

Changes in Career and Practice of Pharmacy after Obtaining a Degree through an External Doctor of Pharmacy Program

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A survey was conducted to determine the impact of the doctor of pharmacy (PharmD) degree on the career and practice of pharmacy for graduates of the University of North Carolina at Chapel Hill (UNC-CH) School of Pharmacy's External Doctor of Pharmacy Program. The first 107 graduates of the UNC-CH School of Pharmacy External Doctor of Pharmacy Program were surveyed during June 2000. Eighty (75 percent) graduates responded to the survey. Results indicated that 35 (44 percent) respondents have received a promotion or job change since receiving the PharmD degree. Eleven additional students (14 percent) reported a change in job responsibilities. Results indicate that obtaining a PharmD degree through the UNC-CH School of Pharmacy's External PharmD Program may enable pharmacists to achieve a change in practice setting, a promotion, or new job responsibilities.

INTRODUCTION

Although the vast majority of pharmacists currently practicing in the United States were trained in Bachelor of Science (BS) programs, the educational background of pharmacists is shifting in the U.S. The BS degree is being phased out of all U.S. schools as a result of changes in national standards by the American Council on Pharmaceutical Education that mandated the Doctor of Pharmacy (PharmD) degree for all accredited programs. Thus, pharmacy education has shifted from Bachelor of Science to doctoral training, and the majority of U.S. graduates now enter the profession with the PharmD degree.

As new graduates with advanced training enter the labor market, many practicing pharmacists with BS degrees contemplate the merits of obtaining a PharmD degree. Since adults often have multiple roles that impact the time and energy that they can devote to their role as a student, it is not surprising for the potential student to ask if the benefit of obtaining a PharmD degree is worth the sacrifice or cost and time forfeited.

Research on the outcomes of nontraditional PharmD programs has been limited. Piascik, *et al.*(1) surveyed the first 30

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Table I. External doctor of pharmacy program requirements

Required courses	Credit hours	Primary method of course delivery
Drug Literature Analysis and Interpretation	4.0	Videotaped lectures and videoconferences
Applied Pharmacokinetics	3.0	Videotaped lectures and videoconferences
Advanced Pharmacotherapy I	6.0	Videotaped lectures and videoconferences
Advanced Pharmacotherapy II	6.0	Videotaped lectures and videoconferences
Immunology & Immunotherapeutics	2.0	Videotaped lectures
Physical Assessment	3.0	Classroom / laboratory
Seminar	1.0	Experiential learning
Clerkships (7)	4.0 / clerkship	Experiential learning

graduates of the University of Kentucky's nontraditional PharmD program and reported that 63 percent of the respondents had made changes in their professional practice after receiving the PharmD degree. When students were requested to compare their current job responsibilities with BS pharmacists, the nontraditional PharmD graduates reported that their responsibilities were more clinical (78 percent) and greater in scope (76 percent). Fjortoft and Engle(2) surveyed 172 graduates of the nontraditional PharmD program at the University of Illinois at Chicago. Their results indicated that 69 percent of the respondents reported receiving a promotion or job change after completing the PharmD degree. The graduates reported that they spent less time in prescription processing and increased time in clinical, management, educational and research activities. Respondents from a national sample(3) reported spending a greater percentage of time on clinical activities. These graduates also indicated higher levels of job satisfaction in their first position with a PharmD degree than in their last position as a BS-trained pharmacist. The primary reason given for pursuing the nontraditional PharmD was to remain competitive in the profession. Many of the graduates received promotions or moved to another institution or new practice setting that allowed them to use their new clinical skills after they obtained the PharmD degree. The purpose of the survey reported here was to determine changes in career and practice of pharmacy for graduates of the University of North Carolina at Chapel Hill (UNC-CH) School of Pharmacy's External Doctor of Pharmacy Program.

METHODS

Program Description

The UNC-CH External PharmD Program was established during the spring of 1996 to provide an accessible means for practicing North Carolina pharmacists to enhance their ability to provide pharmaceutical care within their practice setting and to earn the doctor of pharmacy degree. As shown in Table I, the program consists of 25 hours of didactic coursework and seven clerkships. Traditionally, didactic courses in the UNC-CH external program have been provided using a combination of printed material, videotapes of on-campus lectures, interactive videoconferences and Internet discussion forums.

Once students complete the didactic portion of the program, they are eligible to begin the clerkship component. Overall, one medicine and six elective clerkships are required. In order to assure all students acquire baseline skills, the first clerkship must be a full-time, inpatient family medicine or general medicine clerkship. This full-time clerkship experience is used as a template for future clerkships which may be completed in a nontraditional manner. The elective clerkships may be completed by any of the following methods: full-time or part-time (modified) traditional clerkships and nontraditional

clerkships that include the Pharmaceutical Care Experiential Learning Clerkship, Continuous Patient Care Clerkship, and Project Clerkship. The nontraditional clerkships are designed to be part-time and indirectly precepted at the students' practice site or another clinical site. The Pharmaceutical Care Clerkship requires students to develop and implement pharmaceutical care plans for a minimum of 16 patients. The Continuous Patient Care Clerkship provides an extended pharmaceutical care experience for the practitioner/student with six individual patients in his/her practice site. Each patient must be followed for a minimum of eight months. Project clerkships are clinically oriented projects done on a prospective basis over no more than an eight-month period. Students who completed one clinical clerkship in their BS curriculum may receive credit for one elective clerkship.

Survey Development and Procedure

A survey was developed to determine the impact of the PharmD degree on external graduates' careers and practice of pharmacy. The survey and cover letter were mailed to the first 107 graduates of the UNC-CH School of Pharmacy's External PharmD Program during June 2000. The 101-item questionnaire contained five domains including demographics, undergraduate student experience, external PharmD experience, professional practice after a PharmD and further comments. Item responses were multiple choice, frequency estimates, five-point Likert scale and open-ended.

Analysis

Frequencies of sociodemographic and practice characteristic variables were totaled, and percentages are reported. In addition, responses obtained from the questionnaire were used to categorize individuals into three groups based on: (i) receiving a promotion or job change since obtaining the PharmD degree; (ii) having current job responsibilities change since receiving the PharmD, but without a promotion or job change; and (iii) having no job or responsibility changes. Proportions of respondents in each category were tabulated with variables representing attitudes about the benefits of obtaining the PharmD degree and with the time spent in job activities. Distributions of important variables were graphed and summary statistics calculated. A graphical display of attitudes about distance education and the delivery of course materials were plotted. Data were analyzed using the SAS system for Windows, Version 8.01 (Cary, NC).

RESULTS

Eighty (75 percent) of the 107 graduates completed the survey. Six of the surveys were returned as undeliverable. A description of the respondents is provided in Table II. The typical graduate of the UNC-CH External PharmD Program is female,

Table II. Demographics of respondents

		Percent		
Variable		n	Respondents	Promotion / Job change
Gender	Female	53	66	45
	Male	27	34	41
Age	35 years or younger	28	35	46
	36-45 years	30	37	53
	Over 45 years	22	27	27
Marital status	Married	66	82	42
	Unmarried	14	17	50
Number of dependent children	None	28	35	39
	1	16	20	50
	2	27	34	48
	3 or more	9	11	33
Years since BS degree	3 to 10	31	39	48
	11 to 15	13	16	62
	16 to 20	14	17	57
	20 or more	22	27	18
BS GPA*	2.01 to 2.50	11	13	27
	2.51 to 3.00	28	35	50
	3.01 to 3.50	27	34	52
	3.51 to 4.00	13	16	31
Currently employed as a pharmacist	Yes	69	86	41
	No	11	14	64
Practice setting**	Hospital	41	55	37
	Non-hospital	33	45	55
Hours worked per week***	0 to 40	24	33	46
	>40	49	67	43
Incurred loans	Yes	10	12	60
	No	70	87	41
Pct of education expenses paid from own resources	0 to 25%	18	23	56
	26 to 50%	15	19	27
	51 to 75%	12	15	50
	75% or more	35	44	43

*based on 79 respondents; **based on 74 respondents;

***based on 73 respondents.

married and is 39 years of age. Sixty-nine percent of the respondents received their BS degree in pharmacy from the University of North Carolina at Chapel Hill, and 50 percent reported a cumulative BS degree grade point average of 3.01 or higher. The majority of the respondents (55 percent) practice in hospital pharmacy settings. Thirty-five (44 percent) respondents provided 75 percent or more of their education expenses from their own resources. Ten students (12 percent) incurred loans.

Results indicated that 35 (44 percent) respondents have received a promotion or job change since receiving the PharmD degree. Eleven additional students (14 percent) reported a change in job responsibilities. For those with a promotion or job change, 80 percent of respondents reported less time with prescription processing while more time was reported

in educational activities (63 percent), clinical activities (58 percent), management (43 percent) and research (43 percent) as shown in Table III. Graduates with changes in job responsibilities reported increased time in clinical (64 percent) and educational (82 percent) activities.

Graduates were asked to rank perceived benefits of obtaining a PharmD degree using a five-point Likert scale. When the 35 graduates who reported a promotion or job change since receiving the PharmD degree listed their primary reasons for obtaining the degree, 100 percent of respondents said that better career mobility and remaining current with knowledge were important benefits of obtaining the PharmD degree. Ninety-seven percent of these respondents reported that competitive advantage when applying for a job and improved clinical skills were important benefits of obtaining the PharmD degree. For the 11 graduates who reported a change in job responsibilities, 91 percent of these respondents said that better career mobility, better patient care and remaining current with knowledge were important benefits of obtaining the PharmD degree. One hundred percent of the 34 graduates who reported no changes in their job or responsibilities said that remaining current with knowledge was an important benefit of obtaining the PharmD degree. Ninety-seven percent of this group reported that competitive advantage when applying for a job was a very important reason. Seventy-one percent of those promoted or who received a job change, 73 percent with change in job responsibilities and 76 percent with no changes responded that being called "doctor" was unimportant. A complete listing of the respondents' perceptions of the benefits of obtaining the PharmD degree is shown in Table IV.

Respondents were asked to indicate factors influencing their decision to enroll in the UNC-CH External PharmD Program on a five point scale with 1 = low and 5 = high. Highly rated factors based on mean scores were program requirements 4.05 (SD ± 0.79), reputation of the program 4.03 (SD ± 1.08), self-instructional course delivery 4.03 (SD ± 0.89) and length of time for completion of program 3.96 (SD ± 0.91). Ninety-two percent of respondents agreed that the combination of course packs, videotapes, interactive two-way videoconferences and Internet discussion forums are effective methods of instructional delivery as shown in Figure 1. Forty-two percent of respondents agreed with the statement that they preferred delivery of course material by the Internet.

According to the respondents, coursework in the external PharmD program increased their overall intellectual growth, interest in learning more about things that are new and the ability to critically analyze ideas and information. Specifically, respondents commented that the two advanced therapeutics courses were very relevant to clinical pharmacy practice (84 percent) and very integral to the external PharmD curriculum (81 percent). In addition, respondents felt that the courses were frequently or always challenging (94 percent), and they found the course content was frequently or always current (93 percent).

Chi square analysis examining the association of demographic and other variables showed no statistically significant differences between respondents who received job changes or promotions and those who did not. Nevertheless, the relatively small number of respondents in the sample is likely to have precluded the analysis from detecting statistical differences between the two groups even if they exist. Consequently, further studies are needed with larger samples of graduates to better understand how obtaining a postbaccalaureate PharmD degree affects pharmacists' careers and job responsibilities.

Table III. Time spent on job activities according to changes in job status^a

		n	Percent		
			Less time	About the same	More time
Prescription processing (dispensing)	Promotion /job change	30	80	13	7
	Responsibility changes	11	36	64	0
Clinical activities (patient care)	Promotion /job change	33	33	9	58
	Responsibility changes	11	9	27	64
Management activities	Promotion /job change	35	17	40	43
	Responsibility changes	11	9	73	18
Educating activities	Promotion / job change	35	11	26	63
	Responsibility changes	11	9	9	82
Research activities	Promotion / job change	35	14	43	43
	Responsibility changes	11	0	64	37

^aTable rows represent percentages of total respondents in each job status category.

Table IV. Perceived benefits of obtaining the PharmD degree according to job changes

	Percent								
	Promotion/Job change (n=35)			Responsibilities changed (n=11)			No changes (n=34)		
	Unimportant	Neutral	Important	Unimportant	Neutral	Important	Unimportant	Neutral	Important
Enhanced job performance	6	3	91	0	18	82	0	9	91
Enhanced job satisfaction	6	17	77	0	27	73	0	21	79
Enhanced job security	3	17	80	9	18	73	3	3	94
Better career mobility	0	0	100	9	0	91	0	9	91
Competitive advantage when applying for a job	0	3	97	0	18	82	0	3	97
Competitive advantage when being considered for promotion	0	14	86	9	18	73	6	12	82
Improved clinical skills	0		97	0	18	82	0	6	94
Improved research skills	11	26	63	18	36	45	18	21	62
Enhanced salary	20	31	49	27	45	27	12	44	44
Better patient care	6	6	89	0	9	91	0	6	94
Remain current with knowledge	0	0	100	0	9	91	0	0	100
Can be called "doctor"	71	11	17	73	27	0	76	12	12

DISCUSSION

The UNC-CH findings show similarity to the results reported by an earlier study with respect to promotion and job change. Fjortoft and Engle(2) reported that 69 percent of respondents had received a promotion or job change after receiving the PharmD degree. Forty-six of the 80 (58 percent) UNC-CH graduates who responded to the current survey reported a job change or modification in responsibilities after completing the UNC-CH External PharmD Program. Seven respondents moved into clinical pharmacy specialist positions, and 11 respondents assumed other clinical positions. The other 17 promotions or job changes included positions in academia, home health, industry, long-term care and hospital pharmacy administration. The graduates of the UNC-CH external program also showed similarity to previous study results with respect to their reasons for pursuing an advanced pharmacy degree. In the study by Piascik, *et al.*(1), students entered the nontraditional PharmD program for increased knowledge and self-satisfaction. Fjortoft and Engle(2) reported that respondents ranked improved clinical skills, better patient care and remaining current with knowledge as the three most important benefits of obtaining the PharmD degree.

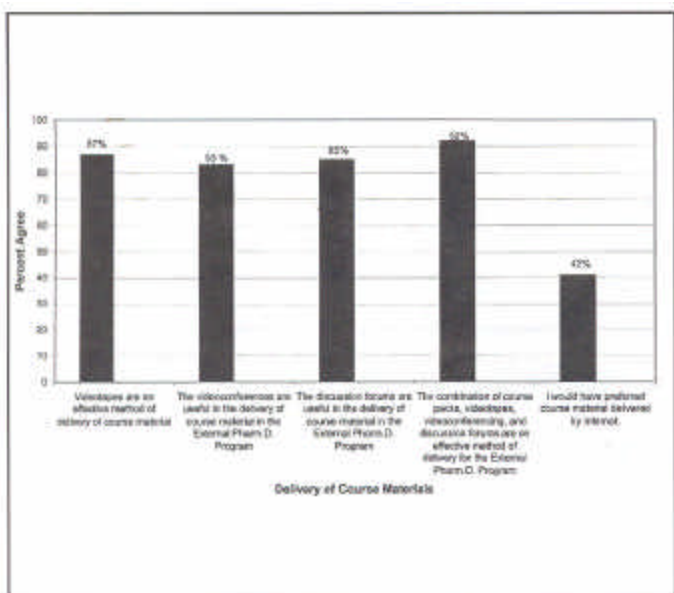


Fig. 1. Attitudes about distance education and delivery of course materials.

Of the eight required courses in the external PharmD curriculum, the two therapeutics courses were considered the most relevant to clinical pharmacy practice and most integral to the external PharmD curriculum, even surpassing the general medicine and elective clerkships in this consideration. Piascik, *et al.*(1) also reported that respondents cited therapeutics as the most useful course in the University of Kentucky's nontraditional PharmD program.

It is interesting to note that the results of the current study closely match those expected from a statewide needs assessment conducted during the fall of 1994(4). The purpose of the statewide needs assessment was to: (i) determine the level of interest of North Carolina pharmacists in obtaining a PharmD degree through an external format; (ii) examine reasons for interest; and (iii) evaluate program design strategies. The results of this 1994 survey indicated a mean age of 37 years for the respondents who expressed interest in the external PharmD, and most of the respondents expressing interest in the external program were married with children. The largest percentage of the 356 respondents indicating interest in an external program identified themselves as hospital pharmacists (43.5 percent). Similarly, the results of the first 107 UNC-CH external PharmD graduates indicated that the typical graduate is 39 years of age and married. Fifty-five percent of the external PharmD graduates practice in hospital pharmacy settings.

CONCLUSION

The results of this study suggest that completion of the UNC-CH External Doctor of Pharmacy Program may assist graduates in changing practice settings, obtaining new job titles and achieving new job responsibilities. This may result because these graduates have acquired knowledge and skills that enable them to make advances in their practice settings. Despite these benefits, barriers such as the cost of tuition, lack of support from employers and time commitment must be addressed for adult learners considering these types of nontraditional programs. Further study will be necessary to evaluate exact characteristics of the best modes or combination of modes of delivery to ensure the maximum impact of the PharmD degree on the career and practice of pharmacy for graduates of UNC-CH School of Pharmacy's External Doctor of Pharmacy Program. In the future, principles and technologies learned and utilized in the External PharmD Program at UNC-CH may influence the delivery of continuing education programs as the need for the nontraditional PharmD program begins to decline.

References

- (1) Piascik, M.M., Butler, D. and Legrand, B.F., "Outcome survey of non-traditional PharmD graduates," *Am. J. Pharm. Educ.*, **56**, 83S(1992).
- (2) Fjortoft, N.F. and Engle, J.P., "Effect of the nontraditional PharmD on individual practice patterns," *ibid.*, **59**, 223-227(1995).
- (3) Fjortoft, N.F., Weigand, L. and Lee, M., "Effect of the nontraditional PharmD degree on practice patterns based on a survey of graduates from six programs," *ibid.*, **63**, 305-309(1999).
- (4) Joyner, P.U., Pittman, A.W., Campbell, W.H. and Dennis, B.H. "A needs assessment for an external doctor of pharmacy degree program," *ibid.*, **61**, 292-296(1997).