Attitude of Medical Students to the Introduction of Complementary Medicine into the Medical Curriculum in Israel

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Abstract

Background: Complementary medicine is gaining in public popularity, yet medical school curricula usually ignore it.

Objectives: To determine whether senior medical students are interested in learning principles of complementary or alternative medicine, to check their degree of familiarity with it, and to suggest a format for such studies in the medical curriculum.

Methods: Senior medical students (n = 117) were surveyed by an anonymous questionnaire.

Results: Seventy-nine percent of the senior medical students were interested in studying complementary or alternative medicine in medical school, and 65% were interested in applying these techniques to treat patients. Eighty-seven percent of students were familiar with some techniques of complementary medicine.

Conclusions: Senior medical students are interested in studying complementary and alternative medicine in medical school and in applying these techniques in practice.

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The use of complementary or alternative medicine is rapidly increasing in the western world. Among the general public in the United States, 34% reported using one or more forms of unconventional medicine in 1990, while the number of visits to unconventional providers was greater than the number of visits to all primary care physicians (425 million vs. 388 million) [1]. More recently, the same group of researchers showed an even greater use of CAM. In 1997 over 42% of Americans used at least one form of unconventional medicine, and expenditure increased by over 45% and reached $21 billion, of which $12 billion was paid out of pocket [2]. A similar situation exists in many other industrialized countries, with usage varying from 25% in Belgium and Denmark to 50% in France and Australia [3].

According to a recently published survey, about 36% of the Israeli population is currently using or has used CAM [4]. It seems that CAM fulfills needs that conventional medicine does not: for example, CAM offers an alternative explanation of health problems and a greater sense of autonomy in dealing with them [5,6].

CAM = complementary or alternative medicine

In recent years initial steps have been taken towards the academization of CAM. The London School of Acupuncture, which in the past provided only private courses, has collaborated with the University of Westminster and is now offering a Bachelors degree in acupuncture. Phytotherapy courses are offered by the University of Middlesex, while Exeter University offers postgraduate studies in complementary medicine [7]. This tendency has not bypassed physicians and trainees for conventional medical practice. These professionals are demanding more information and knowledge in order to deal better with their patients' questions and needs [7–11]. Many think that CAM education should be integrated into the medical school curriculum [12–14]. Medical schools are yielding to this demand, and complementary medicine courses are now included in the syllabi of many. Of the 127 schools of medicine in the United States, only 28 currently do not offer any course in CAM [15]. In the UK the percentage of medical schools offering courses in CAM increased from 10% in 1995 to 40% in 1997 [16].

Medical students today face a dilemma. On the one hand, they are confronted by the increasing public demand for referral to CAM suppliers. On the other hand, they are exposed to an attitude of their teachers and members of the conventional medical establishment that may be hostile. Their exposure to CAM is limited. Moreover, students are aware of the methodologic weaknesses of CAM, especially with regard to well-performed double-blind, placebo-controlled studies, which are the hallmark of conventional medicine. They frequently observe the lack of a "gold standard" in many complementary fields and the often esoteric, non-scientific theories upon which they are founded. On the other hand, students may witness positive results of complementary medical treatment in patients. These successful outcomes might, of course, be the result of a placebo effect, but they may leave a positive impression on the medical student.

The attitude of medical students towards CAM should not be underestimated. They are the doctors of the future and, besides, a part of Israel's citizenry which is showing an increasing interest in CAM.

Very few studies have examined the attitudes of medical students towards CAM and the need to integrate these subjects into their syllabi. In the few papers that do exist, medical students

have consistently shown a positive attitude towards CAM and a willingness to study its disciplines [17,18].

The purposes of this study were to examine the attitudes to, and familiarity with CAM among Israeli medical students, as well as their interest in including CAM in their medical school curriculum. We also sought to determine possible factors influencing those responses. This pilot study was performed as part of a national survey among medical students in Israel.

Methods

The survey was conducted in the year 2000 among 160 medical students at the Sackler Faculty of Medicine at Tel Aviv University. The students were in the clinical phase of study (in their final two clinical years of a 6 year course) and were asked to answer a questionnaire anonymously.

The questionnaire

A two-part questionnaire, developed for the survey, included 19 items. The first part assessed the students' attitudes (7 items). Attitudes were ranked on a four-degree scale, from 1 (low) to 4 (high). In addition, each student specified his/her gender, year of study, as well as his/her previous exposure to CAM. Previous exposure was defined as those responders who themselves, or whose relatives had used CAM in the past (value 2–4 on the questionnaire scale).

In the second part, the students were asked to indicate their familiarity with different fields of CAM (12 items) and then to rank their interest in studying these fields, again on a scale of 1–4, with 1 indicating the least interest and 4 the highest.

Results

The questionnaire was tested for reliability and was found to be highly reliable ($\alpha = 0.91$). The response rate was 73% (117 students) with equal proportions of responses from fifth and sixth year students. The number of female students who responded to the questionnaire was disproportionately high in relation to their numbers in each class. This tendency was noted primarily in the 6th year, but the difference was not significant. However, nearly 70% of those students who had had previous exposure to CAM were female [Table 1].

Table 1. Characteristics of the responders by class, gender and previous exposure* to CAM

Subgroup/Gender	% of respondents	Male	Female
5th year	60 (51%)	31 (52%)	29 (48%)
6th year	57 (49%)	21 (36%)	36 (64%)
Total	117 (100%)	52 (44%)	65 (56%)
Previous exposure to CAM	33 (28%)	10 (30%)	23 (70%)

* Previous exposure = value of 2–4 on the questionnaire scale.

Table 2. Students' attitudes toward introduction of CAM into medical school curriculum

Attitude	Mean (SD)* (n=117)	Frequency (%) of possitive attitudes (3–4 out of 4)
It is still too early to introduce CAM treatments into formal medical practice**	3.30 (1.01)	78.5
Success in treating patients with CAM depends on the quality of practitioner and treatment	3.29 (0.90) +	81.2
I am interested in studying CAM in medical school	3.25 (1.09) +	78.3
In the future I would like to use CAM techniques to treat patients	2.97 (1.13) +	65.4
I would like CAM studies to include clinical work	2.96 (1.22) +	67.5
I believe in helping patients using CAM	2.96 (1.09) +	65.2
CAM efficacy has been proven on patients	2.59 (1.00) + ***	54.1

* 1 = lowest, 4 = highest
** This item was re-coded (1=4, 2=3, 3=2 and 4=1). The results are presented in reverse direction
*** Women were significantly more likely to support this statement.
\+ Previous-exposure responders were significantly more likely to support this statement.

Student attitudes to introduction of CAM into the curriculum

Students' attitudes towards the introduction of CAM varied from a strongly positive response (78%) to the statement "I am interested in studying CAM in medical school," to a less positive response (54%) to the statement "CAM efficacy has been proven in patients." These results are summarized in Table 2.

Significantly more positive attitudes toward CAM were observed among those with previous exposure to CAM, as compared to those without such exposure. However, both groups agreed that it is not too early to introduce or include CAM treatment in formal medical training.

Familiarity with fields of CAM

Most students were familiar with the various fields of CAM (69–87%). The fields in which students displayed the most interest were hypnosis (86.6%), relaxation (75.2%), meditation (73.7%), acupuncture (71.3%), and biofeedback (70.4%). Lower levels of interest were displayed towards healing (37.8%), antioxidants (57.6%), naturopathy (57.6%), and chiropractic (60.6%). Students with previous exposure to CAM were more inclined to want to study CAM, specifically in the two fields of homeopathy and phytotherapy [Table 3]. They were less interested in studying some fields, such as antioxidants or healing, despite their familiarity with these concepts (column 3 in Table 3).

Relationship between gender and attitudes toward CAM

Thirty-five percent of the female responders reported previous exposure to CAM, compared to 20% of the responding male students. Nevertheless, male and female attitudes toward CAM were very similar. The only significant difference was that more females felt that there was evidence that CAM helps patients [Table 2]. Women were also significantly more interested than men in learning about phytotherapy [Table 3].

Discussion

This is a pilot study performed only in one of the four medical schools in Israel. The results of this study reveal a high level of

interest in introducing CAM into the medical school curriculum. These results are similar to the results of a study performed recently among medical students at the Hebrew University Medical School [19]. The students' opinions on CAM are similar to that of the public: the majority can see no reason for delaying the introduction of CAM into conventional practice and would be willing to use CAM to treat patients. Despite the fact that about half of the students did not believe there was proof of the efficacy of CAM, the majority felt that it can help patients, depending on the quality of the therapist and the therapy. A third of the responders reported that either they or their close family members had used CAM in the past. It is interesting to note that although those with previous exposure to CAM were primarily women, there were no significant gender differences in attitudes.

Table 3. Students' interest and familiarity with various CAM fields (descending order)

CAM fields	% interested in studying* (a)	% with familiarity (b)	% Difference between familiarity and interest in studying (b-a)	Mean interest in studying**	SD
Hypnosis	86.6	87.4	0.8	3.49	0.93
Relaxation	75.2	84.9	9.7	3.11	1.08
Meditation	73.7	83.2	9.5	3.10	1.15
Acupuncture	71.3	84.9	13.6	3.05	1.13
Biofeedback	70.4	76.5	6.1	3.00	1.13
Phytotherapy	66.0	84.0	18.0	2.80+	1.19
Reflexology	64.3	82.4	18.1	2.89	1.16
Homeopathy	64.2	83.2	19.0	2.88+	1.18
Chiropractic	60.6	79.0	18.4	2.68	1.20
Naturopathy	57.6	68.9	17.7	2.61	1.28
Antioxidants	57.6	83.2	25.6	2.74	1.19
Healing	37.8	76.5	38.7	2.23	1.20

* Positive attitude = 3 or 4 of 4 on questionnaire scale.
** On a scale from 1 (lowest) to 4 (highest).
# Women were significantly more likely to support this statement.
+ Students with previous exposure were significantly more likely to be interested in studying these fields than were non-users.

It is estimated that in everyday practice more than a third of a general practitioner's patients use CAM [4]. Moreover, the doctor is confronted with many questions concerning CAM, which he or she may not be able to answer [20]. This may lower the patient's trust in his/her physician, resulting in the patient being less willing to volunteer information on his/her use of CAM [1].

It is obviously important for physicians to be aware of CAM procedures. There is another aspect: CAM may be associated with possible harmful effects that can result from certain techniques. Therefore, the physician should be knowledgeable enough about those techniques to be able to evaluate their advantages or disadvantages for his or her patients. This, as well as the results of the present study, justifies the introduction of CAM into the curriculum of the medical faculties.

If one accepts the principle that CAM should be introduced into the medical school curriculum, what should the objectives of this learning experience be? We suggest at this stage that the student should be acquainted with the basic concepts and philosophy of CAM and acquire general knowledge about therapy forms and social aspects of CAM. As in conventional medicine, students should be exposed to evidence-based practice and should discuss scientific problems relating to research in CAM topics. They should be aware of the contraindications and adverse reactions of the major therapies involved (e.g., traditional Chinese medicine, homeopathy, hypnosis, spinal manipulation, etc.) [20]. In any case, at the present time, students should not be expected to demonstrate proficiency in CAM techniques. The question of students being taught to practice CAM should be raised in the future, after more evidence on the efficacy of these disciplines and experience concerning the introductory courses that we propose become available.

Israel's society is ethnically heterogeneous, made up of immigrants and workers from many countries and cultures. Information on medical disciplines traditional to these different ethnic groups should also be made available to doctors working with these groups and to students.

Conclusion

Medical students are in favor of including CAM in the curriculum of the medical school. This is in accordance with the majority of U.S. medical schools that have introduced CAM into their curricula.

The format could be that of an introductory theoretical course in the preclinical phase of the curriculum and should not include any training in, or acquisition of, techniques. The preferable teaching method should include discussions to illustrate the benefits and drawbacks of each of the approaches, and a comparison of CAM to conventional medicine.

The curriculum should encourage discussion of the need for scientific, evidence-based research in CAM, so as to enable future physicians to evaluate the therapeutic efficacy of CAM and to carry out research in this field.

The reduction of hostility toward CAM on the part of faculty members will require a special approach by teachers. The optimal solution would be the side-by-side practice of conventional medicine and CAM, for the benefit of the population's health.

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Mini-capsule

Value of antiplatelet therapy in high risk patients?

Daily aspirin doses of 75–150 mg have a net benefit in most people at high risk for vascular occlusion.

Br Med J 2002;324:71

Mini-capsule

Cardiac pacing for sleep apnea?

Atrial pacing – which increased average nocturnal heart rate from 51 to 72 beats per minute – resulted in substantial improvement in sleep apnea.

N Engl J Med 2002;346:444

Capsule

Ring-like structure of the *Deinococcus radiodurans* genome: a key to radioresistance?

The bacterium *Deinococcus radiodurans* survives ionizing irradiation and other DNA-damaging assaults at doses that are lethal to all other organisms. Smadar Levin-Zaidman and colleagues from the Weizmann Institute of Science tried to resolve the question how *D. radiodurans* accurately reconstructs its genome from hundreds of radiation-generated fragments in the absence of an intact template. They show that the *D. radiodurans* genome assumes an unusual toroidal morphology that may contribute to its radioresistance. The group proposes that, because of restricted diffusion within the tightly packed and laterally ordered DNA toroids, radiation-generated free DNA ends are held together, which may facilitate template-independent yet error-free joining of DNA breaks.

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