

Learning Opportunities for Pharmacy Students in Our Communities

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The projects described in this paper were designed to give pharmacy students insight into the need for their expertise and participation in the community through the provision of ambulatory pharmaceutical care services especially to underserved populations. The three programs discussed include formulary-specific drug information manuals for medical outreach clinics, pharmacotherapeutic assessments for the independently-living elderly, and a geriatric health and pharmacotherapeutic assessment fair. The goals of these programs were to refine and strengthen students' written and oral communication skills, patient counseling and assessment skills, and skills in making recommendations in patients' pharmacotherapeutic regimens. Secondary goals were to spark students' interest in providing community-based pharmaceutical care services and in potential career opportunities in the ambulatory care setting. Additionally, the projects were implemented in an attempt to meet some of the health care needs of underserved populations. Students performed well in all situations and enjoyed the opportunities to work with the various populations involved. Similarly, recipients appreciated the care and information received from the students. Student and practitioner evaluations are included in this paper.

INTRODUCTION

With a population of approximately 186,000 people, Spokane, Washington, is the largest northern tier city between Minneapolis and Seattle without a viable community health program. The resources of the private sector, community hospitals, and special population clinics are strained beyond capacity. The 1990 census reported 32,298 homeless individuals in Spokane(1). In addition, there were most likely a number of homeless that were missed in the count. The 1993 census reported that approximately 2,500 families are living in the community in emergency shelters or in places not meant for human habitation(2).

Additionally, the 1993 census found the total percentage of Spokaneites over the age of 65 years to be 13 percent, similar to National statistics. Ninety-five percent of these people are living in their own homes or apartments and function quite well mentally, physically, and socially(2). However, Elder Services of Spokane, a program which functions to maintain older adults in their homes and avert premature placement in institutions, estimates that 12-15 percent of the elderly population in Spokane is at risk for serious, multiple, and interrelated problems(3).

It is important for pharmacy students to gain an appreciation of the many roles pharmacists have as health care providers. Traditionally, pharmacists carried out their professional activities inside the constraints of a pharmacy whether it was located in a hospital, community, or clinic setting. However, in this era of health care reform, means by which to decrease costs are being sought. One area being reviewed includes the use of ambulatory services for treating many patient illnesses and health care needs. This focus on outpatient and ambulatory services offers pharmacists a challenging opportunity. To obtain the desired outcomes of health care reform, pharmacists must position themselves in roles that will allow the provision of cost-effective, outcome-

oriented, patient services. Because the traditional role of the pharmacist focused on dispensing and not cognitive services, this positioning process may take much effort and diligence(4). By training future pharmacists to envision a practice model that focuses on continuous pharmaceutical patient care and the provision of cognitive services, this positioning process can be facilitated.

Several opportunities were made available to pharmacy residents, bachelor of science and doctor of pharmacy students. These learning situations were created with the goal of developing students' oral and written communications skills and patient and pharmacotherapeutic assessment skills. Secondly, these programs were developed to encourage students to consider a career in ambulatory care and to attempt to meet some of the health-related needs of the underserved populations of our community.

DRUG INFORMATION MANUALS

Program Description

There are several medical outreach clinics in Spokane, Washington, staffed by teams of retired nurses and physicians. These clinics operate once or twice weekly to provide medical care to the indigent populations of the community. These populations seek the care of these clinics because they lack primary care practitioners, cannot find practitioners who take public assistance coupons, or do not have means to pay for health care services.

Patients are seen for acute and chronic conditions. Physicians who staff these clinics do brief work-ups and physical exams to determine if patients need referral for further, more in-depth care. If not, they will prescribe medications from their formularies (drug supply closets) or write prescriptions to be filled at outside pharmacies in the event that patients have public assistance coverage. The medications and supplies on clinic formularies are either donated by local hospitals, physicians, or pharmaceutical companies, or purchased through the hospitals at discounted rates.

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To refine and strengthen students' written drug information skills, a project was implemented by which formulary-specific drug information manuals were created for two outreach clinics. The faculty preceptor for this project compiled a list of all drug products available at the clinics. This list contained approximately 150 medications which were separated into ten drug classes.

Student Expectations

Six third-year students beginning their clinical rotations at a local hospital were given this assignment as part of their drug information requirement. Each student received a list of approximately 25 drugs, selected based upon the specialty of their rotation. They were instructed to write a concise and accurate drug information monograph for each medication including brand and generic names, indication(s), pediatric and adult dosing, adverse effects, significant drug interactions, important patient information, and similar drugs. This information was to be taken from current literature sources, condensed into approximately four to five sentences, and submitted on a computer diskette. The faculty preceptor compiled the data into a uniform format, created indexes for the manuals, and delivered the finished products to the clinics.

Evaluation Process

Evaluations of students' performances for this project were applied toward their final clinical rotation grade. They were graded based upon their ability to follow format directions (they were asked to redo their project if it was submitted using an incorrect format) conciseness and accuracy of the information, and timeliness of project submission (one student had a reduction in his grade as a result of late submission). In general, students performed well on this project, felt it was a useful learning tool, and enjoyed the opportunity to be of assistance to the community.

The lead physician of one of the clinics completed an evaluation of the project and commented that the manuals have been useful to him in his care of patients. Additionally, he felt the information provided was easily accessible, well organized, and applicable to his patient population. He did comment, however, that the manuals need frequent updating to include newly acquired drugs at the clinics due to the nature of medications used (*i.e.*; samples, donations). This is viewed as a positive suggestion for it facilitates continuous student involvement in this project.

PHARMACEUTICAL CARE FOR THE ELDERLY

Program Description

Elderly persons are at an increased risk for developing drug related problems due to the large number of medications they consume(5). Those older adults living independently in the community are at even further risk because they are often responsible for self-administering their medications. Although elderly persons over 65 years of age represent only 12 percent of the population, they are responsible for 25-30 percent of all prescription drug use and experience twice as many adverse drug reactions as the general population(6-9). Similarly, they consume a higher number of OTC medications than the younger population(10). It is evident that the elderly are at an increased risk for adverse drug effects, therapeutic failure, and intentional and non-intentional noncompliance with prescription medi-

ation regimens(11).

To facilitate the development of students' skills in assessing potential drug related, functional, mental, and nutritional risks in the elderly, a project was developed to send students into the community to complete multifaceted assessments for independently-living older adults. The Washington State University College of Pharmacy has developed a Medication, Health, and Functional Status assessment Tool (MHFST) as a systematic mechanism to allow for the comprehensive screening and evaluation of high-risk community-dwelling geriatric patients. This tool serves not only as a data base, but also highlights many real and potential problems likely to be encountered by patients. The MHFST contains nine major areas of assessment including: (i) medication history; (ii) medication complexity index; (iii) compliance scale; (iv) past medical history; (v) nutritional status; (vi) visual and manual dexterity; (vii) cognitive ability; (viii) depression; and (ix) quality of life.

Student Expectations

Five third-year pharmacy students and two pharmacy residents were each given the names of five community-dwelling older adults. These people volunteered their time to work with the students, and were chosen based on their higher level of cognitive functioning to facilitate the learning process. Students and residents were expected to arrange 60 minute home-visits with each of their clients during which time they would complete the MHFST. After collecting all information, the students were instructed to submit to their preceptors, assessments of their clients' actual or potential drug therapy problems, and risk for problems related to poor compliance, nutritional status, or extremely complex medication regimens. In addition to these assessments, students were expected to formulate therapeutic solutions for their clients' actual or potential problems. All clients received letters from their students thanking them for participating in this project. Included in these letters were preceptor-approved student recommendations for improving compliance, correcting or preventing drug therapy problems, and managing specific disease states. Clients were strongly encouraged to share these letters with their physician(s) to facilitate follow-up on problems. Because of the clients' levels of functioning, few major drug therapy problems were detected. However, several potentially dangerous drug interactions, stockpiling of medications, and therapeutic duplications were detected and documented.

Evaluation Process

Students were graded for this project based upon their ability to collect complete data bases from their clients, their ability recognize drug therapy problems and to suggest solutions to these problems. They were also graded on their letters to clients including content, conciseness, and likelihood that clients would be able to understand the language used.

PHARMACOTHERAPEUTIC AND HEALTH FAIR

Program Description

Doctor of Pharmacy students at Washington State University College of Pharmacy complete a six-month course in physical assessment before entering their experiential program. The goal of this course is to prepare students to perform and evaluate basic physical assessments in patients.

Table I. Student evaluation of Health Fair (N = 15)^a

Statement	Average ^a	Minimum	Maximum
1. This program was professionally satisfying and rewarding.	4.37	3	5
2. I was challenged to use my knowledge and communication skills.	4.47	3	5
3. Patient consultation/interaction was a valuable learning experience.	4.63	4	5
4. The faculty members present during the event were supportive.	4.47	4	5
5. A similar program should be required of all doctor of pharmacy students.	4.77	4	5
6. After graduating, I hope to perform similar services/ programs for my Community.	4.57	4	5
7. The response of the residents I dealt with was generally very positive.	4.7	4	5
8. The training I received adequately prepared me for this project.	4.27	3	5
9. This project was a valuable learning experience.	4.63	4	5
10. This project offered a valuable clinical service to residents.	4.4	3	
11. Because of this project, I feel more competent and confident with patient counseling skills.	4.13	3	5
12. Because of this project. I feel more competent and confident with my patient assessment skills.	4.2	3.5	5
13. Because of this project. I feel more competent and confident with my patient health screening skills.	4.2	3	5
14. I feel the faculty involvement in this project should have been greater.	3.2	1	5
15. Overall, my experience with this project was excellent.	4.4	4	5

^a See reference 12.

^b 5 = strongly agree, 4 = agree, 3 - neither agree or disagree, 2 = disagree, 1 = strongly disagree.

They learn how to obtain vital signs and to assess heart and lung sounds, deep tendon reflexes, blood glucose levels, hearing, vision, and mental status.

Students generally practice their physical assessment skills on one another. Faculty members of the College felt it would be useful to provide students with “real-life,” practical application of these skills in subjects who may not be as healthy. To facilitate this process, a Health Fair was hosted at an apartment complex that houses approximately 100 persons aged 60 and older. Residents were notified about the “Brown Bag” and Health Assessment Fair via flyers placed under their apartments doors and in other areas throughout the complex. A visiting nurse who serves the health-related needs of these residents assisted in the promotion of this event by identifying residents she felt would benefit by attending. Residents were asked to bring their medications with them as well as any questions they had about their health.

Student Expectations

Faculty members greeted residents and introduced them to teams of two students who would perform the assessments. In addition, faculty members representing different specialties were available to assist students with difficult patient situations or questions and to assess students’ performance throughout the event. Each student team completed brief medical, social, and medication histories for their elderly participants and assessed vital signs, heart and lung sounds, and blood glucose (if appropriate). If the participants remembered to bring their medications, students completed pharmacotherapeutic assessments evaluating participants’ potential for drug therapy problems. Similarly, the students answered questions related to participants’ health and medications and made recommendations as how to use their medications more safely and efficaciously.

Evaluation Process

Approximately 45 participants attended this program. Student teams spent an average of 45-60 minutes with each

client completing assessments and answering questions. Faculty members felt that this was an excellent opportunity for students to practice their physical assessment skills, as it was an opportunity for faculty to evaluate students’ assessment techniques. Several patients were referred by students and faculty members to their physicians and the visiting nurse for follow-up. Student evaluation of this project can be found in Table 1(12). Overall, the students felt strongly that the program was a valuable learning experience, was well excepted by the participants, and should be required of all students. There were mixed feelings about faculty involvement in the program, however. Some students felt that faculty members should have participated more during the program while others were comfortable with the level of faculty assistance. Other valuable comments shared by the students included promoting the event better so more people would participate, holding the event in a quieter area, and implementing similar programs earlier in the curriculum. Most felt it was a very needed public service and that they would have liked to have more contact with participants.

As well, the visiting nurse evaluated the program and student performance. Overall, she felt the program was needed and well organized. She received positive feedback from the residents who commented that they were treated respectfully and with empathy by the students and they received useful information during the program. The nurse was particularly satisfied with the information she received from students about patients who were confused and may require additional assistance-with their medications. A similar program has been scheduled for the next class of students.

CONCLUSION

This article describes several learning experiences for students through community involvement. These programs not only provide educational opportunities for students, but allow faculty members the chance to observe students practicing in real-life, clinical situations. Similarly, the programs facilitate the provision of pharmaceutical care services to the underserved population of our community.

The implementation of similar programs can serve a valuable role in the development and strengthening of important skills in our students. By affording students the opportunities to practice pharmaceutical care skills on real patients, they may be empowered to provide similar services after they graduate. Implementing similar learning experiences throughout the pharmacy curriculum and in post-graduate training programs will be useful in preparing those interested in providing such services.

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References

- (1) 1990 Census, U.S. Department of Commerce, Washington State Office of Financial Management.
- (2) 1993 Census, U.S. Department of Commerce. Washington State Office of Financial Management.
- (3) Jinks, M.J. and Raschko R.R., "A profile of alcohol and prescription drug abuse in a high-risk community-based elderly population," *DICP Ann. Pharmaco.*, **24**, 971-975(1990).
- (4) Hepler, C.D. and Strand, L.M., "Opportunities and responsibilities in pharmaceutical care," *Am. J. Hosp. Pharm.*, **47**, 533-543(1990).
- (5) Peszencker, B.L., Patsdaughter, C. and Moody, K.A., "Medication regimens and the home care client: A challenge for the health care provider," *Home Health Care Serv. Q.*, **11**, 9-68(1990).
- (6) Anon., U.S. Senate Special Committee on Aging. Aging America: Trends and projections. PL3377(584), 1984.
- (7) Lamy, P.P., "Geriatric drug therapy," *Am. Fam. Physician*, **34**, 188(1986).
- (8) Nolan, L., "Prescriber for the elderly. Part I: Sensitivity of the elderly to adverse drug reactions," *J. Am. Geriatr. Soc.*, **36**, 142(1988).
- (9) Grymonpre, R.E., Mitenko, P.A. and Sitar, D.S., "Drug-associated hospital admissions in older medical patients," *ibid.*, **36**, 1092-1098(1988).
- (10) May, R.E., Stewart, R.B. and Hale, W.E., "Prescribed and nonprescription drug use in an ambulatory elderly population," *South. Med. J.*, **75**, 522-528(1982).
- (11) Priorities and approaches for improving prescription medicine use by older Americans. A report of the National Council on Patient Information and Education. October, 1987. National Council on Patient Information and Education. 666 Eleventh St. NW, Suite 810, Washington DC 20001.
- (12) Magarian, E.O., Peterson, C.D., McCullagh, M.E. and Kuzel, R.J., "Role model ambulatory clinical training site in a community-based pharmacy," *Am. J. Pharm. Educ.*, **57**, 1-9(1993).