Original article

A parallel curriculum in lifestyle medicine

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SUMMARY

Background: Less than 50 per cent of US primary care doctors routinely provide guidance to their patients on lifestyle behaviours such as diet, physical activity or weight control, despite the prediction by the World Health Organization that by 2020, two-thirds of disease worldwide will be the result of poor lifestyle choices. This gap in patient–clinician dialogue is perhaps the result of a lack of structured training in medical school surrounding the components of lifestyle medicine.

Context: Although Harvard Medical School does have a required course in nutrition, there are no requirements for the other components of lifestyle medicine, including physical activity, behaviour change and self-care.

Innovation: Since 2009 Harvard Medical School has addressed this absence in the curriculum by developing a student-led, faculty member-advised, parallel curriculum in lifestyle medicine. Medical student participants were invited to take part in anonymous questionnaires between 2009 and 2013, which gathered data about personal ability and attitude in counselling patients on lifestyle behaviours, as well as subjective data on the curriculum content and applications to effective medical practice.

Implication: Each year, students have pointed to a lack of lifestyle medicine knowledge because of a gap in the traditional curriculum surrounding topics such as physical activity, nutrition and behaviour-change strategies, and indicated that the inclusion of this knowledge and these skills was an important component of medical education. Although participation is currently voluntary, this is the first such curriculum of this type and addresses a critical gap in undergraduate medical education.

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Lifestyle Medicine is beneficial to all medical practices and specialties

INTRODUCTION

Lifestyle Medicine is a relatively new field, defined as an 'evidence based practice of assisting individuals and their families to adopt and sustain behaviours that can improve health and quality of life' – namely, decreased tobacco use, healthy diet, physical activity and moderate alcohol consumption.[1] As a burgeoning discipline, Lifestyle Medicine is beneficial to all medical practices and specialties, and is poised to help solve the health care crisis and to ameliorate the epidemics of diabetes and obesity. Indeed, almost 80 per cent of chronic diseases have been shown to be preventable by lifestyle behaviour,[2] and lifestyle interventions have been shown to be more effective at treating some disorders than medication.[3]

Physician competencies in lifestyle medicine have been outline by Lianov and colleagues in *JAMA*.[1] In 2004 the American College of Lifestyle Medicine was founded 'in answer to the need for quality education and certification of the practice in clinical lifestyle medicine' (htpp://www.lifestylemedicine.org), and in 2007 the Institute of Lifestyle Medicine was founded with a mission to 'reduce lifestyle-related death and disease through clinician-directed interventions with patients' (http://www.instituteoflifestylemedicine.org). More recently, an international coalition has been formed to call for the incorporation of lifestyle medicine into clinical practice,[4] and a national collaborative effort is underway to institute Lifestyle Medicine into undergraduate medical school curricula across the USA.[5]

Despite the increasing curricular materials and calls for reform, neither lifestyle medicine nor its components are taught in most medical schools. Indeed, only approximately one-quarter of medical schools have indicated that they provided the 25 hours of recommended nutrition education,[6] and over half of the doctors trained in the USA in 2013 received no formal education in physical activity.[7] Furthermore, although a clear definition of Lifestyle Medicine capacities for doctors has been defined,[1] as yet there are no curriculum guidelines, validated assessment tools, or evaluation or implementation plans in place. This is a critical gap in the education of our nation's doctors that even the medical students themselves recognise.[8]

A parallel curriculum in Lifestyle Medicine can offer an alternative to the lack of structured courses pertaining to nutrition, physical activity, behaviour change, and self-care. The Harvard Medical School Lifestyle Medicine Interest Group (HMS LMIG) seeks to fill this curricular gap by providing exposure to practices essential for the doctor-directed preventive care that is necessary to address non-communicable diseases in the modern health care environment.

CONTEXT

Harvard Medical School is one of the few medical schools that offer a structured curriculum on nutrition to second-year medical students.[6] Exercise and physical activity are not taught in the structured curriculum. In order to supplement this material and increase student knowledge of complementary physical activity and behaviour-change theories, the HMS LMIG was founded in 2009.

The HMS LMIG collaboration of students and a faculty advisor first defined their concept of doctor-directed lifestyle medicine: 'to empower the next generation of physicians to tackle lifestyle-related illness in an effort to reduce morbidity and mortality from coronary artery disease, diabetes, stroke, metabolic syndrome, obesity, and a sedentary lifestyle'.[9] The curriculum was predetermined by the faculty advisor to include: exercise, nutrition, behaviour change and doctor self-care. The faculty advisor used the coach approach to assess student interest in each topic and to determine the order of presentation.

A Lunch & Learn format was proposed and one of the medical students was charged as the early leader. Lectures were on exercise risk stratification, nutrition and doctor self-care. In the second year of the HMS LMIG, the topics for lectures included an introduction to Lifestyle Medicine, exercise prescription, nutrition counselling, self-care and the rudiments of change using the coach approach. In addition to the faculty advisor and guest lecturers from HMS delivering the lectures, experts from outside the medical school were invited to lecture.

In the third year, the HMS LMIG was given formal approval by the HMS student government to be incorporated into the sanctioned student groups, and became eligible to receive student government funding. Topics remained similar to those of previous years, with the addition of positive psychology and motivational interviewing.

The fourth and fifth years were similar, and student interest continued to grow. As a result of the overwhelming response of the students, three student presidents were elected, along with the same faculty member mentor and several guest lecturers with specific content expertise. A total of four or five lectures were given each year, with approximately 4–8 hours of learning time. The learning objectives for each topic are presented in Table 1.

Table 1. Learning objectives for each Lifestyle Medicine topic

Lifestyle Medicine topic	Core objectives
Introduction to Lifestyle Medicine (LM)	Identify the core competencies of Lifestyle Medicine Review the history of LM; identify landmark medical studies in LM
Exercise and physical activity	Review the benefits of exercise Introduce a risk-stratification system Demonstrate how to write an exercise prescription Review effective counselling techniques for exercise counselling Encourage students to write their own exercise prescription
Diet and nutrition	Discuss the evolution of dietary guidelines Determine what constitutes a healthy diet Review effective counselling techniques for nutrition Introduce the roles of dieticians, nutritionists and health coaches
Self-care	Define self-care in relation to doctors Determine the importance of self-care with relation to burnout, health and wellbeing Review the literature on how a doctor's health habits affect patients
Behaviour change	Introduce the transtheoretical model of change Discuss the evolution of the 5 'A's Identify the difference between the coach approach and the expert approach Review the literature on the coach approach in medicine
Motivational interviewing (MI)	Introduce MI core concepts Practice reflections, affirmations, open-ended questions and summaries Discuss the process of elicit–provide–elicit Review the literature using MI in medicine
Positive psychology (PP)	Discuss the history of the field of PP Review the literature about the use of PP in medicine Relate positive psychology to the life of a health practitioner, both personally and professionally

Practical clinical and self-care skills were taught and work-shopped during each lecture. For example, during exercise lectures, a 'walking classroom' was implemented and student leaders subsequently took the initiative to find sponsors that donated exercise balls to use as chairs or as exercise equipment for gentle stretching or strength training. During nutrition lectures, students were encouraged to cook and share recipes. These modalities were purposefully chosen in order to enhance the learning environment and to encourage healthy physical activity and nutrition practices in real-life application.

By using evidence-based Lifestyle Medicine practices and competencies already established in the literature, the HMS LMIG syllabus encouraged knowledge growth and emphasised a patient-centered model. By focusing on doctor–patient communication, the Lifestyle Medicine approach allowed for doctors to effectively and efficiently promote healthy lifestyle development and changes in their patients.

INNOVATION

In the first year of the HMS LMIG, 26 students participated with one student leader and one faculty member mentor. In 2013, student participation had increased to 35 students with three student leaders. In order to demonstrate the continued need for this type of curriculum, in this study we examined the most recent pre-course survey and the continuing lack of future doctors' perceived ability to evoke behaviour change in their patients. This research was considered exempt for human-studies review by the Committee on Human Studies at the Joslin Diabetes Center.

During the first and last lecture of each semester, a voluntary survey of students assessed current and learned competencies and used open-ended questions to address the personal value of HMS LMIG to their anticipated medical practices and their own personal health behaviours. Students were asked, on a scale of 1–5 (where 1 is highest), to indicate the relevance of the lifestyle medicine curriculum overall, as well as each topic, to their future practice. In addition to being used as a critique of the course, understanding student perception of these topics is critical as doctors who exhibit exemplary health behaviours are more likely to counsel their patients to do so.[10]

As the course has evolved, the surveys were modified and, as such, only outcomes from the most recent survey are presented. In 2013 (Table 2), on a scale of 1–5 (1 is highest – very confident or very important), students who completed the survey (n = 12, a 34% response rate) demonstrated

Practical clinical and self-care skills were taught and work-shopped during each lecture

Future doctors lack the perceived ability to institute behaviour change in their patients

Table 2. Results of 2013 survey

Survey prompt	Average score (SD)	Range
How confident are you in your ability to counsel a patient in the area of behaviour change (exercise, diet, weight loss and smoking cessation)	3.04 (0.52)	2.0–3.0
How important is it to your patients that you gain skills in counselling patients in the area of behaviour change?	1.04 (0.14)	1.0–1.5

that future doctors lack the perceived ability to institute behaviour change in their patients, although this skill was clearly seen as important. This identified a critical gap in the traditional medical school curriculum that this Lifestyle Medicine course sought to address.

Although the 2013 follow-up survey did not address students' newly acquired perceived ability on the same scale, after the course, subjective comments submitted by participating students indicated increased confidence.

- The lectures are very helpful and eye-opening about ways that physicians can use their social, not just medical skills, to truly impact a patient's lifestyle and health.
- I learned information I had not previously encountered in medical school curriculum so far, like how to prescribe exercise, how to determine the patient's readiness to change his lifestyle/health using clearly defined criteria (which is incredibly useful, I found, not just for lifestyle change, but for any medical treatment, as well), and how to engage patients in a conversation (surprisingly not taught as well in [class]).
- Learning that you could prescribe exercise in a clear, concrete, and supportive way changed my whole perspective on the role of a physician in lifestyle changes.

IMPLICATION

The popularity and recognition of the value of the HMS LMIG is a testament to the need for a patient-centred Lifestyle Medicine curriculum within undergraduate medical school education; however, replication in other medical schools, as well as expansion into a full course, requires several important requisites. Table 3 includes suggestions for the application of the principles from HMS LMIG to other medical schools.

CONCLUSION

The success of the Harvard Medical School Lifestyle Medicine Interest Group demonstrates the demand and desire of medical students to incorporate tenets of Lifestyle Medicine into modern medical school education. To address this critical gap in training, alternative curricula, like Lunch & Learn, should be implemented until core curricula are developed and implemented.[5] Lifestyle Medicine is expected to have important public health implications by promoting the prevention and treatment of non-communicable chronic disease with doctor-directed behaviours.[4] Although the current study is limited by a relatively small sample size and a varying survey tool, with narrow participation, the results still indicate continued student interest and behavioural impact. The HMS LMIG is an outstanding design that can be used to cultivate future out-of-classroom experiences to

Table 3. Suggestions for the application of Harvard Medical School Lifestyle Medicine Interest Group (HMS LMIG) to other medical schools

Essential component	Role
A champion mentor	As the Lunch & Learn format is designed for first- and second-year students on campus, a willing faculty member with a strong background in lifestyle medicine, and familiarity with medical school students and procedures, is necessary to facilitate and keep momentum moving as students transition into clinical years
Interested students	The faculty member needs to identify champion students and one or two strong leaders who are committed to lifestyle medicine. Their interest in the material and their willingness to market the talks is critical to the success of the initiative
Recognition from the medical school	A sustainable model would include recognition from the medical school student government, elective board or activities programme in order to continuously provide funding and marketing
A Lifestyle Medicine syllabus	Our syllabus is designed around physical activity, healthy diet, behaviour change and self-care. Other important topics could be included, but should be based on the Lifestyle Medicine competencies[1]

engage students in the necessary clinical tools of Lifestyle Medicine.

Lifestyle Medicine is expected to have important public health implications

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