

## RESEARCH ARTICLES

### A Survey of Pharmacy Student Involvement in Wellness Programs

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Submitted July 14, 2003; accepted May 19, 2004; published December 9, 2004.

**Objective.** The primary objective of this study was to assess wellness programs that are integrated into experiential training in the pharmacy curriculum. The secondary objective was to ascertain faculty members' beliefs towards student involvement in community service-oriented wellness programs within early pharmacy curricula.

**Methods.** A national survey of pharmacy colleges and schools in the United States was conducted in 2003 using web-based survey administration.

**Results.** Of 82 pharmacy colleges and schools sampled, 49 responded to the survey. Of these, 44 institutions offered wellness programs. Forty of these institutions allowed doctor of pharmacy students to interact with patients directly via wellness programs. All respondents, independent of their institution's involvement in wellness programs, believed that these students should be allowed to participate in wellness programs and interact with patients.

**Conclusion.** This study demonstrates the need for pharmacy educators to encourage increased participation of professional students in the provision of community-based wellness services.

**Keywords:** wellness programs, disease management, pharmacy practice experience, pharmacy curriculum

## INTRODUCTION

Experiential programs have been a component of the curriculums at United States pharmacy colleges and schools for several decades.<sup>1</sup> Until recently, however, practice experiences in pharmacy curricula have consisted primarily of clerkship rotations in the final professional year of study. Such experiences are important as they enable students to develop skills and knowledge, thereby promoting the provision of pharmaceutical care.<sup>2,3</sup>

In 1997, the American Council of Pharmaceutical Education (ACPE) Accreditation Standards and Guidelines advocated the inclusion of introductory pharmacy practice experiences (IPEs) in the pharmacy curriculum, that is, "Such practice experiences should be organized as a curricular progression leading to advanced practice experiences so as to support growth in the student's capabilities to render pharmaceutical care" (*Guideline* 11.5).<sup>4,5</sup> The guidelines give pharmacy colleges and schools the authority to either integrate these practice experiences into mandatory course work or offer them as electives. Consequently, several schools and colleges have initiated IPEs in their professional curricu-

lums. Mostly, these IPEs focused on professional socialization, with role models consisting of practicing pharmacists, faculty members, or other doctor of pharmacy students.<sup>2,6</sup>

Recently, several pharmacy colleges and schools have started programs that encourage early student participation in community services. The aim of such programs is to provide doctor of pharmacy students with opportunities for direct patient interaction and provision of pharmaceutical care. One such effort at the University of Florida gives students introductory practice experiences, including conducting community screenings and prevention programs for osteoporosis, hypertension, and diabetes, as well as encouraging poison prevention awareness.<sup>7</sup> At Auburn University's Pharmaceutical Care Center, students perform screening procedures, disease management and prevention counseling, and drug therapy monitoring for university employees and their dependents.<sup>8</sup> The Albany College of Pharmacy initiated the Early Patient Oriented Care (EPOC) program, which gives students the opportunity to interact with patients undergoing renal dialysis by providing medication counseling and evaluation of drug therapy. Students also design therapeutic interventions and perform various laboratory assessments including hematocrit testing.<sup>9</sup> Lastly, several institutions, eg, the St. Louis College of Pharmacy, have included introductory clerkships in the

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early stages of the pharmacy curriculum. In these clerkships, students perform disease state assessment, medication histories, and patient counseling at selected ambulatory sites under the guidance of clinical faculty.<sup>10</sup>

The Janus Commission, established by the American Association of Colleges of Pharmacy (AACP) to assess the challenges confronting pharmacy practice and teaching, recommended that pharmacy colleges allocate greater resources to student experiential programs.<sup>11</sup> Thus far, however, literature on community service-oriented pharmacy programs has been limited to reporting on initiatives at individual institutions. To the best of the authors' knowledge, formal reviews of United States pharmacy experiential programs is limited.<sup>12</sup> Although Harralson<sup>12</sup> contributed significantly to the literature, the study focused on administrative issues regarding pharmacy externships (clinical experience rotations) and did not include prior phases of the pharmacy experiential curriculum. Thus, the primary objective of this project was to conduct a national survey of professional pharmacy student involvement (pharmacy students who have completed their prepharmacy requirements) in community service-orientated wellness programs, which are programs involving screening for diseases and management of diagnosed conditions. The secondary objective of this study was to ascertain faculty members' attitudes regarding student involvement in community service-oriented wellness programs within the pharmacy curriculum, as part of students' skills development prior to entering practice.

## **METHODS**

A census of all United States colleges and schools of pharmacy was conducted. The web-based survey instrument included a personalized cover letter and Web site address, and was forwarded to all the deans at participating colleges via e-mail.<sup>13</sup> The deans were requested to either complete the survey instrument themselves or forward it to the appropriate clinical faculty member involved in doctor of pharmacy instruction or in the development of the pharmacy curricula. Participants were encouraged to complete and return the survey instrument online; however, they were given the option of printing the survey instrument, completing it by hand, and returning it by either mail or fax. Responses could be tracked, so duplicate responses from the same individual or multiple responses from the same institution could be identified and eliminated. The survey instrument was posted on an Internet Web site. An e-mail reminder was sent to nonrespondents 4 weeks after the first e-mail request to complete the survey instrument. The timing of

the e-mail reminder was delayed because the authors anticipated that most deans would forward the e-mail to a clinical faculty member to complete.

The authors selected a web-based approach because of its greater efficiency, reduced cost, and higher item completion rates.<sup>14</sup> Approval for this study was obtained from the Human Subjects Office at the Institutional Review Board of the University of Georgia.

## **Survey Instrument Development**

The initial pool of items was developed by clinical pharmacy faculty members involved in pharmacy student instruction at the University of Georgia, in addition to the ACPE's Accreditation Manual.<sup>4</sup> Prior to administering the survey instrument, pretesting of the instrument was conducted at the University of Georgia College of Pharmacy. The first pretest was in a paper-pencil format and involved administering the survey instrument to 8 faculty members who were involved in either professional student instruction or curriculum design at the College. The expert panel reviewed the survey instrument for completeness, clarity, and appropriateness. Minor revisions were made based on panel recommendations. A second pretest using the online format of the survey instrument was administered to another expert panel of 8 faculty members. Based on panel suggestions and opinions, modifications were made to the instrument. The survey instrument was reported to take 15 to 20 minutes to complete.

## **Final Survey Instrument**

The final survey instrument consisted of 49 items divided into 2 sections (excluding demographics). (The complete survey is available by request from the author.) The first section addressed the current existence of wellness programs at each institution. In this study, wellness programs were defined operationally as community service programs designed to provide traditional doctor of pharmacy students with direct patient contact for screening of undiagnosed conditions (eg, osteoporosis screenings), treatment of diagnosed conditions (eg, diabetes management), or prevention of illnesses (eg, influenza immunizations). If such a program was offered, further information regarding its structure was elicited, such as disease conditions evaluated in wellness programs; involvement of other institutions at the same university; offer of academic credit for participation; level of student participation; types of physical assessment and other wellness activities performed by students; and the geographic location of such wellness programs. Lastly, information was elicited on the funding of the wellness program and patient recruitment efforts.

Table 1. Types of Wellness Programs Offered by Participating Institutions, *N* = 44

<b>Types of Wellness Programs</b>	<b>Total n (%)</b>
Screening for Undiagnosed Conditions	29 (66)
Diabetes	26 (59)
Hypertension	25 (57)
Hypercholesterolemia/Hyperlipidemia	24 (55)
Osteoporosis	17 (39)
Asthma	10 (23)
Other screening programs	4 (9)
Disease Management for Diagnosed Conditions or Disease Prevention Programs	39 (89)
Diabetes management	26 (59)
Immunization	23 (52)
Asthma management	22 (50)
Smoking cessation	19 (43)
Lipid/Cholesterol management	18 (41)
Weight management	6 (14)
Other disease management programs	10 (23)

The second section of the survey instrument assessed opinions regarding the doctor of pharmacy student participation in wellness programs. The items in this section were also applicable to institutions that did not offer a wellness program. Survey respondents were asked their opinions regarding student participation in the provision of wellness programs at their institution. If they favored student participation they were also asked in which professional year they believed doctor of pharmacy students should be allowed to participate; the applicability of academic credit awarded for participation; specific activities that students should be allowed to conduct; the nature of student-patient interaction; other colleges at the university that should be involved in the administration of wellness programs; and whether they believed the inclusion of wellness programs would benefit the overall training of pharmacy students.

The third section of the survey instrument secured respondent demographic information including gender, educational level, number of years of practice experience as a pharmacist, and percent of time spent in teaching, research, and service.

## **RESULTS**

### **Participating Institutions**

Data were collected over a 5-month period (December 2002 to April 2003). Forty-nine of 82 survey instruments were returned. The majority of respondents were college or school administrators (ie, deans, assistant deans). Over half of the respondent were male (51%), and held a doctor of pharmacy degree (55%) or doctor of philosophy degree

(32%). On average, respondents devoted the majority of their time to administrative duties (53%), close to a third of their time to teaching and instructional activities, and 18% to research. Most respondents (64%) had more than 15 years of pharmacy practice experience. Only 4% of the respondents had no pharmacy practice experience.

### **Wellness Clinic Programs**

Of the 49 respondents, 44 (90%) stated their colleges or schools of pharmacy offered wellness programs (Table 1). Twenty-nine institutions incorporated screening programs for undiagnosed conditions in their wellness programs. Common screenings included those for hypertension, hypercholesterolemia, and diabetes. Thirty-nine institutions conducted either disease management programs for diagnosed conditions or disease prevention programs (eg, immunization programs). The most common disease management programs were for diabetes and asthma. The majority of participating institutions also offered immunization programs (Table 1).

Wellness programs were reported to be conducted by 23 (47%) colleges/departments other than pharmacy. Whether these wellness programs were offered in collaboration with the institution's college or school of pharmacy was not a question addressed in this study and therefore this cannot be assumed. Furthermore, these institutions reported involvement by more than 1 other college or department; therefore, the total number of responses was greater than 23. These programs involved the schools of medicine (13 institutions), nursing (14), public health (3), exercise science (3), nutrition (2), physiology (0), health promotion (7), and a miscellaneous category, which included counseling and physical therapy (2).

Forty institutions (82%) permitted doctor of pharmacy students the opportunity to directly interact with patients via their wellness programs. Most colleges allowed third- and fourth-year students to participate in the wellness programs. In most of the institutions offering these programs in the fourth-professional year, participation was mandatory. In the institutions offering the program in earlier years, it was offered as either an elective or a noncredit/extracurricular activity (Table 2). With respect to student-patient interaction, 30 institutions (61%) allowed the students to interact one-on-one with a patient, while 17 institutions (35%), required that a group of doctor of pharmacy students interact with one patient. Only 4 (8%) institutions had a group of patients designated to each doctor of pharmacy student.

Most institutions stated the following objectives for encouraging student participation in their wellness programs: to promote student learning of equipment opera-

Table 2. Professional Year of Doctor of Pharmacy Student Participation in Wellness Programs

Student Participation in Wellness Programs	First Professional Year,	Second Professional Year,	Third Professional Year,	Fourth Professional Year,
	n=22 SOPs	n=25 SOPs	n=32 SOPs	n=39 SOPs
Required	10	6	9	21
Elective	4	8	9	8
Earns no credit hours	8	10	13	6
Earns bonus credit hours	0	0	0	1

SOPs=schools of pharmacy

Table 3. Types of Physical Assessment Conducted by Doctor of Pharmacy Students in Wellness Programs

Type of Physical Assessment	Number of Institutions Allowing Doctor of Pharmacy Student Participation
Blood pressure	35
Blood glucose	31
Cholesterol/lipid	27
Heart rate	26
Weight	23
Height	20
Bone density	17
Body mass index	12
Hemoglobin A1C	11
Spirometry	11
Body fat analysis	9
Blood group	1
Other	4

tion (34 institutions, 69.3%); to increase knowledge of disease management among students (31 institutions, 63.2%), and to encourage students to work with patients (34 institutions, 69.3%). Thirty-three institutions (67.3%) allowed students to record patients' information onto medical profiles. Forty (82%) institutions allowed students to counsel patients and 39 (80%) allowed students to conduct physical assessment as part of their interaction with the patient. Common physical assessment procedures undertaken by students included monitoring patient blood pressure, testing serum glucose, testing cholesterol, determining pulse rate, and assessing/measuring body weight and height (Table 3).

The majority of wellness programs were funded by their college or school of pharmacy (34 institutions, 69%). Alternative sources of funding included grants (9), hospital funding (9), pharmaceutical companies (5), and public health associations (1). Typically, wellness programs were offered as a free service to the majority of patients (27/41, 68%). However, a third of responding institutions (13 of 41) reported charging patients a fee to

Table 4. Types of Patient Recruitment Methods Used for Wellness Programs

Method of Patient Recruitment for Wellness Programs	Number of Institutions Employing Recruitment Method
Referrals by health care professional	27
Fliers	24
Word-of-mouth	19
Newspaper advertisements	15
Radio advertisements	8
E-mails	6
Promotion on college website	4
Other	10

participate. Most charged a nominal fee, with reported charges ranging from a low of \$5 for a blood pressure check to a high of \$40 for a lipid panel. One reported charging an hourly rate of \$60. The fees reported by the majority of responding institutions varied depending on the program or test offered. No institution reported offering patients a financial incentive to participate in their wellness programs. Finally, the majority of institutions reported that existing faculty members were used for day-to-day operation of the clinics, while a few sites reported hiring as many as 5 additional pharmacists.

Referrals by health care professionals, flyers, word-of-mouth promotion, and newspaper advertisements were the most common modes used for recruiting patients to the wellness programs. E-mails and promotions on college Web sites were less-used patient recruitment techniques (Table 4). Flyers and referrals by health care professionals were reported to be the most successful methods of recruiting patients.

Most wellness programs (68%) were located off-campus at community pharmacies. Thirteen institutions (29%) conducted wellness programs at hospitals, 12 (27%) at physician's offices, and 7(16%) at churches. Among wellness programs on campus, 12 (27%) were located within the college or school of pharmacy, 5

(10%) within the university's health center, and 1 (5%) within another college on campus.

### **Faculty Members' Opinions Regarding Wellness Programs**

Respondents from all participating institutions believed the inclusion of wellness programs in the overall experience program would benefit students. All respondents stated disease management programs for diagnosed conditions and disease prevention programs should be included in wellness programs. Almost all respondents (98%) concurred that screening for undiagnosed conditions should be among the primary objectives of wellness programs.

Almost 80% of respondents reported that other colleges or schools within the same university setting should be encouraged to participate in college of pharmacy wellness programs. Collaboration with schools of nursing (67%) and medicine (55%) were the most frequently cited examples. Approximately 22%-25% of respondents supported participation from each of the following departments/schools: health promotion, public health, and exercise science. Only 10% of respondents thought participation from the school of nutrition was necessary in wellness programs.

All respondents, independent of their institution's involvement in wellness programs, believed that doctor of pharmacy students should be allowed to participate in such programs and interact directly with patients as part of their skills development prior to entry into practice. Almost all respondents reported that third- and fourth-professional year students should participate in wellness programs (96% and 94%, respectively). Over three fourths of respondents believed that second-professional year students should participate in such programs, and two thirds believed that first-professional year students should participate. Most respondents believed student participation should be mandatory (88%). Furthermore, 86% of respondents believed students should have one-on-one patient interaction.

Nearly all respondents felt that students should record patients' medical profiles (98%) and counsel patients (96%) as part of their participation in wellness programs. All respondents were favorable towards students conducting physical assessments of patients in the wellness programs. Most respondents believed those assessments and laboratory tests should include blood pressure (96%), body weight (90%), heart rate (88%), body fat (86%), blood glucose (84%), blood group (76%), cholesterol (61%), and bone density (59%). Some respondents also supported student participation in hemoglobin A1C determination (12%) and spirometry (4%).

### **Limitations**

Although this study attempted to conduct a census of all pharmacy colleges and schools, the authors were limited to analyzing the responses from the institutions that agreed to participate; therefore, this sample may not reflect the opinions of all colleges of pharmacy. Furthermore, it is feasible that colleges without wellness programs may respond differently than those with wellness programs. (This is not intended to imply that colleges without such programs did not respond. Our survey completion rate was also dependent upon the appropriate individual receiving the survey instrument.) However, the authors did not view any differences between these 2 groups in the study findings. Furthermore, no differences were noted between late and early responders.

Finally, survey instruments were completed by one individual at each participating college or school of pharmacy, rather than by all faculty members at each institution. Therefore, the responses obtained may not reflect the opinions of all faculty members at the respective colleges. Given that the majority of survey instruments were completed by deans and assistant deans, at a minimum, the responses reflected the professional climate cultivated at the respective institutions. Furthermore, a subanalysis of administrator vs nonadministrator responses showed no differences between the groups regarding wellness program support.

### **DISCUSSION**

Graber et al reported that the greatest obstacle facing pharmacy educators in altering the pharmacy curriculum was the shift from a "classroom-based teaching approach" to one where students learn from practice and interaction with real patients.<sup>15</sup> The results of this study demonstrate overwhelming support for pharmacy student involvement in experiential programs, demonstrating the need for pharmacy educators and administrators to encourage increased participation of professional students in the provision of community-based wellness services. For students, such participation will hone their patient interaction skills and allow them to develop a caring attitude. For educators and administrators, these opportunities may help to build stronger bonds with the community (ie, a win-win scenario) where these institutions are based. This will engender community goodwill towards pharmacy as a profession and service.

Currently, the greatest effort for involving doctor of pharmacy students in wellness programs is directed toward students in their fourth-professional year of study. A more concerted effort may be needed to involve first-year students in an attempt to acclimatize them to

patient interaction early in their pharmacy career. Greater student involvement in wellness programs could potentially assist in meeting the following Center for Advancement in Pharmaceutical Education (CAPE) competencies as they apply to the provision of pharmaceutical care: collecting accurate and comprehensive patient information; patient counseling; communicating pertinent information with colleagues and other health care professionals; performing specific aspects of physical assessment; making referrals and formulating a pharmaceutical care plan.<sup>16</sup>

The results of this study also show that, despite the existence of numerous wellness programs, both funding and coordination of wellness programs are predominately from the college or school of pharmacy itself. This is surprising because schools of public health and health promotion share the same goal of enhancing community and public health. Furthermore, only 5 of 49 respondents (10%) considered involving the nutritional department in their wellness program. Given current problems with obesity in the United States, it is unclear why more respondents did not view input from nutritionists as important. Possibly, the respondents attributed higher priority to involving those health care professionals with whom they interact the most or are more familiar with, ie, nurses and physicians. This finding warrants further investigation.

The wellness programs on which the respondents did not appear to use technology to improve their outreach to patients. Our survey outcome revealed that the dominant methods of recruiting patients included provider referrals, paper flyers, and word-of-mouth advertising. The bridging of the digital divide in recent years implies that patients have greater access to the Internet and e-mail.<sup>17-19</sup> Consequently, wellness programs may lose patients to high-technology resources such as health-related Web sites.<sup>18</sup> An alternative explanation is that the wellness clinics purposefully avoided using computer technology as part of their outreach because they determined that their patient populations did not have access to such technology. The rationale for the patient recruitment methods used was not evaluated in this study and warrants further investigation.

A secondary finding of this study was the high response rate attributed to the web-based survey method and reminder used. A recent study by Cobanoglu et al compared response rates and response speed for 3 survey administration methods—mail, fax, and web-based—in an academic setting.<sup>14</sup> The authors reported response rates of 26%, 17%, and 44% for mail, fax, and web-based methods, respectively. In the current study, the authors considered the e-mail response rate favorably because it exceeded Cobanoglu et

al's response rate by 50% and because the response in this study often involved a 2-step process. (All but 2 survey responses—47 of 49—were submitted by e-mail. Two respondents chose to forward their responses by United States mail). That is, if the deans did not complete the survey themselves, they were required to forward the e-mail to a second person. Furthermore, approximately three fourths of the responses were received in the first 2 weeks after the survey instrument was sent. The follow-up request for participation increased the e-mail response rate dramatically from 45% to 60%. The high response rate, fast response speed, more comprehensive information elicited, and absence of missing values from the data received via e-mail, showed the advantages of using the Internet for survey administration in an academic setting. The higher response rate reported for this social science survey compared with that conducted by Cobanoglu et al could possibly be attributed to a greater access and familiarity of faculty members with e-mail. For example, using e-mail for communication within an academic setting is now standard. Moreover, web survey research is more common than it was when Cobanoglu et al conducted their study in 2000. Also, submitting survey instruments to health service organizations by e-mail rather than traditional mail is far more common in our experience (eg, Drug Information Association, International Society of Pharmacoeconomic Outcomes Research, and the American Medical Association). Alternatively, faculty members may also have greater familiarity with and trust in Web sites, thereby increasing the probability that they would complete the survey instrument online. For example, membership to pharmacy organizations or registration for pharmacy meeting attendance are now commonly made online by pharmacy faculty members. Lastly, the overall interest in wellness programs by colleges of pharmacy may have been the reason for higher survey response rates by pharmacy faculty members.

## **CONCLUSIONS**

In conclusion, this survey focused on pharmacy student involvement in wellness programs in the United States. The study results showed that 49 of 82 colleges and schools of pharmacy responding to a national survey supported professional doctor of pharmacy student involvement in such programs. All respondents, regardless of their institution's involvement in wellness programs, supported professional pharmacy student involvement in wellness programs and in direct patient interaction. The findings of this study demonstrate the need for pharmacy educators to encourage the participation of professional students in community-based wellness programs, especially in the early phases of the cur-

riculum. Further details of how students are evaluated in wellness programs and the potential outcomes that providing wellness services may have on honing students' skills warrant continued study.

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