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Development and Implementation of a Novel Lifestyle Medicine Advanced Pharmacy Practice Experience Elective

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Keywords: lifestyle medicine, experiential education, chronic disease management, prevention

Abstract

Objective: To develop and implement an Advanced Pharmacy Practice Experience (APPE) to increase student's awareness and use of lifestyle modifications in chronic disease prevention and management. **Design:** A five-week APPE was developed that utilized a wide variety of activities, including direct patient care, patient education, case studies, journal clubs and reflective assessment and writing to explore various lifestyle modifications and their relation to chronic disease prevention and management. **Conclusion:** The novel lifestyle medicine APPE provides students a unique opportunity to advance their knowledge in therapeutic lifestyle changes and expand their understanding of the pharmacist's role in chronic disease prevention and management.

Introduction

Therapeutic lifestyle modifications including proper nutrition, consistent physical activity, sleep success, stress reduction, moderate alcohol consumption and tobacco abstinence are the cornerstone of treatment of many chronic diseases.^{1,2,3}

Although lifestyle modifications are a key component in many treatment guidelines, pharmacy education of lifestyle medicine is lacking. One study found that of the fifty pharmacy schools surveyed in the United States, only fourteen offer courses on lifestyle related material.⁹ Of the fourteen courses, five were required and nine were elective. Lifestyle modifications and health prevention are becoming increasingly important in pharmacy practice strategic plans. A statement from the Joint Commission of Pharmacy Practitioners, described the vision of pharmacy practice in 2015 to include the "promotion of wellness, health improvement, and disease prevention."⁷ The 2004 American Association of Colleges of Pharmacy (AACP) educational outcomes include, as a major outcome, "promote health improvement, wellness, and disease prevention."¹⁰ In order to reach these goals, schools and colleges of pharmacy should provide didactic and experiential opportunities for students to advance their knowledge and skills in providing preventive care to patients.

Preventive care in pharmacy practice is not new. For years, pharmacists have participated in chronic disease management, often under collaborative practice agreements

within ambulatory care clinics. Medication Therapy Management (MTM) is routinely performed and reimbursed at many community pharmacy sites. An Advanced Pharmacy Practice Experience (APPE) has been developed that incorporates both chronic disease management and MTM in the unique setting of a self-insured company. The APPE was designed to fit the increasing need of wellness and prevention at an institution level as well as provide clinical experience for pharmacy students in health promotion and disease prevention.

In 2008, a pharmacist-run Cardiovascular Risk Reduction Program (CVRRP) was developed as a joint wellness effort between the Human Resources and Pharmacy Practice Departments at Creighton University.⁴ The goal of the CVRRP is to decrease the incidence and severity of cardiovascular disease in University employees. This goal is met through an ambulatist-run chronic disease management program. An ambulatist is a licensed health care professional that specializes in the prevention and management of chronic disease in ambulatory patients.⁵ An ambulatist has advanced training in lifestyle medicine and care coordination. In this particular program, the ambulatist is a pharmacist.

Since its inception in 2008, the program has expanded and now includes the Diabetes Mellitus Risk Reduction Program (DMRRP) and serves more than 80 employees. In this setting, students completing their Advance Pharmacy Practice Experiences (APPE) are given the unique opportunity to participate in direct patient care using a combination of lifestyle medicine and medication therapy management. Students evaluate current pharmacotherapy, make adjustments or substitutions to reach treatment goals, discontinue unnecessary medications and address any drug or

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disease state interactions. In addition, students design individualized nutrition and physical activity plans for each patient to augment pharmacotherapy. Other lifestyle habits that contribute to cardiovascular risk, including sleep, stress, alcohol and tobacco use, are also addressed. Students have the opportunity to practice motivational interviewing, health behavior change promotion and healthy lifestyle patient education. Students are also exposed to coordination of care and asked to reflect on their own lifestyle habits and risks for chronic disease.

Design

The major goal of the APPE is to enable each student to obtain a better understanding of the pathophysiology and management of various chronic disease states through lifestyle medicine, care coordination and medication therapy management. The objectives for the APPE are listed in Table 1. In order to achieve the objectives, various activities are arranged for student participation. The required student activities and respective educational outcomes for the APPE are listed in Table 2.

Students are required to participate in an informal discussion with either the Clinical Director or ambulatist regarding the Risk Reduction Programs at the University and the pharmacist's role as an ambulatist. Through this discussion the student is introduced to a variety of lifestyle medicine concepts and resources including Healthy People 2020¹¹, the Department of Health and Human Services 2008 Physical Activity Guidelines for Americans¹² and the 2010 Dietary Guidelines for Americans.¹³

As a part of the experience, the student is asked to "be their own first patient." The student is required to keep a physical activity and nutrition diary and complete a baseline health assessment which includes personal history, family history, medication use, lipid profile, blood pressure height and weight measurements. As with each participant in the Risk Reduction Program, this information is used to calculate cardiovascular risk through various Framingham calculations (as applicable) including the ten year coronary heart disease risk prediction, cardiovascular disease risk calculator, predicted five-year risk of stroke, and the two year probability of subsequent coronary heart disease calculator for secondary prevention patients.⁶ Next, the student uses their baseline health information to create a personalized lifestyle program with prescriptions for each of the following lifestyle behaviors: physical activity, nutrition, weight control, sleep success, stress reduction, alcohol intake and tobacco cessation. The student is asked to follow their personalized program for the 5-week duration of the APPE.

After completing a personalized lifestyle program, the student participates in one-on-one program participant consultations with the ambulatist. The student participates in these consultations through various mechanisms. He/she is asked to complete lifestyle prescriptions, nutritional analyses, drug utilization reviews and drug information queries. The student assists in care coordination of the patient through integrating services and resources, medication selection and adjustment based on insurance coverage and referral or identification of specialist care when appropriate. Additionally, the student communicates with other health care professionals regarding participant progress and recommendations based on laboratory and lifestyle data.

In addition to direct patient care, students are required to complete case studies in hypertension, cholesterol and diabetes and to make evidence based lifestyle medicine and pharmacotherapy recommendations. Students are required to complete two formal journal club presentations on articles related to cardiology, diabetes and/or lifestyle medicine. The student is also required to complete one project based on personal interest. Projects may include medical self-care educational materials and presentations for University employees, lifestyle medicine manuscript development and submission or research assistance with the Risk Reduction Programs.

In addition to completing and implementing a personalized lifestyle medicine program, each student is required to complete weekly reflections. These self-reflections address barriers, benefits and challenges to maintaining the healthy lifestyle behavior goals set forth in the personalized program. Students can draw from personal experience or insight from the participant consultations to complete these reflections. Students are also asked to reflect on the role of the pharmacist in a lifestyle medicine clinic and how they plan to implement the skills gained from the APPE into their future practice.

Discussion

An APPE in lifestyle medicine supports the goals and vision of both the Joint Commission of Pharmacy Practitioners 2015 Vision Statement and the 2004 AACP CAPE educational outcomes. A preceptor of the lifestyle medicine APPE can assess a student's knowledge and skills in a number of different areas including evidence-based practice and patient-centered care, as well as communication and written skills. The skills developed during the experience can be applied to various practice settings and are thus applicable to a wide variety of professional student interests. The experience will also expose students to their own lifestyle behaviors and risk for chronic disease, a novel pharmacy education concept in itself.

Barriers to implementing an APPE in lifestyle medicine include buy-in from company employees, participant recruitment, funding support and faculty expertise. The ambulatist clinical position is funded jointly through the School of Pharmacy and Health Professions and the Human Resources Department at Creighton University. Internal cost-analysis data found the program and its associated expenses to be cost-saving for the University. However, the limited budgets of many institutions may prove difficult in securing start-up funding for similar programs. With the success of the Creighton CVRRP/DMRRP, participant recruitment is facilitated through word of mouth. Employees must be provided with the right incentives to buy into the program and actively seek participation. Creighton University is outfitted with several program incentives including access to campus gym facilities, referrals to Creighton employed dietitians and exercise physiologists and access to monthly support group meetings, which are all provided at no cost to the participant. These incentives may not be built in to other institutions.

As stated before, therapeutic lifestyle education in pharmacy curriculum is lacking. Another barrier to implementation of a lifestyle medicine APPE is faculty expertise. Creighton University offers an elective didactic course in lifestyle modifications, a lifestyle medicine advanced pharmacy practice experience, a longitudinal accredited pharmacy practice residency with an emphasis on lifestyle medicine and is in the process of developing a lifestyle medicine certificate program for licensed practitioners. Through providing specialized training for pharmacists, the goal is to replicate the program to other self-insured entities and provide similar APPE experiences for pharmacy students across the country. The team at Creighton is also working on implementing a similar program into the community pharmacy setting.

Summary

An advanced pharmacy practice experience in lifestyle medicine is an effective way to provide students experience in individualized patient-centered pharmaceutical care and evidence-based decision making. Students gain important knowledge and skills related to lifestyle medicine and its implementation. With the right training and supportive funding the APPE can be replicated within various practice settings. The APPE provides a rewarding, educational experience for the student on a personal and professional level.

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Table 1

Learning Objectives for Lifestyle Medicine APPE
1. Integrate didactic concepts in pathophysiology, pharmacology and therapeutics with clinical experience to make appropriate recommendations for patient care.
2. Independently gather patient data and assess patient parameters necessary to recommend drug therapy or behavior change.
3. Retrieve information concerning current drug therapy or lifestyle modifications from clinical literature and present recommendations based on rational evaluation of this literature.
4. Effectively communicate drug information and recommendations to other members of the health care team.
5. Counsel and educate patients regarding their cardiovascular risk, chronic disease conditions, medications and lifestyle behaviors, and properly document such interactions.
6. Engage in self-reflection of personal cardiovascular risk and lifestyle behaviors.

APPE: Advanced Pharmacy Practice Experience

Table 2

Required Student Activities for the Lifestyle Medicine APPE	
Required Activities	AACP CAPE Educational Outcomes ⁸
Introduction to lifestyle medicine clinic <ul style="list-style-type: none"> • Informal discussion of program history, pharmacist's role, program funding and future direction • Introduction to lifestyle medicine guidelines 	<ul style="list-style-type: none"> • Identify and analyze emerging issues, products and services that may impact patient-specific and population-based pharmaceutical care.
Development of personal lifestyle program <ul style="list-style-type: none"> • Complete baseline health history • Assessment of personal cardiovascular risk • Creation of personal lifestyle prescriptions 	<ul style="list-style-type: none"> • Set personal knowledge and ability goals and take responsibility for attaining them.
Participate in program participant consultations <ul style="list-style-type: none"> • Collect participant baseline health history • Perform drug utilization reviews • Assess participant risk • Complete medication therapy management • Develop participant lifestyle programs • Educate participants on disease management • Conduct drug information queries • Identify applicable participant resources • Communicate with other health care providers • Document interaction with participants 	<ul style="list-style-type: none"> • Obtain necessary information from the patient • Identify, minimize or avoid drug interactions, adverse effects, and contraindications associated with the recommended drug therapy. • Design evidence-based disease management programs that incorporate outcome indicators, drug treatment protocols, risk reduction strategies, and education programs for health care providers and patients. • Facilitate patients assuming an active role in their self-care and health • Establish collaborative relationships with other healthcare professionals that foster a team approach to patient care.
Journal club article presentations <ul style="list-style-type: none"> • Read and critically evaluate manuscripts related to lifestyle and chronic disease management 	<ul style="list-style-type: none"> • Retrieve, analyze, and interpret the professional and scientific literature to make informed, rational and evidence-based decisions.
Case Study Exercises <ul style="list-style-type: none"> • Review patient case • Develop an appropriate care plan • Participate in presentation and informal discussion regarding case 	<ul style="list-style-type: none"> • Identify relevant information in the patient profile • Select and recommend appropriate drug (prescription and non-prescription) and non-drug therapy as part of the care plan.
Weekly Reflection Writings <ul style="list-style-type: none"> • Reflect on lifestyle medicine clinic, adhering to lifestyle medicine program and the pharmacist's role in prevention 	<ul style="list-style-type: none"> • Assess one's own knowledge and abilities independently. • Recognize self-limitations and seek appropriate assistance/clarification • Exhibit intellectual curiosity and personal commitment to ensure ongoing professional competency.

APPE: Advanced Pharmacy Practice Experience, AACP: American Association of Colleges of Pharmacy, CAPE: Center for the Advancement of Pharmaceutical Education