Lifestyle Medicine Education: Essential Component of Family Medicine

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INTRODUCTION

The Future of Family Medicine report, released in 2004, concluded that the US healthcare system was inadequate and unsustainable, and that without transformation, the specialty of family medicine might be in danger of extinction.[1,2] From this call to action, a host of innovation and projects were born. These include the *Annals of Family Medicine*, launched with the goal of improving and expanding primary care–focused research.[2] The Preparing the Personal Physician for Practice (P4) Initiative for innovation in family medicine residency education was launched in 2007 and continues to be mined for lessons on graduate medical education redesign.[3-5] Family Medicine for America's Health and Health is Primary initiatives followed in 2012 and 2014 with a particular focus on the triple aim of improving population health, experience of care, and per capita cost, as well as positioning family medicine as an essential player in the changing healthcare climate.[6,7]

After nearly 2 decades, family medicine has achieved many of the initial aims of the Future of Family Medicine report and has helped shape national health policy. Yet the fact remains that healthcare in the United States remains inadequate and unsustainable. It is unsustainable financially in that more than 90% of the $3.8 trillion in healthcare expenditures is spent on chronic disease and mental health conditions.[8] Healthcare costs grow faster than inflation, and individuals and corporations alike struggle under the financial burden of obtaining healthcare.[9,10] One example: An explosion of new medications for diabetes has revolutionized the national guidelines, yet the diabetes epidemic grows unabated.[11] Despite all the innovations in healthcare design, delivery, technology, patient-centered efforts, medical home initiatives, and data analysis, as well as pharmacologic advances, we have failed to advance in our efforts to help individuals and society at large with the foundational elements that support healthy lifestyle behaviors.

This is not for any lack of desire on the part of family physicians. Although physicians believe it is their responsibility to address lifestyle issues during patient encounters,[12-14] many still fail to do so consistently.[15-17] A mere 14% of residents believed they possessed the knowledge and training to counsel patients regarding nutrition.[13] Furthermore, despite the fact that 76% of residents reported confidence that physical fitness should be a priority and 88% reported understanding the benefits of physical activity, less than 50% felt confident in their ability to implement personal physical fitness behavior, and most felt ill-equipped to lead healthy lives themselves.[14] If residents are not confident in their own ability to implement healthy behaviors for themselves, how

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can they be expected to effectively prescribe lifestyle change for their patients?[18] In addition to a lack of sufficient education and training, a dearth of high-quality clinically relevant evidence and clear lifestyle change protocols has made it difficult to prescribe and facilitate change in a way that is both realistic and sufficiently efficacious.

Healthy lifestyle and health behavior change has always been, and must always be, a core element of family medicine. Family physicians excel at developing deep, long-lasting relationships, and it is the bonds of trust in these relationships that allow physicians to encourage and support patients in difficult lifestyle change. A deeper focus on lifestyle medicine with the aim of better education, clear actionable lifestyle medicine treatment protocols, and a system of mentorship holds the promise not only to reinvigorate the health of our patients but to further revolutionize family medicine training and practice. If we are to arrest, let alone reverse, the unsustainable trajectory of our nation's health and healthcare system, addressing core lifestyle-treatable diseases and conditions surely deserves our greatest efforts.

Routine chronic care visits can become moments of transformation if physicians have the educational knowledge and skills to implement lifestyle behavior change as a therapeutic modality among patients. This article summarizes efforts underway in undergraduate medical education, graduate medical education, fellowships, and continuing medical education (CME) to infuse all levels of training with lifestyle medicine education. Such a transformation is illustrated below with patient MM, who was treated by his primary care provider (PCP), a family medicine physician who is a board-certified lifestyle medicine diplomate practicing at an employer-based clinic in rural Indiana. Of note, Indiana ranks 41st in the 2019 America's Health Rankings.[19]

CASE PRESENTATION

In late 2020, MM, a 63-year-old man, presented for follow-up laboratory tests. He had visited his PCP 1 year earlier describing hoarseness of voice and fear of having throat cancer. He had a history of smoking (50 pack-years) and had quit in 2006. He was a heavy drinker, but subsequently reduced drinking to only 1 to 2 beers per week. He denied drug use and had a history of hypertension that was being medically managed. His esophagogastroduodenoscopy indicated esophagitis but no evidence of cancer. After referral to an ear, nose, and throat (ENT) specialist, he was prescribed a high-dose proton pump inhibitor and treated for allergies. This resulted in improvement of his hoarse voice. After the course of a year, with 5 subsequent visits, he presented for a follow-up lab appointment, where he was diagnosed with prediabetes and dyslipidemia. This prompted MM to initiate lifestyle changes to address the hypertension, prediabetes, and dyslipidemia. Six months later, during another follow-up appointment, his PCP assessed how he was progressing with his behavior change goals. See the **TABLE** for a description of the case.

All too often, when patients present with prediabetes and/or dyslipidemia, lifestyle is not addressed as a foundational therapeutic modality. No action is taken or oral pharmacotherapy alone is advised. Additionally, many patients with chronic diseases rooted in lifestyle behaviors, as evidenced by this patient's clustering of hypertension, prediabetes, and dyslipidemia, are unaware that lifestyle modifications are a foundational part of the treatment options available to them. Medical education transformation via implementation of a lifestyle medicine curriculum emphasizing not only health promotion but also disease remission and reversal is critical to ensure physicians' confidence and ability to address lifestyle with patients.

LIFESTYLE MEDICINE TRAINING IN UNDERGRADUATE MEDICAL EDUCATION

A number of medical schools throughout the country are leading the way in lifestyle medicine training in medical education, specifically including Harvard Medical School, University of Oklahoma-Tulsa School of Community Medicine, A. T. Still University School of Osteopathic Medicine in Arizona, University of South Carolina School of Medicine Greenville, and Loma Linda University Health. These schools of medicine have led in the development and implementation of lifestyle medicine through a variety of opportunities that include pre-matriculation sessions, required and voluntary integration into the basic science and clerkship years, exercise and culinary medicine events, Lifestyle Medicine Interest Groups, and lifestyle medicine track development, all with a focus on both personal self-care and patient applications of lifestyle medicine.[20]

Challenges and opportunities associated with integration of lifestyle medicine across undergraduate medicine education include lack of awareness of the efficacy of lifestyle medicine, lack of time to implement, and lack of standardized curriculum. Awareness around the powerful effect of lifestyle medicine is yet to be realized by most medical educators, both biomedical and clinical.[20] However, a number of bills have been introduced into Congress that would bring greater awareness of the need to implement lifestyle training in undergraduate medical education.[21-23] Again, many medical school educators, particularly in the pre-clinical years, cite lack of time to deliver content based on the traditional highly compacted, fast-paced medical curriculum. Although

TABLE. **Patient case description**

Follow-up lab appointment	
Medical history	Hyperlipidemia, hypertension, and prediabetes
Family history	Ischemic heart disease (father) and diabetes (father, brother)
Medications	Omeprazole 40 mg po qd, fluticasone nasal spray qd, cetirizine 10 mg 1 tablet po qd, lisinopril/hydrochlorothiazide 20/25 mg 1 tablet po qam, pravastatin 40 mg po qhs, atenolol 100 mg po qd, metformin 500 mg po BID, baby aspirin 81 mg po qd, multivitamin
Vital Signs	257 lb, BMI 38 kg/m^2, pulse 61 bpm, BP 146/82 mm Hg
Physical exam	Obese male, NAD; cardiovascular, RRR; respiratory, CTAB, no w/r/r; ambulating without assistance
Lab work	HbA1c 5.9%, FBG 108 mg/dL, AST 48 U/L, ALT 64 U/L, TG 182 mg/dL, TC 147 mg/dL, LDL-C 72 mg/dL, HDL-C 39 mg/dL
Patient plan	1) Continue on the high-dose omeprazole as instructed by ENT specialist. 2) Work on adding in more fruits, vegetables, whole grains, beans, and legumes; he was given a handout on whole-food plant-based nutrition. 3) Set goal to lose 5-10 pounds. 4) Begin to exercise, starting with low-intensity and slowly building up to 150 minutes of moderate-intensity exercise per week, with twice-a-week strength training. 5) Follow up in 6 months with repeat HbA1c at that time.
Follow-up 6-month lifestyle change appointment	
Interval history	MM lost 8 pounds and reported walking 1 mile per day. He increased vegetables in his diet, cut out refined breads and pastas, reduced sodium and fat intake. His energy improved. Home BP logs improved from an average of 130/60-70s mm Hg to 120s/60-70s mm Hg. Subjectively, he reported acid reflex improvement; he continued on his omeprazole. MM reported feeling excited and engaged in his health and ready to continue healthy changes.
Vital signs	249 lb, BMI 36.8 kg/m^2, pulse 74 bpm, BP 125/78 mm Hg
Physical exam	Obese male, NAD; cardiovascular, RRR; respiratory, CTAB, no r/r/w; ambulating without assistance
Lab work	HbA1c decreased 0.8% to 5.1%
Patient plan	1) Continue exercising and making changes to diet in order to keep losing weight. 2) Reduce metformin to 1 tablet by mouth daily. 3) Return for repeat fasting labs and annual physical in 6 months.

ALT, alanine aminotransferase; AST, aspartate aminotransferase; bid, twice daily; BMI, body mass index; BP, blood pressure; bpm; beats per minute; CTAB, clear to auscultation bilaterally; FBG, fasting blood glucose; HbA1c, glycated hemoglobin; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; NAD, no acute distress; po, orally; qam, every morning; qd, daily; qhs, every night; RRR, regular rate and rhythm; r/r/w, rales, rhonchi, wheezes; TC, total cholesterol; TG, triglycerides.

these challenges are very real, various medical schools have found unique ways to integrate lifestyle medicine into existing curricula. Many of these schools are working within the system-based education schedule in which students can increase competencies in the mechanisms of action of lifestyle interventions with regard to their effect on each organ system and chronic disease condition.[20] Finally, a lack of standardized lifestyle medicine curricula, as well as a lack of lifestyle medicine biomedical and clinical content expert faculty, is a challenge for medical schools.[20]

These challenges are being met through multiple avenues, including the increasing selection of evidence-based curricular resources offered by the American College of Lifestyle Medicine (ACLM) and the Lifestyle Medicine Education Collaborative (LMEd) efforts; in addition, physicians, professionals, and practitioners are increasingly becoming certified in lifestyle medicine through the American Board of Lifestyle Medicine (ABLM) and ACLM certification exam, which enables schools to have access to these trained professionals as faculty.[24,25]

Curriculum standards have also been outlined to support the integration of lifestyle medicine within undergraduate medical education and to recognize schools that are successful in this endeavor. Furthermore, according to

the curriculum standards, for students attending medical schools with robust lifestyle medicine integration, a pathway has been defined whereby continued practicum training in residency can lead to eligibility for the Lifestyle Medicine Physician certification exam offered by the ABLM.[26,27]

LIFESTYLE MEDICINE TRAINING IN GRADUATE MEDICAL EDUCATION

The Lifestyle Medicine Residency Curriculum (LMRC) was created to meet the demand for lifestyle medicine training within the graduate medical education framework, and although developed independently from family medicine residency redesign efforts, the LMRC incorporates many of the Future of Family Medicine's goals, principles that emerged from the P4 initiative, and aims of family medicine's greater transformation efforts.[1,3,5-7,20,28] The training environment has a significant impact on physician practice behaviors, and the LMRC is designed to influence how physicians in training implement lifestyle medicine into daily practice.[3,5]

The LMRC is built around the concept that lifestyle medicine knowledge acquisition is necessary but not sufficient to create changes in physician practice behaviors. Rather, knowledge acquisition along with observation of preceptor modeling and opportunities to implement the principles into one's own practice pattern are ideal to facilitate lifestyle medicine practice integration. As P4 education redesign efforts showed, when residents and faculty joined in a "learning together" approach, this determined whether practice transformation was successful.[5] As such, the LMRC has both didactic and practicum requirements that enable the residents to apply lifestyle medicine principles throughout residency training in a variety of settings. More specifically, there are 100 hours of educational didactic material, in addition to several practicum components including 400 documented lifestyle medicine–related patient encounters along with group and intensive therapeutic lifestyle change (ITLC) hours.[29] Completion of all LMRC requirements enables the resident to be eligible for the Lifestyle Medicine Physician certification exam offered by the ABLM.[26]

The LMRC is particularly relevant within the field of family medicine, where adoption of primary care principles and continuity relationships over time best support lifestyle-related behavior change.[11,28] Although practicing lifestyle medicine is the very definition of "patient-centered" and is the foundation of most chronic disease management algorithms, we have struggled to define and operationalize this in practice and often fail to implement these foundational aspects of the algorithms.[30-32] Family medicine residency programs have a history of innovation, and innovation in turn attracts a higher caliber and greater number of graduates from educational institutions in the United States.[5] As of 2021, 82 total programs are offering the LMRC. Of those, 46 are family medicine programs, representing the highest uptake for LMRC implementation of any American Board of Medical Specialties specialty, at 56% of total programs.

LEADERS OF LIFESTYLE MEDICINE IN FELLOWSHIP TRAINING

The Lifestyle Medicine Specialist Fellowship (LMSF) is designed to meet the second tier of lifestyle medicine certification through a 12-month training program.[20,26] The LMSF emphasizes higher-level clinical and scholarly activity training in lifestyle medicine. This includes deprescribing protocols and appropriate dosing of lifestyle medicine across the disease severity spectrum, including ITLC programs, in order to demonstrate significant chronic disease symptom improvement or disease remission. Currently only 1 LMSF exists,[33] with the hope of supporting the development of additional sites in the near future.

CONTINUING MEDICAL EDUCATION AND MAINTENANCE OF CERTIFICATION

The ACLM offers lifestyle medicine–related CME, American Academy of Family Physicians–prescribed credits, and American Board of Lifestyle Medicine Maintenance of Certification credits through events such as the annual ACLM conference and symposia, as well as through online courses such as "Foundations of Lifestyle Medicine Board Review," "Lifestyle Medicine Core Competencies," "Reversing Type 2 Diabetes and Insulin Resistance With Lifestyle Medicine," "Physician and Health Professional Well-Being," "Food as Medicine," and more at lifestylemedicine.org/education.[25]

CONCLUSION

An emphasis on lifestyle medicine education across the medical training spectrum is an ideal goal for family physicians, who are trusted and influential healthcare workers and intimately integrated in the health of their communities. Family physicians lead by modeling healthy behaviors. Family physicians lead by empowering patients to take charge of their own health and chronic disease management through lifestyle behavior change. Family physicians lead through educational transformation and bettering physician practice patterns. With broadened education on the relationship between chronic disease and lifestyle choices, clear actionable lifestyle medicine treatment protocols, and a system of mentorship, family physicians will lead in turning the nation's health and healthcare system to a more positive trajectory. ●

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