Science Press

Journal homepage:
www.jcimjournal.com/jim
www.elsevier.com/locate/issn/20954964
Available also online at www.sciencedirect.com.

• Research Article

Incorporation of integrative medicine education into undergraduate medical education: a longitudinal study

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ABSTRACT

OBJECTIVE: Integrative medicine (IM) combines complementary medical approaches into conventional medicine and considers the whole person. We implemented a longitudinal IM short-course curriculum into our medical school education. This study aimed to evaluate the feasibility and effectiveness of the curriculum via knowledge and attitude surveys regarding IM among students.

METHODS: A mandatory short IM curriculum across all years of medical school was created and taught by IM professionals and physician faculty members with expertise in integrative therapies. Graduating classes of 2015 and 2016 completed the same survey in their first and third years of medical school. Paired data analysis was done, and only students who completed surveys at both time points were included in final analyses.

RESULTS: Of 52 students in each class, 17 (33%) in the class of 2015 and 22 (42%) in the class of 2016 completed both surveys. After the IM curriculum, students' knowledge of and comfort with several IM therapies—biofeedback, mindfulness, and the use of St. John's wort—improved significantly. Students' personal health practices also improved, including better sleep, exercise, and stress management for the class of 2015. Students graduating in 2016 reported decreased alcohol use in their third year compared with their first year.

CONCLUSION: It is feasible to incorporate IM education into undergraduate medical education, and this is associated with improvement in students' knowledge of IM and personal health practices.

Keywords: course curriculum; education; integrative medicine; medical students

Citation: Mahapatra S, Bhagra A, Fekadu B, Li Z, Bauer BA, Wahner-Roedler DL. Incorporation of integrative medicine education into undergraduate medical education: a longitudinal study. *J Integr Med*. 2017; 15(6): 442–449.

http://dx.doi.org/10.1016/S2095-4964(17)60367-4
Received January 24, 2017; **accepted** March 29, 2017.
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1 Introduction

Integrative medicine (IM) aims to combine conventional and complementary medical approaches in an organized way, with the goal of integrating the best-available evidence toward patients' well-being, and taking into account the whole person (body, mind, and spirit).[1,2] According to the 2012 National Health Interview Survey report,[3,4] more than one-third of the United States (US) adult population uses some sort of complementary approaches to health. Use of complementary and alternative medicine, more recently referred to as IM, has increased consistently in the US in the past four decades.[5] Reasons for this observed increase include complex medical needs, prevention, wellness promotion, and cultural relevance such as values, beliefs, and philosophical orientations.[6,7] It is estimated that adults in the US spent $14.9 billion out of pocket for visiting IM practitioners and for the purchase of complementary products.[8]

Because of the increased use of IM, US medical institutions have acknowledged the need for training in various IM modalities in their curricula.[9] The General Medical Council encourages the integration of complementary medicine teaching into basic medical education.[10] In 2000, the National Center for Complementary and Integrative Health at the National Institutes of Health took the initiative of funding educational projects to incorporate IM into the curricula of conventional health professional schools.[11] It has been determined that physicians need additional evidence-based IM education to provide proper guidance to patients.[12]

There is a growing need to educate medical students and physicians in IM and its integration into conventional medicine.[10,13–18] Several studies have assessed the teaching of IM in the framework of new courses. Frye et al.[19] and other studies have reported several ways for medical students to acquire knowledge about IM, such as evidence-based IM courses,[20,21] literature reviews,[22] active learning mechanisms,[23] learner-driven activities,[24] and various other modalities.[25] Studies have investigated the interest and enthusiasm[26,27] of medical students to incorporate IM in their course curriculum.[21,28–30] Most medical students believed that knowledge of IM is important for their future careers.[31,32] In addition, senior medical students were interested in learning and applying IM techniques in practice.[33] Students also believed that patient care could be greatly enhanced if physicians educate themselves about patients' beliefs and health care behaviors.[34] A study by Rees et al.[35] suggested that further research was needed to explore whether IM education can change the attitudes of medical students.

Although some studies have evaluated the knowledge and attitudes of medical students regarding IM, most of these studies were cross-sectional. In the current study, we implemented a longitudinal method with the introduction of an IM short-course curriculum. The purpose of this study was to evaluate the feasibility and effectiveness of this curriculum by determining knowledge of IM among students entering medical school (in 2011 and 2012) and follow-up of these 2 cohorts in their clinical years (third year).

2 Methods

2.1 Study design

The study was conducted by the section of IM and health, which is a part of the general internal medicine division at our institution. The study was approved by our institutional review board.

2.2 Development of an IM course curriculum

An IM short-course curriculum, which was mandatory for the medical students, was created and taught by IM professionals and faculty members with doctor of medicine (MD) degree and expertise in integrative therapies. The courses were delivered in lectures, small-group discussions, and student-initiated wellness activities. Course content focused on basic science and experimental and evidence-based knowledge.

2.3 Survey instrument and data collection

The survey was designed to address 4 areas of IM: (1) the students' familiarity and experience with various IM techniques and herbs (23 questions); (2) ratings of the effect of various factors on students' attitudes toward IM (9 questions); (3) students' demographics (8 questions); (4) a personal health index (11 questions). Questions regarding IM were derived from a physician survey previously used by the authors in scholarly projects[36,37] and adjusted for medical students. The personal health index was created by us after review of the appropriate literature.

An electronic survey instrument was created using the Research Electronic Data Capture (REDCap) tool hosted by our institution. REDCap is a secure, web-based application that is designed to support data capture for research studies.[38] A link to the web-based survey (pretest) was emailed to all first-year medical students entering our institution's medical school in 2011 and 2012 (classes of 2015 and 2016) during the first month of the school year. One email reminder was sent after 2 weeks to the nonresponders. Answers from completed survey questionnaires were captured in REDCap. Longitudinal posttesting was conducted at the beginning of the students' third (clinical) year, using the same survey. Data from REDCap were downloaded as Excel files (Microsoft) and imported to SAS software (SAS Institute Inc.) for