medicine	A1, A2, A4, A5, A6, A7, A8, B4, B6, D1, D2	lecture	MCQs & SEQs
4	WHO strategy for TM/CM 2014-2023	A1, A2, A6, A7, A8, B4, B5, C1, D1, D2, D4	lecture	MCQs & SEQs
5	Integrative Medicine	A1, A2, A5, A6, B1, B2, B4	lecture	MCQs & SEQs
6	Research models in CAM	A6, A8, B1, B2, B4, C1, C2, C3, D2	lecture	MCQs & SEQs
7	Evidence based CAM	A6, A8, B1, B2, B4, C1, C2, C3, D2	lecture	MCQs & SEQs
8	CAM resources	B2, B3, C2, D4	lecture	MCQs & SEQs
9	Regulatory framework governing CAM	A7, A8, B4, B5, D1	lecture	MCQs & SEQs
10	Medical ethics of CAM	A8, C2, D1, D4	lecture	MCQs & SEQs
11	Frauds and misconceptions related to CAM practices and products	A1, A2, A7, B6	lecture	MCQs & SEQs
12	Health education and communication in CAM	A1, A2, A7, B6	lecture	MCQs & SEQs
13	Energy medicine	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
14	Local traditional practices in KSA	A2, A4, A5, A7, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
15	Herbal medicine	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
16	Massage therapy	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
17	Reflexology	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
18	Apitherapy	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
19	Mind body medicine	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
20	Prophetic medicine	A2, A4, A5, A7, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
21	Whole medical system (TCM)	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
22	Whole medical system (Naturopathy)	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	lecture	MCQs & SEQs
23	Nutritional therapy	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D4	seminar	MCQs & SEQs
24	Biological based practices	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	seminar	MCQs & SEQs
25	Manipulative and body based practices	A2, A4, A5, B2, B3, C1, C2, D1, D2, D3, D4	seminar	MCQs & SEQs
26	Whole medical system (Homeopathy)	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	seminar	MCQs & SEQs
27	Whole medical system (Unani Medicine, Arabic or Hakim Medicine)	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	seminar	MCQs & SEQs
28	Local traditional CAM practices (Hijama)	A2, A4, A5, B1, B2, B4, C1, C2, C4, D1, D2, D3, D4	Demonstration	MCQs & SEQs
29	Alternative CAM practices (Acupuncture)	A2, A4, A5, B1, B2, B4, C1, C2, C4, D1, D2, D3, D4	Demonstration	MCQs & SEQs
30	Critical appraisal	A6, A8, B4, B6, C1, C2, C3, D1, D2, D3, D4	Demonstration	MCQs & SEQs
31	Prophetic medicine	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	Demonstration	MCQs & SEQs
32	field visit to the nearby community	A2, A4, A5, B1, B2, B4, C1, C2, D1, D2, D3, D4	Field visit	MCQs & SEQs

Table 2: Course ILOs Matrix-Teaching and learning strategy and student assessment.

Summary and Conclusion

Complementary Medicine and Integrative Health Module has been planned and implemented during the year 2016-2017 for fourth year medical students at Dar Al Uloom University, Riyadh, KSA. The Methods of teaching and learning included interactive lectures, seminars, practical sessions, assignments, field visits, simulation, learning by doing, case studies, problem based learning and self-directed learning. Topics covered during the course included; Introduction and overview of Complementary and Alternative Medicine (CAM), Epidemiology of CAM practices, Characteristics and comparison of CAM vs. Conventional Medicine, Integrative Medicine, Research models in CAM, Evidence based CAM, Medical ethics of CAM, Frauds and misconceptions related to CAM practices and products, Health education and communication in CAM, Manipulative and body based practices, Biological-based practices, Mind-body medicine, Energy based therapies, Whole medical systems; Traditional Chinese Medicine (TCM), Unani, Arabic or Hakim Medicine, Prophetic Medicine and Local traditional CAM therapies (Hijamah as a model), Acupuncture, Herbal Medicine, Naturopathy, Nutrition and food supplements, Apitherapy and Homeopathy. At the end of the module, two types of assessments; continuous and final assessments were done. Continuous

assessments took place throughout the course. They were mostly based on course work as follows; Seminar (10%), Assignments (10%), Field visit report (10%) and Mid-term exam (20%). A proportion of 50% had taken in the final assessment. A student who scored 60 or more deemed to have passed this course. The feedback received was most supportive of the module and appreciative of the teachers, the information provided and skills gained and the way in which it was delivered.

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