

INSTRUCTIONAL DESIGN AND ASSESSMENT

Experiential Education at a University-based Wellness Center

Christine O'Neil, PharmD, and Hildegard Berdine, PharmD

Duquesne University, Mylan School of Pharmacy

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Objectives. To enhance students' learning and confidence in their abilities to provide wellness screenings and disease counseling.

Design. An experiential rotation was implemented in January 2004 within the Center for Pharmacy Care, a pharmacist-coordinated, University-based wellness center that offers preventive health screenings, risk assessments, patient education, medication and lifestyle counseling, educational seminars, and referral for common health conditions, such as hypertension, diabetes and osteoporosis.

Assessment. A brief survey instrument consisting of both open-ended questions and ratings of perceived abilities and confidence to provide screening and counseling was administered to students prior to and upon completion of the experience. Results of the survey indicate that the experience significantly enhanced students' preparedness and confidence to conduct community-based wellness screenings.

Conclusion. Students gained confidence in implementing and conducting wellness programs and became motivated to incorporate such programs into their future practice. This experience can serve as a teaching model for other programs to achieve student competencies in health promotion and disease prevention.

Keywords: experiential education, wellness

INTRODUCTION

The vision for the practice of pharmacy encompasses the ability to positively impact the public health of our citizens over the coming decades. Changes in the way health care is delivered in this country are needed with a transition from a medical treatment model to a prevention model. Educators in the schools of pharmacy must also have the vision to facilitate change in the curriculum to include content on the history of public health relative to pharmacy, the pharmacist's role in disease prevention and health promotion, modeling and teaching skills in conducting health screenings. Practice faculty must be able to motivate students to mainstream health promotion activities into their own future practices. Furthermore, educators must be able to teach practice management techniques and help students understand how to develop public health business models with viable financial outcomes.

A national call for improvement in public health was stated in Healthy People 2010, which was released in 2000.¹ The broad objective of Healthy People 2010 is to

increase the quality in years of healthy life and eliminate health disparities among Americans. The pharmacist is a highly trained and accessible health care provider in the community who plays an important role in achieving this objective.

In response to this call, 2 clinical faculty members who recognized students' desire for increased advanced pharmacy practice experiences (APPEs) and the need for more exposure to aspects of public health, such as wellness, health promotion, and disease prevention, created the Center for Pharmacy Care within the School of Pharmacy in 2002. As the Center became an established active practice site for wellness activities, this enabled the implementation of a wellness APPE in January 2004.

Further support for such an APPE was provided by the revised Center for the Advancement of Pharmaceutical Education (CAPE) educational outcomes distributed by the American Association of Colleges of Pharmacy in summer 2004.² That document clearly articulated the importance of public health, disease prevention, and health promotion among expected outcomes in pharmacy education. The pharmacist is expected to be a member of an interdisciplinary team of health care providers promoting health improvement, wellness, and disease prevention. These concepts of health promotion published in a major academic statement validated our beliefs of the

Corresponding Author: Christine O'Neil. Address: Bayer Learning Center, Duquesne University, 600 Forbes Avenue, Pittsburgh, PA 15282. Tel: 412-396-6417. Fax: 412-396-5130. E-mail: oneilc@duq.edu

importance of taking this direction in our teaching and practice model through the Center.

The objective of this article is to describe the development of a wellness APPE and to examine the perceived confidence and preparedness of students who completed the wellness rotation relative to their skills, knowledge, and desire to implement wellness activities into their own future practices.

DESIGN

The Center for Pharmacy Care was created in 2002 to serve as a pharmacist-coordinated provider of disease prevention and health management services for the Duquesne University campus and surrounding community and offer preventive health screenings; risk assessment; patient education; medication and lifestyle counseling; referral for common health conditions, such as hypertension, diabetes, and osteoporosis; educational seminars; and outcome reporting for common health conditions. The goals established for the Center were:

- To develop an on-campus pharmaceutical care and wellness program with the primary intent of developing an experiential model for educating students,
- To serve as an educational resource and role model for pharmacy preceptors and other pharmacists within the community, and
- To measure the impact of services on the various populations served by the Center through community-based clinical research.

As part of the requirements of the doctor of pharmacy program, students are required to complete seven, 5-week APPEs during the sixth year of the curriculum. The purpose of experiential education is to provide the student with the opportunity to translate the didactic and theoretical knowledge of the classroom into the skills necessary to function proficiently in the practice setting. Consequently, experiential education is an essential and critical component of the program. Four of the APPEs are required. The remaining 3 are elective rotations.

In 2004, an innovative wellness APPE was created in the Center for Pharmacy Care to fulfill an elective requirement. The goal of the APPE was to enhance students' learning and confidence in their abilities to provide wellness screenings and disease counseling for health prevention through guided experience, self-reflection, patient-student interaction, and preceptor feedback and assessment. The learning objectives of the experience included the following:

- The student will develop a thorough knowledge base in the pathophysiology, prevention, and treatment of diabetes, hypertension, hyperlipid-

emia, nicotine addiction, obesity, osteoporosis, asthma, and COPD.

- The student will understand disease state management, the use of screening tools, and risk assessment of the above disorders.
- The student will communicate effectively with patients regarding risk assessment and design a treatment plan preparing patients for behavioral and lifestyle change.
- The student will understand the implications of a pharmacy-based immunization program on the public health and participate in developing a community immunization program.
- The student will be able to develop collaborative agreements with other health care providers for use in community practice.

In order for the student to achieve these specific objectives, a comprehensive wellness curriculum was developed with specific knowledge and skill competencies for each disease prevention and management topic. Each set of competencies included proficiencies in identifying patients at risk, ability to counsel the patient about prevention, and determination of the most appropriate intervention. Competencies were developed for each of the following areas: hyperlipidemia, diabetes, hypertension, obesity, nicotine addiction, and osteoporosis. An example of the student competency checklist for hyperlipidemia is included in Appendix 1.

Students participated in a 5-week APPE emphasizing the principles of disease prevention and health promotion. They were required not only to learn about chronic diseases from a prevention perspective, but also to become proficient in screening skills. These skills were proficiency in using screening instruments, interviewing, communicating, and problem solving with clients appropriately during clinic interactions.

Week 1. During the first week of the experience, the students were instructed by faculty members on the operation of the following screening equipment: Cholestech-LDX (Cholestech, Hayward, Calif), Sahara BMD Ultrasound Bone Density Densitometer (Hologic, New Rochelle, NY), Cuba Clinical Heel Ultrasound (McCue Ultrasonics, Winchester, UK), Tanita Body Composition Analyzer (Tanita Corporation of America, Arlington Heights, Ill), DermaView Facial Skin Analyzer (Futrex, Hagerstown, Md) and use of blood pressure screening equipment. Students practiced administering the tests on each other prior to screening patients in order to develop proficiency and confidence in the technical aspects of the screenings. Students were instructed in the various aspects of health promotion including risk assessment, screening, interpretation of clinical data, and patient

counseling with a focus on behavioral modification and lifestyle changes. Through these activities, students were prompted to review disease pathophysiology and therapeutics. They practiced communicating these concepts in appropriate language to the patient as a means of motivating change.

Throughout the rotation, students completed the necessary day-to-day data management associated with the operations of the Center. Students summarized screening activities, completed quality assurance tasks required for equipment operated under a laboratory permit, and conducted follow-up telephone calls. They also developed and revised patient education materials, maintained patient charts, and updated policies and procedures.

Weeks 2-5. Students participated in a variety of wellness and health promotion activities coordinated through the Center for Pharmacy Care as described below:

Wellness Mondays. Students participated in five 4-hour Wellness Mondays sessions, during each of which University employees scheduled 15-minute appointments for health screenings and counseling. Students observed activities during week 1 and actively participated in weeks 2 through 5.

Blood Pressure in the Union. Blood Pressure in the Union consisted of 2-hour, bimonthly sessions in a visible area of the Student Union for blood pressure assessment, counseling, and referral that was open to faculty and staff member, students, and others without an appointment.

Spirit of Health Van. The Spirit of Health Van was a faith-based, cooperative program between the Mylan School of Pharmacy, a hospital-based parish nurse program, and a religious order dedicated to the underserved. The students traveled on the van to neighborhoods in the Pittsburgh area once a week. The 3-hour, on-site visit allowed the students the opportunity to provide health screenings and counseling to medically underserved people. The mobile health outreach encouraged continuous care by establishing a patient medical chart and keeping monthly scheduled visits throughout the year.

Disease Management Program. Students participated approximately 4-6 hours per week in a diabetes self-management program. From this experience, students became effective interviewers by collecting patients' medical and medication histories and assessing patients' knowledge, skills and readiness for change. Students were also challenged to problem solve with patients during the consultation. They also conducted drug therapy assessment, formulated care plans, documented clinical activities in the chart, billed for services, and communicated with other members of the health care team. Students gained valuable experience in managing a clinical practice through these activities.

Ambulatory Practice Sites. Students were involved in providing patient care approximately 8 hours per week at several other ambulatory sites, which enabled them to reinforce health promotion concepts in an interdisciplinary setting. The opportunities included participating in a teaching hospital-based, outpatient ambulatory care center, a county hospital cooperative free health care center, and a physician-based office practice.

Other Health Promotion Opportunities. Students were also required to participate in a variety of screening efforts conducted on campus and throughout the community. Some of the screenings were held at large venues such as nonprofit health clubs and some were held at smaller venues such as churches, senior citizen centers, employee health and benefits fairs, hospital-based wellness centers, physician offices, and ambulatory care centers.

The students were required to present 2 patient cases and 1 seminar on disease prevention and health promotion relative to hypertension, hyperlipidemia, diabetes, osteoporosis, tobacco cessation or weight management; participate in journal club; and write a formulary review.

Student evaluation was conducted using the standard student performance evaluation supplied by the school's Office of Experiential Education (OEE), which assesses drug information skills, clinical skills, communication skills, practice management skills, and professional and personal interactive skills. These were required and completed by the preceptor for all students at the end of each APPE and were submitted to the OEE.

Since the standard evaluation tool did not include specific competencies related to wellness and health promotion, a survey instrument was developed by faculty members to assess students' perceptions about the wellness APPE. The survey instrument consisted of 9 statements that reflected wellness competencies with responses based on a 5-point Likert scale. Another section of the survey instrument asked students to reflect upon their confidence and preparedness to provide disease prevention and management services before and after the learning experience (survey instrument is available by request to the author). A retrospective self-evaluation was chosen instead of a pre/post survey since many of the wellness concepts and screenings had not been previously taught to the students. Students who completed the wellness APPE between spring 2004 and spring 2006 were asked to complete the survey instrument at the end of the rotation. Participation was optional and anonymous. Students were also asked to prepare a reflective summary of the rotation and describe what might be the potential impact of the experience on their future practice.

Evaluations of the preceptor were submitted by students on a voluntary basis utilizing standard clinical

teaching effectiveness questionnaires approved by the University. Summaries and written comments were provided periodically to faculty members.

ASSESSMENT

Since its inception in January 2004, 70 students have completed the wellness APPE. This represents approximately 25% of each class, reflecting a high level of interest in this type of APPE. Forty-six students (66% response rate) submitted the anonymous survey instruments upon completion of the APPE, rating their perceptions about preparedness regarding wellness and health promotion activities.

Survey results were evaluated using descriptive statistics and nonparametric tests as appropriate. Students were asked to rate the impact of the rotation on achievement of 9 wellness and health prevention competencies using a Likert scale of 1 to 5 with 1 indicating complete agreement and 5 indicating complete disagreement. Based on the summary of responses on the self-assessment of wellness competencies (Table 1), students described an enhanced understanding of the role of pharmacists in wellness. The following statements provide a brief summary of the results:

- 83% to 93% of students agreed that the experience helped them to understand their role in wellness and enhanced their preparedness to provide such services (questions 1-4);

- 43% to 48% of students somewhat agreed that the experience enhanced their ability to plan and implement wellness services in a community pharmacy (questions 5-7);
- 70% indicated that they planned on implementing wellness programs in their future practice (question 8); and
- 85% of students felt that the experience helped them to assess and improve their own health-related behaviors (question 9).

Student responses to the survey are presented in Table 2. The mode of the responses to all 9 questions was either 1 (questions 1-4, 8, and 9) or 2 (questions 5-7), indicating a high level of agreement. Students also indicated the experience improved their competence and confidence in providing most of the health screenings (Table 3). Statistical analysis of these before and after self-ratings was performed utilizing the McNamar's test for nonparametric data using SPSS version 12.0 (SPSS Inc, Chicago, Ill). Data achieved statistical significance ($p < 0.05$) for all areas assessed and indicated a significant improvement in student's self-reported confidence and preparedness to conduct health screenings during the rotation.

In their comments to the instructors within the reflective summaries and on teacher evaluations, students voiced an interest in wellness and health promotion activities as an important part of their learning experience in

Table 1. Summary of Pharmacy Students' Responses to Self-Assessment of Wellness Competencies

No.	Survey Item	Completely Agree, %	Somewhat Agree, %	Not Sure, %	Somewhat Disagree, %	Completely Disagree, %
1	Helped me understand the role of the pharmacist in providing wellness services	93	7	0	0	0
2	Helped to increase my level of comfort speaking to someone about wellness and prevention	85	15	0	0	0
3	Helped to enhance my ability to provide health screenings	85	15	0	0	0
4	Helped to enhance my ability to provide medication and lifestyle counseling relative to wellness	83	17	0	0	0
5	Helped me to understand how to develop and implement a wellness program in a community pharmacy	43	43	11	2	0
6	Helped me to develop and organize a community health fair	22	48	28	2	0
7	Helped to enhance my ability to offer community based health education seminars	38	44	16	2	0
8	I plan to implement a wellness program in my future pharmacy practice	48	22	26	4	0
9	Helped me to assess and improve my own health related behaviors	57	28	13	2	0

Table 2. Pharmacy Students' Responses to Self-Assessment of Wellness Competencies*

No.	Survey Item	Spring 2004 (n = 14)	Fall 2004-Spring 2005 (n = 12)	Fall 2005-Spring 2006 (n = 20)	Cumulative (N = 46)
1	Helped me understand the role of the pharmacist in providing wellness services	1	1	1	1
2	Helped to increase my level of comfort speaking to someone about wellness and prevention	1	1	1	1
3	Helped to enhance my ability to provide health screenings	1	1	1	1
4	Helped to enhance my ability to provide medication and lifestyle counseling relative to wellness	1	1	1	1
5	Helped me to understand how to develop and implement a wellness program in a community pharmacy	2	1	1	2
6	Helped me to develop and organize a community health fair	2	2	2	2
7	Helped to enhance my ability to offer community based health education seminars	2	2	2	2
8	I plan to implement a wellness program in my future pharmacy practice	1	1	1	1
9	Helped me to assess and improve my own health related behaviors	1	1	1	1

*Mode of responses for the group

Likert Scale: 1 = Completely Agree to 5 = Completely Disagree

school. They agreed they felt more prepared and confident to provide these services in the community as they began careers in community practice. Approximately 85% of students who completed the rotation expressed a desire to participate in other screening events sponsored by the Center, even after graduation. These students have been added to a list of casual staff members who assist with large screening events conducted by the Center. To date, approximately 25% of the students who had completed this APPE participated in such screening opportunities after graduating.

DISCUSSION

To date, progress has been made on the 3 initial goals described in the Design section. The Center has received local and national recognition as a unique practice model.

The wellness experience enhanced the students' understanding of the role of the pharmacist in wellness and improved the perception of competence and confidence to provide most of the health screenings. Of the 9 questions assessing wellness competencies, those addressing planning and implementing a health fair or screening received a favorable, yet lower mode response of 2 (somewhat agree). Future offerings of the wellness APPE will include more experience in the business planning and marketing aspects of a wellness and health pro-

motion practice. Based on feedback provided by the students in rotation summaries, wellness and health promotion activities are an important part of the learning experience in pharmacy.

Based on overall perception of their preparedness, the students felt more prepared and confident about implementing and providing wellness services in community practice after completing the wellness APPE. Lower levels of perceived improvement in blood pressure assessment likely reflect the prior instruction and experience students had received in an existing pharmacy practice course focusing on clinical and physical assessment. Lower levels of perceived improvement in stroke screening abilities likely reflect the limited availability of this screening, which is only offered during the month of May. Conducting a pre- and post-assessment of knowledge and skills in addition to surveying students' perceptions of the rotation would provide valuable information to be used in revising the didactic curriculum with respect to wellness and health promotion and for enhancing the wellness APPE.

Currently, this elective ambulatory rotation is available to approximately 25% of fourth-professional year students. Future plans include converting this elective experience into a required ambulatory experience in order to meet the new ACPE guidelines for experiential

Table 3. Pharmacy Students' Self-Assessment of Confidence and Preparedness to Perform Wellness Activities Before and After Completing an Advanced Pharmacy Practice Experience (N = 43)

	Percentage of Students in Agreement	
	Before	After*
Confidence		
Blood Pressure Screening	48	91
Cholesterol Screening w/Cholestech LDX	20	95
Osteoporosis Screening w Sahara heel Ultrasound	14	98
Body Composition Analysis w Tanita Scale	16	91
Facial Skin Analysis w/Derma-view	11	82
Stroke Screening	11	43
Smoking Cessation Counseling	18	66
Counseling on Nutrition Lifestyle Changes	43	89
Counseling on Exercise Lifestyle Changes	48	84
Counseling on Preventive health Practices (Sunscreen, routine visits, immunizations)	36	80
Competence/Preparedness		
Blood Pressure Screening	47	88
Cholesterol Screening w/Cholestech LDX	16	98
Osteoporosis Screening w Sahara heel Ultrasound	16	95
Body Composition Analysis w Tanita Scale	9	93
Facial Skin Analysis w/Derma-view	7	70
Stroke Screening	12	44
Smoking Cessation Counseling	16	63
Counseling on Nutrition Lifestyle Changes	42	86
Counseling on Exercise Lifestyle Changes	44	86
Counseling on Preventive health Practices (Sunscreen, routine visits, immunizations)	40	79

* $p < 0.05$, McNamar test

education by implementing a multidisciplinary approach to wellness.³

Other plans for APPE activities are the development and implementation of an immunization practice and expansion of clinical research projects conducted within the Center, thereby providing more opportunities for students to become involved in community-based research. Future plans for assessment include a survey assessing the extent to which past participants in the wellness APPE have implemented wellness and health promotion activities at their current practice sites.

CONCLUSION

This wellness APPE has proven to be an excellent teaching environment, enhancing students' perception of their confidence and preparedness to provide wellness and health promotion actions in an ambulatory setting.

It is hoped that this experience will enable these future practitioners to implement such activities in their future practice sites.

REFERENCES

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Appendix 1. Expected competencies for pharmacy students regarding hyperlipidemia.

Hyperlipidemia Competencies

- I. Describe the prevalence, etiology, and pathophysiology of hyperlipidemia.
- II. Identify the standard of care in recognized clinical guidelines.
- III. Identify which patients are at risk for heart disease:
 - a. Interpret results of a cholesterol screening and effectively counsel a patient on these results.
 - b. Describe how the Cholestech LDX operates and measures lipid parameters in a blood sample.
 - c. Describe the quality control procedures for the Cholestech LDX.
- IV. Counsel a patient on the prevention of hyperlipidemia relative to these topics:
 - a. Dietary planning
 - b. Physical Activity
 - c. Weight management
 - d. Alcohol
 - e. Stress management
- V. Determine the most appropriate intervention for each patient depending on his/her cardiovascular risk relative to:
 - a. Dietary planning
 - b. Physical Activity
 - c. Physician referral
 - d. Pharmacotherapy/over the counter/prescription
- VI. Discuss a contemporary issue relative to cardiovascular disease and hyperlipidemia. Some examples are:
 - a. New prognostic indicators
 - b. Trans fatty acids and the risk for cardiovascular disease
 - c. Use of supplements such as folic acid, B-6, and B-12 in the reduction of risk for cardiovascular disease